

Facilities Plan Update

Town of Coventry,
Rhode Island

February 2010

Weston&Sampson

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February 4, 2010

Mr. Arthur G. Zeman, P.E.
Principal Engineer
RIDEM Office of Water Resources
235 Promenade Street, 2nd Floor
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**Re: Town of Coventry Facilities Plan Update (DEM File #09-G)
Response to Comments**

Dear Mr. Zeman:

Weston & Sampson, Inc. has reviewed your letter dated December 3, 2009 and has addressed the comments concerning the recently reviewed Facilities Plan Update (FPU) for the Town of Coventry. The following are the requested narrative responses to your comments:

1. *In the Final FPU submittal, please include all Public Meeting/Public Hearing handouts, transcripts, public notes, etc. in the Appendices. Also, please include all Intergovernmental Review correspondence in the Appendices.*

All requested Public Meeting/Public Hearing handouts, transcripts, public notes, etc., as well as all Intergovernmental Review correspondence has been added into the Appendix of the final FPU submittal.

2. *On page 3-23, in the last paragraph, please consider referencing the study areas by the new letter designation rather than the numerical designation to maintain consistency throughout the FPU.*

The reference to the study areas has been changed to the new letter designation to remain consistent with the remainder of the FPU.

3. *On page 3-27, please revise the third paragraph under Section 3.6.1 regarding the average and peak flows at the West Warwick WWTF. The average daily flow is currently 10.5 MGD, not 7.89 MGD, and the peak flow is 25.34 MGD, not 18.15 MGD. Also in the fourth paragraph, it states that West Warwick currently accepts septage. It is OWR's understanding that West Warwick does not accept any septage, although they have the equipment in place to do so.*

The average and peak daily flows have been revised accordingly. The paragraph regarding the acceptance of septage has been revised as follows:

“ The West Warwick facility currently has the equipment to properly accept septage for treatment. However, at this time no septage is accepted at the facility. The Intermunicipal Agreement (IMA) between West Warwick and Coventry has a stipulation that would allow Coventry to dispose of septage at the facility if it were to be accepted from any other communities (including West Warwick). ”

4. *On page 4-7, Table 4-3, shouldn't Study Area P also be highlighted in green due to reallocation of flows (Rhodes and Clariant)? Please revise if necessary. Also, Figure 4-2 shows Rhodes and Clariant in Study Area O, not P. The text says Rhodes and Clariant flows are part of Study Area P. Is it that Rhodes and Clariant are, in fact, located in Study Area O, but the wastewater will discharge to Study Area P? Please explain and revise the FPU if necessary.*

Your assumption is correct. While the parcel where Clariant Corporation and Rhodes Technologies are located is in Study Area O, the wastewater flows that will be generated from these facilities will actually discharge to Washington Street, which is part of Study Area P. Thus the allocation to Study Area P must be reallocated. A statement explaining this has been added to page 4-15, Section 4.3.2, and is excerpted below.

“ Please note that while most of the physical parcel areas that house these two facilities are located in Study Area O (see Figure 4-2), the wastewater flows generated by the industries will be discharged to the existing sewer located on Washington Street, which is part of Study Area P. Because the facilities are discharging to Study Area P, the wastewater flows associated with Study Area P (not Study Area O) must be reallocated. “

5. *On page 5-19, in the second paragraph, the discussion on septage again mentions West Warwick as a septage receiving WWTF. Please revise text accordingly.*

The text on septage receiving has been revised as follows.

“ Currently Option B (Treatment and disposal at the West Warwick WWTF) is not viable. While the West Warwick facility currently has the equipment to properly accept septage for treatment, at this time no septage from any municipalities (including West Warwick) is accepted at the facility. The Inter-municipal Agreement (IMA) between West Warwick and Coventry has a stipulation that would allow Coventry to dispose of septage at the facility if it were to be accepted from any other communities (including West Warwick). “

6. *On page 7-4, please consider revising the text in Section 7.1.4 which states, “This is reasonable since all taxpayers may benefit directly from the use of West Warwick WWTF for wastewater treatment and/or septage disposal.” Since West Warwick doesn't accept any septage, there appears to be no benefit to the Coventry homeowners that will remain on septic systems to contribute to the local cost allocation of the improvements to West Warwick's wastewater treatment and collection system. This statement is mentioned again on page 7-8 in the second paragraph of Section 7.1.7. Please revise these sections accordingly.*

The text has been revised to account for West Warwick not accepting septage as follows:

Section 7.1.4:

“ The other significant capital cost needing allocation is the share of the West Warwick improvements to the regional collection and treatment system (currently at \$10,861,534). The Town is using funds from the collected sewer betterments to make the payments on the improvements cost. It is the recommendation of this report (and in the previous 1995 FP) that the Town allocate the remaining payments under general taxes. While there may be criticism that the entire tax base is not benefiting

from Coventry's share of the West Warwick improvements to the regional collection and treatment system, it would be unreasonable, from a cost perspective, to assess this large sum of monies to the betterments of a small portion of the Town that is/will be sewerred. While individual taxpayers may not benefit directly from the West Warwick improvements, the Town as a whole does benefit from the increase in development potential and property values that the sewers bring, and the corresponding increase in tax revenues the Town will receive. Also there can be a case made to the extent that the sewers will increase in environmental quality to public lands (due to the elimination of improperly functioning OWTS and cesspools) that are enjoyed by the entire Town. “

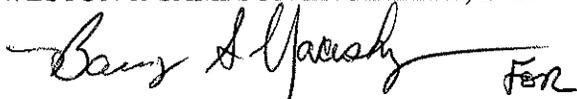
Section 7.1.7:

“ In the past West Warwick costs have been paid through funds from the collected sewer betterments. As stated in Section 7.1.4, it is the recommendation of this report (and in the previous 1995 FP) that the Town allocate the remaining payments under general taxes. The criticism that the entire Town does not benefit from the past improvements can be suppressed by the Town as a whole benefiting from the increase in development potential and property values that the sewers bring, corresponding to an increase in potential tax revenues. “

Should you have any questions or require additional information, please contact me at 1-800-SAMPSON Ext. 2408.

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.

A handwritten signature in black ink, appearing to read "Kent M. Nichols". To the right of the signature, the initials "KMN" are written in a stylized, bold font.

Kent M. Nichols, P.E.
Vice President

Enclosure

cc: Thomas Hoover, Town Manager, Coventry, RI

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Rec'd
Apr 15, 2010
By [Signature]



RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

March 29, 2010

CERTIFIED MAIL

Mr. Thomas R. Hoover, Town Manager
Coventry Town Hall
1670 Flat River Road
Coventry, Rhode Island 02816

RE: Approval of Wastewater Facilities Plan Update and Finding of No Significant Impact
(DEM file #09-G) Coventry, Rhode Island

Dear Mr. Hoover:

This letter is in regard to the Town's request to approve the above-referenced Wastewater Facilities Plan Update (FPU) and the FPU's associated environmental review findings.

The Town submitted the FPU approval request based on "Facilities Plan Update Town of Coventry, Rhode Island" prepared by Weston & Sampson dated February 2010 (revised March 24, 2010). The proposed projects involve design and construction of a sewer system expansion in Subareas A through Z, AD, AE and AF. These projects are intended to mitigate adverse water quality impacts to surface and groundwaters of the Town, including Tiogue Lake, Huron Pond and the Pawtuxet River.

Based on our review, RIDEM hereby approves this document as the Town-wide FPU.

Please note that the FPU includes an allocation of 24,000 gallons per day for the 82 Acre parcel owned by Clariant Corporation. This flow allocation was provided by Clariant based on projected activities at the site which were far below historic use of the property. In addition this flow allocation was much less than the 500 gallon/acre/day estimate that the FPU uses to establish future flows for all other properties zoned for industrial use (which would result in 41,000 gallons per day for the property owned by Clariant). As you know Clariant has announced that they will be ceasing all activities at the Coventry site. When evaluating future development proposals for the site, the Town must consider the flow issues noted above and shall amend the FPU if flows significantly greater than 41,000 gpd are proposed.

The FPU sufficiently addresses the statutory intent of the environmental review requirements of the Federal Water Pollution Control Act (commonly known as the Clean Water Act) and **RIDEM is hereby issuing a Finding of No Significant Impact (FONSI)** for the proposed projects identified in the FPU. Please note that unless reaffirmed, this environmental review approval expires five (5) years from the date of issuance.

This approval maintains eligibility for construction assistance programs administered by RIDEM which contain funds allotted to the state under provisions of the Clean Water Act.



R.I. DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources



FINDING OF NO SIGNIFICANT IMPACT

The Office of Water Resources has reviewed "Facilities Plan Update Town of Coventry, Rhode Island" prepared by Weston & Sampson, dated August 31, 2009 (revised February 8 and March 24, 2010), for the Town of Coventry, Rhode Island, in conjunction with a request for approval of this Facilities Plan Update (FPU) and the water pollution abatement projects proposed therein, and

Pursuant to the requirements and authority set forth in Chapter 46-12.2 of the General Laws of Rhode Island, 1956, as amended, and the "Rules and Regulations for the State Revolving Fund (SRF) Program", DEM has determined that the projects identified in the above FPU will not cause significant detrimental effects, the quality of the environment will be improved by the proposed projects, and an Environmental Impact Statement will not be required. The environmental information provided has met the statutory intent of the Federal Clean Water Act environmental review requirements.

DEM is hereby issuing a formal FINDING OF NO SIGNIFICANT IMPACT for the above FPU.

The approval of the projects identified below and contained in the study areas of this FPU is recommended for immediate implementation and will not foreclose alternatives to the Town in other areas.

The proposed project involves the design and construction of wastewater collection systems in Subareas A through Z, AD, AE, and AF. These projects are intended to mitigate the adverse water quality impacts to surface and groundwaters of the Town including, but not limited to, Tiogue Lake, Huron Pond, and the Pawtuxet River.

Project Name: Town of Coventry FPU

Project Location: Town-wide

Project Description: Design and construction of wastewater collection system in Subareas A-Z, AD, AE, and AF

Anticipated Environmental Impacts:

Long Term: No detrimental impacts

Short Term: Construction-related impacts only

Required Mitigation Measures:

Sedimentation and erosion control, as necessary, during construction; any other measures required by federal or state permitting and/or approval authorities.

Angelo S. Liberty, P.E., Chief, Surface Water Protection Section
Office of Water Resources, DEM

DATE: March 29, 2010

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1 EXECUTIVE SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

1.0 General

There is currently only a very limited wastewater collection and treatment system existing in the Town of Coventry. Approximately 98 percent of the residences in Coventry rely on onsite wastewater treatment systems (OWTSs) for treatment and disposal of wastewater.

Previous wastewater planning studies for Coventry recommended construction of wastewater collection facilities, with transmission to the regional wastewater treatment facility (WWTF) in West Warwick for treatment, to serve much of the densely populated eastern portion of Town. OWTS problems in the eastern portions of Town are common. The Town executed an inter-municipal agreement (IMA) with West Warwick reserving 2.25 million gallons per day of wastewater capacity in their regional WWTF. Since the last Facilities Plan (FP) re-affirmation and the subsequent installation of the main interceptor that collects and transports wastewater to the WWTF the Town has begun to expand their collection system to congested and environmentally sensitive areas.

The purpose of this FP Update is to investigate and address the following:

1. Provide for the inclusion of proposed developments and existing industrial properties not previously addressed in the facilities plan flow allocation.
2. Update of the projected wastewater flows for the 20-year and 50-year planning periods.
3. Provide re-allocation of flow capacity to study areas as a result of previously mentioned existing and future developments.
4. Provide review and evaluation of need for wastewater collection facilities, including:
 - a. delineation of problem areas,
 - b. determination of OWTS rehabilitation (or repair) feasibility, and
 - c. prioritization of sewer needs areas.
5. Examine relevant wastewater project financing options available and feasibility of implementation.

1.1 Conclusions

Chapters 3 and 4 of this Facilities Plan examine the current and expected future conditions in eastern Coventry, with specific interest in the treatment and disposal of wastewater. The investigations performed included review of all available relevant documents. The results of the previous survey (**Appendix A**) confirmed a preponderance of OWTS problems in several areas of eastern Coventry. These areas have been delineated and were prioritized (Phase I) for sewerage in the 1995 FP. The conclusion reached through these examinations is that the current system of wastewater disposal

through onsite wastewater treatment systems (OWTSs) is not an acceptable long term solution in some areas of eastern Coventry. Continued operation of OWTSs will increase pollutant loads to ground and surface water resources, limit property values, negatively impact quality of life for residents and introduce potential public health concerns.

Chapter 5 examines several alternatives available to the Town for wastewater management and disposal, including no action, on-site or OWTS type options (including OWTS rehabilitation), and construction of a sewer collection system. Several specific concerns were identified in the preparation of the facilities plan, including:

- Several areas of eastern Coventry are experiencing significant OWTS problems which cannot be resolved through on-site (OWTS) solutions such as system rehabilitation or reconstruction due to site specific limitations.
- Coventry has invested at least 19 million dollars to date in a wastewater collection system which benefits very few residents due to the lateral sewer system not being completely built out.
- Negative environmental and financial impacts associated with the construction of a sewer collection system need to be minimized, and positive impacts must be maximized.

1.2 Recommendations

The recommended plan was prepared to specifically address the wastewater management problems in Coventry. The plan includes the following components:

- A wastewater collection and transmission system to serve portions of eastern Coventry.
- The continued use of onsite wastewater treatment systems (OWTS) for wastewater disposal in areas where this option is feasible.
- Treatment of wastewater and septage from Coventry at the West Warwick Regional Wastewater Treatment Facility.

The recommended wastewater collection and transmission system is divided into three main phases, the Initial Sewer Construction Program (Phase I), the Continuing Sewer Construction Program (Phase II), and the Future Construction Program (Phase III). Phase I and II sewer programs represent all successive study areas and needs as included in future sewer contracts 6 through 11. The remaining planning areas will then be sewered by study area as needed. The areas served by each of these programs are shown on **Figure 6-1**.

The Phase I sewer program currently completed consists of approximately 56,800 feet of interceptor and lateral sewers, and one main wastewater pump station (located on Sandy Bottom Road). This program includes construction of the main interceptor sewer which represents the 'backbone' of the Town sewer system. This pipeline will be utilized by a majority of the planning areas to be sewered for transporting wastewater from the initial and future sewer service areas to the West Warwick regional sewer system. The previously installed "dry" sewer in Hopkins Hill Road, as discussed in the 1995 FP, has

been activated and receives flow from the Amgen industrial facility, a portion of the Center Of New England Development and adjacent parcels along Hopkins Hill Road. The Phase I system, when completed, will also directly service approximately 900 properties, including many multi-family and commercial properties. The capital cost associated with the remaining Phase I construction program is approximately \$9,500,000. Chapter 7 in this report outlines the implementation necessary to maintain and continue the expansion of the existing sewer system.

The Phase II sewer program could be implemented both during and following completion of Phase I, depending on economic feasibility and need. Phase II consists of approximately 219,650 feet of interceptor and lateral sewers, and eight wastewater pump stations. The Phase II system consists mainly of lateral (collector) sewers, and when completed will service approximately 3,150 properties (in addition to those served by Phase I). The total capital cost associated with Phase II is approximately \$41,580,000. Due to its magnitude, this phase would most likely be constructed over an eight to ten year period.

The Phase III sewer program could be implemented both during and after completion of the Phase II system, depending on economic feasibility and need. Phase III consists of approximately 175,500 feet of lateral sewers, and seven wastewater pump stations. The Phase III system would service approximately 2,150 properties (in addition to those served by Phases I and II) when completed. The total construction cost associated with Phase III is approximately \$12,000,000. At this time, construction of the Phase III system would most likely not commence for at least eight to ten years. Sewers under this phase would likely be constructed on an area by area (contract) basis, as needs arise.

Once constructed, administration, operation and maintenance of the wastewater collection system should be provided by the Town of Coventry. This will initially include the hiring of private contractors to provide sewer system operation and maintenance services. The eventual establishment of a Coventry Sewer Department, under the current Public Works Department, is also a possibility. Included in the sewer system administration tasks would be the billing of Coventry sewer users.

Portions of Town to the north and west of the areas to be sewered will continue to be served by OWTS. Septage from the periodic pumping of these OWTSs should be disposed of at the West Warwick Regional WWTF, or Cranston WWTF. In these areas, and more importantly in areas where OWTS problems are prevalent, future provisions should be made for a public information program on the proper care and maintenance of OWTSs.

1.3 West Warwick Regional Sewer System

Wastewater and septage generated in Coventry will be transported to the West Warwick Regional Wastewater Treatment Facility (WWTF). Coventry currently has a reserve capacity of 2.25 mgd (average daily flow) in the WWTF. This is sufficient to cover the design year 2030 flow of 2.246 mgd from all phases outlined in the recommended sewer program. As of 2009, Coventry is contributing about 0.165 mgd (average daily flow) to

the West Warwick WWTF (not including flows from the Woodland Manor sewer system, and East Greenwich/Amgen Pharmaceuticals). To date, Coventry has paid approximately \$10.9 million for this capacity in West Warwick through upgrades to the treatment plant and common interceptor sewers in West Warwick.

1.4 Implementation and Cost

The Town has begun installation of the previous Facilities Plan's identified Phase I sewer program. Therefore, the Town has a vested interest in continuing to install the remaining Phase I sewer collection systems in order of need. This Facilities Plan will require that the Town perform the following tasks:

- Submit the draft Wastewater Facility Plan Update to the RI-DEM Division of Water Resources for review and comment. Respond to or incorporate RI-DEM comments as necessary.
- Conduct a formal public hearing to present the conclusions and recommendations of the Wastewater Facility Plan Update.
- Finalize the report and submit the final Wastewater Facility Plan Update to RI-DEM Division of Water Resources for final review and approval.
- Submit project information to RI-DEM to remain on the state's Project Priority List (PPL) for receipt of future design and construction grants/loans. This has already been completed for the state's FY 2010 PPL, but future submissions should continue to be made.
- Perform necessary steps for the design, permitting and construction of the recommended sewer plan, which include:
 - Submitting formal funding applications to RI-DEM to receive grant and/or loans to fund the design and construction phases. Funding programs to be used include (State Revolving Loan Fund (SRF), or Interceptor Bond Fund (IBF), if applicable/available),
 - Entering into a contract with a qualified engineering firm to design and prepare final plans and specifications for the proposed future projects, as discussed in previous Chapters, including permit applications and regulatory agency review submissions.
 - Implementing the appropriate construction financing arrangements to coincide with the current regulations.
 - Securing competitive bids for the construction of proposed future projects.
 - Awarding construction contract(s).
 - Initiating sewer construction and overseeing construction completion.
- Continue to review/revise the local sewer use ordinance, including implementation of the required industrial pretreatment requirements (at least equivalent to those in place in West Warwick), and the user charge and betterment assessment programs.
- Ensure programs and mechanisms are in place for the proper administration and operation and maintenance of the new sewer system.
- Following approval by the appropriate agencies, commence operation by allowing the connection of properties to the completed sewer system, assessing sewer betterments and collecting sewer use charges.

Chapter 7 presents a method of financing the estimated costs of the proposed sewer program. The cost of the sewer projects will be paid for through assessments to sewerer properties. The Town has recently adopted a new sewer use ordinance that states the recommended method of sewer assessments. This method is summarized in **Chapter 7**.

1.5 Summary

The conclusions reached from this FP Update echo those conclusions from the 1995 FP and 2003 FP Reaffirmation. It is recommended that the existing sewer system be expanded to serve portions of eastern Coventry that can no longer rely on OWTs for long term wastewater management. The plan recommended herein, however, revises the previous recommended sewer plan to provide flow allocations in areas where future development will require additional wastewater management capacity. This plan will still meet the need for sewerage of the more densely populated areas within eastern Coventry, while also allowing the Town to provide sewer capacity for proposed developments, which are important to the local economy.

The recommended plan should be adopted and implementation of the remainder of the Phase I sewer construction program should commence, as outlined in Chapter 7. This plan will result in a fully functioning sewer system which will serve Coventry through the year 2030 and beyond.

In order to remain current, this Wastewater Facilities Plan should be reviewed by the Town every five years, as required by the State of Rhode Island, and should be reaffirmed or updated as necessary when significant changes occur that might otherwise impact the recommendations outlined in this report.

O:\Coventry RI\FP Update 2008\Facility Plan Update Document\Draft Sections\Section 1 - Executive Summary_rev.doc

2 Introduction

2.0 Study Purpose

This facilities plan report has been prepared for the Town of Coventry as an intermediate step towards the continued implementation for wastewater management within the town. The Town of Coventry has, over the past 35 years, performed several studies addressing the requirements for wastewater disposal from residential, commercial, industrial and municipal sources within the Town. This updated facility plan is based on the following:

- The last actual wastewater facilities plan for the town, which was completed in 1995.
- The last affirmation of the 1995 Facilities Plan, which was completed in 2003.
- An updated facilities plan is a prerequisite for future state and/ or federal financing of wastewater collection and treatment facilities.
- An updated inventory of existing Onsite Wastewater Treatment Systems (OWTS) is needed for accuracy.
- Sewer needs areas within the town need to be re-evaluated to reflect the current conditions.
- Estimated sewer project costs and possible financial assistance for recommended facilities needs to be updated.
- Provisions of the existing inter-municipal agreement with West Warwick needs to be clarified, including the status of regional projects, the disposition of costs paid to date by Coventry, and the estimated future costs incurred by Coventry.
- The use of existing sewer facilities in Coventry (including the Hopkins Hill Road sewer, Woodland Manor sewer, etc.) needs to be optimized.
- A reasonable method for allocation of project costs needs to be optimized.

The previously completed wastewater facilities plan and relevant wastewater studies for Coventry generally include the following:

1. "Preliminary Engineering Survey and Report on Sewerage and Sewage Treatment for the Town of Coventry", Fenton G. Keyes Associates, November 1966.
2. "Facilities Plan for Wastewater Collection and Treatment Facilities", C.E. Maguire, Inc., 1977.
3. "Amended Facilities Plan", Hayden, Harding, and Buchanan, Inc., June 1981.
4. "Facilities Plan Supplement", Weston and Sampson Engineers, Inc., August 1982.
5. "Industrial Sewer Study", Weston and Sampson Engineers, Inc., June 1986.
6. "Wastewater Facilities Plan", Weston and Sampson Engineers, Inc. June 1995.

7. “Facilities Plan Reaffirmation”, Weston and Sampson Engineers, Inc., September 2003.

Each of these studies recommended a plan for the installation of sewers in the town of Coventry. At this time, there have been five contracts built under the 1995 Facilities Plan, which was reaffirmed in 2003.

In 1991, the Rhode Island Department of Environmental Management (RIDEM) notified cities and towns that an approved Facilities Plan would be required for all projects which were to receive state and/or federal financing. The Town of Coventry, having a plan that RIDEM considered outdated, began the process of preparing this Facilities Plan Update. This plan requires the re-evaluation of alternatives from previously approved plan.

This document was prepared according to the guidelines presented by the RIDEM Division of Water Resources in their Facilities Plan Review Checklist. This study is intended to provide a guidance document to the town for use in the effective management of wastewater, as well as to meet the requirements of the RIDEM for the eligibility of recommended projects for state funding.

This facilities plan was prepared with the guidance of the Coventry Department of Public Works, the Planning Department, and the Sewer Sub-committee, and is intended to address the wastewater component of the town’s Community Comprehensive Plan (CCP), which is being prepared by Anthony W. Lachowicz and Samuel J. Shamoon, AICP drafted in 2008. This facilities plan will serve to update the Wastewater Management portion of the Community Services and Facilities section of the CCP. Applicable data, maps, figures, and forecasts for development have been extracted from the town-wide Community Comprehensive Plan for inclusion in this report.

2.1 Planning Area

The Town of Coventry is located in Kent County in west central Rhode Island. The town is bordered by Foster, Scituate, and Cranston to the north; West Warwick to the east; East Greenwich and West Greenwich to the South and Connecticut to the West. The Town is rectangular in shape, having dimensions of approximately 11.25 miles east to west and 5.0 miles north to south. The Town has a total land area of 61.4 square miles. The eastern third of the town is characterized by urban-suburban development, while the western end of town is rural, including significant portions of agricultural land and open space.

Due to the population’s patterns within the town, dense in the east and sparse in the west, the areas of concern for wastewater management are strictly those in eastern Coventry. The western areas of town consist of large (two to five acres) lots, and do not lend themselves well to wastewater management alternatives other than onsite

wastewater treatment systems (OWTS). For this reason, this study will primarily concentrate on eastern Coventry, with its higher density of development.

Figure 2-1 shows the planning areas as delineated by Weston & Sampson, Inc. in the 1995 Facilities Plan. These planning areas were referenced by number in the 1995 Facilities Plan and in the 2003 Facilities Plan Reaffirmation. However, due to the confusion incurred with the contract numbers, this Facilities Plan and all hereafter documents will refer to the delineated planning areas by letter. **Table 2-1** specifies the exact reference between letters and numbers.

The Town of Coventry is governed by an elected five member Town Council, and a Town Manager (appointed by the Town Council). The Town has periodic open town meetings for policy making decisions. Due to the lack of significant sewered area in town, there is no current wastewater utility management structure. Existing sewers within the town generally fall under the control of the Coventry Department of Public Works.

All of the existing sewers in town are tributary to the West Warwick system. System users are billed directly by West Warwick, and are therefore subject to wastewater management by the Town of West Warwick. West Warwick currently charges users of its sewer system, (both within and outside West Warwick) a rate of \$.0228 per cubic foot, based upon water consumption data provided by Kent County Water Authority (KCWA). West Warwick's sewer system is controlled directly by the Superintendent of its Sewer Department. The West Warwick Town Council, acting as the Town Sewer Commission, makes decisions concerning the sewer system, and is composed of members from West Warwick, Coventry, East Greenwich, Scituate, Cranston and Warwick.

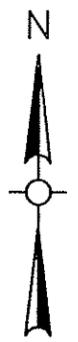
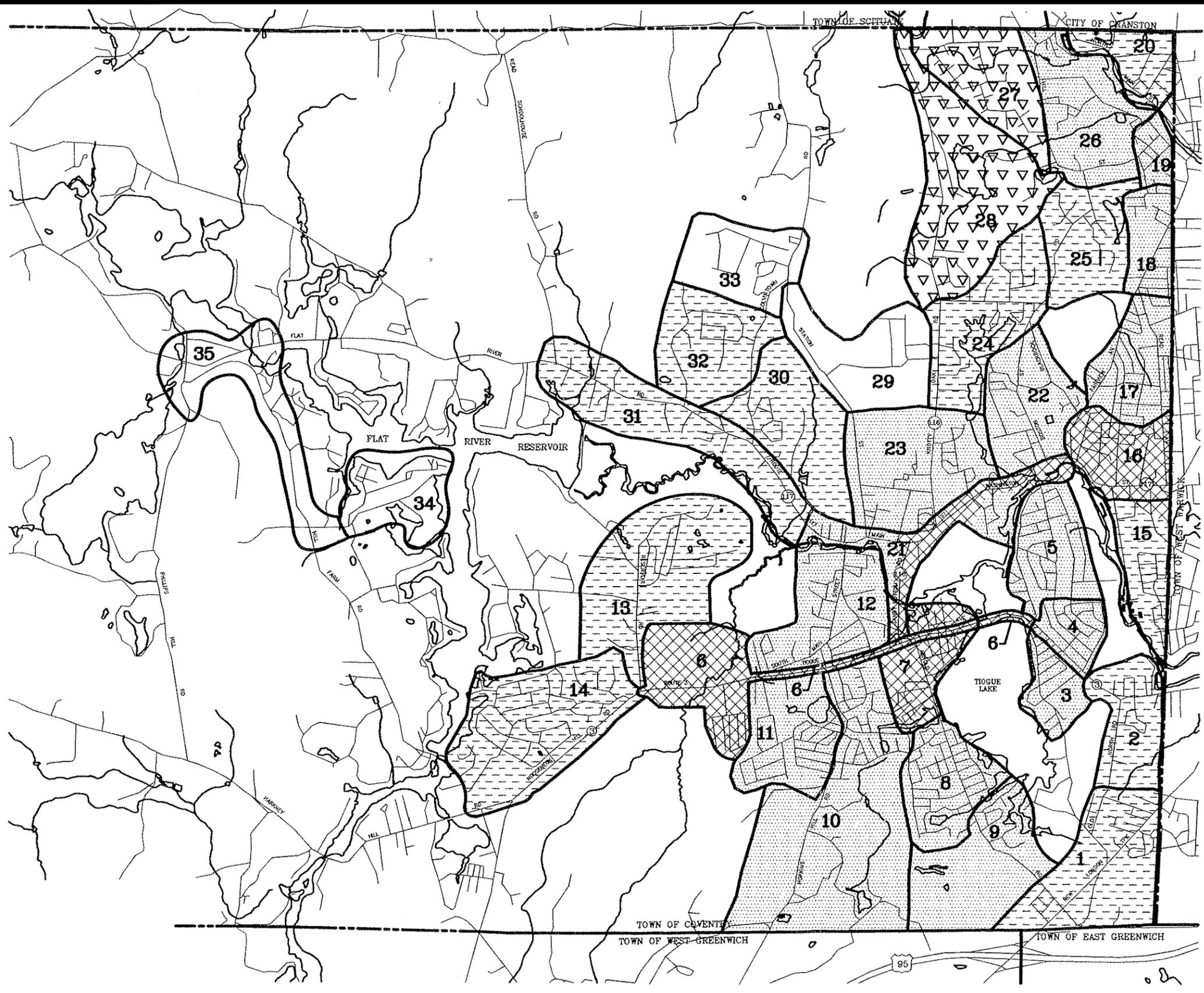
As part of the implementation of this plan, the Town of Coventry will need to establish a management structure to regulate the sewer system within the town. The proposed wastewater management structure is described in Chapter 7 of this plan.

2.2 Treated Wastewater Effluent Discharge

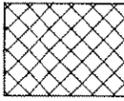
As provided by the State of Rhode Island, in the 208 Area-wide Water Quality Management Plan (WQMP) for the State of Rhode Island, Coventry is a member community in the West Warwick Regional Wastewater Treatment Plan. As such, all wastewater and septage from the Town of Coventry is slated to be treated and disposed of at the West Warwick Plant. The West Warwick Plant discharges to the main stem of the Pawtuxet River, at a point approximately two-miles west of the confluence of the North Branch and the South Branch of the Pawtuxet River.

Table 2-1 Referencing Planning Areas

Number referenced in 1995 Facilities Plan and 2003 FP Reaffirmation	Letter referenced in 2009 Facilities Plan Update and hereafter
1	A
2	B
3	C
4	D
5	E
6	F
7	G
8	H
9	I
10	J
11	K
12	L
13	M
14	N
15	O
16	P
17	Q
18	R
19	S
20	T
21	U
22	V
23	W
24	X
25	Y
26	Z
27	AA
28	AB
29	AC
30	AD
31	AE
32	AF
33	AG
34	AH
35	AI



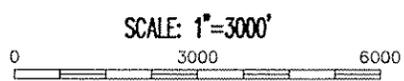
LEGEND:

-  PHASE 1 – INITIAL SEWER CONSTRUCTION PROGRAM
-  PHASE 2 – CONTINUING SEWER CONSTRUCTION PROGRAM
-  PHASE 3 – FUTURE SEWER CONSTRUCTION PROGRAM
-  1995 FACILITY PLAN AREAS REMOVED FROM FUTURE SEWER CONSTRUCTION PROGRAM

NOTE:

BASEMAP SOURCE: RIGIS

FIGURE 2-1		
TOWN OF COVENTRY, RHODE ISLAND 2009 FACILITIES PLAN UPDATE		
1995 FACILITIES PLAN PLANNING AREAS		
DESIGNED BY: TSD	CHECKED BY: TSD	DATE: AUGUST 2009



3 Existing Conditions in the Planning Area

3.0 General

This chapter outlines the current environmental situation in Coventry, including general information on the environment, information on existing onsite wastewater treatment systems (OWTS) and information on the existing wastewater collection and transmission system. The existing conditions in the planning area are generally described, including the physical characteristics of the area, such as soils, topography, geology and hydrology, as well as information on current land use. The principal resources used in the preparation of the existing conditions section of this Facilities Plan were the (draft) 2008 Comprehensive Community Plan (CCP), the 2000 Comprehensive Community Plan (CCP), the 2003 Facilities Plan Reaffirmation, the 1995 Facilities Plan, the 1977 Facilities Plan, the 1981 Amended Facilities Plan and the 1982 Facilities Plan Supplement.

3.1 Geophysical Conditions

The following sections discuss the existing geophysical conditions in the project area, including information on soils, topography, geology and hydrology. The information presented is based on the findings of existing reports and documents, unless otherwise noted.

3.1.1 Soils

As discussed in the 2000 Comprehensive Community Plan (CCP), the soils in Rhode Island are generally made up of four types of glacial deposits: Upland Till Plains, Narragansett Till Plains, the Charlestown and Block Island Moraines, and Outwash Deposits. Most of Coventry overlies older granite rocks, with some blackstone series metamorphic and pennsylvanian sedimentary rocks located in the eastern end of town. Specific geology in the study area is further discussed below. **Figure 3-1** is the detailed soils map from the digitized Soil Survey of Rhode Island, prepared by the U.S. Soil Conservation Service (SCS), made available by Rhode Island Geographic Information Systems (RIGIS). These figures identify the soils in the Coventry study area by their representative symbol. A table showing the approximate acreage of various types of soils in the town, excerpted from the Inventory and Analysis of Existing Conditions portion of the CCP, is shown on **Table 3-1**.

Table 3-1 Coventry Soil Types by Acreage

Symbol	Name	Acres
Aa	Adrian Muck	1,050
AfA, AfB	Agawam	250
BmA, BhA, BhB, BmB, BmC, BoC	Bridgehampton	465
CdB, CdA, CdC, CB	Canton and Charlton	14,255
Co	Carlisle Muck	765
Dc	Deerfield	290
Du	Dumps	15
EfA, EfB	Enfield	395
GhC, GhD	Gloucester-Hinckley	120
HkC, HkA, HkB, HkD	Hinckley	4,195
LgC	Lippitt	895
MmB, MmA, Mu	Merrimac	2,425
NaB, NaA, NbB, NbC, NcC	Narragansett	1,850
Nt	Ninigret	75
PbB, PaA, PaB, PbC, PcC	Paxton	1,655
Pg	(Gravel) Pits	300
Pk	(Quarries) Pits	5
Pp	Podunk	5
RbB, RgA, RgB	Rainbow	15
Rc	Raypol	105
Re, Rf	Ridgebury	3,035
Rp	Rock Outcrop	25
Ru	Rumney	205
Sb	Scarboro	600
ScA, ScB	Scio	30
Ss	Sudbury	585
StB, StA, SuB, SyB	Sutton	965
Tb	Tisbury	35
UD	Udorthents	725
Ur	Urban Land	80
Wa	Walpole	650
WcB, WcB, WdB	Wapping	345
WgA, WgB	Windsor	915
WoB, WhA, WhB, WrB	Woodbridge	2,420
Total Coventry Land Area		39,745

3.1.2 Topography

Topography in Coventry includes surface elevations ranging from approximately 150 feet above mean sea level (M.S.L.) to approximately 550 feet above mean sea level. The ground surface rises from low points along the North and South Branches of the Pawtuxet River, and the Flat River Reservoir, in the eastern end to the high ridge in the central part of town. Elevations slope back down from this ridge to the west, dropping below 350 feet M.S.L. at the Connecticut border. Topography is important since it dictates the limits of natural drainage basins. The general topography in the study area is shown on **Figure 3-2**, made available by the United States Geological Survey (USGS).

3.1.3 Geology

Geologically, Coventry lies within the seaboard lowland physiographic province. The ground surface of the entire New England region was subjected to severe grinding and scouring action by the advancing glaciers of the Ice Age. Debris from this action was deposited beneath the ice sheets as a compact layer of glacial till. This layer of glacial till, also known as ground moraine, is made up of clay, silt, sand, gravel and boulders. Glacial till occurs within about half of Coventry as a thin surface deposit overlying bedrock, and predominantly made up by sand with dispersed boulders and cobbles.

At the end of the Ice Age, streams carried away some of the deposited soil materials. The materials formed outwash deposits, made up generally of silt, sand and gravel, with some boulders also present.

Small portions of the project area are occupied by alluvial flood plains and swamps, created by more recent surface deposits. Flood plains occur generally along the Pawtuxet River and its tributaries. They are typically made up of loose to medium dense layers of fine to medium sand. The swamp areas lie adjacent to the flood plains, and are typically made up of sand and silt, with humus, peat and/or organic silt.

Bedrock in the project area is generally composed of Cowesett granite and Scituate granite gneiss. The eastern portion of Coventry and the western portion of West Warwick are generally occupied by a hard, medium grained granite formation. The remainder of town is occupied by a hard, gray to pink, medium to coarse grained, foliated granite gneiss.

3.1.4 Hydrology

The State of Rhode Island is divided into five major drainage basins: the Narragansett Bay Basin, the Pawcatuck River Basin, the Rhode Island Coastal Basin, the Thomas River Basin and the Massachusetts Coastal Basin. The majority of Coventry lies within two of the basins: the Thomas River Basin, which flows west to the Thomas River in Connecticut; and the Narragansett

Bay Basin, which flows east to Narragansett Bay. The Moosup River Basin, which is the major sub-drainage basin to the Thomas River Basin in Rhode Island, drains the areas of Coventry generally west of Route 102. Areas to the east generally drain to the Pawtuxet River Basin, a major tributary to Narragansett Bay. **Figure 3-3** shows the limits of the sub-drainage areas within the planning area, made available by RIGIS.

The wetlands, surface water and groundwater in Coventry are discussed in detail in the following sections.

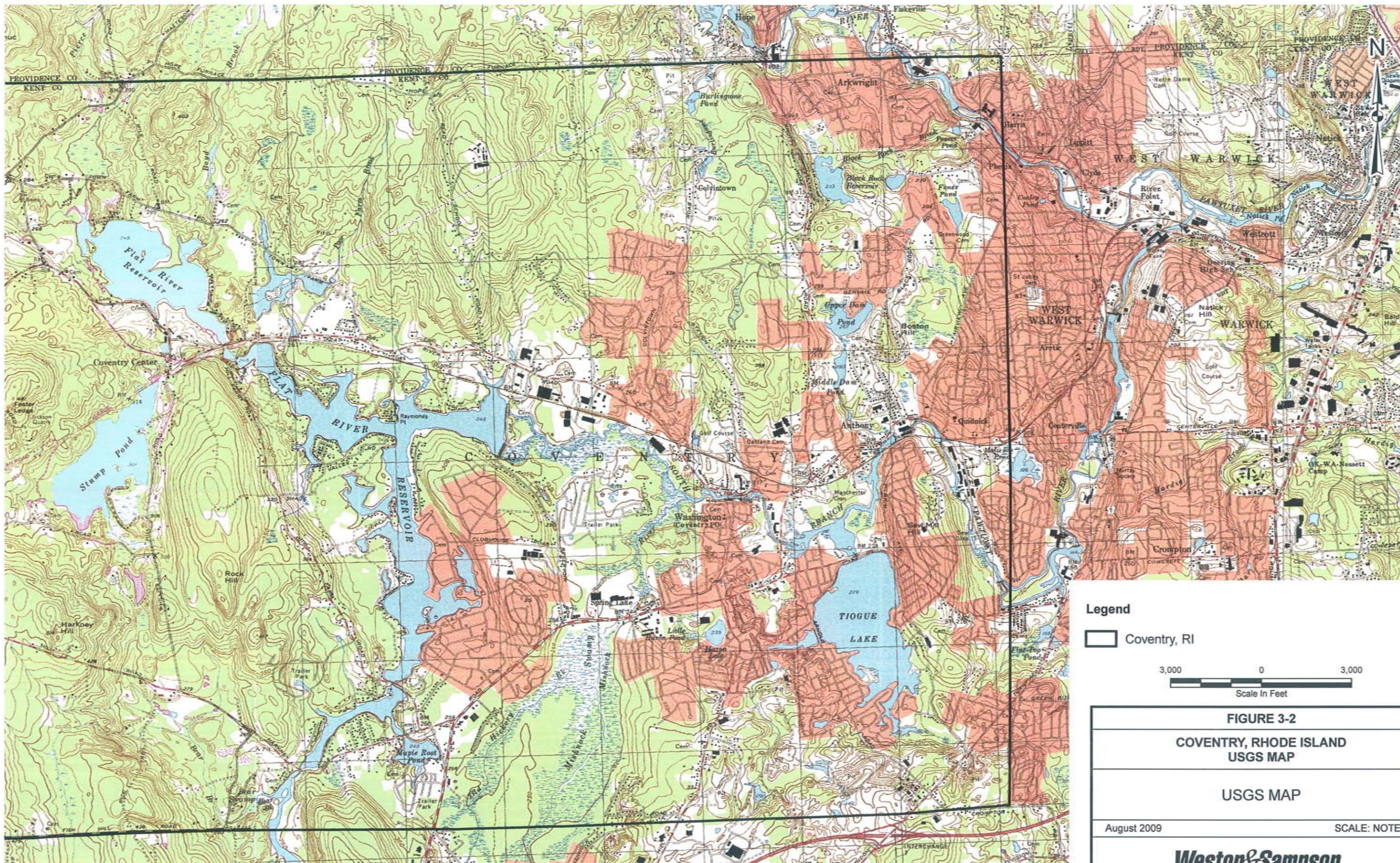
3.1.4.a Wetlands

Freshwater Wetlands in Coventry are shown on **Figure 3-4**. This figure indicates that approximately 18.6 percent of Coventry is devoted to water/wetlands. The following discussion of wetlands in Coventry is excerpted from the 2008 Draft CCP.

“A review of the Town of Coventry indicates a pattern of wetlands evenly distributed town-wide imaging the drainage patterns, streams and brooks and surface water bodies. Their individual character ranges from narrow and linear in nature (the majority), to broad irregular shaped parcels of up to several hundred acres. A number of these larger water bodies and wetlands are located in proximity to the Town's southern boundary (i.e., Mishnock Swamp, Great Grass and Whitford Pond Areas). Criteria for locating the wetland areas have been field investigation, aerial photography and the Rhode Island Geographic Information System (RIGIS), Coventry Soil Analysis 1990, "Hydric Soils" demarcation.

Coventry's wetlands are a vital component in the community's ecological system providing a buffer for groundwater recharge areas, serving in a retention capacity alleviating flooding and providing a habitat for much of the Town's wildlife.

Recognizing both the sensitive nature of and magnitude of importance in the overall ecosystem, strong state and federal regulations have been put in place for the protection of wetlands. The Rhode Island Freshwater Wetlands Act (Rhode Island General Laws Sections 2-1-18 et. seq.) and the Department of Environmental Management's Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act are the primary regulations dealing with the enforcement of wetlands protection, alteration and permitting in Rhode Island.”



Legend

Coventry, RI



FIGURE 3-2

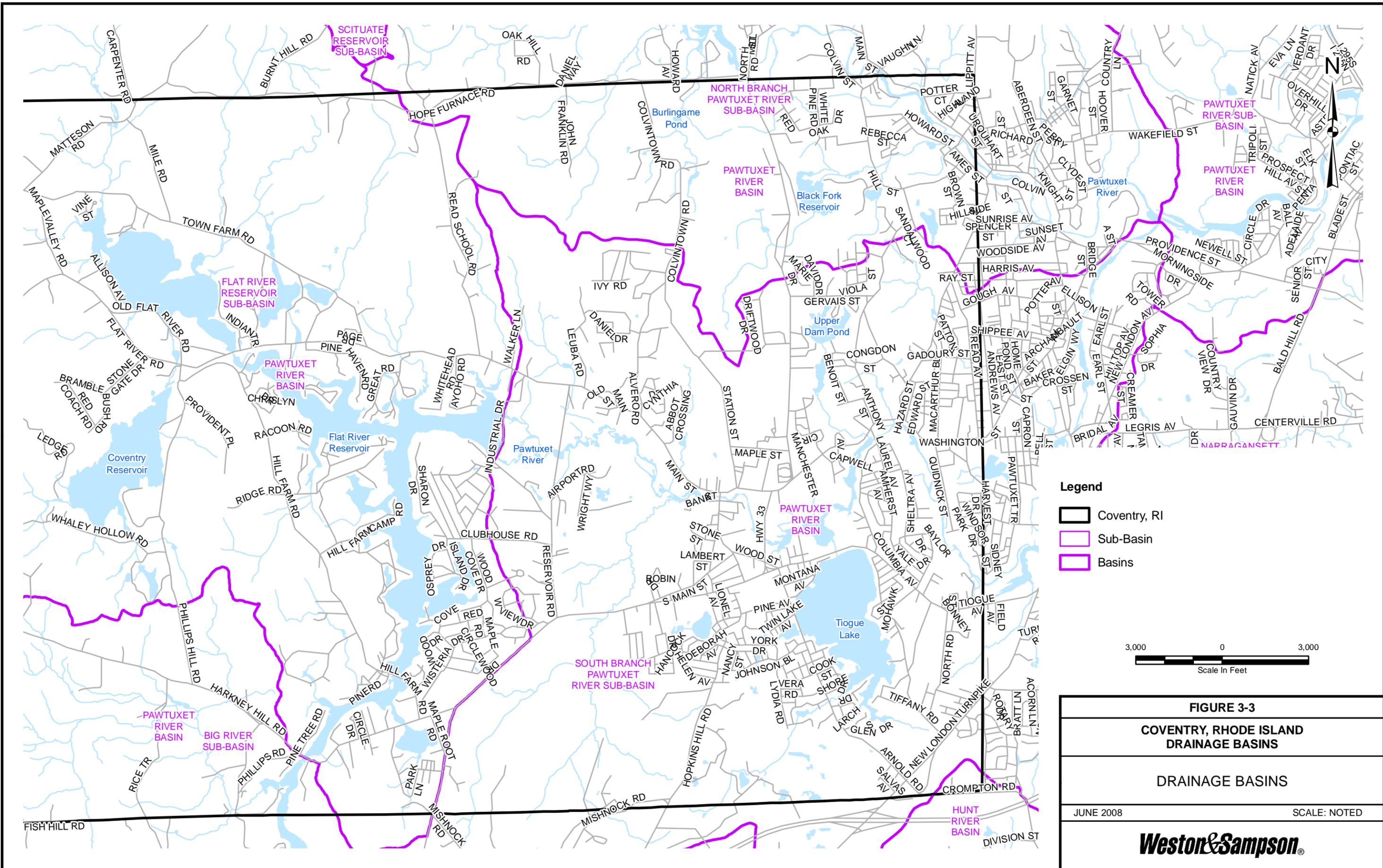
**COVENTRY, RHODE ISLAND
USGS MAP**

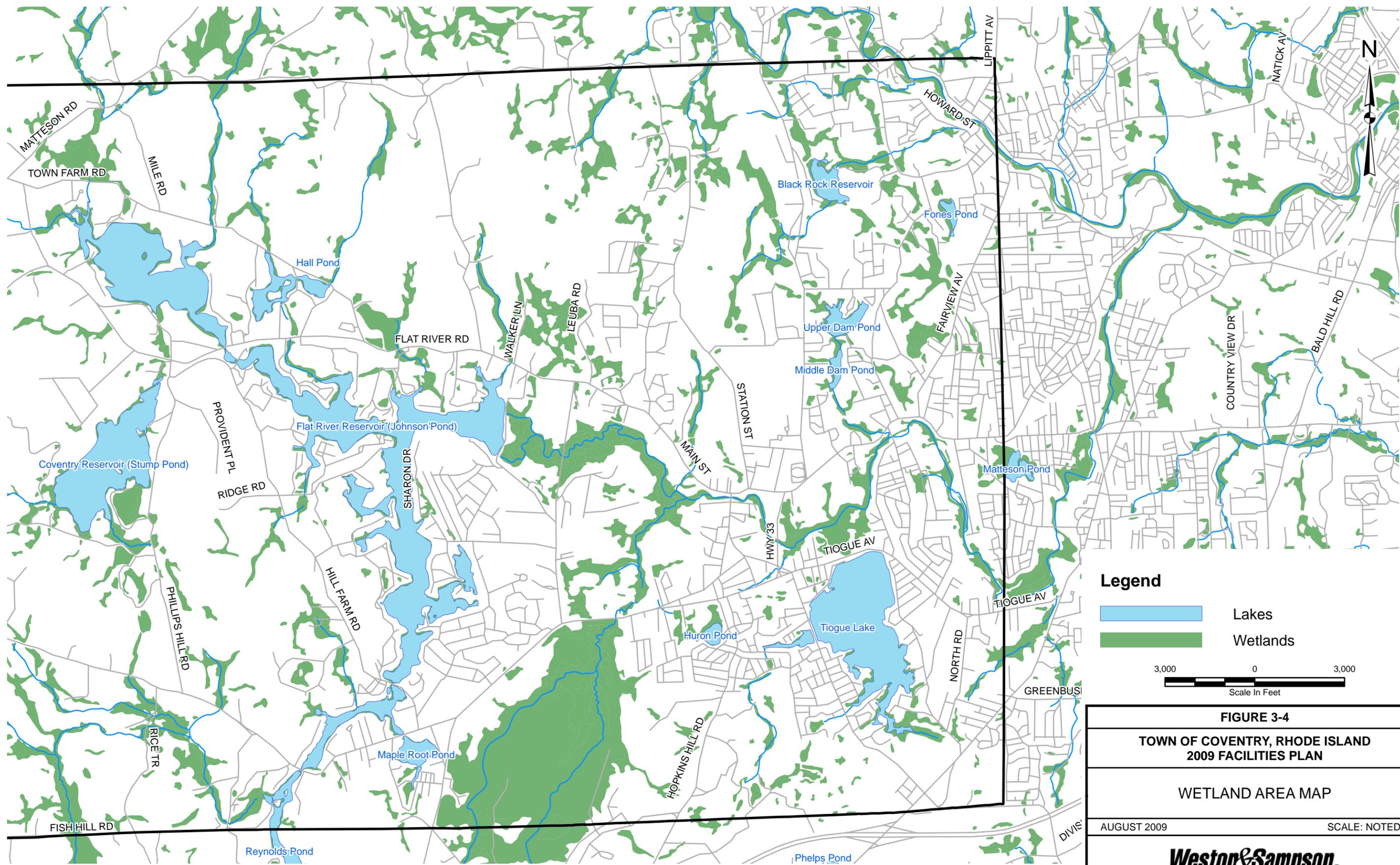
USGS MAP

August 2009

SCALE: NOTED

Weston & Sampson





Legend

- Lakes
- Wetlands

3,000
0
3,000

Scale In Feet

FIGURE 3-4

TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN

WETLAND AREA MAP

AUGUST 2009
SCALE: NOTED

Weston & Sampson®

3.1.4.b Surface Waters

Over 1,600 acres, or approximately 2.6 square miles, of surface waters lie within the borders of Coventry. Of particular importance in this study is the Pawtuxet River basin, which encompasses most of the eastern two-thirds of Coventry. The major surface water components of this watershed are the Flat River Reservoir (including Quidnick Reservoir, Johnson Pond, Mapleroot Pond and Stump Pond), Tiogue Lake, and the North and South Branches of the Pawtuxet River.

The following is a discussion from the 2008 Draft CCP regarding the Pawtuxet River Sub Watershed:

“This watershed consists of the 8.5 mile segment of the South Branch of the Pawtuxet River from the Flat River Reservoir Dam to the confluence with the North Branch, including 6.2 miles of tributary streams and 263 acres of ponds and reservoirs. The waters are located in Coventry and West Warwick. These waters support fishing, and in those portions designated as Class B, swimming. Public access is provided via a car top boat launch on Mishnock Pond; and a state boat launch ramp, town beach and shoreline access on Tiogue Lake.

RIDEM data collected at the Route 33 bridge, in the segment of the South Branch delineated by Mishnock River and the North Branch confluence indicate exceedances in chronic criteria for lead, naphthalene and fluoranthene, and acute criteria for copper. At the station located on the South Branch just upstream from the confluence with the North Branch, chronic criteria for total cadmium, total copper, total silver, DHP and fluoranthene were exceeded one out of three monitoring events, and chronic criteria for total lead were exceeded three out of three monitoring events.

Tiogue Lake is shallow and nutrient rich. Heavy residential development within the watershed and commercial development on Route 3 contribute runoff and the pond receives little "clean" inflow. It is believed the lake is meeting Class B criteria for bacteria, however, eutrophication has reduced its attraction for swimming. Watershed Watch, a volunteer group is currently monitoring water quality in Tiogue Lake. The information collected by Watershed Watch can be used to determine the water quality in the future.

Based upon the available monitored and evaluated information, it is determined that 7.7 miles and 48 acres of surface waters within the sub-watershed are in full support of their designated uses, but are threatened due to non-point source contributions. The 215 acres making up Tiogue Lake are found to be in partial support of designated uses due to eutrophic conditions

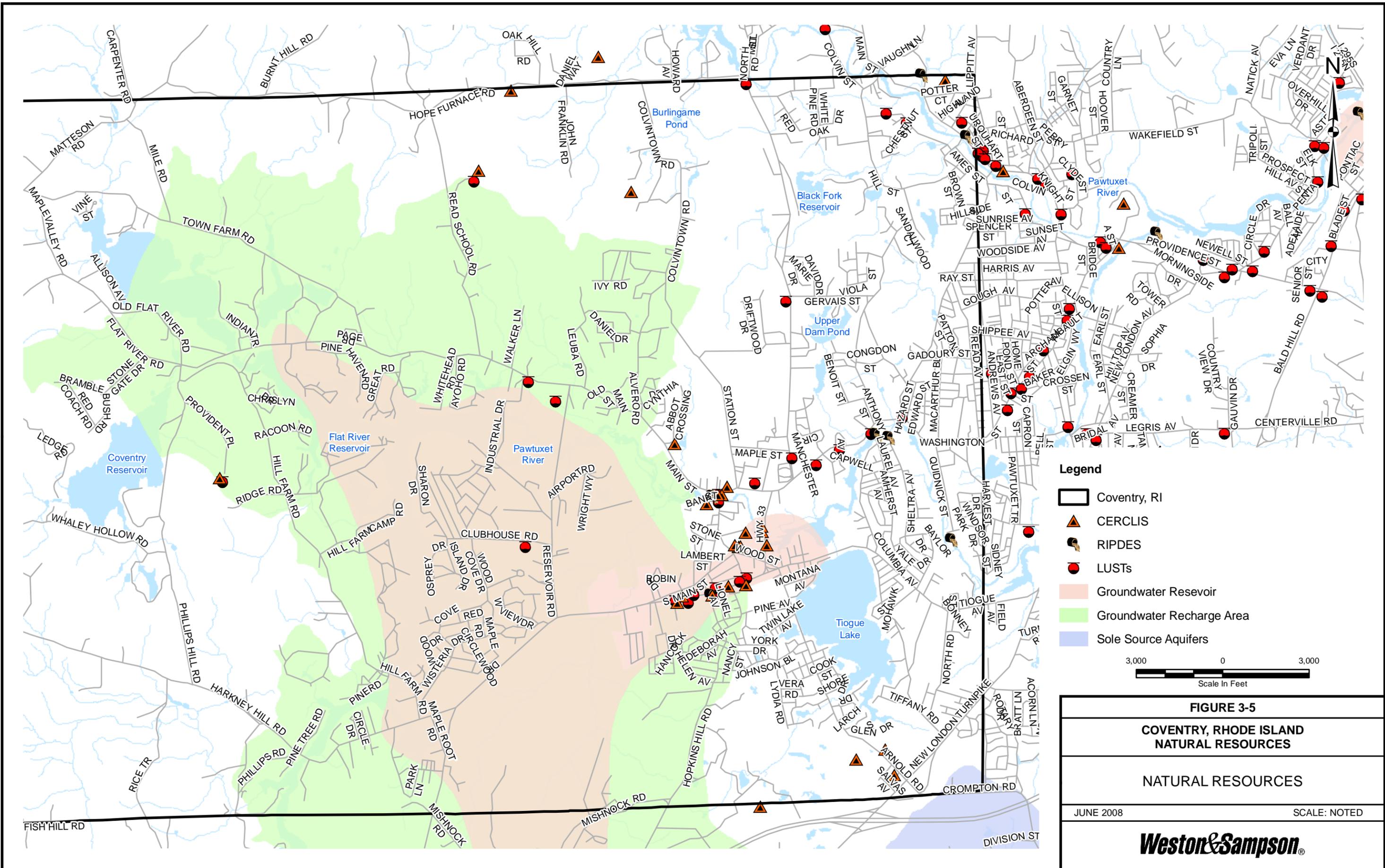
aggravated by non-point source inputs of nutrients. The 7.0 mile stretch of the South Branch designated as Class C are found to not support designated uses, due to elevated heavy metals and organic concentrations, with both point and non-point sources contributing to the degradation. Fishable/swimmable conditions are maintained at 7.7 miles and 48 acres, are not supported but are attainable at 215 acres and are not attainable in 7.0 miles.

In the Flat River Reservoir, as well as Quidnick Reservoir, Stump Pond and Maple Root Pond, sources of metals, nutrients and oxygen demanding solids may be associated with development along the shoreline and within their respective watersheds. No known point sources of pollution contribute to these waters. Septic systems, fertilizer usage and storm water runoff from urbanized areas, (especially from Route 3/Tiogou Avenue), may contribute pollutants. The conversion of summer homes for year-round use and the presence of older, malfunctioning septic systems may contribute to accelerated eutrophication rates. The sandy soils in this area have poor nutrient attenuation capabilities. Under these conditions, even properly functioning OWTS may contribute excessive nutrients and bacteria. The building of walls and other shore line development may potentially have adverse affects upon fisheries habitat, and pollution from motorboat use represents another potential concern.

Based upon current available information, and the criteria established by DEM, the 1,019.5 acres of reservoirs and ponds and 17 miles of rivers in the Flat River Reservoir sub-watershed are determined to be in full support of Class B designated uses, however they are potentially threatened by point and non-point sources of pollution. Based on existing conditions meeting Class B criteria, fishable/swimmable conditions are met.”

3.1.4.c Groundwater

Groundwater is an increasingly important resource in the State of Rhode Island. One of the state's 21 major stratified drift groundwater reservoirs, identified by the Rhode Island Water Resource Board, lies mainly in Coventry. This is the Mishnock Groundwater Reservoir, located south of Nooseneck Hill Road, in the eastern central part of Coventry. A report by RIDEM ("Assessment of Non-Point Sources of Pollution to Rhode Island Waters") notes the extreme vulnerability of these stratified drift aquifers to pollution, such as Underground Storage Tanks (USTs), dump sites, industrial and commercial manufacturers, automotive repair shops, pesticides and fertilizers from agriculture and urban runoff (residential applications), nitrates, bacteria, viruses and toxics from OWTS systems and sodium chloride from road salt applications. The findings of the report qualify groundwater resources in the central area of Coventry as "threatened" and in the eastern area as "impacted". The limits of these groundwater reservoirs and several key groundwater contamination sites identified by RIDEM are shown on **Figure 3-5**.



Legend

- Coventry, RI
- CERCLIS
- RIPDES
- LUSTs
- Groundwater Reservoir
- Groundwater Recharge Area
- Sole Source Aquifers



FIGURE 3-5
COVENTRY, RHODE ISLAND
NATURAL RESOURCES

NATURAL RESOURCES

JUNE 2008 SCALE: NOTED

Weston & Sampson

The Kent County Water Authority (KCWA), the public water supplier in the Town of Coventry, currently has existing wells in the Mishnock Swamp area, which are not currently in use. The Spring Lake wells are located adjacent to Huron Pond, west of Hopkins Hill Road (Study Area 11), and are also currently not in use. Since any or all of these existing drinking water supply wells could be opened for use if water demand increases, protection of these supplies is warranted.

Groundwater provides the primary source of drinking water to many of Coventry's residents. The State of Rhode Island, through RIDEM and federal participation, provides regulatory guidance. RIDEM provides primary enforcement of groundwater sources which may negatively impact wetlands. Likewise, the RI Department of Health is responsible for review of applications for installation of new community wells for major developments. Community Wellhead Protection Areas (CWHPA) and Non-Community Wellhead Protection Areas (NCWHPA) are vital to protect this important natural resource.

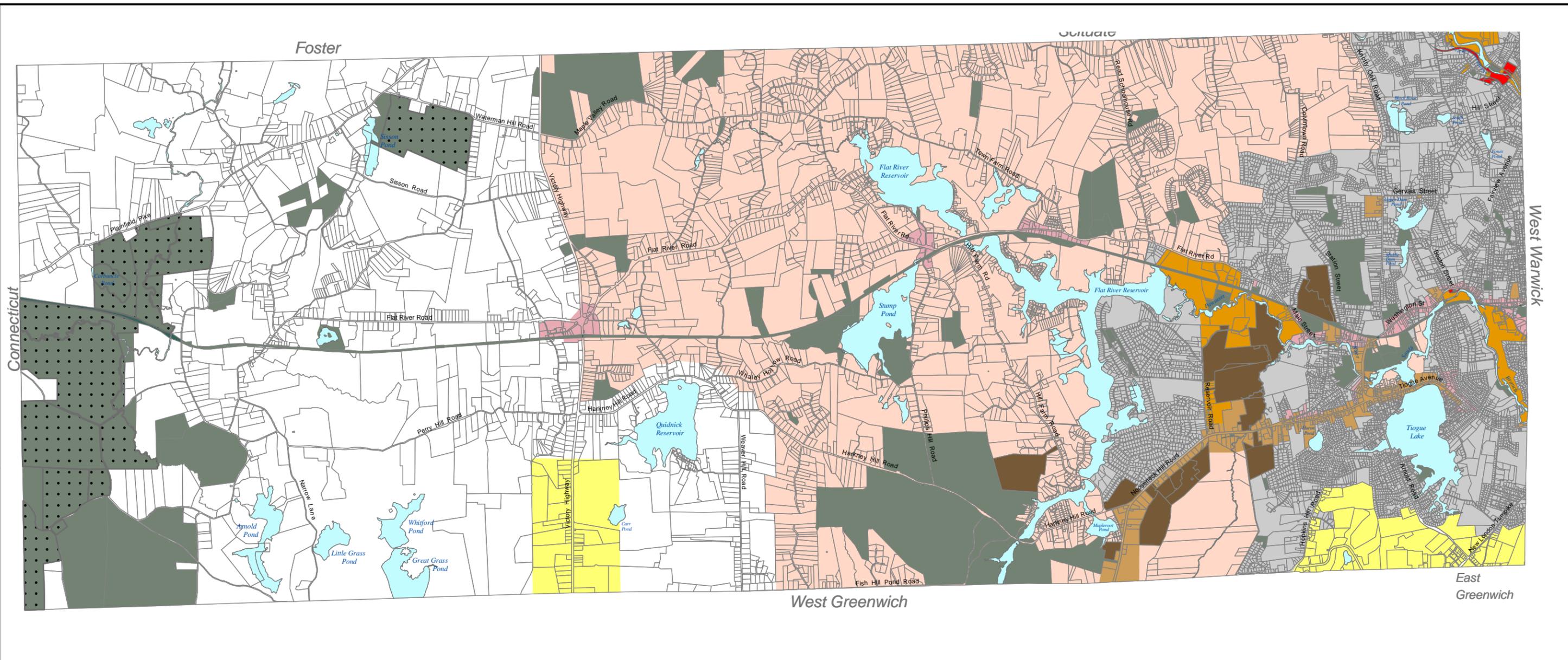
The CCP Analysis of Existing Conditions determined that OWTS systems are a significant concern in the groundwater quality of the area. The CCP report notes the following:

“The reliance of the community upon OWTS, the high number of systems installed within the heart of the recharge area prior to current regulations and the presence of soils conducive to system failure combine to make septic systems an issue demanding appropriate attention and follow through.”

3.2 Land Use

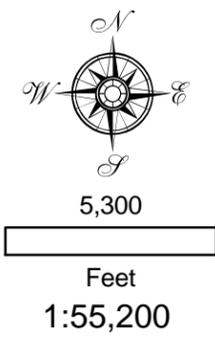
As discussed in the Community Comprehensive Plan, the eastern end of Coventry has become increasingly more urbanized. The most prevalent land use is residential, with newer commercial development. **Figure 3-6**, excerpted from the Community Comprehensive Plan, shows the existing land uses in the eastern end of Coventry. The uses as shown are further described as follows:

- Residential Uses, including Single Family Residential, Multi-Family Residential and Mobile Homes, are concentrated in the eastern end of town.
- Commercial Uses encompass an array of retail and service-type businesses. The primary commercial areas are located along Tiogue Avenue (Route 3) from Tiogue Lake westward to Woodland Manor, and along Washington Street (Route 117) from West Warwick to Abbotts Crossing Road.
- Industrial Uses are primarily located along the State highways in eastern Coventry and include both manufacturing and non-manufacturing activities, as well as extraction, transportation, communication and utility-type uses.



Comprehensive Community Plan Town of Coventry, Rhode Island Land Use Plan

Figure 3-6



Residential

- Very Low Density Residential
- Low Density Residential
- Medium Density Residential

Business / Industrial

- Industrial
- Business Park
- Village Commercial

Other

- Planned Development
- Coventry Greenway
- Parks and Open Space
- Agriculture
- Mill Conversion Floating District



Data Sources
Parcel Boundaries and Zoning Boundaries
delineated from Town Plat Maps
by Cartographic Associates, Inc. under contract
to the Town of Coventry.

LC November 25 2007
land_use_plan_D_1_1_11x17.mxd

Intended For Planning Purposes Only
This map created and maintained pursuant to R.I.G.L. 45-24-29

- Public and Semi-Public Uses, including schools, churches, town administrative facilities, Police and Fire Stations and other similar uses. These facilities are also concentrated in the eastern end of town convenient to the largest portion of Coventry's population.
- Parks, Recreation and Open Space Uses, including Agricultural Land, with the majority of open space and agricultural areas in the western and central parts of town.

Land use and development in Coventry is regulated by the town's Zoning Ordinance and Land and Subdivision Regulations. **Figure 3-7**, excerpted from the CCP, shows the existing zoning districts for eastern Coventry.

3.3 Other Environmental Conditions

In addition to the areas discussed above, several other environmental conditions are relevant to the preparation of this wastewater facilities plan. These conditions include air quality, noise levels, wildlife and plant habitats, and other specific areas of concern as discussed below.

3.3.1 Air Quality

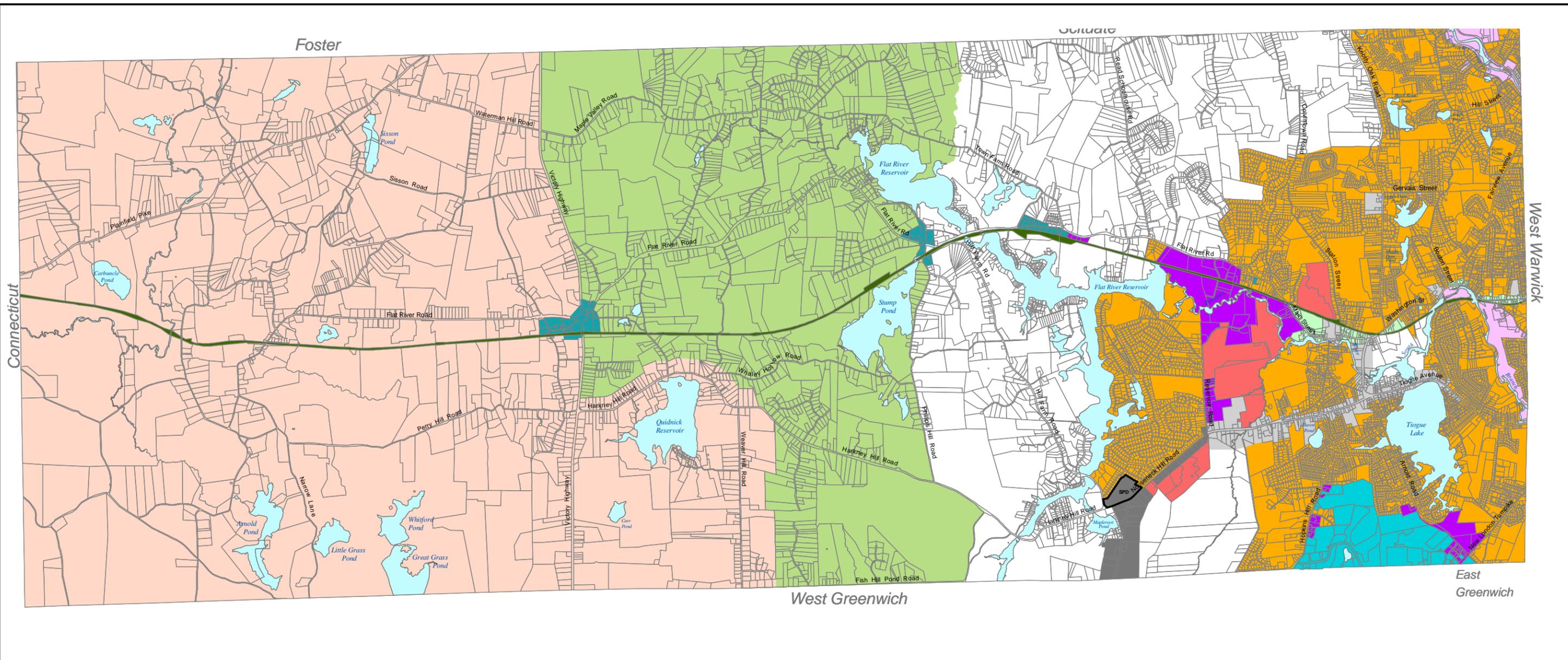
The Town of Coventry, as per the RIDEM Division of Air and Hazardous Materials, complies with the US Clean Air Act, with the exception of ozone. Non-compliance with regard to ozone is a deficiency shared with surrounding communities in the area. The basis of the problem is "smog" created by hydrocarbons, oxygen and nitrogen combining in the presence of sunlight to form an inversion layer. The source of the problem is most likely auto emissions and industry.

3.3.2 Noise Pollution

Industry-related stationary noise in Coventry is relatively light. Vehicular activity accounts for most of the Town's noise pollution with Route 3 (Tiogue Avenue) being the biggest offender, followed by Route 117 and, despite its volumes, Interstate 95 creates minimal impact due to its remote location on the fringe of Town. Coventry is located on a flight path to the T. F. Green State Airport and these flight patterns add significant noise impacts and visual disruptions to some areas of Coventry. In addition, some migratory bird patterns have been observed to be adversely affected by flight patterns over Coventry.

3.3.3 Wildlife

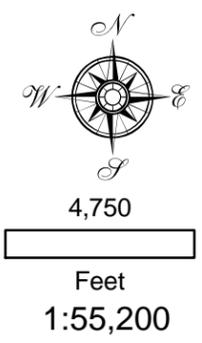
Coventry's approximate 62 square miles of land mass is home and habitat for numerous common and rare species of animals and plant life, all contributing to the delicate ecological balance of the area.



Comprehensive Community Plan Town of Coventry, Rhode Island Existing Zoning Districts - 2007

Figure 3-7

Intended For Planning Purposes Only
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Legend

- Residential 20,000
- Rural Residential Two Acre
- Rural Residential Three Acre
- Rural Residential Five Acre
- General Business
- General Business One Acre
- Industrial I-1
- Industrial I-2
- Industrial - Mill Conversion Overlay
- Planned Business Park
- Planned Development
- Residential Mobile Home District
- Village Main Street Commercial
- Village Rural Commercial
- Special Planning Overlay District



Data Sources
Parcel Boundaries and Zoning Boundaries
delineated from Town Plat Maps
by Cartographic Associates, Inc. under contract
to the Town of Coventry.

LC August 2007
smallzoning11x17

Of particular importance is the November 1990, RIDEM, Natural Heritage Program, Rare Species in Coventry report that, in addition to its town-wide overview, calls out specific areas of concern (i.e., Trestle Trail, Nicholas Farm, Parker Woodland and Broadwell Farm) for their potential impact on wildlife habitats.

3.4 Existing Onsite Wastewater Treatment Systems (OWTS)

The existing sanitary sewage disposal system in the Town of Coventry essentially consists of Onsite Wastewater Treatment Systems (OWTS) and sewer mains transmitting wastewater to the West Warwick Treatment Facility. The 1995 Wastewater Facilities Plan referenced above recommended that sanitary sewers be constructed to serve approximately half the total properties in Coventry. The recommendations under this plan are currently being constructed and designed. Coventry prepared an Onsite Wastewater Management (OWM) Plan in 2003; this plan found that over 99% of the residences in Coventry rely on OWTS for treatment and disposal of wastewater. It further found that the Town of Coventry is the largest community in the State of Rhode Island not served by a community sewer system. Therefore, Coventry has more OWTS than any other town in Rhode Island. The 2003 OWM Plan identified the areas in town that are considered priorities for wastewater management. With a few exceptions, these areas are concentrated in the eastern portions of town. Although some of these priority areas are currently serviced by sanitary sewers, the overwhelming majority of properties still rely on OWTS for treatment of wastewater.

Many factors impact the performance, deficiency or alteration of OWTS in the priority areas identified in the OWM Plan, including soil conditions, residential density, age and maintenance of OWTS, and Rhode Island Department of Environmental Management (RIDEM) OWTS Regulations. Malfunctioning OWTS systems typically result from inadequate soil absorption of wastewater flows. This generally results in a health hazard or public nuisance. The upward movement and surfacing of partially treated or untreated wastewater, piping system back-ups into homes and rapid transport of septic tank effluent through the soil into the groundwater often result from system malfunctions or failures. These failures are often attributable to one or more of the following causes:

- The soils in the leaching area will no longer absorb wastewater at a sufficient rate.
- The leaching system is located too close to an underlying or adjacent impervious soil layer (such as clay or bedrock).
- insufficient depth to groundwater table,
- The soils in the leaching area have too high a permeability to provide sufficient treatment prior to the leachate reaching the groundwater table.
- Harmful substances which could clog the absorption system have been flushed into or added to the system.

- The septic tank, distribution box or system piping is collapsed, broken or clogged.
- The OWTS has not been properly designed and/or constructed.
- A lack of proper maintenance pumping has resulted in excessive solids carryover into the leaching area.
- Excessive or extraneous flows have resulted in hydraulic overloading of the leaching area.

3.4.1 Innovative/Alternative Technologies

In the past ten (10) years, there have been great advances in Onsite Wastewater Treatment Technology, also known as Innovative/Alternative Technologies (I/A). Site limitations may make constructing a conventional system unfeasible; I/A systems can work around site limitations and perform as well, or better than a conventional system.

- I/A systems are generally better than conventional septic systems at removing solids and other pollutants from wastewater before it goes to the soil absorption system (SAS).
- The SAS following an I/A technology can be expected to have a longer life.
- I/A technology can also provide advanced treatment to reduce the wastewater's nitrogen content. For this reason, nitrogen reducing systems may be required for new construction, including additions to existing homes, near a private or public water supply well or other nitrogen-sensitive areas.

3.4.2 Cesspool Act of 2007

The Cesspool Act of 2007 is designed to phase out cesspools from environmentally sensitive areas. There are three possible scenarios under which a property owner is required to replace their cesspool:

1. The cesspool has failed. This applies anywhere in the State and is required under current regulations.
2. The property owner has a cesspool that serves a commercial facility or multifamily dwelling. This applies anywhere in the state under the proposed new septic system rules.
3. The cesspool is located within one of the three areas described below, effective June 1, 2008:
 - Within 200 feet of the inland edge of shoreline features bordering tidal water areas (i.e., Coastal Resources Management Council's jurisdiction).
 - Within 200 feet of a public well.
 - Within 200 feet of a water body with an intake for a drinking water supply.

The Cesspool Act of 2007 also outlines maintenance activities that must occur for all existing in-use cesspools:

- All cesspools will have to be inspected, on a rotating basis, within a 4-year time period, completed by January 1, 2012;
- All cesspools found to be failed will need to be replaced within 1 year;
- All cesspools found in already sewered areas will need to be hooked-up to the sewer within one year of the sale of the associated property; and
- All other cesspools will need to be replaced by January 1, 2013.

RIDEM estimates that there are approximately 50,000 cesspools in Rhode Island. This Cesspool Act is anticipated to remove approximately 3,000 cesspools.

3.4.3 Repair Information

The State of Rhode Island Department of Environmental Management (RIDEM) is responsible for maintaining all records pertaining to the construction, alteration and repair of individual on-site sewage treatment systems (OWTS) in the state. As part of the current facilities planning effort, a review of RIDEM records was conducted to obtain data on recent OWTS repairs. OWTS repair records for the five year period (2003 through 2007) were examined to locate OWTS failures within the proposed study areas. All repairs recorded for this period are listed in **Appendix A**. This data is summarized in **Table 3-2** on a study sub-area basis. The number of OWTS repairs in itself may not be an indication of poor soil and/or groundwater conditions. Repairs are also an indication of the age of the system and the maintenance history of the system. Representatives of the RIDEM Division of Water Resources have indicated during past investigations that many system repairs and alterations are not reported and consequently are not recorded. Please note that in **Table 3-2** and the remainder of this report Planning Area ZZ represents all other parcels in Coventry located outside of the designated Planning Areas, as described previously.

Table 3-2 RIDEM OWTS File Review Data 2003-2007

PLANNING AREA	Repairs to Existing Systems	New Systems	Alterations to Existing Systems	Number of Existing Homes 2008	Percentage of Systems Repaired	Percentage of Total Repairs
A	12	1	1	270	4.4%	1.9%
B	10	0	0	154	6.5%	1.6%
C	16	0	1	167	9.6%	2.5%
D	45	0	1	245	18.4%	7.1%
E	29	1	1	298	9.7%	4.6%
F	1	0	0	99	1.0%	0.2%
G	26	1	3	208	12.5%	4.1%
H	24	3	1	349	6.9%	3.8%
I	11	0	0	109	10.1%	1.7%
J	28	5	2	321	8.7%	4.4%
K	25	0	2	288	8.7%	3.9%
L	19	2	1	375	5.1%	3.0%
M	4	24	0	61	6.6%	0.6%
N	20	1	1	304	6.6%	3.1%
O	8	0	1	211	3.8%	1.3%
P	29	0	1	290	10.0%	4.6%
Q	17	0	0	314	5.4%	2.7%
R	8	1	2	90	8.9%	1.3%
S	5	0	1	90	5.6%	0.8%
T	7	0	0	109	6.4%	1.1%
U	5	0	0	106	4.7%	0.8%
V	12	4	0	167	7.2%	1.9%
W	28	1	2	191	14.7%	4.4%
X	14	2	1	185	7.6%	2.2%
Y	13	34	0	125	10.4%	2.0%
Z	19	0	1	196	9.7%	3.0%
AA	11	0	1	214	5.1%	1.7%
AB	11	4	1	141	7.8%	1.7%
AC	7	1	1	119	5.9%	1.1%
AD	17	1	1	152	11.2%	2.7%
AE	14	2	2	113	12.4%	2.2%
AF	7	0	0	146	4.8%	1.1%
AG	1	0	1	117	0.9%	0.2%
AH	5	2	2	68	7.4%	0.8%
AI	7	1	1	117	6.0%	1.1%
ZZ	120	106	23	5658	2.1%	18.9%
TOTAL	635	197	56	12167	5.2%	

3.4.4 Soils Suitability for OWTS

In order for individual sewage disposal systems to operate properly, soils on which they are constructed must be suitable for such use. The following sections include information available on soils in the study area, including Soil Conservation Service information and information obtained from soil borings and wells in Coventry.

Most soil types in eastern Coventry, where the major OWTS deficiencies occur, are either Canton-Urban land complex or Merrimac-Urban land complex as identified in the *RI Soil Survey*. Both of these soils are characterized as having slight limitations for the construction of OWTS. The Soil Conservation Service (SCS) requires detailed on-site investigations and evaluation for most land uses on Canton Urban-land complex and Merrimac Urban-land complex soils. Urban land, which consists of areas covered by streets, parking lots and shopping centers and other structures, total 30 to 40 percent of areas with Canton and Merrimac soils. This, combined with the fact that a large percentage of homes are constructed on lots substantially smaller than the lot sizes described in the SCS report, greatly impacts OWTS construction and/or operation in these soils. **Table 3-3** lists soils with severe or moderate limitations, and the primary constraints that limit OWTS construction. **Figure 3-8** maps the areas in Coventry with such types of soil.

Soils classified as 'severe' exhibit properties or site features that are extremely restrictive to proper functioning of OWTS systems. Soils classified as 'moderate' exhibit properties or site features that are unfavorable for proper functioning of OWTS absorption fields that may be overcome through special planning and design. However, when such conditions are combined with small lot sizes, 'special planning and design' may not be able to provide a solution.

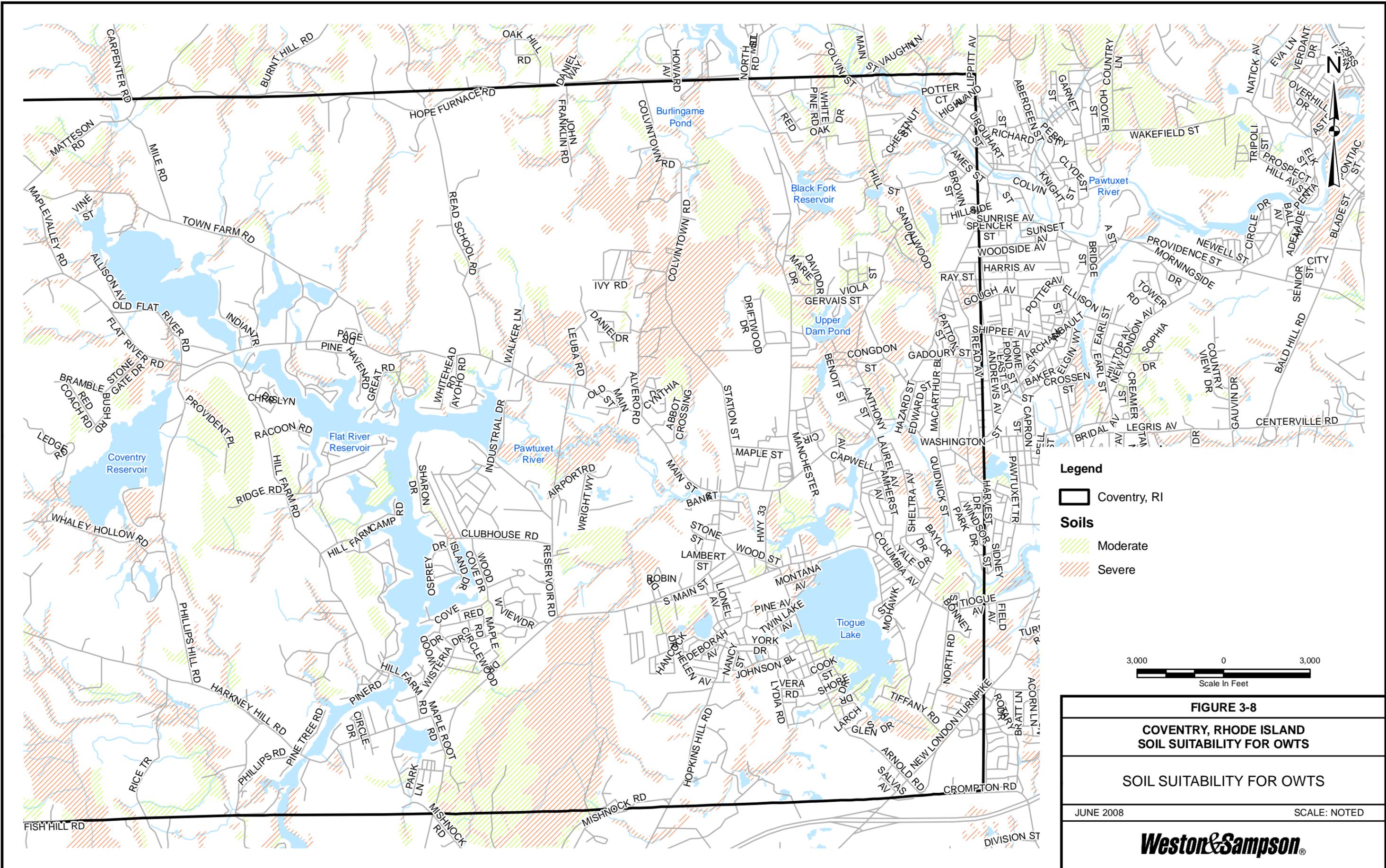


Table 3-3 Coventry Soil Limitations for OWTS

Soil Symbol	Soil Name	Limitation	Primary Constraints
Aa	Adrian Muck	Severe	High water table
Co	Carlisle Muck	Severe	High water table
Dc	Deerfield	Moderate	Seasonal high water table
GhD	Gloucester-Hinckley	Severe	High slope, rockiness
HkD	Hinckley	Severe	High slope
LgC	Lippitt	Severe	Depth to bedrock, rock outcrops
Nt	Ninigret	Moderate	Seasonal high water table
PaA, PaB, PbB, PbC	Paxton	Moderate	Slow permeability
PcC	Paxton	Moderate	Slow permeability, rockiness
Pp	Podunk	Severe	Seasonal high water table
Rc	Raypol	Severe	Seasonal high water table
Re	Ridgebury	Severe	High water table, slow permeability
Rf	Ridgebury, Leicester and Whitman	Severe	High water table
Ru	Rumney	Severe	High water table
Sb	Scarboro	Severe	Seasonal high water table
ScA, ScB	Scio	Moderate	Seasonal high water table
Ss	Sudbury	Moderate	Seasonal high water table
StA, StB, SuB	Sutton	Moderate	Seasonal high water table
SvB	Sutton	Moderate	Seasonal high water table, rockiness
Tb	Tisbury	Moderate	Seasonal high water table
Wa	Walpole	Severe	Seasonal high water table
WbA, WbB, WcB	Wapping	Moderate	Seasonal high water table
WdB	Wapping	Moderate	Seasonal high water table, rockiness
WhA, WhB, WoB	Woodbridge	Moderate	Seasonal high water table, slow permeability
WrA	Woodbridge	Moderate	Seasonal high water table, slow permeability, rockiness

As part of this (and previous) facility planning process, the eastern portion of Coventry has been evaluated to identify problem areas for (OWTS) construction and operation, and to reaffirm the need for corrective action in those areas. This section summarizes the information utilized in delineating problem areas.

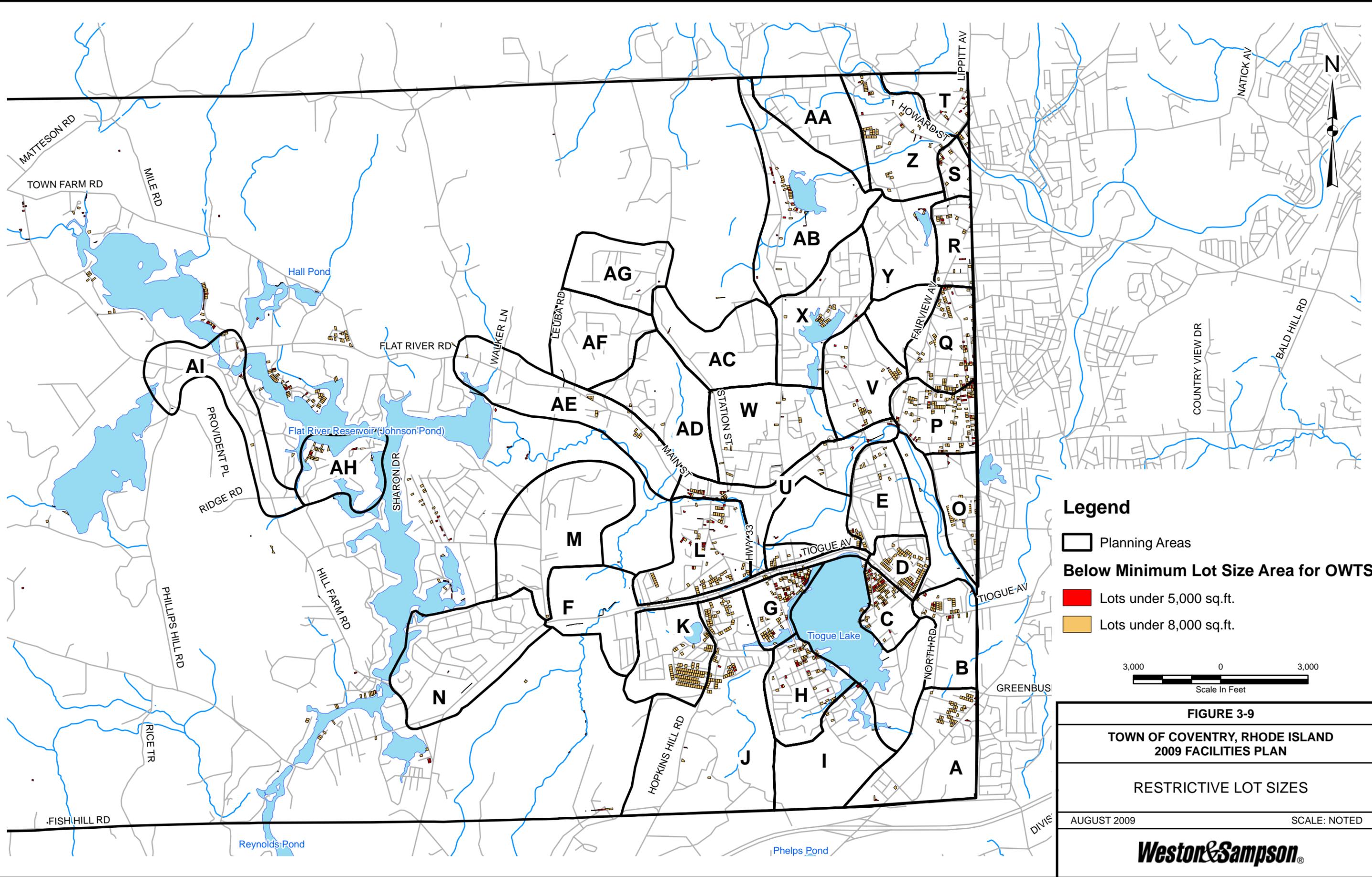
3.4.5 OWTS Lot Size Limitations

Even with acceptable soils, the available lot area can be limited to such an extent that construction of on-site systems may be restricted. Current RIDEM Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems (OWTS) state that any new lot that is less than 10,000 square feet and requires more than one variance for construction will be denied. This implies that a 10,000 square foot lot size is the minimum lot size to have a safe and effective OWTS.

Many residential areas of eastern Coventry were developed with average lots covering 10,000 square feet or less. These residential areas, which in some cases were developed with lots of less than 5,000 square feet, create significant difficulties when their substandard OWTS systems begin to malfunction. **Table 3-4** shows the average lot sizes in each of the study areas, as well as the occurrences of lots below 8,000 and 5,000 square feet in area. **Figure 3-9** shows these lots in plan view. In some areas of eastern Coventry, large two-family mill houses have been constructed on lots which could be of acceptable size for smaller single family residences. The large building footprint area minimizes the land available for an on-site system, and combined with the higher wastewater flows from two (or more) families, can preclude construction of an adequate system. The Greene Street/Laurel Avenue area (Area E) and the Washington, Quidnick and Anthony Areas (Areas P, Q, U, V and W) are characterized by such development. In addition, numerous commercial buildings and residences between Washington Street and the South Branch of the Pawtuxet River occupy nearly all of the usable area for the parcels. On these lots, there is essentially no land available for construction of any type of on-site disposal system.

Table 3-4 Lot Size Limitations for OWTS Siting

Planning Area	Number of Existing Homes 2008	Typical Lot Size	Percent of Lots under 5,000 sf	Percent of Lots under 8,000 sf
A	270	10000 sf	0%	11%
B	154	10000 sf	12%	27%
C	167	8000 sf	33%	52%
D	245	8000 sf	0%	51%
E	298	10000 sf	1%	10%
F	99	20000 sf	3%	14%
G	208	8000 sf	27%	50%
H	349	10000 sf	7%	12%
I	109	10000 sf	6%	8%
J	321	10000 sf	2%	33%
K	288	10000 sf	0%	40%
L	375	10000 sf	9%	28%
M	61	1 acre	0%	3%
N	304	20000 sf	0%	0%
O	211	10000 sf	3%	34%
P	290	10000 sf	20%	44%
Q	314	10000 sf	12%	32%
R	90	15000 sf	18%	21%
S	90	10000 sf	9%	22%
T	109	20000 sf	11%	18%
U	106	20000 sf	19%	30%
V	167	20000 sf	9%	20%
W	191	10000 sf	2%	14%
X	185	20000 sf	0%	10%
Y	125	20000 sf	0%	0%
Z	196	15000 sf	4%	27%
AA	214	10000 sf	0%	0%
AB	141	25000 sf	9%	19%
AC	119	1 acre	0%	2%
AD	152	10000 sf	1%	3%
AE	113	1 acre	0%	10%
AF	146	20000 sf	0%	0%
AG	117	20000 sf	0%	0%
AH	68	10000 sf	24%	33%
AI	117	1 acre	0%	4%



Legend

- Planning Areas
- Below Minimum Lot Size Area for OWTS**
- Lots under 5,000 sq.ft.
- Lots under 8,000 sq.ft.



FIGURE 3-9
TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN

RESTRICTIVE LOT SIZES

AUGUST 2009 SCALE: NOTED

Weston & Sampson[®]

3.4.6 Summary of Existing OWTS Conditions

Based on the above discussions, the overall effectiveness of OWTS systems in the study area can be estimated. RIDEM Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems (OWTS) defines a failed system as any OWTS that does not adequately treat and disperse wastewater so as to create a public or private nuisance or threat to public health or environmental quality, as evidenced by, but not limited to, one or more of the following conditions:

- Failure to accept wastewater into the building sewer.
- Discharge of wastewater to a basement; subsurface drain; stormwater collection, conveyance, or treatment device; or watercourse unless expressly permitted by the Department.
- Wastewater rising to the surface of the ground over or near any part of the OWTS or seeping from the absorption area at any change in grade, bank or road cut.
- The invert of the inlet or the invert of the outlet for a septic tank, distribution box, or pump tank is submerged.
- The liquid depth in a cesspool is less than six (6) inches from the inlet pipe invert.
- Pumping of the cesspool or septic tank is required more than two (2) times per year.
- OWTS is shown to have contaminated a drinking water well or watercourse.
- If a septic tank, pump tank, distribution box, or cesspool is pumped and groundwater seeps into it.
- Any deterioration, damage, or malfunction relating to any OWTS that would preclude adequate treatment and dispersal of wastewater.
- Excessive solids are evident in the distribution box or distribution lines.

From this definition we can estimate that a significant number of the OWTS systems in eastern Coventry are showing evidence of failure. The available soils and groundwater information, OWTS system repair information, existence of substandard systems (i.e. cesspools), occurrence of system problems and limitations on system construction and operation (such as lot size restrictions) were reviewed to identify specific areas where existing conditions preclude the proper operation of individual sewage disposal systems.

3.5 Existing Direct Wastewater Discharges

The unfavorable conditions for OWTS systems, the lack of a town sewer system and the large surface water areas which exist in eastern Coventry combine to make it a prime area for direct wastewater discharges. These include overflow relief pipes from

OWTS systems and direct building sewers to surface waters and storm drains. The North and South Branches of the Pawtuxet River were once known to have a significant number of such direct discharges. However, it seems that in the past ten to fifteen years, the number of direct discharges has decreased. This is evidenced by the increased water quality in both the North and South Branches of the Pawtuxet River. At the time of the 1995 Facilities Plan, parts of the Pawtuxet River in Coventry were not supporting their designated uses due to pollution. At the time of this Facilities Plan Update, all of the Pawtuxet River in Coventry was able to support all designated uses and was deemed fishable/swimmable.

Although there seems to be a significant increase in the water quality in Coventry, there is no way to estimate the actual number of direct wastewater and stormwater discharges in Coventry without a more comprehensive study.

3.6 Existing Wastewater Collection and Treatment System

3.6.1 West Warwick Regional Wastewater Treatment Facilities

As noted in Chapter 2 of this report, the State's 208 Areawide Water Quality Management Plan (WQMP) recommended that wastewater from Coventry be treated at the West Warwick Regional Wastewater Treatment Facility. This contradicted the previous recommendations for an independent Coventry Wastewater Treatment Facility made by earlier reports (Keyes and Maguire). The recommendation of the 208 study has since been implemented, and Coventry is now a member community in the West Warwick regional system.

In 1984, the Town of Coventry signed an intermunicipal agreement with the Town of West Warwick, which provided 2.25 mgd (average daily flow) of capacity for Coventry in the West Warwick Regional Wastewater Treatment Facility.

The West Warwick Regional Wastewater Treatment Facility is located off Pontiac Avenue, in the northeast corner of West Warwick. The treatment facility discharges treated effluent to the Pawtuxet River. The Town of West Warwick recently completed improvements at the WWTF to provide a tertiary level of wastewater treatment (nutrient removal) for an average daily flow of 10.5 mgd (peak flow of 25.34 mgd). West Warwick's facility consists of an activated sludge treatment, a biological activated filter and UV disinfection.

The West Warwick facility currently has the equipment to properly accept septage for treatment. However, at this time no septage is accepted at the facility. The Inter-municipal Agreement (IMA) between West Warwick and Coventry has a stipulation that would allow Coventry to dispose of septage at the facility if it were to be accepted from any other communities (including West Warwick).

Specific information on the existing and proposed West Warwick Regional Wastewater Treatment Facilities is contained in the West Warwick Wastewater Facilities Plan.

In late 2008, the West Warwick WWTF was issued a new draft RIPDES discharge permit that requires the facility to meet more stringent discharge limits for nutrients, including the addition of a stringent seasonal phosphorus limit. The facility is currently in the planning stages for additional upgrades which will allow the WWTF to meet these new discharge limits.

3.6.2 Wastewater Collection and Transmission System

The existing portions of the wastewater collection and transmission system are described below and can be seen in **Figure 3-10**.

3.6.2.a Hopkins Hill Road Sewer

Between 1989 and 1991, as part of a Rhode Island Department of Transportation (RIDOT) road reconstruction project, the town constructed the Hopkins Hill Road sewer. The project included approximately 850 feet of 18 and 24 inch sewer in Tiogue Avenue (Route 3) and 4,350 feet of 8, 10, 12 and 18 inch sewer in Hopkins Hill Road. The project included 88 service connections to properties fronting on the sewer. The sewer was installed as a dry line but was activated upon completion of the previously proposed Tiogue Avenue Interceptor (see Contract 03-01) and Pumping Station project.

3.6.2.b Arnold Road Pumping Station and Force Main

The Arnold Road Pumping Station and Force Main was constructed by the town in 1985 to service the Cal Chemical Corporation's industrial complex near the southern end of Arnold Road. The project was funded by a grant from the Federal Department of Housing and Urban Development (HUD). The project included a small (160 gpm) duplex submersible type pump station located on the Cal Chemical Corporation property, approximately 1,200 feet of 4 inch force main, and 300 feet of 8 inch gravity sewer in Arnold Road. In addition to servicing Cal Chemical Corporation, the project provided one service connection to a property fronting on the gravity sewer. This sewer pumping station is currently operating and discharges to the New London Turnpike Sewer at its intersection with Arnold Road.

3.6.2.c North Road Terrace Sewers

The North Road Terrace Sewer was constructed by the town in 1985 to service the Coventry Housing Authority complex near the northern end of Old North Road. The project was funded by a grant from the Federal Department of Housing and Urban Development (HUD). The project included a small (160 gpm) duplex submersible type pump station required for off peak pumping, as well as approximately 1,250 feet of 8 inch gravity sewers in Tiogue Avenue (Route 3), 300 feet of 8 inch sewer on Old North Road, and 1,550 feet of 6 and

8 inch sewer on the Housing Authority property. In addition to servicing the North Road Terrace housing complex, the project provided 23 service connections to properties fronting on the sewer along Old North Road and Tiogue Avenue. This sewer is currently operating and discharges directly to the West Warwick sewer system at the Town Line on Tiogue Avenue.

3.6.2.d North Branch Interceptor Sewer

A portion of the North Branch Interceptor Sewer was constructed in 1985 by the town to service the Victor Corp. industrial complex on North Main Street. Like Arnold Road and North Road Terrace, the project was funded by a grant from the Federal Department of Housing and Urban Development (HUD). The project included approximately 200 feet of 15 inch sewer in North Main Street, and 130 feet of 8 inch sewer on the Victor Corp. property. In addition to servicing Victor Corp., the sewer provided one service connection to a property fronting on the sewer. This sewer is currently operating and discharges to an 18 inch sewer on North Main Street at the intersection of Broad Street.

3.6.2.e New London Turnpike Sewer

The New London Turnpike Sewer was constructed in the early 1980's by West Warwick to provide service to the West Greenwich Industrial Park development located in north-eastern West Greenwich. The project included approximately 4,500 feet of 15 inch sewer in the New London Turnpike from the West Warwick town line to the East Greenwich town line. Approximately 53 properties in Coventry front on this sewer. The sewer is currently active and flows into the Maisie Quinn Interceptor.

3.6.2.f Broad Street Sewer

The Broad Street sewer extension was constructed by West Warwick as part of their system in the Harris area. The sewer in Coventry was necessary to provide gravity sewer service to portions of Broad Street and Summit Avenue in West Warwick. The sewer installation includes approximately 700 feet of 18 inch sewer in North Main Street, 700 feet of sewer in Broad Street, 400 feet of sewer in Lamphear Street, and 150 feet of sewer on Summit Avenue. Approximately 21 properties in Coventry front on this sewer. These active sewers are directly tributary to the Clyde Interceptor in West Warwick.

3.6.2.g Woodland Manor Pumping Station and Force Main

The Woodland Manor Pumping Station and Force Main were constructed in 1980 by the Mapleroot Development Corporation, developers of the Woodland Manor housing complex on Nooseneck Hill Road. The pumping station services the housing development, including capacity for future phases, and several adjacent commercial establishments. The 10 inch force main extends approximately 19,360 feet along Nooseneck Hill Road/ Tiogue Avenue (Route 3) to the West Warwick town line, where it discharges to the West Warwick

system. Mapleroot Development Corp. has a 1978 agreement with West Warwick to discharge 200,000 gallons per day to the West Warwick system. This is a privately owned and operated sewer system, separate from the Town of Coventry system, designed to provide sewer service to an area within central Coventry.

Since the construction of the Woodland Manor force main, the pipeline owners have allowed several pressure connections along the length of Tiogue Avenue. These connections have typically been to commercial establishments with severe OWTS problems. Such connections were approved by both West Warwick and Coventry (whose plant capacity was utilized for the connections).

3.6.2.h Contract 03-01

The Contract 03-01 sewer project was constructed in 2004 by the Town of Coventry to service part of Tiogue Avenue and Washington Street. This contract connected the system to the Sandy Bottom Road pump station, built under Contract 03-02 by the Town of Coventry. The connection to the pump station under the Pawtuxet River was by a depressed sewer made up of a series of ductile iron pipes (3 barrels - one 16-inch and two 12-inch pipes). Two 12-inch ductile iron force mains extend from the pump station to the intersection of Washington Street and Knotty Oak Road (approximately 2,446 feet). A 30-inch PVC gravity sewer pipe extends from the intersection of Washington Street and Knotty Oak Road to the intersection of Washington Street and Pulaski Street (approximately 6,068 feet). A 24-inch PVC gravity sewer extends from the pump station to approximately 3,014 feet west along Tiogue Avenue. This line connected to the previously “dry” sewer line installed in Hopkins Hill Road, and allowed the activation of that sewer line.

3.6.2.i Contract 03-02

The Sandy Bottom Road Pump Station was constructed under Contract 03-02 concurrently with the gravity sewers and force main in Contract 03-01. The Sandy Bottom Road Pump Station is a custom designed 3 level pump station with separate dry and wet process areas. The pump station was constructed with 2 pumps initially, but was designed for the additional of two additional, larger pumps such that the future capacity of the upgraded station will be sufficient to handle flows from the majority of the sewered areas in eastern Coventry. The location and elevation of this station was selected to allow gravity sewer service to most of the areas along the South Branch of the Pawtuxet River.

The Sandy Bottom Road pump station includes sewage grinders in the wetwell area, and the station discharges through a dual 12-inch force main to allow for significant variations in design flow rates. The station is equipped with a flow meter and enhanced instrumentation and control (I&C) system.

This station is presently equipped to handle initial design flows from the Coventry system, including flows from the Amgen facility. The station will need to be upgraded with one or more additional or larger pumps as the service areas outlying from Tiogue Avenue, Hopkins Hill Road, and Main Street are sewerred.

3.6.2.j Contract 03-03

The Hopkins Hill Road force main was constructed in 2006 by the Town of Coventry to connect the West Greenwich Technology Park with the existing gravity sewer in Hopkins Hill Road. It consists of approximately 2,484 feet of 12-inch ductile iron force main from the Coventry / West Greenwich town line and 971 feet of 8-inch ductile iron force main on Hopkins Hill Road.

3.6.2.k Contract 4

The Tiogue Avenue gravity sewer system was constructed in 2007 by the Town of Coventry to provide service to more of Tiogue Avenue and Ramblewood Estates, a mobile home park in Coventry. It consisted of approximately 2,920 feet of 18-inch PVC pipe along Tiogue Avenue to Ramblewood Estates, 1,200 feet of 18-inch PVC pipe in Morningside Drive, 18-inch PVC pipe in 900 feet in “D” Lane, 522 feet 18-inch PVC pipe in Monroe Drive and 995 feet of 18-inch ductile iron pipe along a cross country portion. It also consists of 8-inch PVC lateral pipe in Anthony Street (820 feet) Fairview Avenue (1,270 feet), Ray Street (580 feet) and Wood Street (1,125 feet).

3.6.2.l Contract 5

The Main Street gravity sewer system was constructed in 2008 by the Town of Coventry to provide service to Main St / Route 117 and to connect this to the Sandy Bottom Road pump station. It consisted of 1,100 feet of 12-inch PVC gravity sewer pipe along Sandy Bottom Road, 900 feet of 12-inch PVC cross country pipe between Sandy Bottom Road and Main Street, 2,700 feet of 12-inch PVC pipe along Main St (Route 117), 590 feet of 8-inch PVC pipe along Main Street, 1,050 feet of 18-inch PVC pipe along Tiogue Avenue, and 175 feet of 12-inch PVC pipe along Idaho Street. The contract also included 8-inch PVC lateral pipe along Contentment Drive (2,000 feet), Boston Street (1,675 feet), Whitman Street (75 feet) and Clearview Drive (75 feet).

3.6.2.m Contract 2008A

The Johnson Boulevard gravity sewer system was constructed in 2008 by the Town of Coventry to provide service from Johnson Boulevard to Hopkins Hill Road. It consists of approximately 550 feet of eight inch PVC gravity sewer along Johnson Boulevard. This project has since been combined and was made part of the Main Street Area Sewer Project – Contract 5.

3.6.3 Existing Wastewater Flows

As described above, the Town of Coventry owns approximately 2.25 mgd of capacity in the West Warwick Wastewater Treatment Facility. This average daily flow was based on the Year 2000 projections in the 1981 Amended Facilities Plan. The current estimated wastewater flow from Coventry to the West Warwick sewer system is approximately 164,836 gallons per day (gpd) average daily flow, as shown in **Table 3-5**. The present peak flow from Coventry can therefore be estimated as 857,150 gpd using a peaking factor of 5.2 (see **Figure 3-11**).

Since existing flows from Coventry are estimated, information on dry and wet weather flows is not available. Recognizing the relative size and age of the system, no studies of infiltration/inflow problems have been conducted on the sewer pipelines located in Coventry. Infiltration/inflow volumes are not likely to be significant for the small system.

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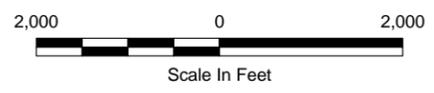
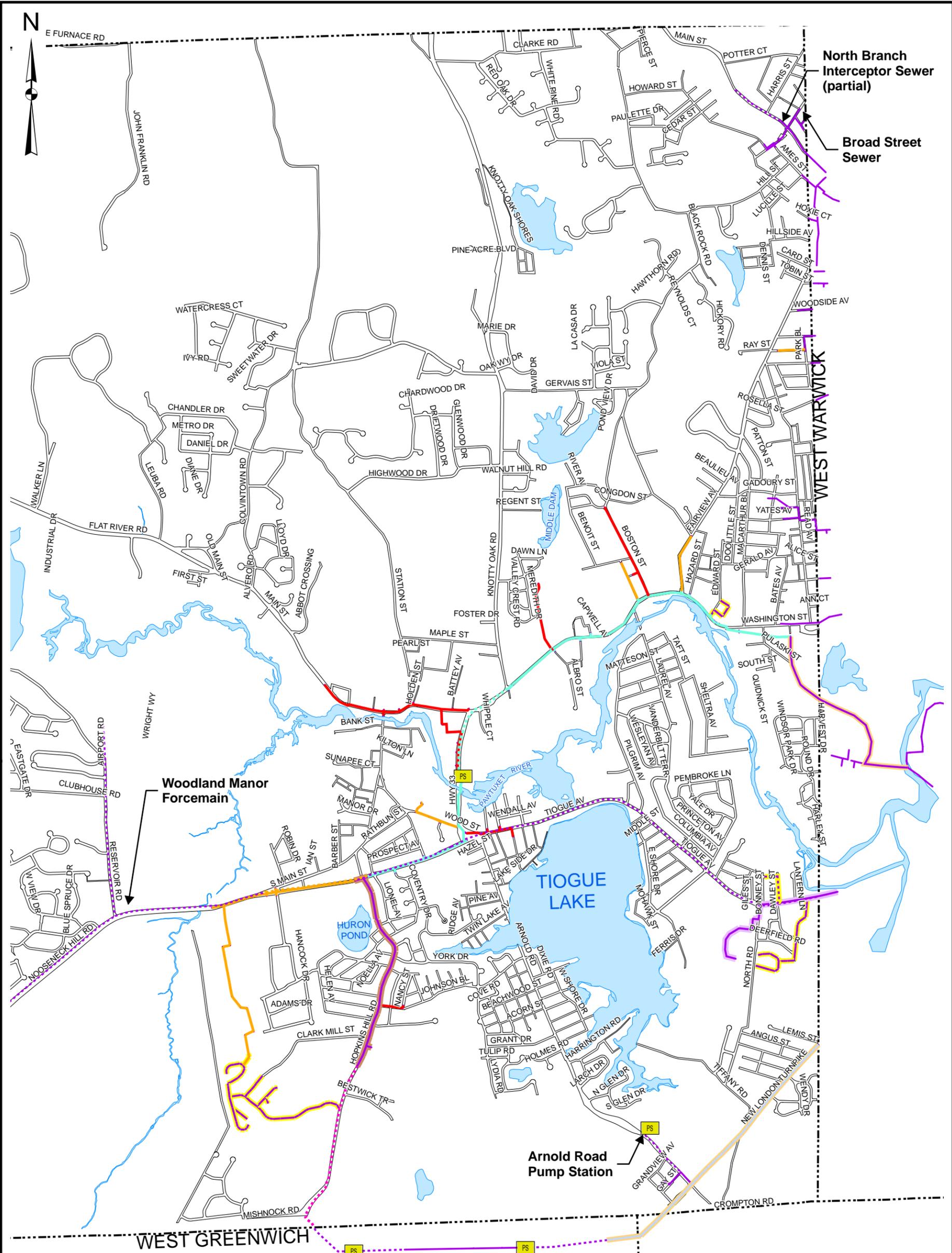
**Table 3-5
Current Flows to the West Warwick System**

Flow From Properties Tied into the System⁽¹⁾				
SUBAREA	Woodland Manor Capacity	West Warwick Capacity	Coventry Capacity⁽²⁾	Total
A	-	33,590	526,301	559,891
B	-	-	1,018,196	1,018,196
C	-	-	-	-
D	-	-	-	-
E	-	-	-	-
F	353,600	-	824,700	1,178,300
G	-	-	-	-
H	-	-	-	-
I	-	-	1,618,597	1,618,597
J	-	-	2,093,392	2,093,392
K	-	-	65,901	65,901
L	-	-	196,800	196,800
M	108,990	-	-	108,990
N	2,884,273	-	410,000	3,294,273
O	-	76,906	59,100	136,006
P	-	146,790	268,190	414,980
Q	-	252,390	111,337	363,727
R	-	110,173	49,600	159,773
S	-	6,500	-	6,500
T	-	1,325,547	7,100	1,332,647
U	-	-	378,100	378,100
V	-	-	89,547	89,547
W	-	-	326,622	326,622
X	-	-	-	-
Y	-	-	-	-
Z	-	-	-	-
AA	-	-	-	-
AB	-	-	-	-
AC	-	-	-	-
AD	-	-	-	-
AE	-	-	-	-
AF	-	-	-	-
AG	-	-	-	-
Total (cfy)	3,346,863	1,951,896	8,043,483	13,342,242
Total (gpd)	68,588	40,000	164,836	273,425

(1) Existing Flows are based on Kent County Water Authority's water use records for 2007 and are in cubic feet per year.

(2) Coventry's capacity at the West Warwick WWTF is only used by parcels connected to a Town of Coventry Sewer.

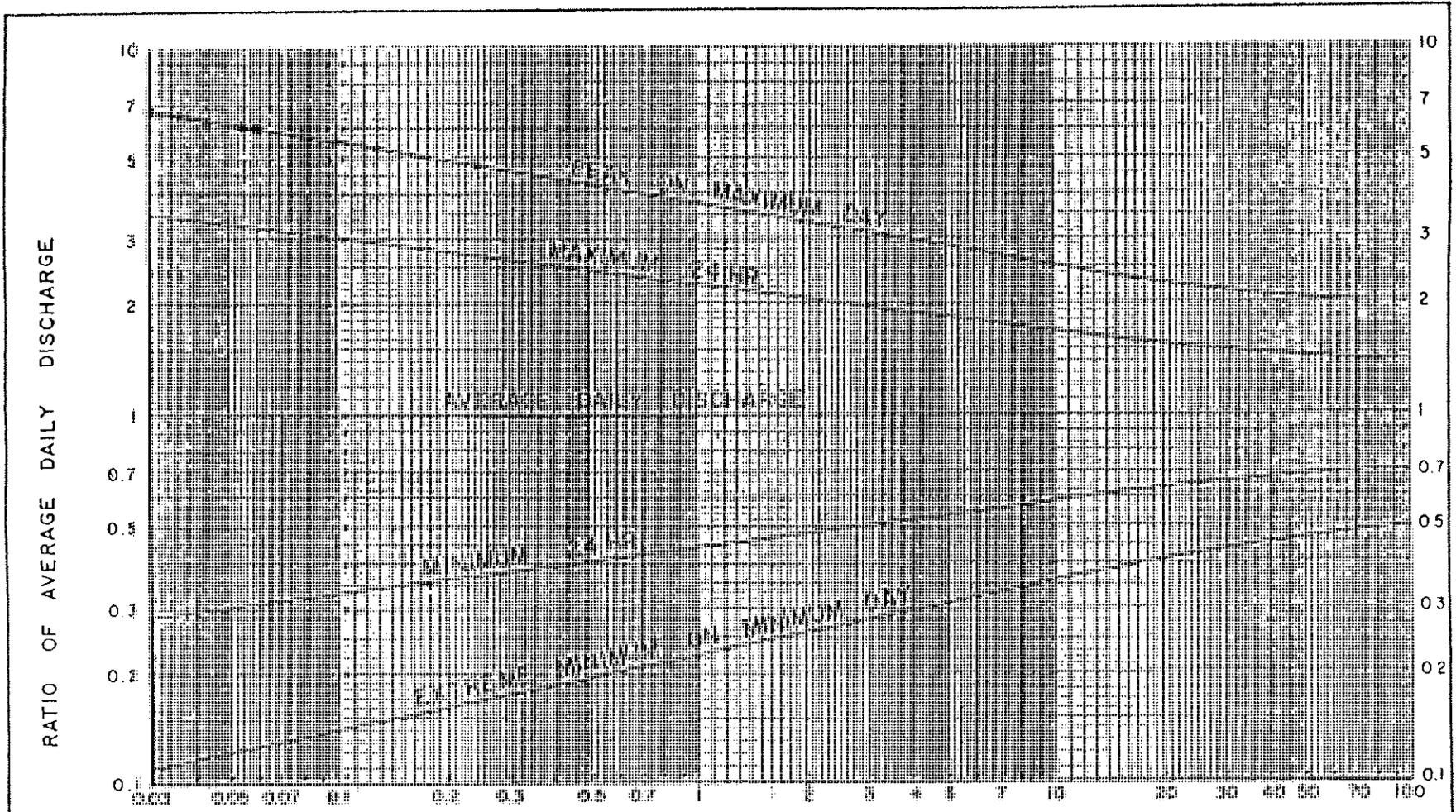
O:\Coventry R\IFP Update 2008\Facility Plan Update Document\Figures\Section 3 - Existing Conditions\Table 3-5 Current Connected Flows into system



Legend

- PS Pump Station
- Gravity Main**
- Contracts 03-01, 04, 05**
- Contract 03-01
- Contract 03-03
- Contract 04
- Contract 05
- Gravity Main - Other Sewer Projects**
- North Road Terrace Sewer Project
- New London Turnpike Sewer Project
- Pulaski Street / Robinson Way Sewer Project
- RIDOT Hopkins Hill Reconstruction Project
- Gravity Main - Subdivisions
- Gravity Main Installed by Others
- - - Force Main
- Town Boundaries
- Hydrography

FIGURE 3-10	
TOWN OF COVENTRY, RHODE ISLAND	
2009 FACILITIES PLAN UPDATE	
EXISTING SEWER SYSTEM	
AUGUST 2009	SCALE: NOTED
Weston & Sampson	



AVERAGE DAILY DISCHARGE OF DOMESTIC WASTEWATER - MGD.

FIG. 3-11 RATIO OF EXTREME DISCHARGES ON MAXIMUM AND MINIMUM DAYS TO THE AVERAGE DAILY DISCHARGES OF DOMESTIC WASTEWATER

SOURCE: ASCE MANUAL OF ENGINEERING PRACTICE NO. 37

WESTON & SAMPTON

4 Future Conditions in the Planning Area

4.0 General

This chapter outlines the expected future conditions in the Town of Coventry, including information on future population, planned land use, economic conditions and wastewater flows and loadings. EPA regulations stipulate that the facilities planning should extend 20 years. Based upon this criteria, the planning period for this wastewater facilities plan is through 2029 (however for ease in population projections year 2030 will be used in this facility plan). EPA also requires that wastewater flow forecasts be projected for a 50 year planning period for the purposes of determining a cost effective design. Therefore, wastewater flow projections through the year 2060 are included in this report.

Wastewater collection and treatment needs and design capacities will be determined by land use patterns (including proposed developments), economic growth and population growth. These factors must be accurately projected for the planning periods to provide a cost-effective long-term wastewater management plan for a community. The principal source of this information is the draft 2008 Comprehensive Community Plan (CCP).

4.1 Population Projections

Population projections for the Town of Coventry were obtained from the Rhode Island Department of Administration's Statewide Planning Program's technical paper titled "Rhode Island Population Projections: State, County and Municipal 2000-2030". These projections use population data from the U.S. Census Bureau and extend the projections for a period of thirty years to 2030. Please note that U.S. Censuses are conducted every 10-years, so the 2000 Census is the most current for this 2009 Facility Plan. The population projections are summarized in the following **Table 4.1**.

Table 4-1 Population Projections 2000-2030

Year	Projected Population ⁽¹⁾
2000	33,668 ⁽²⁾
2005	34,590 ⁽²⁾
2010	35,357
2015	36,507
2020	37,789
2025	38,886
2030	39,687

⁽¹⁾ Projected population data obtained from RI-Department of Administration document titled "Rhode Island Population Projections: State, County and Municipal 2000-2030" (August 2004).

⁽²⁾ Actual population values, not projections.

Figure 4-1 shows historic population for the Town of Coventry from 1790 to 2005 and the projected populations from 2010 to 2060. Projected populations up to 2030 were obtained from Table 4-1 and the document referenced above. Using this data through 2030, population projections were made using straight line interpolation from 1790 to 2005 to project populations for 2040 (41,190), 2050 (42,690) and 2060 (44,190), which are also shown in **Figure 4-1**.

Population growth in the planning areas of eastern Coventry up to the planning periods will be limited due to the lack of buildout potential. The build-out analysis in the CCP provides for an ultimate Coventry population of 45,897. Because of the lack of buildout potential in the eastern portions of Coventry, most of the area available for population growth is in the central and western parts of the Town.

Table 4-2 shows the projected population of each of the Planning Areas for the design years, based on a proportionate projection of total Town population to the Planning Area Population, until Ultimate Buildout is achieved.

4.2 Future Land Use

Assessment of the future land use plays a significant part in the wastewater facilities planning process. The Town's CCP Land Use Plan has been utilized to estimate future land use. The CCP Land Use Plan is presented in **Figure 3-6**. This plan provides recommendations for the various types of residential, commercial and industrial development in specific areas, as well as providing significant areas of parks, open space and agricultural use lands (most of which are located in central and western Coventry).

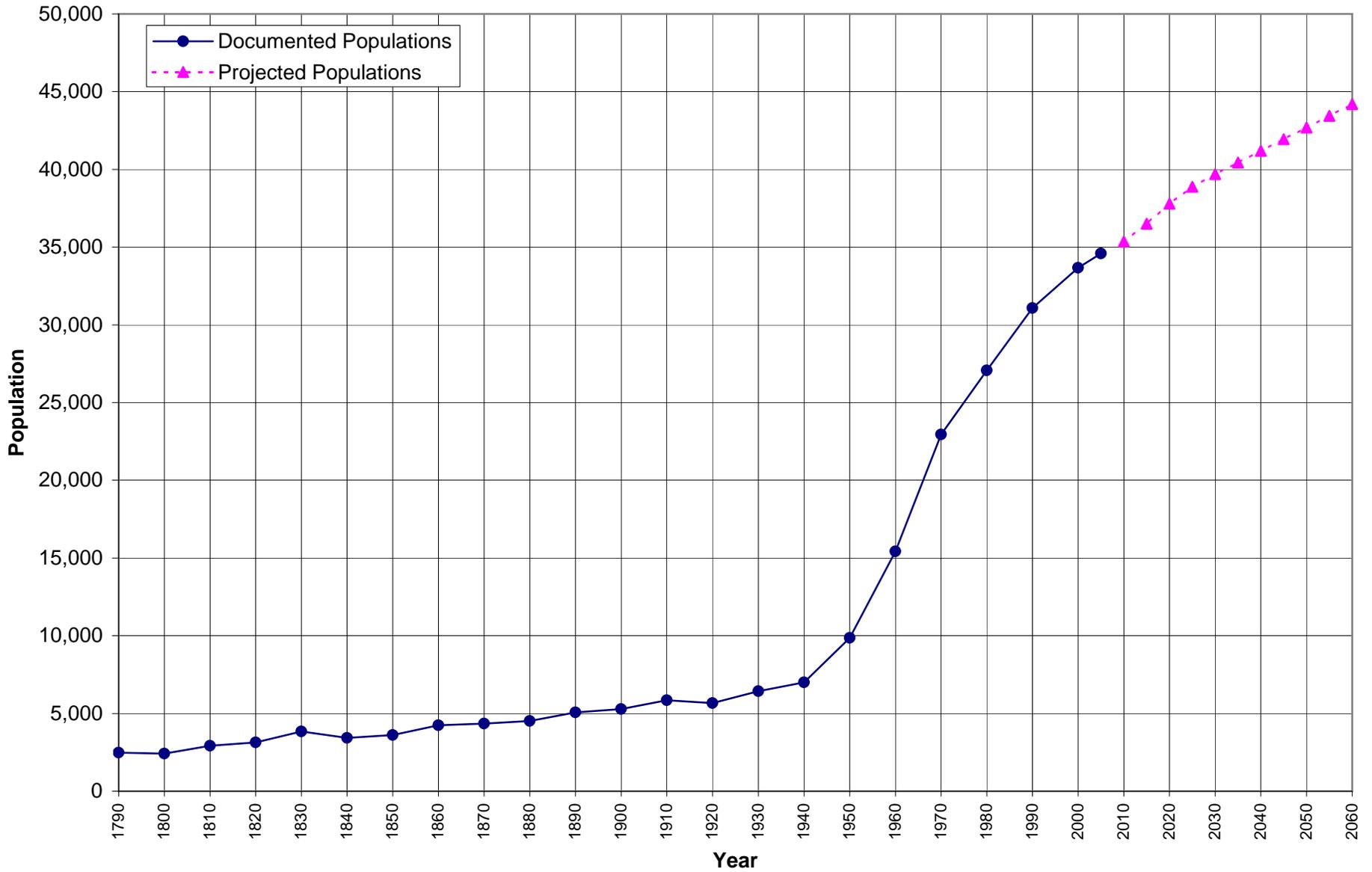
The CCP includes a build-out analysis based on the Land Use Plan. This analysis indicates an ultimate build-out population of 45,897 based on 28,022 acres of residential land that is developable. The plan also indicates 876 acres of buildable commercial land and 446 acres of buildable industrial land.

4.3 Future Wastewater Flows and Loads

Future wastewater flows and loads have been calculated for all of the study areas in eastern Coventry, for the initial planning year of this Facilities Plan (2010 is used for ease in calculations) and for the 20 (year 2030) and 50 (year 2060) year planning periods, as well as for the ultimate build-out of the planning area. These calculations are contained in **Appendix B** and are discussed in the following sub-sections. Wastewater that is generated outside of the planning areas will be in the form of septage pumped out from the properties respective OWTS.

New developments under review by the Town's Planning Department and existing parcels that were not included in the projected wastewater flows and loads, but have requested to connect into the municipal system are shown in **Figure 4-2**. These proposed developments would either significantly change the projected wastewater flow values, as estimated in the 1995 Facilities Plan or were never included in the calculations due to varying circumstances. Descriptions and the effects of these planned developments on future wastewater flows and loads will be discussed later in this section.

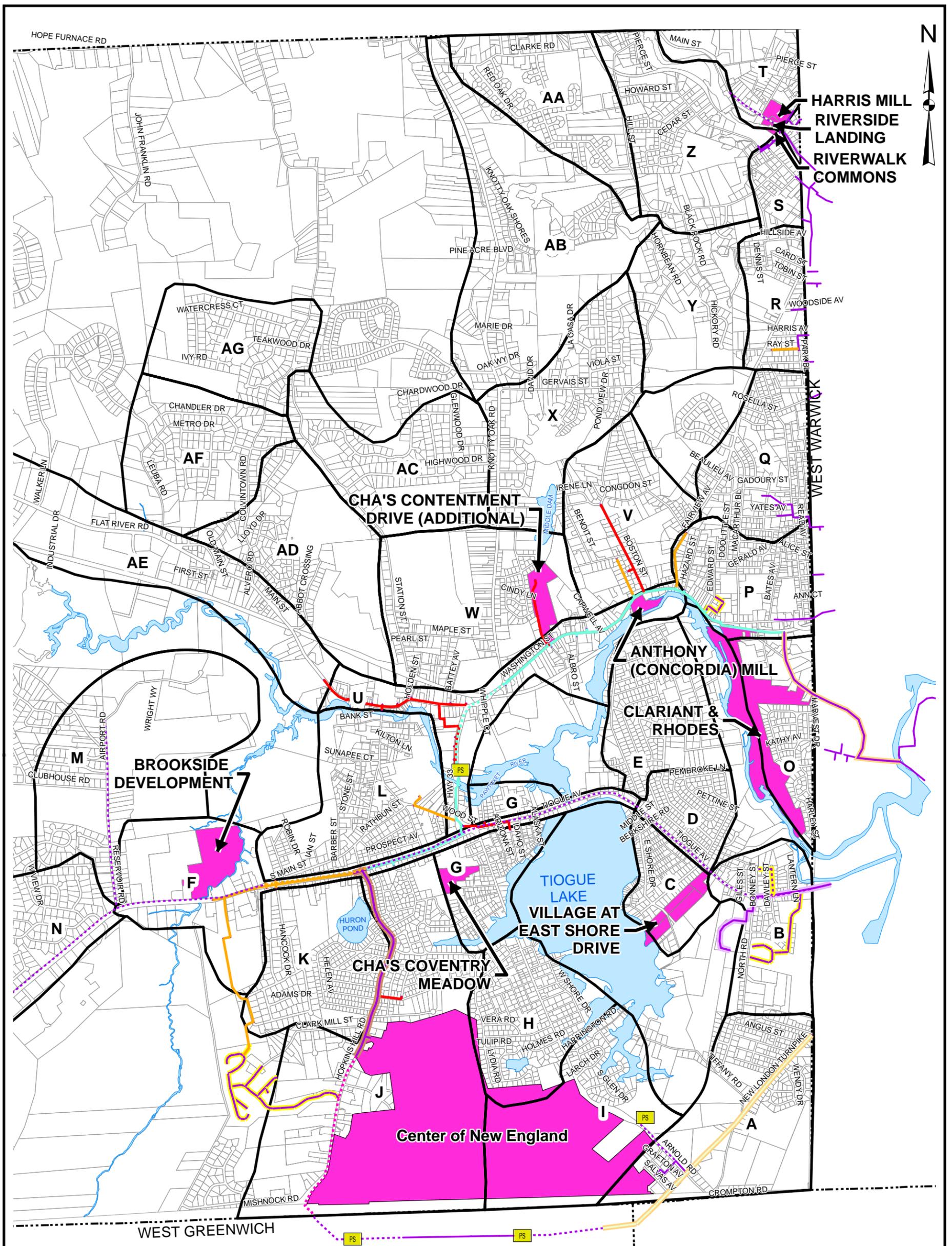
Figure 4-1
Town of Coventry Documented and
Projected Population 1790-2060



**Table 4-2
Projected Population Growth per Planning Area**

Planning Area	1995 Est. Population	2010 Est Population	2015 Est Population	2020 Est Population	2030 Est Population	2040 Est Population	2050 Est Population	2060 Est Population	Max Buildout Population
A	792	865	894	925	971	1008	1045	1056	1056
B	495	541	559	578	607	630	653	669	669
C	516	564	582	603	612	612	612	612	612
D	753	756	756	756	756	756	756	756	756
E	1110	1213	1252	1254	1254	1254	1254	1254	1254
F	117	128	132	137	144	147	147	147	147
G	630	689	696	696	696	696	696	696	696
H	1047	1104	1104	1104	1104	1104	1104	1104	1104
I	327	358	363	363	363	363	363	363	363
J	936	1023	1056	1093	1148	1167	1167	1167	1167
K	867	894	894	894	894	894	894	894	894
L	1230	1344	1387	1436	1508	1565	1622	1679	1728
M	114	125	129	134	140	146	151	156	168
N	894	977	1009	1044	1096	1138	1179	1221	1254
O	678	720	720	720	720	720	720	720	720
P	1077	1107	1107	1107	1107	1107	1107	1107	1107
Q	1107	1161	1161	1161	1161	1161	1161	1161	1161
R	285	306	306	306	306	306	306	306	306
S	357	387	387	387	387	387	387	387	387
T	450	492	501	501	501	501	501	501	501
U	633	633	633	633	633	633	633	633	633
V	1008	1101	1137	1177	1221	1221	1221	1221	1221
W	726	793	801	801	801	801	801	801	801
X	555	607	626	648	681	707	732	758	774
Y	276	302	312	323	339	352	364	377	546
Z	651	711	735	760	799	829	859	889	912
AA	642	702	724	738	738	738	738	738	738
AB	432	472	488	505	530	550	570	590	741
AC	354	387	400	414	417	417	417	417	417
AD	456	498	515	533	537	537	537	537	537
AE	360	394	406	421	442	458	459	459	459
AF	438	479	494	512	537	558	578	598	633
AG	351	384	396	410	431	447	463	480	636
AH	198	198	198	198	198	198	198	198	198
AI	354	387	400	414	434	451	467	484	777

Population Change (%) from 1995 to 2010 = 9.2%
 Population Change (%) from 1995 to 2015 = 12.8%
 Population Change (%) from 1995 to 2020 = 16.7%
 Population Change (%) from 1995 to 2030 = 22.6%
 Population Change (%) from 1995 to 2040 = 27.2%
 Population Change (%) from 1995 to 2050 = 31.8%
 Population Change (%) from 1995 to 2060 = 36.5%



Legend

- PS Pump Station
- Gravity Main - Other Sewer Projects**
- Gravity Main Installed by Others
- North Road Terrace Sewer Project
- New London Turnpike Sewer Project
- Force Main
- Contract 03-01
- Contract 03-03
- Contract 04
- Contract 05
- Pulaski Street / Robinson Way Sewer Project
- RIDOT Hopkins Hill Reconstruction Project
- Gravity Main - Subdivisions
- BaseMap**
- Parcels
- Town Boundaries
- Hydrography

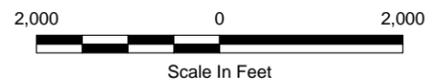


FIGURE 4-2

**TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN UPDATE**

PROPOSED DEVELOPMENTS

AUGUST 2009

SCALE: NOTED

Weston & Sampson

4.3.1 Future Study Area Wastewater Flows and Loads

A calculation of wastewater flows in the eastern Coventry study areas was made for the planning period years 2010, 2030 and 2060. **Tables 4-3, 4-4 and 4-5** respectively show these flow projections by study area including both the existing (**Table 4-3**) and proposed (**Table 4-4 and 4-5**) sewer flows from the developments discussed below. The complete study area calculations for these wastewater flows are contained in **Appendix B**. These calculations include an independent build-out analysis of the study areas conducted as part of the 1995 Facilities Plan. The 2010, 2030 and 2060 flows are based on an incremental percentage increase of the sanitary sewer flows (calculated in the 1995 Facilities Plan) based on the equivalent percentage population increase as shown in Section 4.1 of this report. However, the 2010, 2030 and 2060 flows are limited by the build-out potential of each planning area (i.e. if a study area reaches build-out potential at year 2030, the same build-out sanitary sewer flow will be utilized for year 2060).

As described in Section 4.1 of this report, developments have been proposed that significantly change the land use that was calculated as part of the 1995 Facilities Plan. This change must be accounted for when projecting future flows. As part of this Facilities Plan Update, estimated flows have been calculated for the developments described below, using RI-DEM's flow estimation method in their OWTS Rules and Regulations (January 1, 2008). These calculations are included in **Table 4-6**. Projected flows for the developments as part of this report are and have been added to the flow projections in **Tables 4-2, 4-3 and 4-4** and **Appendix B**.

Please note that in this report any allocations based upon these projections are not made to the singular development. Instead allocations will be made to the Planning Area in general where the development is proposed. Any allocation to a specific entity must be made by the Town, and reference to a specific development in this report shall not guarantee nor grant connection for the said development into the system.

4.3.1.a Coventry Housing Authority's Contentment Drive Additions

The Coventry Housing Authority (CHA) is proposing additions to their existing Knotty Oak Village development on Contentment Drive and Carley Drive (Assessor's Map 54 Lot 103). Two-buildings are proposed on the sites of the previously existing leach field locations. The proposed buildings will each consist of 34 one-bedroom units located in Planning Area W.

The 1995 Facilities Plan did not include any additional buildings in Knotty Oak Village other than what was existing. Therefore all additional flows for the proposed development will need allocation to the respective planning area.

**Table 4-3
Study Area Projected Wastewater Flows
Average Daily Flow - Design Year 2010**

Study Area	Domestic (gpd)	Industrial (gpd)	Commercial (gpd)	Institutional (gpd)	Infiltration and Inflow (gpd)	Total ADF (gpd)
A	60,550	1,906	1,230	0	9,250	72,936
B	37,870	0	1,037	7,560	3,875	50,342
C	47,670	0	0	8,663	2,975	59,308
D	52,920	0	1,932	7,068	5,450	67,370
E	84,910	246	4,052	3,675	7,875	100,758
F	8,960	400	97,980	0	10,750	118,090
G	59,270	246	492	0	5,050	65,058
H	77,280	0	246	0	8,750	86,276
I	25,060	5,308	246	0	2,700	33,314
J	256,910	1,400	738	7,088	8,200	274,336
K	62,580	0	2,400	0	6,950	71,930
L	94,080	2,548	2,255	1,575	9,625	110,083
M	8,750	246	57,408	32,592	1,175	100,171
N	1,470	0	5,910	0	450	7,830
O	20,370	175	60	0	3,400	24,005
P	77,490	80,000	8,368	3,026	7,400	176,284
Q	81,270	0	210	0	9,650	91,130
R	21,420	0	246	0	3,025	24,691
S	27,090	0	0	0	2,700	29,790
T	43,675	19,742	5,156	6,825	3,950	79,348
U	44,310	7,541	44,493	0	9,450	105,794
V	77,070	250	246	0	3,275	80,841
W	59,420	0	738	39,055	5,275	104,488
X	24,220	350	6,990	0	4,563	36,123
Y	0	0	0	0	0	0
Z	28,394	400	0	525	2,165	31,484
AA	Not included in sewer program (2003).					0
AB	Not included in sewer program (2003).					0
AC	Not included in sewer program (1995).					0
AD	0	0	0	0	0	0
AE	21,910	9,850	2,430	21,283	3,488	58,961
AF	0	0	0	0	0	0
AG	Not included in sewer program (1995).					0
AH	Not included in sewer program (1995).					0
AI	Not included in sewer program (1995).					0

TOTAL TOWN	2,060,740
-------------------	------------------

Note:

Planning areas highlighted have flows that have been re-allocated based on the 2009 Facilities Plan Update
This table updates information presented in Table F-1 of the 1995 Facility Plan.

Domestic flow based upon 3 people/EDU and 70 gallons per day per capita (gpcd).

Industrial flow based upon 500 gallons per day per acre (gpad).

Commercial flow based upon 300 gpad.

Infiltration/Inflow based upon 250 gallons per day per inch diameter mile (gpdim).

O:\Coventry RIIFP Update 2008\Facility Plan Update Document\Figures\Section 4 - Future Conditions\Table 4-2 to Table 4-5 Sewer Flows & Population per Area.xls\Table 4-3 Summary of Fl

**Table 4-4
Study Area Projected Wastewater Flows
Average Daily Flow - Design Year 2030**

Study Area	Domestic (gpd)	Industrial (gpd)	Commercial (gpd)	Institutional (gpd)	Infiltration and Inflow (gpd)	Total ADF (gpd)
A	67,970	1,906	1,230	0	12,950	84,056
B	42,490	0	1,037	8,165	5,425	57,117
C	51,030	0	0	9,356	4,165	64,551
D	52,920	0	1,932	7,655	7,630	70,137
E	87,780	246	4,052	3,969	11,025	107,072
F	10,080	400	98,610	0	15,050	124,140
G	59,760	246	492	0	7,070	67,568
H	77,280	0	246	0	12,250	89,776
I	25,410	32,308	246	0	3,780	61,744
J	265,660	24,784	738	7,655	11,480	310,317
K	62,580	0	3,000	0	9,730	75,310
L	105,560	2,548	2,255	1,701	13,475	125,539
M	9,800	246	57,408	35,199	1,645	104,298
N	1,470	0	5,910	0	630	8,010
O	20,370	175	60	0	4,760	25,365
P	77,490	80,000	8,368	3,288	10,360	179,506
Q	81,270	0	210	0	13,510	94,990
R	21,420	0	246	0	4,235	25,901
S	27,090	0	0	0	3,780	30,870
T	44,305	19,742	5,156	7,371	5,530	82,104
U	44,310	7,541	44,493	0	13,230	109,574
V	85,470	250	246	0	4,585	90,551
W	59,980	0	738	42,179	7,385	110,282
X	29,400	350	6,990	0	6,388	43,128
Y	0	0	0	0	0	0
Z	34,554	400	0	567	3,031	38,552
AA	Not included in sewer program (2003).					0
AB	Not included in sewer program (2003).					0
AC	Not included in sewer program (1995).					0
AD	0	0	0	0	0	0
AE	25,270	10,400	2,430	22,964	4,883	65,947
AF	0	0	0	0	0	0
AG	Not included in sewer program (1995).					0
AH	Not included in sewer program (1995).					0
AI	Not included in sewer program (1995).					0

TOTAL TOWN	2,246,404
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Note:

Planning areas highlighted have flows that have been re-allocated based on the 2009 Facilities Plan Update
This table updates information presented in Table F-1 of the 1995 Facility Plan.

Domestic flow based upon 3 people/EDU and 70 gallons per day per capita (gpcd).

Industrial flow based upon 500 gallons per day per acre (gpac).

Commercial flow based upon 300 gpac.

Infiltration/Inflow based upon 350 gallons per day per inch diameter mile (gpdim).

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**Table 4-5
Study Area Projected Wastewater Flows
Average Daily Flow - Design Year 2060**

Study Area	Domestic (gpd)	Industrial (gpd)	Commercial (gpd)	Institutional (gpd)	Infiltration and Inflow (gpd)	Total ADF (gpd)
A	73,920	1,906	1,230	0	14,800	91,856
B	47,250	0	1,037	8,165	6,200	62,652
C	51,030	0	0	9,356	4,760	65,146
D	52,920	0	1,932	7,655	8,720	71,227
E	87,780	246	4,052	3,969	12,600	108,647
F	10,290	400	98,610	0	17,200	126,500
G	59,760	246	492	0	8,080	68,578
H	77,280	0	0	0	14,000	91,280
I	25,410	32,308	246	0	4,320	62,284
J	266,990	24,784	738	7,655	13,120	313,287
K	62,580	0	3,000	0	11,120	76,700
L	117,530	2,548	2,255	1,701	15,400	139,434
M	10,850	246	57,408	35,199	1,880	105,583
N	1,470	0	5,910	0	720	8,100
O	20,370	175	60	0	5,440	26,045
P	77,490	80,000	8,368	3,288	11,840	180,986
Q	81,270	0	210	0	15,440	96,920
R	21,420	0	246	0	4,840	26,506
S	27,090	0	0	0	4,320	31,410
T	44,305	19,742	5,156	7,371	6,320	82,894
U	44,310	7,541	44,493	0	15,120	111,464
V	85,470	250	246	0	5,240	91,206
W	59,980	0	738	42,179	8,440	111,337
X	29,400	350	6,990	0	7,300	44,040
Y	0	0	0	0	0	0
Z	34,554	400	0	567	3,464	38,985
AA	Not included in sewer program (2003).					0
AB	Not included in sewer program (2003).					0
AC	Not included in sewer program (1995).					0
AD	0	0	0	0	0	0
AE	25,270	10,400	2,430	22,964	5,580	66,644
AF	0	0	0	0	0	0
AG	Not included in sewer program (1995).					0
AH	Not included in sewer program (1995).					0
AI	Not included in sewer program (1995).					0

TOTAL TOWN	2,299,711
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Note:

Planning areas highlighted have flows that have been re-allocated based on the 2009 Facilities Plan Update
This table updates information presented in Table F-1 of the 1995 Facility Plan.

Domestic flow based upon 3 people/EDU and 70 gallons per day per capita (gpcd).

Industrial flow based upon 500 gallons per day per acre (gpac).

Commercial flow based upon 300 gpac.

Infiltration/Inflow based upon 400 gallons per day per inch diameter mile (gpdim).

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Table 4-6

Future Proposed Development Flow

CHA's Contentment Drive Additions (54-103)					Planning Area W		
After Planned Redevelopment							
Condos	34 units	at 1-bedroom x	115 GPD/bedroom	=		3,910 GPD	
Previous to Planned Redevelopment	NONE THIS IS ADDITONAL TO WHAT WAS CURRENTLY THERE					=	0 GPD
					Total Additional Flow	3,910 GPD	
CHA's Coventry Meadow, off Tiogue Avenue (30-161)					Planning Area G		
After Planned Redevelopment							
Condos	8 units	at 1-bedroom x	115 GPD/bedroom	=		920 GPD	
	20 units	at 2-bedroom x	115 GPD/bedroom	=		4,600 GPD	
	16 units	at 3-bedroom x	115 GPD/bedroom	=		5,520 GPD	
Previous to Planned Redevelopment	NONE THIS IS ADDITONAL TO WHAT WAS CURRENTLY THERE					=	0 GPD
					Total Additional Flow	11,040 GPD	
Village at East Shore Drive (31-72, 31-88, 31-89, 31-94, 31-95)					Planning Area C		
After Planned Redevelopment							
Single Family Homes:	28 units	x	345 GPD/Unit	=		9,660 GPD	
Previous to Planned Redevelopment							
Single Family Homes:	7 units	x	210 GPD/Unit	=		1,470 GPD	
					Total Additional Flow	8,190 GPD	
Brookside Development (28-3)					Planning Area F		
After Planned Redevelopment							
Condos	104 units	at 2-bedrooms x	115 GPD/bedroom	=		23,920 GPD	
Office	10,000 sq. ft.	x	0.08 GPD/sq. ft.	=		800 GPD	
Retail	35,200 sq. ft.	x	0.08 GPD/sq. ft.	=		2,816 GPD	
Restaurant	60 seats	x	40 GPD/seat	=		2,400 GPD	
					TOTAL	29,936 GPD	
Previous to Planned Redevelopment							
Commercial Vacant	28.40 acres	x	300 GPD/acre	=		8,520 GPD	
					Total Additional Flow	21,416 GPD	
Riverwalk Commons (96-18.3, 96-18.1)					Planning Area Z		
After Planned Redevelopment							
Condos	6 units	at 1-bedrooms x	115 GPD/bedroom	=		690 GPD	
	43 units	at 2-bedrooms x	115 GPD/bedroom	=		9,890 GPD	
					TOTAL	10,580 GPD	
Previous to Planned Redevelopment							
Single Family Homes:	1 units	x	210 GPD/Unit	=		210 GPD	
Industrial Actual Water Use				=		246 GPD	
					TOTAL	456 GPD	
					Total Additional Flow	10,124 GPD	
Riverside Landing (96-19)					Planning Area T		
After Planned Redevelopment							
Condos	8 units	at 2-bedrooms x	115 GPD/bedroom	=		1,840 GPD	
					TOTAL	1,840 GPD	
Previous to Planned Redevelopment							
Industrial Vacant	0.66 acres	x	500 GPD/acre	=		330 GPD	
					Total Additional Flow	1,510 GPD	

Table 4-6 cont'd

Village at Harris Mill (96-23, 96-24, 96-25)					Planning Area T	
After Planned Redevelopment						
Condos	141 units	at 1-bedrooms x	115 GPD/bedroom	=	16,215 GPD	
Condos	13 units	at 2-bedrooms x	115 GPD/bedroom	=	2,990 GPD	
Office	4,300 sq. ft.	x	0.08 GPD/sq. ft.	=	344 GPD	
Retail	5,000 sq. ft.	x	0.08 GPD/sq. ft.	=	400 GPD	
Restauraunt	180 seats	x	40 GPD/seat	=	7,200 GPD	
					TOTAL	27,149 GPD
Previous to Planned Redevelopment						
Single Family Homes:	2 units	x	210 GPD/Unit	=	420 GPD	
Industrial Actual Water Use					=	19,004 GPD
					TOTAL	19,424 GPD
					Total Additional Flow	7,725 GPD
Anthony (Concordia) Mill (55-77)					Planning Area U	
After Planned Redevelopment						
Apartments	15 units	at small lofts (assmd 1 BR) x	115 GPD/bedroom	=	1,725 GPD	
	38 units	at 1-bedrooms x	115 GPD/bedroom	=	4,370 GPD	
	62 units	at 2-bedrooms x	115 GPD/bedroom	=	14,260 GPD	
	10 units	at 3-bedrooms x	116 GPD/bedroom	=	3,480 GPD	
Office	14,500 sq. ft.	x	0.08 GPD/sq. ft.	=	1,160 GPD	
Retail	6,500 sq. ft.	x	0.08 GPD/sq. ft.	=	520 GPD	
Restauraunt(1)	25 seats	x	40 GPD/seat	=	1,000 GPD	
					TOTAL	26,515 GPD
Previous to Planned Redevelopment						
Industrial Actual Water Use					=	6,804 GPD
					Total Additional Flow	19,711 GPD

Existing Developments with Flow and Loads not Accounted for in Previous Facilities Plans

Center of New England		Planning Area J	
Additional Flow	Based on documentation given by the developer, shown in Appendix C.	=	78,000 GPD
		Total Additional Flow	78,000 GPD
Rhodes Technologies (56-113.1)		Planning Area P	
Additional Flow	Existing water use records and wastewater pump station flow records for the industry.	=	56,000 GPD
		Total Additional Flow	56,000 GPD
Clariant Corporation (56-113.1)		Planning Area P	
Additional Flow	Existing water use records and wastewater pump station flow records for the industry.	=	24,000 GPD
		Total Additional Flow	24,000 GPD

**TOTAL ADDITIONAL FLOW NEEDING
RE-ALLOCATION 241,626 GPD**

(1) - Proposed Restaurant (café/deli) is 1,500 sq.ft. Actual number of seats has not been determined at this stage in planning. For the purpose of this calculation, assumed one seat per 60 total sq.ft.

4.3.1.b Coventry Housing Authority's Coventry Meadow

The Coventry Housing Authority (CHA) is proposing a new residential development off of Tiogue Avenue (Assessor's Map 30 Lot 161) adjacent to 760 Tiogue Avenue. The development, located in Planning Area G, will consist of 8 one-bedroom units, 20 two-bedroom units and 16 three-bedroom units.

The 1995 Facilities Plan did not factor in any wastewater flows for this parcel. Therefore all additional flows for this development will need allocation to the respective planning area.

4.3.1.c The Village at East Shore Drive

The Village at East Shore Drive is a proposed residential subdivision on the eastern shore of Tiogue Lake adjacent to the intersection of East Shore Drive and Rawlinson Drive (Assessor's Map 31 Lots 72, 88, 89, 94 and 95). The development will consist of 28 single family homes and is located in Planning Area C.

The 1995 Facilities Plan estimated flow from 7 single family homes for the vacant parcels. The difference in the original estimation of flow and the current proposed estimation of flow will need allocation to the planning area. **Table 4-6** includes a breakdown of this additional flow calculation.

4.3.1.d Brookside Development

The Brookside Development is a proposed combined residential and commercial development bordering the western bank of the Mishnock River at the intersection of Tiogue Avenue (Assessor's Map 28 Lot 3). The development, located in Planning Area F, will consist of 104 two-bedroom condominiums, 10,000 square feet of office space, 35,200 square feet of retail space and a 60 seat restaurant building.

The 1995 Facilities Plan estimated flow for this 28.4 acre vacant lot based on a 300 gallon per acre day (gpad) for an average commercial development. The difference in this original estimation of flow and the proposed estimation of flow based on development will need allocation to the respective planning area. **Table 4-6** includes a breakdown of this additional flow calculation.

4.3.1.e Riverwalk Commons

Riverwalk Commons is a proposed residential development located on the south side of the North Branch of the Pawtuxet River at the crossing with Lincoln Street (Assessor's Map 96 Lots 18.1 and 18.3). The

development, located in Planning Area Z, will consist of 6 one-bedroom and 43 two-bedroom condominiums.

The 1995 Facilities Plan calculated flow based on existing industrial water use (96-18.1) and a single family home for the vacant parcel (96-18.3). The difference in the original estimation of flow and the current proposed estimation of flow will need allocation to the planning area. **Table 4-6** includes a breakdown of this additional flow calculation.

4.3.1.f Riverside Landing

Riverside Landing is a proposed residential development located on the north bank of the North Branch of the Pawtuxet River at the intersection of Broad Street and Main Street (Assessor's Map 96 Lot 19). The development, located in Planning Area T, will consist of 8 one-bedroom condominium units.

The 1995 Facilities Plan calculated flow for a 0.66 acre vacant industrial lot for the parcel. The difference in the original estimation of flow and the current proposed estimation of flow will need allocation to the planning area. **Table 4-6** includes a breakdown of this additional flow calculation.

4.3.1.g Village at Harris Mill

The Village at Harris Mill is a proposed mill redevelopment project. The development is residential and commercial mix use located on the north side of the North Branch of the Pawtuxet River at the intersection of Broad Street and Main Street (Assessor's Map 96 Lots 23, 24 and 25). The development, located in Planning Area T, will consist of 141 one-bedroom and 13 two-bedroom condominium units, 4,300 square feet of office space, 5,000 square feet of retail space and a 180 seat restaurant building.

The 1995 Facilities Plan calculated flow based on actual water use records from the existing Harris Mill building and for two single family homes for the remaining two vacant parcels. The difference in the original estimation of flow and the current proposed estimation of flow will need allocation to the planning area. **Table 4-6** includes a breakdown of this additional flow calculation.

4.3.1.h Anthony Mill

Anthony Mill is a proposed mill redevelopment project. The development is residential and commercial mix use located on the north side of the South Branch of the Pawtuxet River at the intersection of Anthony Street and Washington Street (Assessor's Map 55 Lot 77). The development, located in Planning Area U, will consist of 15 small lofts, 38 one-bedroom, 62 two-bedroom and 10 three-bedroom condominium

units, 14,500 square feet of office space, 6,500 square feet of retail space and an approximate 25 seat restaurant building.

The 1995 Facilities Plan calculated flow based on actual water use records from the existing Anthony Mill building. The difference in the original estimation of flow and the current proposed estimation of flow will need allocation to the planning area. **Table 4-6** includes a breakdown of this additional flow calculation.

4.3.1.i Center of New England

Located on the southern border of the eastern side of Coventry, Center of New England consists of both commercial and residential developments. The developments are bordered by Hopkins Hill to the west, Arnold Road to the east, King Street to the north and the West Greenwich town line to the south. Through the 2003 Facilities Plan Reaffirmation, Center of New England was allocated 185,000 gpd in Planning Area J. Currently the development has estimated existing average daily wastewater flows of 162,220 gpd. This is approximately 88% of the total allocated flow to the Center of New England development.

Based on discussions with the developer regarding future development, it is estimated that an additional 78,000 gpd will need to be allocated to Planning Area F for proposed development in the Center of New England. A letter dated August 3, 2009 addressed to the Town of Coventry from Caito Engineering (design engineer for the developer) provides backup calculations for the additional flow which are included in **Appendix C**. **Table 4-6** includes a summary of this additional flow calculation.

The additional projected wastewater flows from the developments summarized above are shown in **Table 4-6**, and are included in the flow projections in **Tables 4-2, 4-3 and 4-4**. These flows require additional examination to ensure the Town does not exceed their flow limitations in the IMA with West Warwick in future years. This examination occurs in Section 5 of this report.

The strength of wastewater is measured by the parameters of biochemical oxygen demand (BOD) and total suspended solids (TSS). BOD has been estimated for domestic wastewater at 0.14 pounds per capita per day and TSS estimated loadings at 0.15 pounds per capita day. These are based on a per capita domestic wastewater flow of 65 gallons per capita per day with BOD and TSS concentrations of 250 milligrams/liter (mg/l) and 275 mg/l, respectively (Note: 1 mg/l = 1 parts per million, ppm).

4.3.2 Rhodes Technologies and Clariant Corporation

In addition to the proposed developments listed above, two industrial users in Planning Area O (Rhodes Technologies and Clariant Corporation), located on Washington Street

near the intersection of Macarthur Boulevard (Assessor's Map 56 Lot 113.001), have requested connection into the municipal system. In the previous Facilities Plan documents, the industrial users were not accounted for in the flow estimations and projections since they were both served by an existing on-site industrial WWTF (owned and operated by Clariant Corporation). In preparing earlier wastewater planning documents, the opinion of connecting to a municipal sewer system was discussed with Clariant Corporation numerous times. Each time Clariant Corporation declined, preferring to continue operation of their existing WWTF.

Since that time, Clariant Corporation has downsized their operations and has expressed interest in limiting the operation of their private industrial WWTF. They have also indicated to Rhodes Technologies that they will no longer be accepting their industrial flows because of the downsizing.

Conversations between the two industrial users and the Town began within the last year, regarding their request to connect into the municipal system. Since both industries were not included under the 1995 Facilities Plan, all additional flows for this development will need allocation to the planning area.

Rhodes Technologies is still continuing their industrial operations on the site, and thus would be discharging not only their domestic wastewater but also their industrial wastewater into the municipal system. An industrial pre-treatment program (IPP), as described in Section 4.3.4.c, approved by West Warwick will be in effect to lower the impacts of the industrial wastewater. However, even with this pretreatment program, the BOD of the wastewater is high (>2,000 mg/L). Because of this Rhodes Technologies will pay a surcharge penalty, as determined by West Warwick for exceeding the West Warwick WWTF set BOD limits. The BOD strength of the wastewater is not expected to have a significant effect on the Town of Coventry's total BOD strength discharging to West Warwick because it will be diluted by the Town's normal wastewater flows, which are well under the BOD limits of the West Warwick WWTF.

Clariant Corporation, because of downsizing, is only requesting to discharge domestic wastewater to the municipal system from a select number of their buildings. No industrial wastewater shall be discharged by Clariant Corporation to the municipal system. Therefore, normal estimations of wastewater strength may be used.

The additional wastewater flows associated with both Rhodes Technologies and Clariant Corporation are shown in **Table 4-6**, and are included in the flow projections in **Tables 4-2, 4-3 and 4-4**. Reallocation of Planning Area Flows to accommodate the increase in sewer needs will be examined in Section 6 of this report.

Please note that while most of the physical parcel areas that house these two facilities are located in Study Area O (see Figure 4-2), the wastewater flows generated by the industries will be discharged to the existing sewer located on Washington Street, which is part of Study Area P. Because the facilities are discharging to Study Area P, the wastewater flows associated with Study Area P (not Study Area O) must be reallocated.

4.3.3 Future Septage Volumes and Loads

Estimates of septage volumes generated in Coventry can be made based on assumed pumping frequencies. The projected septage volumes herein assume that an average OWTS will be pumped out once every three (3) years. Based on this assumption, maximum and minimum annual septage volumes have been estimated for Coventry as shown in **Table 4-7**.

Maximum septage volumes are based on the assumption that no further wastewater collection system construction will take place in town. Therefore, all the homes have been accounted for in the above wastewater flow calculations. An additional six percent (6%) has been added to the maximum septage volumes to represent commercial septage.

Minimum septage volumes assume the construction of sewers in all of the study areas included in the wastewater flow calculations. Since the great majority of commercial properties exist in the study areas, no adjustment of the minimum septage volumes was made for commercial septage.

A typical 1,000 gallon load of residential septage contains approximately 50 pounds of BOD and 75 pounds of TSS. In addition, organic pollutants (which have been detected in some septic systems additives) could be present in some residential septage.

4.3.4 Waste Reduction Programs

A principal concern in the operation of a wastewater collection and treatment system is the reduction of waste volumes and pollutant loadings. Reduced waste volumes and loads equate to reduced transmission and treatment costs, while decreasing the impact on the WWTF receiving water. Major waste volume reductions typically involve the reduction of sanitary flows through water conservation, or the elimination of groundwater infiltration and stormwater inflow (I/I) into the system. The principal waste load reduction method is to control the introduction of wastes stronger than domestic sewage into the system. This waste is typically generated by industrial users and therefore is controlled through an industrial pretreatment program. Reduction of wastewater flows through water conservation and elimination of I/I, as well as the use of an industrial pretreatment program are discussed in the following sections.

4.3.4.a Flow Reduction through Water Conservation

Water use conservation measures can be effective ways to reduce wastewater flows. Potable water service is provided to the project area by Kent County Water Authority (KCWA). State regulations require KCWA to prepare a Water Supply Management Plan, which must include a water conservation plan. The major benefits of a water conservation plan to wastewater flow reduction include: the retrofitting of homes with water saving devices; full flow metering (which provides economic advantages to water conservation); and public education programs for water conservation.

**Table 4-7
Future Septage Volumes**

Design Year	Minimum Number of OWTS Systems ¹	Maximum Number of OWTS Systems ²	Minimum Pumped Septage Volume ³		Maximum Pumped Septage Volume ⁴	
			(gal/year)	(gal/day)	(gal/year)	(gal/day)
1995	5,471	11,788	1,823,667	4,996	4,165,093	11,411
2010	11,739	12,566	3,912,934	10,720	4,439,917	12,164
2030 ⁵	7,480	14,206	2,493,399	6,831	5,019,437	13,752
2060 ⁶	9,088	15,911	3,029,384	8,300	5,621,710	15,402
BO ⁷	9,639	16,558	3,213,096	8,803	5,850,574	16,029

- 1 Minimum number of OWTS systems is based on maximum number of systems minus the projected number of sewered residences. Note for Year 2010, current number of parcels with access to sewers is approximately 827.
- 2 Maximum number of OWTS systems is based on projected population divided by 2.64 (average people per household, US Census) minus the current number of parcels with access to the sewer system (827). Current parcels with access to sewer system are subtracted from this number.
- 3 Based on minimum number of OWTS and 1,000 gallons per 3-years (assumed average pump out rate). Includes no allowance for commercial septage.
- 4 Based on maximum number of OWTS and 1,000 gallons per 3-years (assumed average pump out rate). Includes 6% allowance for commercial septage.
- 5 Based on total population projection in 2030 of 39,687 and sewered population projection of 17,756.
- 6 Based on total population projection in 2060 of 44,187 and sewered population projection of 18,011.
- 7 Based on ultimate buildout population projection of 45,897 from Coventry CCP and sewered population projection of 18,266.

Implementation of the water conservation program will help reduce Coventry's wastewater flows, and therefore the costs of transmitting and treating the wastewater.

4.3.4.b Infiltration/Inflow (I/I) Reduction

Due to the limited size of the functioning sewer collection system in Coventry and its relatively recent installation, a study of the impact of I/I into the existing system has not been completed. Since no study has been completed, an accurate estimate of the volume of I/I entering the system cannot be made. Due to the limited extent of the Coventry collection system, it is assumed that excessive I/I (i.e. more than 120 gpcd infiltration and 275 gpcd inflow) does not exist.

4.3.4.c Industrial Pretreatment Program

There are several industrial users currently connected to the system. The wastewater discharged by these users is regulated by the West Warwick Industrial Pretreatment Program (IPP). The intent of this program is to achieve the objectives of the U.S. EPA's National Pretreatment Program. The West Warwick IPP was approved by the EPA on September 9, 1983, and is currently in compliance with RI-DEM regulations.

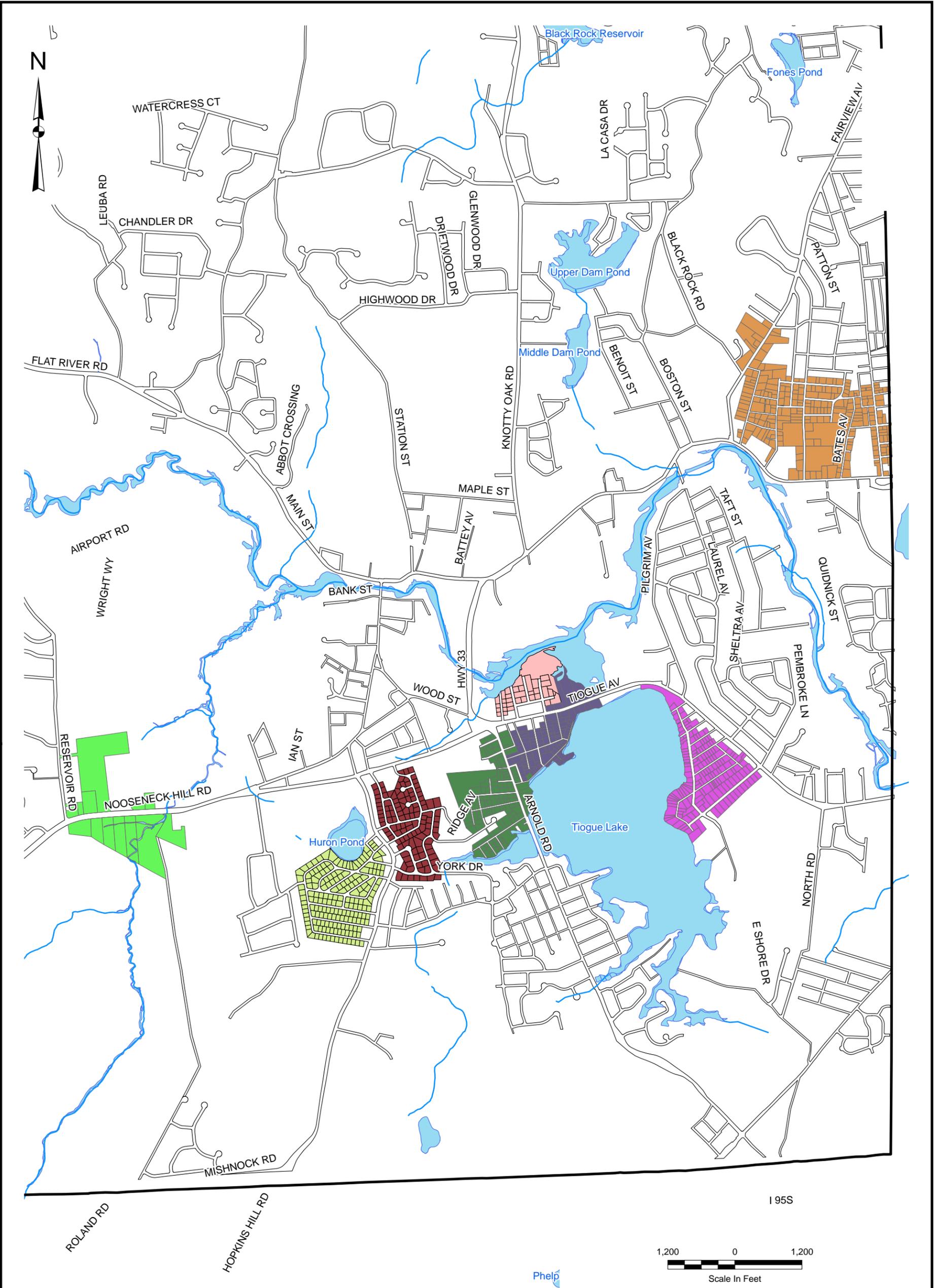
As the Coventry wastewater collection system expands in the future, the West Warwick IPP will continue to govern industrial users of the sewer system. The IPP will be modified by West Warwick, as needed, to maintain compliance with state and federal pretreatment requirements.

4.4 Future Planned Sewer Construction Projects

Based on previous recommendations from the 1995 FP, existing sewer construction projects have been built and eight additional proposed sewer construction projects are in the preliminary planning phase to be built. These eight additional projects (Contracts 6, 7, 8, 9, 10, 11, Hopkins Hill East, and Huron Pond) have been submitted as part of the RI-DEM's Fiscal Year (FY) 2010 Priority Determination System for SRF funding, as described in Chapter 7 of this report. The submittal for this program is attached in **Appendix H**. The existing projects have been described in Chapter 3 and the eight proposed projects are described as follows. A location plan of these projects can be seen in **Figure 4-3**:

4.4.1 Contract 6 – Lakeside I

This project involves the installation of a portion of the 12-inch Tiogue Avenue East sewer interceptor and 8-inch sewer laterals in the eastern area of Tiogue Avenue. The parcels that will be served by this project are bordered by Tiogue Avenue by the north, Lakeside Drive to the south, Arnold Road to the west, and the Tiogue Dam to the east. This area is adjacent to the northwest shore of Tiogue Lake. This sewer project will serve parcels in Planning Areas G and F.



Legend

- | | | | | | |
|---|------------|---|-------------|---|-------------------|
|  | Contract 6 |  | Contract 9 |  | Hopkins Hill East |
|  | Contract 7 |  | Contract 10 |  | Huron Pond |
|  | Contract 8 |  | Contract 11 |  | Roads |
| | |  | | | Water |

FIGURE 4-3
TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN UPDATE
PROPOSED SEWER
CONTRACTS
 AUGUST 2009 SCALE: NOTED
Weston & Sampson

4.4.2 Contract 7 – Tiogue Avenue West (Nooseneck Hill Road)

This project involves the installation of the remaining Tiogue Avenue West 18-inch sewer interceptor in the western portion of Tiogue Avenue (Nooseneck Hill Road) from 1100 Tiogue Avenue (McDonalds) to the intersection of Reservoir Road. This sewer project along with Contract 6 will serve the remaining parcels in Planning Area F.

4.4.3 Contract 8 – Quidnick Village

This project involves the design and installation of the 12-inch Read Avenue Interceptor and 8-inch sewer laterals in the Quidnick Village area, located along the northern branch of the Pawtuxet River on the West Warwick town line. The parcels that will be served by this project are bordered by Cecile Avenue by the north, Washington Street to the south, Hazard Street to the west, and the West Warwick town line to the east (with the remaining portion of Fairview Avenue, north to Gadoury Avenue). This sewer project will serve all parcels in Planning Area P.

4.4.4 Contract 9 – Wendell Avenue

This project involves the design and installation of 8-inch lateral sewer pipe in the Wendell Avenue neighborhood north of Tiogue Lake and south of the Pawtuxet River. The parcels that will be served by this project are bordered by the Pawtuxet River to the north and east, Tiogue Avenue to the south and Whitman Street to the west). This sewer project will serve parcels in Planning Area G.

4.4.5 Contract 10 – Tiogue School and East Shore Drive

This project involves the design and installation of a portion of the 12-inch Tiogue Avenue East Interceptor and 8-inch lateral sewer pipe in the Tiogue School area including East Shore Drive and adjacent streets, bordering the eastern shore of Tiogue Lake. The parcels that will be served by this project are bordered by Tiogue Avenue by the north and east, Rawlinson Avenue to the south and Tiogue Lake to the west. This sewer project will serve all parcels in Planning Area C.

4.4.6 Contract 11 – Lakeside Area II

This project involves the design and installation of 8-inch lateral sewer pipe in the Lakeside neighborhood west of Arnold Road bordering the northwest shore of Tiogue Lake. The parcels that will be served by this project are bordered by Hazel Street to the north, Twin Lakes Avenue to the south, Ridge Avenue to the west and Arnold Road to the east. This sewer project along with Contracts 6 and 9 will serve all parcels in Planning Area G.

4.4.7 Hopkins Hill Road East Sewer Project

This project involves the design and installation of 8-inch lateral sewer pipe west of Hopkins Hill Road. The parcels that will be served by this project are bordered

by Tiogue Avenue by the north, Angelwood Road to the south, Hopkins Hill Road to the west, and York Drive to the east. This area sits between Tiogue Lake and Huron Pond. This sewer project will serve parcels in Planning Area J.

4.4.8 Huron Pond Sewer Project

This project involves the design and installation of 8-inch lateral sewer pipe in the area south of Huron Pond. The parcels that will be served by this project are bordered by Huron Pond to the north, Hopkins Hill Road to the east and Helen Avenue to the south and west. This area sits between Tiogue Lake and Huron Pond. This sewer project will serve parcels in Planning Area K.

4.5 Future Planning Area with “No Build” Alternative

Without the construction of proper wastewater management facilities to meet the existing needs of eastern Coventry and with the continued use of OWTSSs as the principal method for wastewater treatment and disposal, the following consequences can result:

1. A continuing high number of septic system failures.
2. Nuisance problems, such as odors, from malfunctioning systems.
3. Health problems due to malfunctioning systems in densely populated areas.
4. Environmental problems due to malfunctioning systems in environmentally sensitive areas.
5. Difficulties in expanding or rehabilitating septic systems on small lots.
6. Restriction on industrial and commercial growth in Coventry due to inadequate area for proper OWTSSs, increasing burden on the residential tax base.

Due to the continued presence of point and non-point sources of pollution in eastern Coventry due to the OWTSSs, portions of the north and south branches of the Pawtuxet River will continue with their present Class “C” status (unsuitable for fishing and swimming). Other surface waters areas in and around Coventry could be impacted, reducing their Class status further.

The significant groundwater reservoir and recharge areas located in Coventry, if not protected from contamination by malfunctioning OWTSSs, will be impacted. This will result in a decrease in available and suitable groundwater supplies for drinking water, thereby necessitating the use of impacted surface water and/or groundwater supplies.

If steps are not taken to implement a wastewater management program in Coventry, the existing sources of pollution contributing to the degradation of the Pawtuxet River and groundwater aquifers will continue to prevent the community from attaining the water quality goals of the 208 Water Quality Management Plan. In addition, new commercial and industrial facilities will not be encouraged to develop and the potential for broadening the tax base in Coventry will be curtailed.

The use of OWTSSs as a continuing means of wastewater disposal is questionable in many areas of eastern Coventry where soils are found to have “severe septic system limitation” as shown in **Figure 3-8** in the previous section.

In addition to the environmental impacts discussed above, significant financial impacts will be felt by the Town. All monies previously appropriated and paid to West Warwick for participation in their sewer collection system and WWTF will provide limited benefit to many Coventry residents. The additional cost of future treatment upgrades/facilities in West Warwick will be incurred by Coventry (as provided under the inter-municipal agreement) with negligible benefit to the Town.

The current sewer interceptors installed throughout the Town on Tiogue Avenue, Washington Street, Hopkins Hill Road and Main Street, in addition to the pump station on Sandy Bottom Road, were all sized to account for additional flows coming from future planning areas not yet sewered. The capital cost expenditure for the increased capacity in the interceptors and pump station will therefore provide no additional benefit to the Town if no additional flows are added to the existing system.

While a limited benefit from septage disposal at the West Warwick WWTF would be gained from capital costs paid to West Warwick for WWTF upgrades, payment for the disposal of septage generated in Coventry would be required with or without domestic sewage flows from Coventry.

The selection of the ‘no action’ alternative for wastewater management as described in Section 5 of this report is projected to have a detrimental impact on the Town. Both future environmental conditions and public health concerns will increase due to the continued use of poorly functioning OWTSSs. In addition, financial impacts without accompanying benefits will be felt by the Town.

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5 Evaluation of Alternatives

5.0 General

The primary objective of this facilities plan is to develop and evaluate wastewater management and disposal alternatives and to select an alternative(s) for each of the designated planning areas.

The wastewater management alternatives for the planning areas were developed and evaluated as part of the 1995 Facilities Plan (FP). The alternatives that were discussed for each planning area are described in detail below. As part of the 1995 FP, the alternatives were evaluated and thoroughly investigated in great detail to determine the most appropriate option for the final plan selection. Please note that portions of the alternatives discussed in the previous 1995 FP still are currently viable. Reference is made to these alternatives in the sections below and in Chapter 6.

As part of this FP Update, this report will discuss the available alternatives for each area, as described in the 1995 FP, and then examine the plan's selected alternative to determine whether it remains the "best" alternative(s). The "best" alternative(s) should provide the most economical means of meeting water quality and public health requirements.

The selection process, however, is not entirely based on monetary considerations. Environmental consequences and the ability to implement and administer an alternative must be thoroughly investigated from a logistical, legal, financial and management standpoint.

5.1 Description of Available Alternatives

There are several alternatives available to parcels within the Town for disposal of wastewater. Prior to the recommendations of the 1995 FP and the construction of sewers in the eastern portion of Coventry, most parcels disposed of their wastewater using on-site systems (OWTSs). This is not always the best alternative, especially in the planning areas of eastern Coventry where lot restrictions may limit the effectiveness of OWTSs.

Analyzing the need of each of the planning areas is very important in determining the most viable wastewater management alternative to recommend for each area. In general each alternative belongs to one of two major categories, on-site wastewater disposal systems and off-site wastewater disposal systems.

5.1.1 On-Site Systems

On-site systems include individual septic systems that treat and dispose of wastewater on the same parcel on which the wastewater is generated. These systems often consist of a septic tank to separate solids and a leaching field to treat the wastewater and re-distribute the discharge back to the ground. Some on-site systems require additional treatment components (e.g., Innovative/Alternative) or special construction (e.g., mounds), which will be discussed later in this Section.

A conventional OWTS is not designed to achieve a high level of treatment of biochemical oxygen demand (BOD), total nitrogen removal or phosphorus removal. OWTS septic tanks do not remove a high level of nutrients from the wastewater before it enters the soil absorption system. Properly designed, installed, and maintained systems may still discharge pollutants into the groundwater. Unsaturated soils in a soil absorption system are effective at removing bacteria, viruses, and most nutrients (with the exception of some forms of nitrogen and high levels of phosphorus). Systems with saturated soils, inadequate separation between the soil absorption system and the groundwater, rapidly percolating soils, an inadequately designed soil absorption system, or other limitations will contribute even higher levels of pollutants to the groundwater. Therefore it is sometimes desirable, particularly in sensitive areas, to achieve a higher level of treatment than a conventional OWTS can provide.

Since traditionally the Town has managed wastewater disposal through the use of OWTSs, several on-site system alternatives must be examined when evaluating the wastewater management for Coventry.

5.1.1.a Continued Use of Current OWTS (i.e. “No Build”)

For obvious reasons, the least costly method for wastewater management in Coventry is to continue use of the existing OWTSs for treatment and disposal of wastewater on individual parcels. Within this “No Build” alternative there are more specific sub-alternatives as detailed below.

5.1.1.a.1 Option 1: No Action

The 'no action' option for wastewater management in Coventry includes continuing with OWTS use and septage disposal, as currently occurs in the study area. Each individual home or business owner is responsible for their OWTS, including protection from unintended uses, determining when it needs pumping, repairs and other maintenance and/or replacement if necessary. This wastewater management option does not provide a mechanism for OWTS management beyond those included in state laws. However, since this option requires no implementation steps and no capital investment, it is more often than not the most cost effective solution.

The 'no action' alternative relies on the capabilities of the existing OWTSs in the project area. The limited capabilities of the existing OWTSs in the project area were discussed in Chapter 3. Basic soils information was utilized to identify specific areas where existing conditions and constraints limit and/or preclude continued long-term reliance on OWTSs.

Based on the findings of this study, the 'no action' alternative is clearly inadequate for several areas of Town. In the past, the 'no action' practice has led to multiple system failures in densely

settled areas. Such failures, as discussed in Chapter 3, have resulted in public nuisances and health concerns, as well as impacts to the surface and groundwater resources. As a consequence of the 'no action' alternative, property owners often neglect routine maintenance of their OWTSSs, and/or may not make costly system repairs.

While it is apparent that the 'no action' alternative for wastewater management is not an acceptable option for the entire Town, it may prove to be the best available option for certain areas.

The basic assumption in the 1995 FP was that the current OWTSS management practices will continue in the western locations of Coventry. This was due to the limited need for sewer construction in the western areas, non-restrictive lots, and that constructing sewers in the western part of Coventry is not economically feasible.

5.1.1.b Option 2: Optimizing Operation of Existing OWTSSs

Optimizing the operation of existing OWTSSs in Coventry would encompass a large number of parcels, since many portions of the Town have no access to the municipal sewer system (as of yet) and are currently served by OWTSSs. Some management mechanism(s) will need implementation in order to facilitate the optimization of the existing OWTSSs. The basic options being examined for OWTSS management in Coventry are discussed in detail below.

5.1.1.b.1 Option 2a: OWTSS Wastewater Management District (WWMD)

A consideration of this study, and the previous 1995 FP, has been the implementation of Wastewater Management Districts (WWMD) in Coventry to regulate both wastewater collection systems (sewers) and OWTSSs. This section includes a discussion of a WWMD for management and control of OWTSS maintenance.

As mentioned in the 1995 FP, in June of 1987, the Rhode Island General Assembly enacted legislation known as the Rhode Island Septic System Maintenance Act (Title 45 of Chapter 24.5). This legislation established the legal basis for communities to establish wastewater management districts (WWMD) to regulate the maintenance of privately owned OWTSS systems. Subsequently, the RI Department of Administration, Division of Planning published a 1987 report entitled "Wastewater Management Districts: A Starting Point" (Report No. 62), which describes the potential benefits of a WWMD for septic system maintenance. This helpful publication also included a model ordinance for a wastewater management district.

The main purpose of a WWMD is to regulate the maintenance of privately owned OWTSSs which, more often than not, are inadequately maintained. The WWMD is controlled by an administrative body, either specifically created for the WWMD, or already in place in the community (such as the Sewer Commission or Public Works Department). The WWMD administrative body has full or part-time staff that is responsible for inspecting OWTSSs to determine when system maintenance is necessary.

In some cases, the WWMD arranges for necessary maintenance of an individual property owner's OWTSS, such as pumping or repairs. In this case, the WWMD often establishes contracts with several licensed septage haulers and/or installers to perform pumping and repair duties. The procurement procedures utilized allow the WWMD to obtain competitive pricing for the necessary services. Obviously, the funds needed to operate a WWMD of this type are significant.

In other cases, the WWMD is empowered to issue citations to the owner of the OWTSS in question, who is then responsible for the necessary maintenance. In this case, the powers of the WWMD must include enforcement provisions, which typically includes fines for violations of WWMD regulations. The 1987 legislation allows for fines of up to \$500 per day for noncompliance with WWMD regulations.

Some WWMDs participate in the repair or replacement of old or malfunctioning OWTSSs. This is often helpful where the cost burden of such repairs may exceed the financial capabilities of individual property owners in the WWMD, whereby others within the WWMD help to fund such repairs through routine assessments. Other functions of the WWMD may include negotiating septage disposal agreements with neighboring wastewater treatment facilities (WWTF) and establishing public education programs for the proper care and maintenance of OWTSSs.

Since an OWTSS WWMD requires the imposition of the powers of the district over the rights of the landowner, general public acceptance and financial support, of such a program is an absolute necessity for implementation. Under the previous 1995 FP, period Wastewater Management Needs Questionnaire surveys were conducted that included a public opinion question on whether people would support the idea of a WWMD to regulate the pumping and maintenance of OWTSSs. The results of this questionnaire survey are included in **Appendix A**. Across the eastern Coventry study area, an average of 48 percent (48%) of

respondents stated their opposition to a WWMD, while only 27 percent (27%) were in favor of such a measure (with the remainder stating no opinion). In addition, many of those in support of a WWMD noted their opposition if the costs to homeowners were more than minimal.

It is assumed that implementation of a WWMD for OWTS maintenance would improve the management of OWTSs. However, a Town-wide WWMD program would require multiple full-time staff positions to provide necessary OWTS inspection and administrative services. The costs involved in managing such a WWMD, in addition to the cost of septage pumping and disposal, and potentially OWTS repairs, would be significant. Based on the expected costs, and the evident lack of public support, implementation of a large scale WWMD for OWTS maintenance in Coventry would most likely not meet with voter approval. This option will therefore not be considered further as a Town-wide solution at this time. If state or federal enforcement actions were to be implemented against the Town at some future date, this option may prove more economically feasible, and should be further explored at that time.

This option may be more applicable, however, in isolated areas where other wastewater management measures do not prove acceptable.

5.1.1.b.2 Option 2b: Implementation of other OWTS management programs for the regulation of OWTS systems

Option 2b includes the implementation of an alternative OWTS management program in order to optimize operation of existing OWTSs in Coventry. Such a program could include one or more of the following features.

OWTS Maintenance Incentive

OWTS maintenance incentives have been used successfully in several communities. One method of implementation is to provide for free or reduced cost disposal of one load (or more) per year of septage from each home in Coventry. The cost for this septage disposal would be included in local taxes or separate wastewater related fees. This would provide incentive for each home to pump its system one or more times per year, as necessary. Implementation of this type of management system would include reimbursement by Coventry to the West Warwick WWTF (or other facility) for the one load (or more) per home.

Another maintenance incentive method that could be implemented is to provide property owners with inspection of their OWTS for free or at a reduced cost. This incentive could be granted to the homeowner once or on a continual basis. This would provide incentive to homeowners to begin and hopefully continue an OWTS inspection routine. These inspections could also be used by the Town to establish a database of OWTSs throughout Coventry. The cost to pay for these inspections would also be included in local taxes or separate wastewater related fees. Systems similar to this are currently being implemented in Block Island, Charlestown and South Kingstown and seem to work fairly well.

One disadvantage of these incentive options is the cost of additional management and record keeping required for their implementation. Providing free or reduced inspection costs also does not guarantee proper maintenance will be performed by the property owner. In the case of the septage disposal incentive there is also potential for abuse of such a system by septage haulers. Since the septage hauler would not be charged for discharging the one load per home, it would be possible to discharge subsequent loads from the same home (or potentially loads from outside Coventry) at no cost, claiming they originated from homes not pumped during that year. Coventry would have little control over such activities, as West Warwick WWTF staff would be responsible for ensuring that the system is not abused. Property owners have also been adverse to proposed implementation programs if the costs to homeowners are more than minimal as shown in the surveys conducted as part of the 1995 FP (See **Appendix A**). This would not be the case if the cost for the septage disposal and/or inspections were paid for through local taxes or separate wastewater fees. Due to these implementation difficulties, this option is not considered feasible in the project area. If the state or federal funding ever became available for these options, implementation feasibility would have to be re-examined.

Local Regulations

The adoption of local regulations which exceed those imposed by the state is utilized in several communities, typically in dealing with new OWTS construction. The aforementioned 1987 Department of Administration Report No. 62, notes the ability of communities to provide more stringent regulations for OWTS installations than those imposed by the state, citing a relevant 1987 RI Supreme Court decision (*Gara Realty v. Zoning Board of Review of South Kingstown*).

While OWTS installation regulations may be easily imposed through the local Zoning or Building Construction Ordinance, regulations pertaining to maintenance of existing OWTSs must be imposed through local public health or other ordinances. Enforcement of such regulations may be difficult in communities such as Coventry, which do not have the personnel needed to supplement the efforts of the RI Department of Health. Since this option presents significant implementation difficulties, it is not considered feasible in the project area.

Public Education Program

A contributor to several current wastewater management problems in Coventry can be traced to poor public awareness. In areas served by OWTSs, public knowledge regarding the proper care and maintenance of these systems is critical to their successful operation, but is often lacking. In such areas, public information and education programs are helpful to provide information directly to the persons responsible for the care and maintenance of privately owned OWTSs. In addition, the potential benefit of public education programs typically outweighs the cost involved, and specific programs can be tailored to meet the Town's financial capabilities.

Based on responses to the Coventry Wastewater Management Questionnaire survey that was given to Town residents during the preparation of the 1995 FP (see **Appendix D**), a significant number of homeowners in Coventry have very limited knowledge of their own OWTS. A large number of respondents could not identify the type (cesspool, septic tank and leaching field, etc.) of the OWTS which serves their home. Based on the large number of OWTSs in Coventry, and the apparent lack of a good public knowledge base for proper OWTS care, the implementation of a town-wide public education/awareness program is an appropriate option for wastewater management in Coventry.

5.1.1.c Option 3: Non-Sewer OWTS Options

In areas where OWTS management strategies alone are not enough to alleviate wastewater disposal problems, structural alternatives must be evaluated. Structural options available for the study area fall into two basic categories: sewer options and non-sewer (on-site) options. The following sections discuss non-sewer structural alternatives for wastewater disposal, including areawide OWTS rehabilitation and installation of alternative OWTSs, such as non-conventional leachfield systems, effluent filters or chemical and composting toilets.

5.1.1.c.1 Option 3a: OWTS Rehabilitation

Several of the OWTS problem areas previously identified in this report require some type of corrective action. The available information on these areas was examined to determine if OWTSs are capable of providing effective long-term disposal of wastewater. OWTS rehabilitation was evaluated as the preferred remedial method due to the low installation cost, low maintenance and operation costs, low energy use and effective treatment of wastes which properly functioning OWTSs can provide. Therefore, problem areas were evaluated to determine if existing OWTSs could be effectively rehabilitated in conformance with the requirements set forth in the Rhode Island OWTS regulations.

OWTS regulations, issued by DEM in January of 2008, require the use of leachfields with dispersal trenches or shallow concrete chambers in trench configurations. The regulations also require a minimum depth from the existing ground surface to groundwater and impervious material of two-feet and four-feet, respectively. A summary of other minimum clearance distances to existing facilities, watercourses, wetlands and other features are listed in the RI-DEM OWTS Regulations in **Appendix E**.

Hypothetical OWTSs were designed as part of the 208 Area-wide Water Quality Management Plan (WQMP). The use of disposal trenches was assumed to maintain sufficient depth to groundwater and/or impervious materials. Standard configurations for on-site system layouts and location as well as minimum setback requirements were used to determine minimum land area requirements. Based on the information presented in the 208 WQMP, the minimum lot size for a single family home with a single leaching field is approximately 8,750 square feet, and the minimum lot size for a single family home with an alternate field location, or for a two family home with a single leaching field location would be 13,750 square feet. Minimum distances to water supplies, watercourses and edge of slopes must also be observed.

Typical lots within each problem area were evaluated to determine if an OWTS designed in accordance with OWTS regulations could be constructed. Restrictive lot sizes were determined as shown on **Figure 3-9**. Depths to groundwater and/or impervious material, as well as areas with poor soil conditions for OWTS construction were determined based on the information presented in **Figure 3-8**.

Areas where existing conditions significantly limit possible OWTS rehabilitation, and the specific reason for the limitations, are delineated on **Table 5-1**. As shown, the major limiting factors and

**Table 5-1
Summary of OWTS Rehabilitation Limitations**

Area #	OWTS Rehabilitation Feasible	Reasons for OWTS Rehabilitation Limitations					
		Shallow Groundwater	Shallow Bedrock	Steep Ground Slopes	Poor Soils	Small Lots >20% under 8,750 sqft	Distance to Watercourse
A	No	X			X	X	
B	No	X			X	X	
C	No					X	X
D	No					X	
E	No	X			X		
F	No	X			X		X
G	No	X			X	X	X
H	No	X			X		X
I	No	X			X		X
J	No	X			X	X	
K	No	X			X	X	
L	No	X			X	X	X
M	No	X			X		
N	?	X			X		
O	?	X			X	X	
P	No	X			X	X	
Q	No	X	X	X	X	X	
R	No					X	
S	No					X	
T	?	X				X	
U	No	X				X	X
V	No	X	X		X		
W	No	X			X		
X	No	X		X	X		X
Y	No	X		X	X		
Z	No	X		X	X	X	
AA	?	X			X		
AB	No	X	X	X	X		
AC	?	X	X	X	X		
AD	No	X	X	X	X		
AE	?	X		X	X		
AF	No	X	X		X		
AG	Yes	X	X	X	X		
AH	No	X			X	X	
AI	Yes	X			X		

Note: OWTS rehabilitation in areas denoted by a ? May be feasible, but some available data makes this appear questionable.

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constraints are primarily: small lots sizes; shallow depth to bedrock or groundwater; poor soil conditions; seasonally high groundwater and required distances to watercourses. Depth to groundwater and impervious material constraints were generally limiting factors as shown on **Figure 3-8**.

Based on the analyses conducted for the project area and relevant available information, areawide OWTS rehabilitation is clearly not a feasible option. However, on a smaller scale the possibility of OWTS rehabilitation appears to be feasible for portions of the study areas.

The State of Rhode Island Clean Water Finance Agency currently has a Community Septic System Loan Program (CSSLP). This program was established to provide financial assistance to towns in developing a program of septic system repair in their community. This program provides towns the ability to grant homeowners low interest loans (currently at 2%) for the repair or replacement of failed or failing septic systems. In areas where OWTS rehabilitation is a viable option, and because there are large amounts of existing OWTSs throughout the Town of Coventry, this program could provide funding to property owners that would help to encourage OWTS repairs and replacements. The policies and procedures for this loan program are included in **Appendix L**.

5.1.1.c.2 Option 3b: Use of Alternative/Experimental (A/E) Technology

In problem areas where conventional OWTS systems are not operating properly and where the rehabilitation or reconstruction of such systems is generally not feasible, other on-site options must be considered.

RI-DEM allows the use of alternative toilets and A/E OWTSs that can reduce the leach field area requirement needed to construct an OWTS. This would allow an area restrictive lot to install an alternative system, where a conventional OWTS system (septic tank, distribution box and standard leach field) cannot be constructed based on RI-DEM regulations.

Alternative toilets are toilet systems that require little to no water and treat/eliminate sanitary waste through a different method from a conventional toilet. RI-DEM allows composting toilets, and incinerator toilets to be utilized when a conventional OWTS system cannot be constructed.

- Composting Toilet System: Incorporates a waterless toilet connected to a composting reactor. Sanitary waste from the

toilet is directed to the reactor, where the waste is biologically decomposed by naturally occurring micro-organisms. Organic bulking agents (typically grass clippings, leaves or wood chips) may be added depending on the carbon need of the micro-organisms. Remaining solids, after the biological decomposition, are then removed from the reactor and buried on-site or removed by a licensed septage hauler. In colder climates, energy in the form of heat is needed to keep the composting reactor at optimal temperatures for the biological processes and ensure proper functioning.

- Incinerator Toilet System: Incorporates a waterless toilet connected to a gas-fired (propane or natural gas) or electric heated incinerator chamber. Sanitary waste from the toilet is directed to the incinerator chamber where it is burned into a sterile ash. Adding of anti-foaming agents may be required in the incineration chamber to prevent liquid wastes from boiling over during incineration. Gases created during incineration are then vented outside by an exhaust fan. Remaining ash must then be removed and disposed of properly.

The use of an alternative toilet removes the flow from the toilets from the OWTS. When an alternative toilet is utilized, RI-DEM allows a 40% reduction in normal daily flows to be used in the design of the OWTS, provided no flows from any conventional toilets are directed to the leachfield. The remaining 60% of normal daily flow is required to handle any greywater (sinks, laundry, bath/shower...etc.) coming from non-toilet flows in the building. This reduction would reduce the leachfield size requirement and may potentially allow a parcel to rehabilitate or reconstruct a new OWTS.

A/E OWTS do not meet the location, design or construction requirements of a conventional system (septic tank, distribution box and standard leach field), but have demonstrated to provide the same degree (or better) of environmental and public health protection. Installation of an A/E OWTS in most cases provides superior treatment of wastewater and reduces the size requirements of the leaching field. The reduction in leachfield size allows installation on restrictive lots that would normally have difficulty installing a conventional OWTS.

RI-DEM published (April 2009) a listing of recognized types of A/E OWTS, including A/E leachfield systems, effluent filters, and

distribution systems. A list of approved alternative/experimental (A/E) technologies for OWTSS has been issued by RI-DEM in a document titled “Alternative/Experimental Onsite Wastewater Treatment Systems Technology Program, April 2009” published on the RI-DEM website and attached in **Appendix E**:

(<http://www.dem.ri.gov/programs/benviron/water/permits/isds/pdfs/ialist.pdf>)

While both alternative toilet systems and A/E OWTSS offer an alternative to conventional OWTSS or sewer collection systems, there are several key disadvantages related to each. All of these systems require periodic specialized maintenance and handling of the wastewater end product. Such system maintenance is always more costly than maintenance for a conventional OWTSS, and is often more costly than maintenance for a wastewater collection system.

In addition, if not properly maintained waste products from alternative toilets can cause odors, and may become public nuisances and/or public health concerns. Incinerator toilets and heat assisted composting toilets use energy to provide the end product.

The use of these systems for area-wide installation is not typical. Such alternative systems are selected by individuals seeking to remedy their on-site wastewater disposal problems. Some systems may be better suited to some parcels than to others. The implementation of a large scale installation program would be difficult, and would most likely meet with public opposition. In general, none of these available alternative systems can be recommended for area wide use. They may, however, be used in isolated circumstances where all other feasible options have been eliminated, and could be encouraged to replace failing systems in areas selected for the 'no action' alternative.

5.1.2 Off-site Systems

Off-site systems collect wastewater from a community or neighborhood and treat and dispose of wastewater on a parcel separate from the wastewater generation point(s). Off-site systems include:

5.1.2.a Option 4: Shared/Community OWTSS:

Shared OWTSS systems (designed to treat more than 5,000 gpd) require an impact analysis and special approval from RI-DEM, as well as legal agreements and documentation regarding ownership, maintenance, and other issues. Shared systems must be pumped at least once per year. A conventional shared system for a particular area would include a localized collection system, a large septic tank, a dosing (pump) chamber, and a large soil absorption system.

Shared OWTSs would not be viable as a Town wide wastewater management solution as land requirements in the eastern portion of Coventry may prohibit construction of properly sized leaching trenches. However, on a smaller scale the possibility of shared OWTSs appears to be feasible for portions of the study areas.

5.1.2.b Option 5: Small Decentralized Cluster/Neighborhood Treatment Systems (NTS):

This type of off-site system collects wastewater from a localized area that cannot discharge to a large OWTS, as defined in Rule 35 of the OWTS Rules and Regulations, and requires construction of a small, neighborhood treatment and groundwater disposal system. This type of off-site system is relatively new compared to centralized sewer systems but offers the benefit of groundwater recharge with higher quality effluent than conventional OWTSs. Groundwater recharge is a term used for putting water back into the same general area from which it was taken, in order to replenish the groundwater.

A neighborhood treatment system generally includes below ground tankage and small-scale wastewater treatment components/equipment, which are often enclosed in a small above ground structure. Groundwater disposal systems are similar to leaching fields used in on-site systems, but they generally have a larger footprint designed to process greater flows of higher quality effluent. Groundwater discharges require a State permit to discharge the effluent to the ground.

This wastewater management alternative also allows the groundwater recharge to replenish base flow to area surface waters (lakes, ponds, brooks, streams or rivers), recharge the groundwater supply in drinking water aquifers, and maintain the water balance in sub-watershed basins.

Difficulty remains in recommending this alternative for the Planning Areas due to public acceptance and site concerns in relation to the location of the treatment plant.

Public acceptance of the decentralized treatment plant is, for the most part, very difficult to obtain. Due mainly to the negative connotation associated with wastewater and the idea of having a ‘treatment plant’ in a neighborhood, there is often great resistance on the part of local residents to allow a municipality to locate a NTS.

Choosing a site that not only appeases the local residents, but also is an adequate size to site the small treatment plant is also challenging. Most parcels located in eastern Coventry are presently developed. Also, areas where a NTS would be recommended are usually areas where the average lot size limits siting even a single household conventional OWTS, which would have a smaller footprint than a full NTS. Combining of adjacent lots may be feasible to site the plant, however

problems again occur because of the percentage of parcels in eastern Coventry already developed.

Even after a potential site has passed the public acceptance test, the site must be technically analyzed to confirm that soils are appropriate to adequately filter the NTS effluent, that groundwater is deep enough to not cause a surcharge effect, and that sensitive receptors (like drinking water supplies, surface waters, wetlands, etc.) are not negatively impacted.

For these reasons, the NTS alternative is not an acceptable option for the entire Town, but it may be viable for smaller sections of planning areas where siting concerns are more easily solved.

5.1.2.c Option 6: Centralized Sewer and Large-scale Wastewater Treatment Plant:

Several options are available to the Town of Coventry for the centralized treatment and disposal of wastewater. For the purpose of this FP, the options evaluated were the treatment of the wastewater at either the existing West Warwick WWTF or at a proposed Coventry WWTF. Other area WWTFs, such as Cranston, Warwick and East Greenwich, are located much more remote from Coventry, and do not have capacity reserved for Coventry, and were therefore not considered. The following sections include detailed discussions of each of these options.

5.1.2.c.1 Coventry Wastewater Treatment Facility

The 1977 FP by C.E. Maguire, and the previous wastewater report by F.G. Keyes, recommended the construction of a separate wastewater treatment facility to treat the wastewater flows from Coventry. This proposed facility was intended to be located along the banks of the South Branch of the Pawtuxet River, just north of Tiogue Avenue near the West Warwick town line. This solution for the treatment and disposal of Coventry's wastewater was primarily recommended for economic reasons, since it appeared at that time to be the most cost effective option.

However, the 208 Areawide Water Quality Management Plan, prepared in 1979, found the following:

“ Tying Coventry into the West Warwick system would eliminate the future discharge of some 3.5 mgd of effluent to the south branch from a Coventry wastewater treatment facility, allowing the water quality of the south branch to be maintained at least at present levels. The potential for fishing in the south branch would be enhanced by the displacement of Coventry's wastewater to the main stem. ”

Based on these findings, the 208 WQMP recommended the creation of a regional plant at West Warwick. Based on the recommendations of the 208 WQMP, a separate wastewater treatment facility for Coventry would not be in conformance with state planning goals, would not be cost effective (based on the initial investment already made by Coventry in West Warwick's WWTF), and is therefore not considered further.

However, there is currently an industrial WWTF located off Washington Street on Assessor's Map 56 Lot 113.1, which is owned and operated by Clariant Corporation. This plant has a Rhode Island Pollutant Discharge Elimination System (RIPDES) permit to discharge 1.05 mgd of treated effluent flow to the South Branch of the Pawtuxet River. Due to certain economic conditions, the industry has decided to downsize its operations. The Town has inquired on the status of this WWTF and the possibility of the Town taking ownership of the plant to retrofit it to handle municipal wastewater. Currently, there has been no desire from Clariant Corporation to seek this option.

Should this industrial WWTF ever be made available to the Town for purchase, further investigations would be needed to determine the economic feasibility of rehabilitating this WWTF to accept municipal wastewater, and allowing Coventry to use the plant to provide additional capacity for the Town's sanitary sewer flows. This WWTF would not eliminate the need to discharge flow to the West Warwick WWTF. It would only provide additional treatment capacity for those areas of concern not able to be served by the West Warwick WWTF due to capacity limitations, as outlined in the IMA (**Appendix K**) based on the flow restriction of the current IMA with West Warwick. Currently, because the industry has no intentions on selling the WWTF this option is not considered feasible and is therefore not considered further in this report.

5.1.2.c.2 West Warwick Regional Wastewater Treatment Facility

As discussed above, treatment of Coventry's wastewater at the West Warwick regional WWTF is a principal recommendation of the 208 WQMP. The 1981 Amended FP and the 1982 FP Supplement also recommended this treatment option.

Based on the previous 1995 FP and the 2003 FP Reaffirmation, the Town of Coventry has finished construction on a limited municipal sewer system. This system includes interceptor and lateral piping that collects wastewater flow from portions of the planning areas, including residences, businesses and institutions, and transports

this flow to the West Warwick Wastewater Treatment Plant (WWTP).

To allow this discharge into the West Warwick sewer system, and eventually the WWTP, Coventry entered into an intermunicipal agreement (IMA) with West Warwick (originally dated November 28, 1994). The agreement included provisions for Coventry to reimburse West Warwick for capital costs related to the WWTF capacity and collection system expansions required to allow service to Coventry. West Warwick then proceeded with upgrading their WWTF to provide secondary treatment levels, and expanding the treatment plant's capacity to allow connection of the Coventry system. West Warwick also increased the capacity of their interceptors to allow the transmission of Coventry's wastewater to the regional WWTF. The IMA allows a certain amount of flow (2.25 mgd) and pollutant loading to be discharged into the West Warwick system by Coventry. All flow treated by the West Warwick WWTF is discharged into the Pawtuxet River.

Since construction of portions of the planned sewer system interceptors has been completed based upon recommendations set forth in the 1995 FP, planned extension of this sewer system to serve the planning areas has been evaluated as part of this FP Update. Careful considerations were made so that the current and projected 20-year planning flows from these areas would not violate the IMA with West Warwick.

Based on the findings of the previous FP documents, and the significant capital expenditures made by both Coventry and West Warwick towards this regional solution, the treatment of Coventry's wastewater at the West Warwick Regional WWTF continues to be the best option currently available for areas in eastern Coventry which can no longer rely on the use of OWTSSs for wastewater treatment and disposal.

5.2 Wastewater Service Area Options

In some areas of Coventry, continued long-term reliance on OWTSSs for wastewater disposal is not an acceptable option. In those areas, the extension of sewers was considered in the 1995 FP. The findings from the previous FPs for Coventry have produced recommendations for sewerage a significant portion of eastern Coventry. The more detailed, updated information presented in Chapter 3 supports the past recommendation for a wastewater collection system to serve some parts of eastern Coventry.

Since the 1995 FP, several sewer projects have been completed by the Town to provide sewer extensions to portions of eastern Coventry recommended for sewerage in the

previous FP. A map showing the existing sewer system, outlining the limits of each sewer construction project, is shown in **Figure 3-10**.

The remaining service area options for sewer installation in eastern Coventry are as follows:

- Option A: Limited Sewer Service Area, serving only the areas of greatest need, Planning Areas designated as Phase I,
- Option B: Medium Sewer Service Area, serving the areas of great need, Planning Areas designated as Phase II,
- Option C: Large Sewer Service Area, serving all areas of significant need, Planning Areas designated as Phase III,
- Option D: Town-wide Sewer Program, serving all areas of eastern Coventry.

The proposed sewer construction contracts 6 through 11 will complete construction of all sewers designated as Phase I. Specific discussions on each service area can be found in the 1995 FP document.

Each of the service area options serves a progressively larger area of eastern Coventry. The need for sewers to serve an area is based on the information presented in Chapter 3, with consideration of the potential for continued service by OWTs, as discussed previously in this chapter.

5.3 Wastewater Collection System Options

Several options were considered, as part of the 1995 FP, for the wastewater collection and transmission system to serve the service area options in Section 5.2. The detailed discussion of wastewater collection system options is identical to those discussed in the 1995 FP and was separated into two parts: discussion of sewer interceptor (transmission) options, and discussion of lateral sewer (collection) options. This discussion can be found in the 1995 FP document.

Table 5-2 presents a summary of the wastewater management options identified as viable for each of the study areas.

5.4 Septage Treatment and Disposal Options

The alternatives available to Coventry for treatment and disposal of septage are limited. The previous 1995 FP identified the following alternatives for septage treatment and disposal:

- Option A: Treatment and disposal at a site in Coventry
- Option B: Treatment and disposal at the West Warwick WWTF

**Table 5-2
Summary of Feasible Wastewater Management Alternatives**

Area #	Continued Use of OWTS		Sewer Collection System			
	WWMD	Construction/ Rehabilitation	Conventional	Pressure	STEP	Vacuum
A		Yes	Yes			
B			Yes			
C			Yes	Yes		Yes
D			Yes			
E			Yes			
F			Yes			Yes
G			Yes	Yes		Yes
H			Yes	Yes		Yes
I			Yes	Yes		
J			Yes			
K			Yes			
L			Yes			
M			Yes			
N			Yes			
O		Yes	Yes			
P			Yes			
Q			Yes			
R			Yes			
S			Yes			
T		Yes	Yes			
U			Yes			
V			Yes			
W			Yes			
X			Yes			
Y			Yes	Yes		
Z			Yes			
AA			Yes			
AB			Yes	Yes		Yes
AC		Yes	Yes			
AD			Yes			
AE		Yes	Yes			
AF			Yes			
AG		Yes	Yes			
AH	Yes				Yes	
AI		Yes				

Option C: Treatment and disposal at the Cranston WWTF

Option D: Treatment and disposal at another area WWTF

In addition to treatment and disposal sites, Section 5.1 identifies management alternatives for regulating septage treatment and disposal in Coventry.

Currently Option B (Treatment and disposal at the West Warwick WWTF) is not viable. While the West Warwick facility currently has the equipment to properly accept septage for treatment, at this time no septage from any municipalities (including West Warwick) is accepted at the facility. The Inter-municipal Agreement (IMA) between West Warwick and Coventry has a stipulation that would allow Coventry to dispose of septage at the facility if it were to be accepted from any other communities (including West Warwick).

Based on data from the previous 1995 FP, and confirmed during the creation of this FP, disposing of septage at the Cranston WWTF is clearly the most beneficial option due to the high cost of constructing a septage disposal site in Town. Based on discussions with septage haulers (see **Appendix F**) the preferred site to dispose of septage from Coventry is the Cranston WWTF. The other septage treatment and disposal options identified above either are not cost effective (Option A), are not feasible at this time (Option B), or are more costly for disposal and/or are a greater distance from Option C, thus making them less feasible for septage treatment and disposal. Option A, Option B and Option D will not be considered further in this study.

5.5 Sludge Treatment and Disposal Options

Based on the previous discussion of wastewater treatment options, there is currently no feasible option for constructing a separate wastewater treatment facility in Coventry. Therefore, all waste sludge produced from Coventry's wastewater will be in the form of septage pumped from OWTSs or waste sludge produced at the West Warwick Regional WWTF.

The septage (from OWTS) treatment and disposal is discussed in the preceding section, and will be handled by either the West Warwick WWTF or the Cranston WWTF.

The West Warwick WWTF has an established solids handling program. The current program includes composting digested sludge. The Town of Coventry has in the past utilized composted sludge from the West Warwick WWTF as a soil additive for Public Works/Recreation Department projects. Coventry plans to consider the beneficial use of composted sludge product from the regional WWTF where it may be deemed appropriate.

Specific details on sludge handling, including options for treatment and disposal, are discussed in the West Warwick and Cranston FP.

5.6 Combined Sewer Overflows

Due to the limited number and relatively young age of the sanitary sewers in Coventry, there are no known combined sewers in Town. No combined sewers or combined sewer overflows (CSO) will be constructed in Coventry, as construction of such systems are no longer allowed by state and federal regulations.

5.7 Environmental Impact of Alternatives

Evaluation of environmental impacts provides comparative data to assist in the selection of the best alternative plan for wastewater management in the study area. Environmental impacts should be addressed during each step of the facilities planning process. The specific procedures for addressing environmental impacts were outlined in the EPA regulations, as required under the National Environmental Policy Act of 1969. In addition, the environmental review requirements suggested by the RI-DEM FP Review Checklist, and all pertinent state and local laws and regulations have been followed.

The environmental evaluation of specific parameters for various wastewater management alternatives in some cases overlaps. The previous 1995 FP discussed in detail the general and specific environmental impacts, both direct and indirect, of the wastewater management options identified in this section. The environmental considerations listed in the 1995 FP were reviewed and determined to be similar for this current document. Detailed descriptions of the environmental impacts can be viewed in the 1995 FP document and a summary is presented in **Table 5-3** of this document. The future conditions in the planning area resulting from the 'No Action' alternative were discussed previously in Chapter 4.

5.7.1 Summary of Environmental Considerations

Each of the identified alternatives can be evaluated by their expected environmental impacts. **Table 5-3** presents a summary of the major environmental impacts, both beneficial and detrimental, for each of the identified feasible options. As shown in the table, and as discussed in Chapter 4, the 'no action' option is estimated to have the greatest detrimental long-term effect on the area, mostly by way of water quality and quality of life. The probable effect of a public education program, or an OWTS rehabilitation program, alone would be similar to the 'no action' option, though lesser in magnitude, and would likely result in some minor short-term construction related impacts. The effects of a sewer installation program on the project area would have significant short-term construction related impacts. Such a program would, however, result in significant long-term benefits to the community, both in water quality and in quality of life.

5.8 Financial Considerations for Alternatives

The final consideration for selecting an appropriate option for addressing the planning area OWTS problems is project cost. From a public opinion standpoint, this is perhaps the most important consideration. The question of the affordability of a project most often determines whether it is eventually implemented, or falls by the wayside. In Coventry, past initiatives based on recommendations from prior FPs have failed, mostly due to real

**Table 5-3
Summary of Environmental Considerations for Wastewater Management Alternatives**

Description of Option	Positive Impacts	Negative Impacts
<u>Continued Use of OWTs</u>		
No Action	Short Term (1) None.	(1) None.
	Long Term (1) None.	(1) Continuing groundwater and surface water quality degradation problems (2) Nuisances and health concerns from failing OWTs. (3) Indirect adverse effect on commercial and industrial use.
OWTs Wastewater Management District	Short Term (1) None.	(1) Minor construction related surface water quality and wetland impacts from soil erosion. (2) Minor construction related noise, air quality and traffic impacts.
	Long Term (1) Possible decrease in malfunctioning OWTs.	(1) Potential for surface and groundwater quality degradation problems, nuisances and health concerns from failing OWTs.
OWTs Public Education Program	Short Term (1) None	(1) None.
	Long Term (1) Increase OWTs owner knowledge that may limit number of serious environmental impacts occurring from malfunctioning OWTs.	(1) Potential for surface and groundwater quality degradation problems, nuisances and health concerns from failing OWTs.
OWTs System Rehabilitation	Short Term (1) None.	(1) Minor construction related surface water quality and wetland impacts from soil erosion. (2) Minor construction related noise, air quality and traffic impacts.
	Long Term (1) Possible decrease in malfunctioning OWTs.	(1) Potential for surface and groundwater quality degradation problems, nuisances and health concerns from failing OWTs.
Use of Alternative/Experimental (A/E) Technology	Short Term (1) None.	(1) None.
	Long Term (1) Possible beneficial impact on surface and groundwater quality.	(1) Potential for surface and groundwater quality degradation problems, nuisances and health concerns from failing OWTs.
<u>Wastewater Collection and Treatment</u>		
Conventional and Alternative Collection System Options	Short Term (1) None.	(1) Minor construction related surface water quality and wetland impacts from soil erosion. (2) Minor construction related noise, air quality and traffic impacts.
	Long Term (1) Beneficial impact on surface and groundwater quality.	(1) None.

O:\Coventry RNFP Update 2008\Facility Plan Update Document\Figures\Section 5 - Evaluation of Alternatives\[Table 5-3 - Summary of Env. Considerations for WW Mgmt Options.xls]Sheet1

or perceived financial impacts of the proposed sewer construction program. Therefore, financial considerations will continue to play a major role in selecting the best available option.

For the purposes of this analysis, a planning period of 20 years has been used. Analyses include an estimated present worth value for each option discussed.

5.8.1 No Action

The 'no action' alternative is always the most advantageous from an initial cost viewpoint. Since this option requires no initial capital input by the Town, the capital cost associated with it (other than for individual OWTS care and maintenance) is negligible. Actual annual costs associated with this option would be borne by individual property owners, and are difficult to predict. Such costs would include OWTS maintenance pumping, and repair and potential replacement of failing OWTSs. Based on the average system pumping criteria of one pump-out per three years used to estimate septage volumes in Chapter 4, and an average pump-out charge of \$200 as determined from Septage Hauler Interviews, included in **Appendix F**, the minimum cost of this option is approximately \$67 per home per year.

In addition, costs already expended by the Town for a sewer system would be wasted if this option was selected. To date these costs include approximately \$10.9 million for capacity in the West Warwick sewer system and WWTF upgrades, and approximately \$14 million for installation of existing pump station, interceptor and lateral sewers. Unfortunately, selection of the 'no action' alternative provides no wastewater management benefit to the Town. Where significant water quality and public health concerns currently exist, this is not an acceptable alternative.

5.8.2 OWTS Wastewater Management District (WWMD)

Where an OWTS Wastewater Management District (WWMD) has been identified as a feasible alternative for wastewater management, the cost of implementing such a district should be evaluated. The 1995 FP evaluated the cost of implementing a WWMD in Area AH (previous Area 34), which is the Shady Valley Road area, adjacent to the Flat River Reservoir. This Planning Area was selected due to the area's size and isolated location. The conditions in the Shady Valley Road area itself would make the usefulness of a WWMD for maintaining existing OWTS systems extremely limited. However, this area was chosen as a suitable example, because it is fairly representative of several such isolated areas located throughout central and western Coventry (areas to which conventional sewers will most likely never be extended). The 1995 FP data has been updated and the approximate capital costs and annual costs estimated for this area are shown in **Table 5-4**.

Table 5-4
ESTIMATED OWTS WASTEWATER MANAGEMENT DISTRICT COSTS
AREA AH - SHADY VALLEY ROAD

Description	Cost
OWTS System Inspection Costs (including 2 annual system inspections per home, based on a total of 80 hours of effort per year for a two person crew, assume \$60 per hour for each member)	\$9,600 ⁽¹⁾
OWTS System Pumping Costs (including one pump-out per home per 2 years, i.e. 33 pumps per year)	\$6,600 ⁽²⁾
Administrative Costs (20% of above costs)	\$3,300
Total Annual Cost	\$19,500
Annual Cost per Residence	\$295 ⁽²⁾

(1) Costs for inspection are based on work being performed by a private Contractor or by existing Town personnel.

(2) The estimate is based on an estimated 66 existing homes in the planning area.

While this system appears to be affordable to the homes in the Shady Valley service area, the added benefit over the 'no action' option is difficult to quantify. Also, the above costs for this option do not address replacement of seriously malfunctioning OWTSs in the area. Such replacements would increase costs to area residents significantly. As detailed in **Appendix F**, the cost to replace a failed system ranges from \$9,000 to \$16,000 per occurrence on average.

If this option were considered for a wider service area in eastern-central Coventry where homes are on larger lots and the population is less dense, the costs per home may not be equivalent. In addition, costs already expended by the Town for a sewer system (approximately \$14 million to date), as discussed above, should be considered. Unfortunately, selection of this option, like the 'no action' alternative, provides minor benefit to the Shady Valley area. Since significant OWTS failure problems exist in this area, mainly due to high groundwater and poor soils, this option should be combined with some other solution, such as OWTS rehabilitation or a sewer system, to be considered an acceptable alternative.

The conditions in the Shady Valley area would generally favor sewer installation. However, due to the isolated location of the area, sewerage to West Warwick would be difficult and very costly. As an option, sewer system combined with a community septic

system or packaged wastewater treatment system should be considered. Such a system could be constructed and managed through a wastewater management district, if desired. Costs for this system can vary greatly based on site location/conditions. Should this alternative be considered by the Town further investigation to generate a more accurate cost estimate should be performed.

5.8.3 Public Information for OWTS Management

After the 'no action' alternative, implementing a public education program for wastewater management is the next most advantageous option from a cost viewpoint. The required initial capital input for this option is limited to developing and distributing OWTS maintenance information to the public. Costs would include development of material, printing, mailing or publication costs.

In general, the cost associated with distributing a one page mailing to approximately 6,000 addresses is estimated to be between \$2,500 and \$5,000, depending on the distribution method selected.

Selection of this alternative could provide a benefit to the entire Town, including western Coventry. In areas where a significant number of failing OWTSs exist, however, a public information program alone is not an adequate solution. This option should be considered for all areas where other structural options, such as sewers, are not feasible and are not recommended.

5.8.4 OWTS Rehabilitation Program

As discussed earlier in this chapter, the rehabilitation of existing OWTSs may be feasible in areas where poor soils and/or high groundwater and small lot size are not the main cause of system malfunctions. In these areas, OWTSs can be assumed to be malfunctioning due to deficiencies in the system construction (i.e. under-designed systems and cesspools), or damage to systems from misuse or lack of maintenance (clogged leaching fields, etc.). In these areas, the reconstruction of the OWTS is a reasonable long-term solution.

For the purposes of this report, we have estimated the cost of reconstructing a typical septic system. This system cost is based on construction of a new system, for a typical three to four bedroom home, to meet the OWTS regulations published by RI-DEM. The cost of constructing such a system is estimated to be between \$10,000 and \$20,000, depending on lot configuration and soil and groundwater conditions. For areas with limited OWTS failures, this option is cost effective, but could be considered equivalent to the 'no action' option, since OWTS reconstruction can be left to the individual property owner. For areas where a significant percentage of existing OWTS systems are failing, this option is not as acceptable, since the costs for rehabilitating many systems is significant, and may approach the cost of lateral sewer installation.

5.8.5 Wastewater Collection and Treatment System

In many areas, the installation of a wastewater collection system is the only reasonable alternative for permanently ending the chronic OWTS failure problems.

5.8.5.a Sewer Interceptor System

The previous 1995 FP outlined the three most logical options for proposed sewer interceptor systems. The option previously recommended and constructed is briefly described below. The original interceptor plan from the 1995 FP is included in **Figure 5-1** (Note that since the 1995 FP some of the interceptors have been constructed, see **Figure 3-10** for the current existing interceptors):

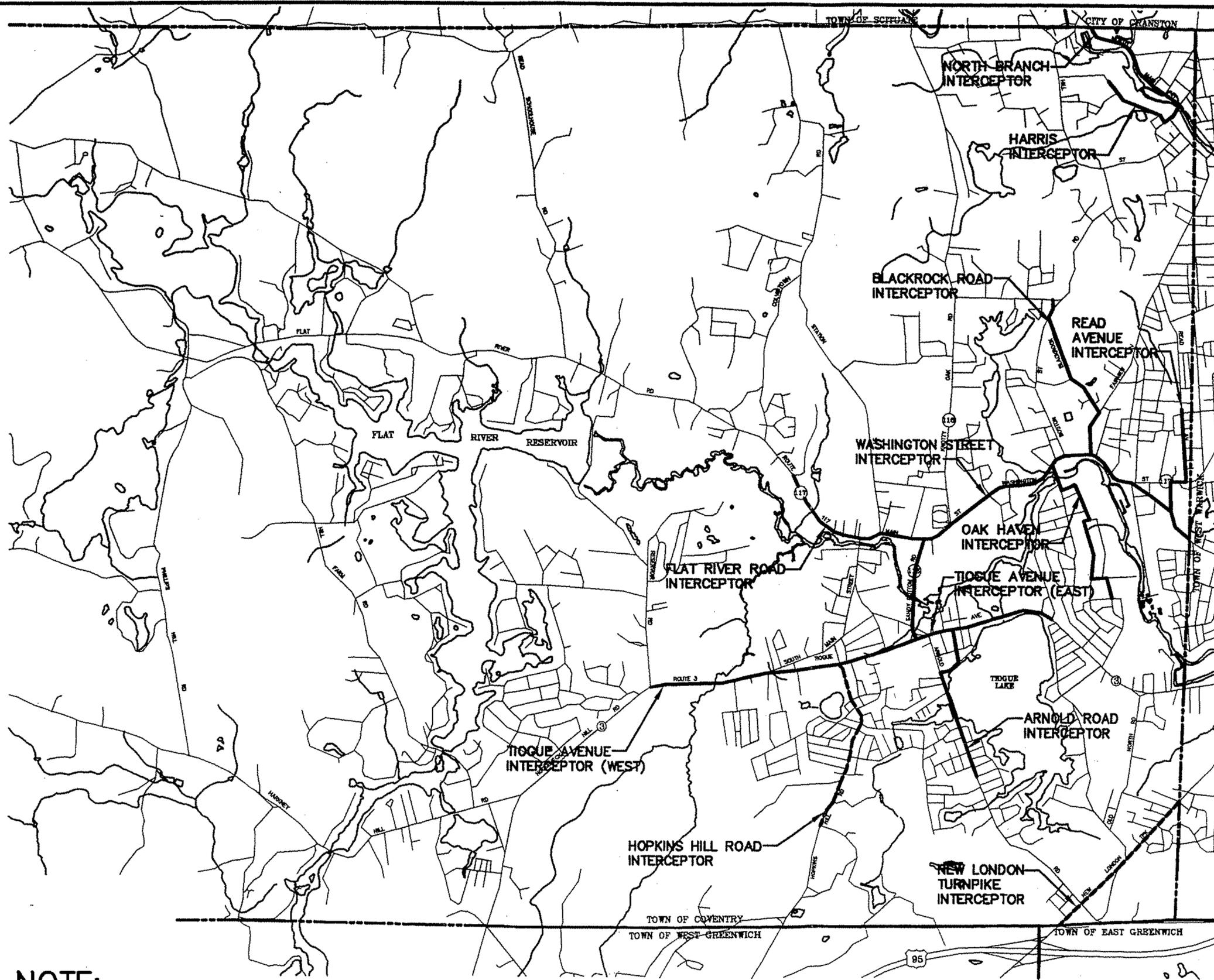
Central Pumping Station at Tiogue Avenue and Washington Street Interceptor:

This option included constructing a pump station on Sandy Bottom Road. A new force main was installed on Sandy Bottom Road that discharges to a gravity interceptor at the approximate intersection of Washington Street and Knotty Oak Road. This gravity interceptor would then travel east along Washington Street to the intersection of Quidnick Avenue where it would then follow an abandoned railroad bed to Whitford Street and down Pulaski Street to the West Warwick Town boundary.

This option was selected in the previous report based on the proposed benefits and the project's cost effectiveness. Based on this recommendation of the 1995 FP, this option, including the Sandy Bottom Road Pump Station, forcemain and Washington Street interceptor to the West Warwick Town boundary were constructed.

A previous option that was not recommended in the 1995 FP mentioned the use of the existing Woodland Manor private force main. Based on previous discussions, the owner of this sewer is not interested in granting use of this force main to the Town for reasonable considerations. However, if the force main was ever offered/granted to the Town for use, further investigation would be needed to assess the structural stability and the feasibility of using portions of Woodland Manor private force main to service parcels along Tiogue Avenue where collection sewers have yet to be constructed.

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LEGEND:

- PROPOSED INTERCEPTOR
- - - - - EXISTING INTERCEPTOR

NOTE:

BASEMAP SOURCE: RIGIS

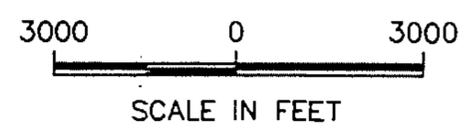


FIG 5-1
RECOMMENDED
INTERCEPTOR
SEWER PROGRAM

6 SELECTED PLAN, PRELIMINARY DESIGN AND COST ESTIMATES

6.0 General

This section is intended to provide a description of the selected plan, including an assessment of environmental impacts, preliminary design information and a cost estimate for the work involved. The present use of OWTSs for wastewater disposal is clearly inadequate in certain portions of eastern Coventry. The information presented in Chapters 3 and 5 of this report (and in previous planning reports prepared by the Town of Coventry) substantiates existing OWTS problems which cannot be corrected by construction of new OWTSs designed in accordance with RI-DEM OWTS Regulations. Therefore, an alternative method of wastewater management must be utilized for wastewater treatment and disposal in those areas where OWTS use is no longer feasible.

6.1 Plan Selection

The wastewater management plan proposed herein was developed based on the discussion of alternatives in Chapter 5. The selection criteria included technical, structural, environmental, economic and political considerations. The selected plan presents the best balance of the importance of these considerations. Because of the plan previously selected in the 1995 Facilities Plan (FP) and amended based upon the 2003 FP Reaffirmation, a portion of sewers in the eastern section of Coventry have already been constructed (**Figure 3-10**). The alternatives listed in Chapter 5 have previously been reviewed and a three phased recommended sewerage program was created. This recommended program, due to its inclusion as part of the 1995 FP and due to the completion of portions of the sewer construction make this alternative the most viable due to the selection criteria mentioned above. Therefore, the plan selected as part of the 1995 FP, with modifications made in the 2003 reaffirmation, will remain the plan selected for this 2009 FP Update. However, modifications to this plan must be made to incorporate significant changes that affect the overall projection of wastewater needs in Town as discussed in Chapter 4. The selected plan, with modifications, is as follows.

6.1.1 Continue the Wastewater Collection System in the Eastern Portions of Coventry

As discussed in earlier sections, construction of a wastewater collection system with lateral sewers has already commenced based upon past recommendations of planning reports prepared by and/or for the Town of Coventry. These constructed sewers described in Chapter 3 are shown in **Figure 3-10** and have begun to serve the Planning Areas in eastern Coventry with the greatest need for off-site wastewater disposal (Phase I), while also providing the infrastructure (sewer interceptors, pump station, and forcemains) for future sewer system expansion to the remaining Planning Areas. Planned sewer construction contracts 6 to 11 will complete the recommended Phase I sewerage program.

The 1995 FP recognized Planning Areas where there was a strong need for off-site disposal of wastewater and also Planning Areas that should be removed from the

sewering program because the utilization of OWTs would be a more viable wastewater disposal option (Areas AC, AG, AH, AI). Based upon the recommended areas to be sewerred, a wastewater collection system was created to served these Planning Areas.

In the 2003 FP Reaffirmation, additional wastewater treatment capacity was allocated for two proposed developments, Pine Ridge Subdivision and Center of New England. Due to this additional wastewater allocation need, Planning Areas (AA and AB) with less need for sewerred were removed and instead it was recommended to continue the utilization of the existing OWTs.

As part of this FP Update, future proposed developments in existing sewerred areas that will significantly increase wastewater flows to the system were analyzed to determine the amount of additional flow they will contribute to the sewer system (**Table 4-6**). Also, flows for the Planning Areas have been updated and projected out to the 20-year planning period (2030). The amount of wastewater flow Coventry can discharge to West Warwick is limited by the two municipalities IMA which outlines the amount of capacity they own at the West Warwick WWTF (2.25 mgd). Therefore in order to accommodate the additional flows from the proposed developments and updated projected flows, the recommended plan for sewerred eastern Coventry must be revised. As stated previously, past planning reports included areas in the recommended three phased plan for sewerred with less of a need than other more densely populated areas. By eliminating full and partial Planning Areas with less need for an off-site wastewater disposal solution, a new recommended plan for sewerred eastern Coventry can be established. This plan will still predominately meet the need for sewerred the more densely populated areas within eastern Coventry, but also allows the Town to provide sewer capacity for the proposed developments, which are important to the local economy.

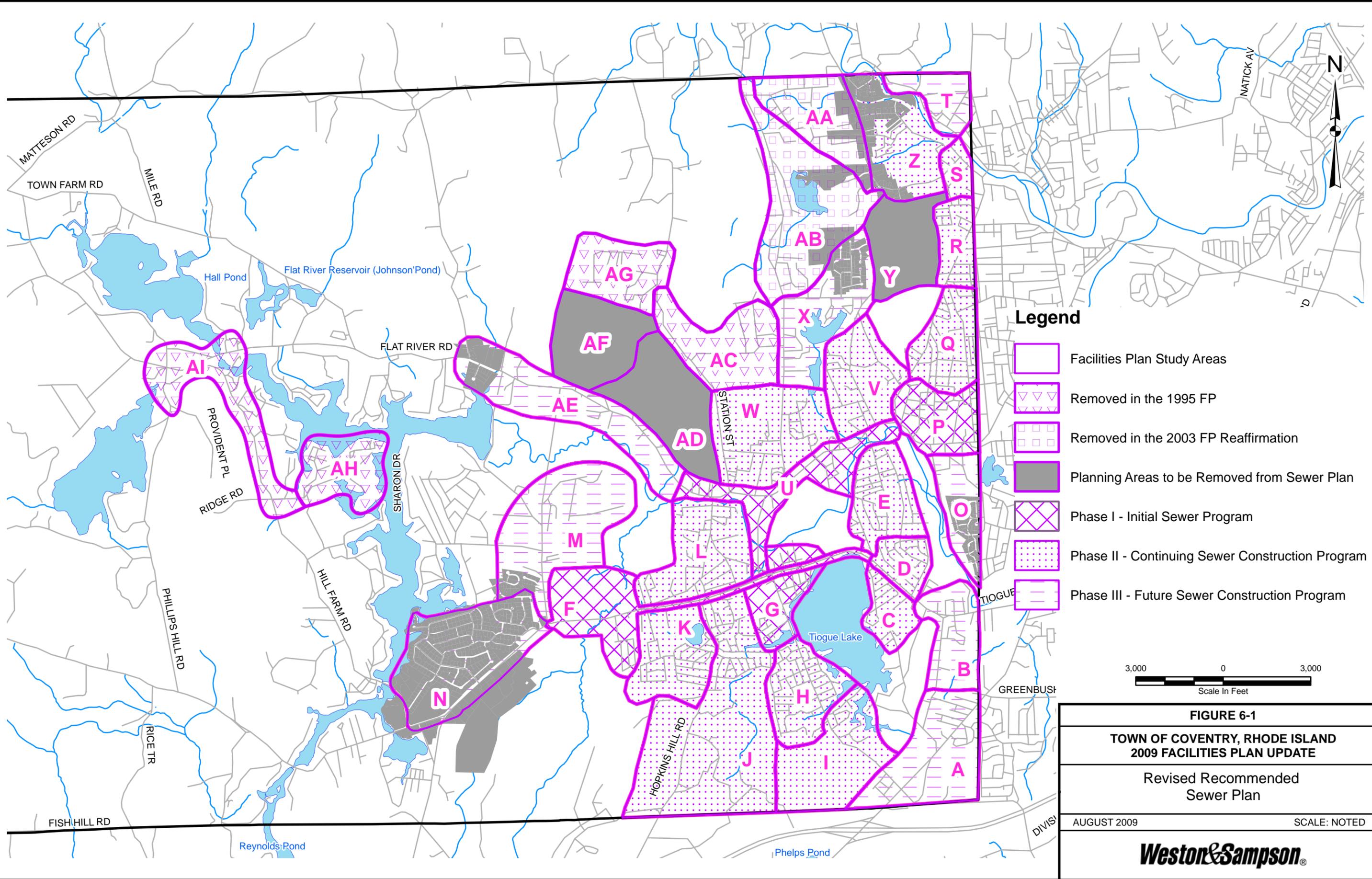
6.1.2 Revised Recommended Plan

The revised recommended revisions to the sewerred plan are described below and include the removal of three full Planning Areas and five partial Planning Areas in order to reallocate flows to areas with more need. Removing only portions of a Planning Area allows the more densely populated areas, or areas with greater need to remain sewerred, while other areas within the same Planning Area with less need can continue utilization of their OWTs. Information collected for each Planning Area to determine sewer needs is summarized in **Table 6-1**. Based upon this information, a new recommended sewer plan can be established. **Figure 6-1** shows this revised sewer plan, and the areas that are recommended for removal. It should be noted that the full or partial removal of an area does not mean that area will never receive municipal sewers. Circumstances could arise that cause a Planning Area to be reinstated to the recommended plan for sewerred, such as a sudden increase in need or increased available wastewater treatment capacity obtained by the Town. These circumstances will continue to be monitored in future planning exercises and changes made based upon the findings.

The following sub-sections 6.1.2.a to 6.1.2.ii briefly describe each planning area and based on information presented in this report, either confirm the recommendations of the

**Table 6-1
Planning Area Sewer Needs**

SubArea Letter	OWTS Rated	Large or Amount of OWTS Repairs?	Sewer Phase	Sewer Contract	Town Property	Commercial	Affordable Housing	Shallow Groundwater	Shallow Bedrock	Steep Ground Slopes	Poor Soils	Distance to Watercourse	Small Lots (>20% under 8,750 sq. ft.)	Waterfront	Low Income	Moderate Income
A	Poor	N	3		N	Y	N						Y	N	Y	Y
B	Very Poor	N	3		N	Y	Y						Y	N	Y	Y
C	Critical	Y	2	10	Y	N	N						Y	Y	Y	Y
D	Very Poor	Y	2		N	N	N	Y			Y			N	N	Y
E	Very Poor	Y	2		Y	N	N	Y			Y	Y		N	N	Y
F	Critical	N	1	1, 2, 4, 5, 7	N	Y	Y	Y			Y		Y	N	Y	Y
G	Critical	Y	1	6, 9, 11	N	N	N	Y			Y		Y	Y	Y	Y
H	Very Poor	N	2	5	Y	N	N	Y			Y	Y	Y	Y	Y	Y
I	Very Poor	Y	2		N	Y	N	Y			Y	Y		Y	Y	Y
J	Critical	N	2	3, 5	Y	Y	Y	Y			Y	Y		N	Y	Y
K	Very Poor	N	2	4	N	N	N	Y			Y		Y	N	Y	Y
L	Critical	N	2	5	Y	Y	N	Y			Y		Y	N	Y	Y
M	Poor	N	3		Y	Y	N	Y					Y	N	Y	Y
N	Poor	N	3		N	N	N	Y				Y	Y	Y	Y	Y
O	Poor	N	3		N	Y	N	Y	Y		Y			N	N	Y
P	Critical	Y	1	1, 8	N	Y	N					Y	Y	N	Y	Y
Q	Very Poor	N	2		N	N	N	Y			Y	Y	Y	N	Y	Y
R	Very Poor	N	2		N	N	N	Y			Y			N	Y	Y
S	Very Poor	N	2		N	N	N	Y			Y			N	Y	Y
T	Poor	N	3		N	Y	N	Y			Y			N	Y	Y
U	Critical	N	1/2	1, 2, 5	Y	Y	N	Y	Y	Y	Y			Y	Y	Y
V	Critical	N	2	5	N	N	N	Y			Y		Y	N	Y	Y
W	Very Poor	Y	2	4	Y	N	N	Y			Y		Y	N	N	Y
X	Poor	N	3		Y	N	N	Y		Y	Y	Y		Y	Y	Y
Y	Poor	Y	3		N	N	N	Y		Y	Y			N	N	N
Z	Very Poor	Y	2		N	N	N	Y	Y	Y	Y		Y	N	N	N
AA	Poor	N	Removed		N	N	N	Y	Y	Y	Y			N	N	N
AB	Poor	N	Removed		N	N	N	Y		Y	Y			N	N	N
AC	Fair	N	Removed		N	N	N	Y	Y		Y			N	N	N
AD	Poor	Y	3		N	N	N	Y		Y	Y		Y	N	N	N
AE	Fair	Y	3		Y	Y	N	Y			Y			N	N	N
AF	Poor	N	3		N	N	N	Y	Y	Y	Y			N	N	N
AG	Good	N	Removed		N	N	N	Y	Y	Y	Y			N	N	N
AH	Very Poor	N	Removed		N	N	N	Y			Y		Y	Y	N	N
AI	Fair	N	Removed		N	Y	N	Y			Y			N	N	N



Legend

- Facilities Plan Study Areas
- Removed in the 1995 FP
- Removed in the 2003 FP Reaffirmation
- Planning Areas to be Removed from Sewer Plan
- Phase I - Initial Sewer Program
- Phase II - Continuing Sewer Construction Program
- Phase III - Future Sewer Construction Program



FIGURE 6-1	
TOWN OF COVENTRY, RHODE ISLAND 2009 FACILITIES PLAN UPDATE	
Revised Recommended Sewer Plan	
AUGUST 2009	SCALE: NOTED
Weston & Sampson®	

1995 FP and/or the 2003 FP Reaffirmation, or provide revised recommendations based upon the current wastewater management needs.

Please note that in this report any allocations or re-allocations of wastewater flows discussed below are not made to the singular development mentioned. All developments discussed below were used only to generate increased flow projections to the planning areas. Instead, recommendations for re-allocations will be made only to the referenced planning area in general, where the development is proposed. Any allocation to a specific entity must be made by the Town, and reference to a specific development in this report is for planning purposes and shall not grant capacity nor connection for the said development into the system.

6.1.2.a Planning Area A

Planning Area A was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area will flow to the existing sewer interceptor installed on the New London Turnpike. This area was proposed to be sewerage as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTs construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase III sewer program is confirmed.

6.1.2.b Planning Area B

Planning Area B was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow north along Old North Road into Tiogue Avenue, then west to the West Warwick town line. This area was proposed to be sewerage as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTs construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage them was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase III sewer program is confirmed.

6.1.2.c Planning Area C

Planning Area C was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and possible on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area will flow north to the proposed Tiogue Avenue Interceptor (East). This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be in poor condition for OWTs construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed. The proposed sewer construction under Contract 10 is the installation of lateral sewers in this planning area. The estimated date of commencement for this project is October 2011, based upon the 2010 Priority Determination System's Project Information Sheets submitted to RI-DEM, as described in Chapter 7 of this report.

Additional flows of 8,190 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need as a result of the proposed Village at East Shore Drive development, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.d Planning Area D

Planning Area D was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow south into Tiogue Avenue, then west to the West Warwick town line. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTs construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.e Planning Area E

Planning Area E was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Portions of the wastewater flow from this area flow south into Tiogue Avenue, then west to the West Warwick town line, while the remaining portion flows north to the Washington Street Interceptor. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.f Planning Area F

Planning Area F was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Based upon this recommendation, portions of the sewer proposed for this area have been constructed (**Figure 3-10**). The wastewater from this area will flow through the Tiogue Avenue Interceptor to the existing Sandy Bottom Road Pump Station, where it is pumped to Washington Street to flow by gravity into West Warwick. This area was proposed to be sewerage as part of the Phase I sewer program, meaning the area was deemed to have the greatest need within the Town for sewerage and the location was ideal for the installation of larger sewer interceptors required for the system.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase I sewer program is confirmed. The proposed sewer construction contracts 6 and 7 will provide sewers to the entire planning area. The estimated date of commencement for the projects are October 2009 and May 2010, based upon the 2010 Priority Determination System's Project Information Sheets submitted to RI-DEM as described in Chapter 7 of this report.

Additional flows of 21,416 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need proposed Brookside Development, as described in Chapter 4 of this report. This additional flow will

come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.g Planning Area G

Planning Area G was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The wastewater from this area is proposed to flow through the existing Tiogue Avenue Interceptor (West) to the existing Sandy Bottom Road Pump Station, where it is pumped to Washington Street to flow by gravity into West Warwick. This area was proposed to be sewerage as part of the Phase I sewer program, meaning the area was deemed to have the greatest need within the Town for sewerage and the location was ideal for the installation of larger sewer interceptors required for the system.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase I sewer program is confirmed. The proposed sewer construction contracts 6, 9 and 11 are for the installation of lateral sewers in this planning area. The estimated date of commencement for these projects are October 2009, May 2011 and May 2012, based upon the 2010 Priority Determination System's Project Information Sheets submitted to RI-DEM as described in Chapter 7 of this report.

Additional flows of 11,040 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need as a result of the proposed Coventry Housing Authority's Coventry Meadow development, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.h Planning Area H

Planning Area H was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is to flow into a proposed pump station which will pump the flow to the Arnold Road Interceptor. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTs construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists.

Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.i Planning Area I

Planning Area I was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTS and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area originates from the Center of New England Development. The remaining flows are to flow into a proposed pump station which will pump the flow to the Arnold Road Interceptor. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.j Planning Area J

Planning Area J was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area originates from the Center of New England Development. Flows from this area are discharged into either the Hopkins Hill Relief Sewer or the Hopkins Hill Road Interceptor. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

The 2003 FP Reaffirmation reallocated 155,700 gpd of additional flows to this planning area in order to accommodate the Pine Ridge Subdivision and the Center of New England Development.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

Additional flows of 78,000 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need as a result of the proposed developments on-going at the Center of New England, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.k Planning Area K

Planning Area K was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Based upon the previous recommendations for sewerage, portions of this area have been seweraged as part of the Hopkins Hill Relief Sewer Project (Contract 4). The majority of wastewater from this area flows north to the Tiogue Avenue Interceptor (West). This area was originally proposed to be seweraged as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTs construction, but other areas (Phase I areas) have either greater need and/or would have to be seweraged in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for the remaining parcels within this area is to remain in the Phase II sewer program is confirmed.

6.1.2.l Planning Area L

Planning Area L was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Wastewater from this area is proposed to flow south to the Tiogue Avenue Interceptor (West) installed under sewer contract 04 (**Figure 3-10**). This area was proposed to be seweraged as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTs construction, but other areas (Phase I areas) have either greater need and/or would have to be seweraged in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.m Planning Area M

Planning Area M was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area originates from the mobile home compounds located in the northeast portions of the planning area and is pumped south along Reservoir Road into the Tiogue Avenue Interceptor (West). This area was proposed to be sewerage as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Currently, the mobile home compounds located in this area are connected into the private Woodland Manor Forcemain located on Tiogue Avenue. However, the Town has agreed to accept wastewater from this area when the municipal sewers in the Tiogue Avenue area are extended to Reservoir Road. Flows for these mobile homes have already been included in the flow projections for this planning area.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase III sewer program is confirmed.

6.1.2.n Planning Area N

Planning Area N was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is to flow to a proposed pump station which will transmit the flow into the Tiogue Avenue Interceptor (West). This area was proposed to be sewerage as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage them was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution is not as prevalent as other areas where flow can be better allocated. The parcels located in this planning area are in a remote location that, while originally planned for sewerage, is not in any of the sewer construction contracts planned for the foreseeable future. The topography of this area will require either a pump station or low pressure sewers to be built to serve the majority of parcels, except for 7 single

family homes and 6 commercial parcels along Nooseneck Hill Road able to flow by gravity into the Tiogue Avenue Interceptor (West). The area's remote location and the need to pump the wastewater flow make construction of sewers within this area less economically feasible. This factor compiled with the fact that the area has a large concentration of single family homes where a majority of the lot sizes are sufficient for conventional OWTS construction making sewerage this area a lower priority. Therefore, the recommendation is to remove this area from the sewerage plan and to continue use of current on-site wastewater disposal methods.

The drawbacks to the removal of this area are its close proximity to Johnson Pond and the possibility that poor soils not conducive to on-site systems may be located in the area. However, due to the increased treatment capabilities of current conventional or A/E OWTS technologies for use where possible site restrictions are a factor, options exist for providing adequate treatment of wastewater by use of OWTSs in this planning area.

Therefore, it is recommended that all parcels in this area are removed from the sewerage plan, in favor of the continued use of existing OWTSs for wastewater disposal, with the exception of those parcels able to be served by gravity sewers as discussed above. Due to continued reliance on OWTSs and their possible impact with the environment caused by improperly functioning OWTS, coupled with lack of general knowledge that most homeowners have regarding operation and maintenance (O&M) their septic systems, a public education program (as described in Chapter 5) is recommended in this planning area. This area should continue to be monitored for any future signs of widespread OWTS failure.

Removal of the majority of this area from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas that have greater need. The average daily wastewater flows that can be reallocated for design years 2030 and 2060 is 97,085 gpd and 108,100 gpd respectively.

6.1.2.o Planning Area O

Planning Area O was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow to the Washington Street Interceptor via a pump station to be constructed. This area was proposed to be seweraged as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution is not as prevalent as other areas where flow can be better allocated. The majority of parcels located in this planning area are in a remote location that, while originally planned for sewerage, are not included in any of the sewer construction contracts planned for the foreseeable future. The topography of the area necessitates that a pump station be built to serve the majority of parcels in this area, with the exception of those parcels located along Washington Street that can flow by gravity into the Washington Street Interceptor. The area's remote location and the need to pump the wastewater flow make construction of sewers within this area less economically feasible. It is recommended that this planning area be removed from the sewerage plan in favor of the continued use of current on-site wastewater disposal methods.

The drawbacks to the removal of this area are the somewhat smaller lot sizes that do not lend themselves to the construction of conventional OWTs. However, based on septic system repair records, there is a lower occurrence of OWTs problems in this area. Due to the increased treatment capabilities of current OWTs technologies and the availability of alternate/innovative OWTs that can treat septic tank effluent to a greater degree, thus allowing construction on lots that may have possible site restrictions, options exist for providing adequate treatment of wastewater by use of OWTs in this planning area.

Due to concerns over economic feasibility, the low occurrence of OWTs repairs from 2003-2007 (**Table 3-2**) and available technologies that can adequately treat wastewater on-site, it is recommended that all parcels that require pumping of their wastewater to the Washington Street Interceptor be removed from the sewerage plan. Due to the continued reliance on OWTs, restrictive lot sizes in the area and lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended for implementation in this planning area. This area should continue to be monitored for any signs of widespread OWTs failure.

Removal of the majority of this area from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas that have greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 34,685 gpd and 35,350 gpd respectively.

6.1.2.p Planning Area P

Planning Area P was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The wastewater from this area is proposed to flow through the existing Washington Street Interceptor by gravity into West Warwick. This area was proposed to be seweraged as part of the Phase I sewer

program, meaning the area was deemed to have the greatest need in the Town for an off-site wastewater management solution.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase I sewer program is confirmed. Sewers have been installed to serve parcels adjacent to Washington Street, and the remaining parcels in this area will be served as part of Sewer Construction Contract No. 8. The estimated date of commencement for the project is October 2010, based upon the 2010 Priority Determination System's Project Information Sheets submitted to RI-DEM.

Additional flows of 80,000 gpd will be re-allocated to this planning area. This re-allocation is due to an increase in wastewater need as a result of Rhodes Technology's proposed connection to the municipal sewer system and the proposed domestic wastewater flow from Clariant Corporations, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.q Planning Area Q

Planning Area Q was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSS and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow south through Area P and into the Washington Street Interceptor, then west to the West Warwick town line. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTSS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.r Planning Area R

Planning Area R was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSS and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow north to the North Branch Interceptor, then west to the West Warwick town line. This area was proposed to be sewerage as part of the Phase II

sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerred in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.s Planning Area S

Planning Area S was recommended for sewerred as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow north to the North Branch Interceptor, then west to the West Warwick town line. This area was proposed to be sewerred as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerred in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.t Planning Area T

Planning Area T was recommended for sewerred as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area flows south to the existing Broad Street sewers then to the North Branch Interceptor. This area was proposed to be sewerred as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerred was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase III sewer program is confirmed.

Additional flows of 9,235 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need due to the proposed Riverside Landing and Village at Harris Mill developments, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.u Planning Area U

Planning Area U was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The Washington Street Interceptor along with other secondary sewers were proposed and constructed as part of this recommendation. The area was proposed to be sewerage as part of both the Phase I and Phase II sewer program, meaning the area was deemed to have the most need within the Town to be sewerage in order to provide the necessary off-site wastewater management solution. Phase I was the construction of the Washington Street Interceptor to the West Warwick town line, while Phase II was the construction of gravity sewers north of the Sandy Bottom Road Pump Station and west on Main Street. Based upon the recommendations of the past FP reports, the sewer construction proposed in this area is fully complete. Therefore, no additional investigation is needed into alternative wastewater disposal options for this area.

Additional flows of 19,711 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need due to the proposed Anthony Mill re-development, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.v Planning Area V

Planning Area V was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Portions of this area flow to the Blackrock Road Interceptor while the remaining wastewater flows south into the Washington Street Interceptor, then west to the West Warwick town line. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based on recommendations from previous FP reports, sewers have been installed, as part of sewer construction contracts 4 and 5, to serve approximately 48 parcels on Boston Street and Anthony Street (**Figure 3-10**). This represents nearly 50% of the parcels for this planning area. Since nearly half of the parcels in this area are already being served by the municipal sewer system and due to updated information obtained for this report, it is clear that the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

6.1.2.w Planning Area W

Planning Area W was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is proposed to flow south into the Washington Street Interceptor, then west to the West Warwick town line. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTs construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based on recommendations from previous FP reports, sewers have been installed in this area as part of sewer construction in Contract 5 to serve parcels in the Coventry Housing Authority's Knotty Oak Village on Contentment Drive (**Figure 3-10**). Since sewers have already been constructed in the area and based on updated information obtained for this report, the need to serve this entire area by means of an off-site wastewater management solution still exists. Therefore, the recommendation for this area to remain in the Phase II sewer program is confirmed.

Additional flows of 3,910 gpd will be re-allocated to this planning area. This re-allocation is due to the increase in wastewater need due to the proposed additions to the Coventry Housing Authority's Contentment Drive development, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.x Planning Area X

Planning Area X was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area would flow to the proposed Blackrock Road Interceptor. This area was to be

sewered as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area completely by means of an off-site wastewater management solution is not as prevalent as other areas where flow can be better allocated. The parcels located in the northern portion of this planning area (north of Gervais Street) are in a location that, while originally planned for sewerage, is not in any of the sewer construction contracts for the foreseeable future. In this area, there is a large concentration of single family homes and the majority of lot sizes are sufficient for conventional OWTSs.

The drawbacks to recommending continued reliance on OWTSs in this location are close proximity to a waterbody (Upper Tiogue Dam) and the possibility of poor soils for on-site systems located in the area. However, due to increased treatment capabilities of current OWTS technologies and the availability of I/A OWTS technologies for use where site restrictions are a factor, options exist for providing adequate treatment of wastewater by use of OWTSs in this planning area.

Therefore, it is recommended that all parcels north of Gervais Street, that are located within the planning area be removed in favor of continued use of existing OWTSs for wastewater disposal. As a result of continued reliance on OWTSs, possible impacts to the environment caused by improperly functioning OWTSs and the lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended for this area. This area should continue to be monitored for any signs of widespread OWTS failure.

Removal of the area north of Gervais Road from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas with greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 30,305 gpd and 36,078 gpd respectively.

6.1.2.y Planning Area Y

Planning Area Y was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area would flow north to the proposed North Branch Interceptor. This area was to be sewerage as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas)

were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area completely by means of an off-site wastewater management solution is not as critical as other areas where flow can be better allocated. The parcels located in this area are in a location that, while originally planned for sewerage, is not in any of the sewer construction contracts for the foreseeable future. In this area there is a greater concentration of parcels with lots sizes that are sufficient for conventional OWTS construction.

The drawbacks to recommending continued reliance on OWTSs at this location are close proximity to a waterbody (Fones Pond) and the possibility of poor soils not conducive to on-site systems. However, due to the increased treatment capabilities of current OWTS technologies and the availability of I/A OWTS technologies for use where site restrictions are a factor, options exist for providing adequate treatment of wastewater by use of OWTSs in this planning area.

Therefore, it is recommended that all parcels from this area be removed in favor of continuing the use of OWTSs for wastewater disposal. As a result of the continued reliance on OWTSs, possible impacts to the environment caused by improperly functioning OWTSs and the lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended in this planning area. This area should continue to be monitored for any signs of widespread OWTS failure.

Removal of this planning area from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas with greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 32,305 gpd and 35,710 gpd respectively.

6.1.2.z Planning Area Z

Planning Area Z was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area would flow to the proposed Harris Interceptor. This area was proposed to be sewerage as part of the Phase II sewer program, meaning the area was deemed to be poor for OWTS construction, but other areas (Phase I areas) have either greater need and/or would have to be sewerage in order to provide the necessary wastewater infrastructure to make installing lateral sewers in this area economically feasible.

Based upon updated information obtained for this report, the need to serve this area completely by means of an off-site wastewater management solution is not as

critical as other areas where flow can be better allocated. While the parcels located on the eastern end of the planning area have a higher concentration of commercial properties that have a greater need for sewers, the parcels located on the western side of the area along Hill Street and Howard Avenue are in a more remote location where need is less. The topography of the western area will require construction of a pump station to service the majority of parcels of this area. The area's remote location and the need to pump wastewater flow make construction of sewers within this area less economically feasible. This factor alone is sufficient enough to consider removing this planning area from the sewerage plan in favor of continued use of current on-site wastewater disposal methods. Furthermore this area has a greater concentration of single family homes with lot sizes sufficient enough for conventional OWTSSs.

The drawbacks to recommending continued reliance on OWTSSs at this location are close proximity to a waterbody (Pawtuxet River) and the possibility of poor soils not conducive to on-site systems. However, due to increased treatment capabilities of current OWTSS technologies and the availability of I/A OWTSS technologies for use where site restrictions are a factor, options exist for providing adequate treatment of wastewater by use of OWTSSs in this planning area.

Therefore, it is recommended that parcels in the western part of the planning area (parcels adjacent to Hill Street, Colvin Street and Howard Street to Chestnut Street) are removed from the sewerage plan, thus continuing the use of OWTSSs for wastewater disposal for these parcels. As a result of continued reliance on OWTSSs, possible impacts to the environment caused by improperly functioning OWTSSs and lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended. This area should continue to be monitored for any signs of widespread OWTSS failure.

Removal of the areas discussed above from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas with greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 37,359 gpd and 44,426 gpd respectively.

Additional flows of 10,124 gpd have also been added to this planning area. These flows are due to the increase in wastewater need due to the proposed Riverwalk Commons development, as described in Chapter 4 of this report. This additional flow will come from the recommended removal of the Planning Areas from the sewer plan, as mentioned in this Chapter.

6.1.2.aa Planning Area AA

Planning Area AA was recommended for sewerage as part of the 1995 FP report. However, this area was removed from the sewerage plan based upon the recommendation in the 2003 FP Reaffirmation to continue the use of existing OWTSSs. This removal was due to increased sewer need in Planning Area J due to

the proposed commercial and residential developments (see previous Chapters in this report, the 2003 FP Reaffirmation and the 1995 FP for a more detailed evaluation of this area).

Based upon updated information obtained for this report, the need for this area to be served by an off-site wastewater management solution remains low and the projected flows for the area are better allocated to areas with greater need. Therefore, the recommendation in the 2003 FP Reaffirmation that this area be excluded from the sewer program is confirmed.

6.1.2.bb Planning Area AB

Planning Area AB was recommended for sewerage as part of the 1995 FP report. However, the area was removed from the sewerage plan based upon the recommendation in the 2003 FP Reaffirmation to continue the use of existing OWTs. This removal was due to the increased sewer need associated with commercial and residential developments in Planning Area J (see previous Chapters in this report, the 2003 FP Reaffirmation and the 1995 FP for a more detailed evaluation of this area).

Based upon updated information obtained for this report, the need for this area to be served by an off-site wastewater management solution remains low and the projected flows for the area are better allocated to areas with greater need. Therefore, the recommendation that this area remain excluded from the sewer program is confirmed.

6.1.2.cc Planning Area AC

Planning Area AC was not recommended for sewerage as part of the 1995 FP report; it was instead recommended that this area continue to treat their wastewater on-site through the use of OWTs (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Removal of this area from the sewerage plan was also recommended to allow wastewater flow allocation to areas with greater need for sewers.

Based upon updated information obtained for this report, the need for this area to be served by off-site wastewater management solution remains low and the projected flows for this area are better allocated to areas with greater need. Therefore, the recommendation in the 1995 FP for that area remain excluded from the sewer program is confirmed.

6.1.2.dd Planning Area AD

Planning Area AD was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area is to flow south to the Flat River Road Interceptor. This area was to be sewerage

as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area completely by means of an off-site wastewater management solution is not as prevalent as other areas, where flow can be better allocated. The parcels located in this area are in a location that, while originally planned for sewerage, are not in any of the sewer construction contracts for the foreseeable future. In this area, there is a greater concentration of parcels with lots sizes that are adequate for conventional OWTS construction.

The drawbacks to recommending continued reliance on OWTSs at this location are the possibility of poor soils not conducive to on-site systems. However, due to increased treatment capabilities of current OWTS technologies and the availability of I/A OWTS technologies where site restrictions are a factor, the options exist for providing adequate treatment of wastewater by use of OWTSs in this planning area.

Therefore, it is recommended that all parcels be removed from this area, in favor of continued use of OWTSs for wastewater disposal. As a result of continued reliance on OWTSs, possible impacts to the environment caused by improperly functioning OWTSs and lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended. This area should continue to be monitored for any signs of widespread OWTS failure.

Removal of the planning area from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas with greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 43,542 gpd and 44,292 gpd respectively.

6.1.2.ee Planning Area AE

Planning Area AE was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area would flow to the Flat River Road Interceptor. This area was to be sewerage as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area completely by means of an off-site wastewater management solution is not as prevalent as other areas where flow can be better allocated. The parcels located west of Walker Lane are in a location that, while originally planned for sewerage, is not in any of the sewer construction contracts for the foreseeable future. In this area there is a high concentration of parcels with lot sizes adequate for conventional OWTSSs.

The drawback to recommending continued reliance on OWTSSs in this area is the possibility of poor soils not conducive to on-site systems. However, due to increased treatment capabilities of current OWTSS technologies and the availability of I/A OWTSS technologies where site restrictions are a factor, the options exist for providing adequate treatment of wastewater by use of OWTSSs in this planning area.

Therefore, it is recommended that all parcels west of Walker Lane be removed from the sewerage plan, thus continuing the use of OWTSSs for wastewater disposal for these parcels. As a result of the continued reliance on OWTSSs possible impacts to the environment caused by improperly functioning OWTSSs and lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended. This area should continue to be monitored for any signs of widespread OWTSS failure.

Removal of the parcels west of Walker Lane from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas that have greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 6,493 gpd and 7,800 gpd respectively.

6.1.2.ff Planning Area AF

Planning Area AF was recommended for sewerage as part of the 1995 FP report. This was due to certain economic and on-site restrictions prohibiting properly functioning OWTSSs and justifying the need to provide the parcels with an off-site wastewater management solution (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). The majority of wastewater from this area would flow south to the Flat River Road Interceptor. This area was to be seweraged as part of the Phase III sewer program, meaning the area was deemed to be poor for OWTSS construction, but that other areas (Phase I and Phase II areas) were deemed either to have a greater need for sewers or their locations were such that sewerage was more economically feasible.

Based upon updated information obtained for this report, the need to serve this area completely by means of an off-site wastewater management solution is not as prevalent as other areas, where flow can be better allocated. The parcels located in this area are in a location that, while originally planned for sewerage, is not in

any of the sewer construction contracts for the foreseeable future. In this area, there is a greater concentration of parcels with lots sizes that are adequate for conventional OWTS construction.

The drawbacks to recommending continued reliance on OWTSs at this location are the possibility of poor soils not conducive to on-site systems. However, due to increased treatment capabilities of current OWTS technologies and the availability of I/A OWTS technologies where site restrictions are a factor, options exist for providing adequate treatment of wastewater by use of OWTSs in this planning area.

Therefore, it is recommended to that all parcels be removed from this area, in favor of continued the use of OWTSs for wastewater disposal. As a result of continued reliance on OWTSs, possible impacts to the environment caused by improperly functioning OWTSs and lack of general knowledge that most homeowners have regarding O&M of their septic systems, a public education program (as described in Chapter 5) is recommended. This area should continue to be monitored for any signs of widespread OWTS failures.

Removal of the planning area from the sewerage program will provide additional wastewater capacity that can be reallocated to other planning areas with greater need. The average daily wastewater flow that can be reallocated for design years 2030 and 2060 is 45,746 gpd and 51,146 gpd respectively.

6.1.2.gg Planning Area AG

Planning Area AG was not recommended for sewerage as part of the 1995 FP report; it was instead recommended that this area continue to treat their wastewater on-site through the use of OWTSs (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). Removal of this area was also recommended to allow wastewater allocation to areas with a greater need for sewers.

Based upon updated information obtained for this report, the need for this area to be served by off-site wastewater management solution remains low and the projected flows for the area are better allocated to areas with more need. Therefore, the recommendation that this area remain excluded from the sewer program is confirmed.

6.1.2.hh Planning Area AH

Planning Area AH was not recommended for sewerage as part of the 1995 FP report, it was instead recommended that this area use a community OWTS to manage their wastewater (see previous Chapters and the 1995 FP for a more detailed evaluation of this area). This alternative was recommended because many lots in this area are undersized for conventional OWTS use; however, the remote location makes sewerage this area through connection to the municipal sewer system economically in-feasible. The 1995 report recommended that

localized collector sewer systems be installed for restrictive lots and that the systems transmit the wastewater from these parcels to a community OWTS for disposal.

Based upon updated information obtained for this report, the need for this area to be served by an off-site wastewater management solution still remains economically in-feasible option. Therefore, the recommendation for this area to remain excluded from the sewer program is confirmed.

6.1.2.ii Planning Area AI

Planning Area AC was not recommended for sewerage as part of the 1995 FP report; it was instead recommended that this area continue to treat their wastewater on-site through the use of OWTSs (see previous and the 1995 FP for a more detailed evaluation of this area). Removal of this area was recommended to allow wastewater allocation to areas with a greater need for sewers.

Based upon updated information obtained for this report, the need for this area to be served by off-site wastewater management solution remains low and the projected flows for the area are better allocated to areas with greater need. Therefore, the recommendation that this area remain excluded from the sewer program is confirmed.

Based upon needs data, including OWTS repair information obtained from RI-DEM, development density and GIS mapping, the Planning Areas to be removed from the recommended sewer plan were determined to have the least need and greatest sewer construction difficulty and associated cost of the remaining areas to be sewerage. OWTS information, presented in Chapter 3, show that these areas experience low to moderate OWTS problems in comparison to the remaining Planning Areas. Also, with the exception of Area Z, these Planning Areas were in the Phase III sewer construction, based on the 1995 Facilities Plan. Phase III construction represented areas with the least amount of sewerage need, and areas where either sewer construction may be difficult or where Phase I and Phase II sewers needed to be built before sewer access could be obtained. Since Phase I sewers have yet to be completed, the Phase III sewers are still in the conceptual phase and given the current rate of the sewer installation, it may still be several years away from completion.

6.2 Recommended Sewer Collection System Cost Estimate

The cost of installing conventional sewer collection systems in the study areas for which they have been identified as a feasible option have been generated as part of this study. The detailed collection system costs are based on a preliminary layout of sewers on town assessor's maps, with the aid of topographic mapping prepared as part of the 1966 Keyes report. The estimated sewerage costs for each study area are shown on **Table 6-2**. A detailed street by street breakdown of these costs is included in **Appendix G**. Sewer construction costs were obtained from actual bids by contractors on similar type projects.

As shown in **Table 6-2**, the cost to serve individual study areas and the cost per dwelling unit served vary widely. Factors affecting the system cost include lot sizes and configurations, soil conditions (i.e. bedrock) and topography. Topography often dictates that some areas require sewer pump stations and force mains to transmit flow to other areas and to interceptors. Other areas may require sections of sewer to be installed in cross-country alignments to facilitate gravity transmission of the wastewater. In both cases, construction of such facilities may come at a high capital cost while not providing direct service to adjacent properties.

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**Table 6-2
Summary of Conventional Sewer Collection System Costs**

Area	Length of Sewer Interceptor (feet)	Length of Lateral Sewer (feet)	Pump Stations Required	Length of Sewer Force Main (feet)	Approx. No. of Properties Served	Total Sewer Construction Cost	Cost per Unit	Comments
A	0	15,800	1	1,300	230	\$ 3,584,000.00	\$ 15,582.61	To Existing New London Tpk Sewer
B	0	7,850	1	750	127	\$ 1,710,000.00	\$ 13,464.57	To West Warwick thru Tiogue Avenue
C	0	7,900	0	0	173	\$ 1,580,000.00	\$ 9,132.95	To Tiogue Avenue Interceptor - East
D	1,100	12,900	0	0	264	\$ 2,910,000.00	\$ 11,022.73	To Existing Washington Interceptor
E	3,250	16,100	1	750	306	\$ 4,655,000.00	\$ 15,212.42	To Existing Washington Interceptor
F	3,100	0	0	0	30	\$ 1,130,000.00	\$ 37,666.67	To Existing Tiogue Interceptor & Sandy Bottom Rd. PS
G	2,200	10,275	0	0	221	\$ 2,715,000.00	\$ 12,285.07	To Tiogue Avenue Interceptor - East
H	2,475	19,400	1	750	357	\$ 4,842,500.00	\$ 13,564.43	To Tiogue Avenue Interceptor - East
I	0	7,100	1	1,525	114	\$ 1,702,000.00	\$ 14,929.82	To Tiogue Avenue Interceptor - East
J	0	13,825	1	900	224	\$ 2,997,000.00	\$ 13,379.46	To Existing Hopkins Hill Rd. Sewer
K	0	17,825	0	0	300	\$ 3,565,000.00	\$ 11,883.33	To Existing Hopkins Hill Rd. Sewer
L	0	23,400	0	0	348	\$ 4,680,000.00	\$ 13,448.28	To Tiogue Avenue Interceptor - West
M	0	3,100	0	0	32	\$ 620,000.00	\$ 19,375.00	To Tiogue Avenue Interceptor - West
N	0	400	0	0	3	\$ 80,000.00	\$ 26,666.67	To Tiogue Avenue Interceptor - West. Portions elim. (2009)
O	0	1,750	0	0	26	\$ 350,000.00	\$ 13,461.54	To Existing Washington Interceptor. Portions elim. (2009)
P	2,600	13,000	0	0	275	\$ 3,380,000.00	\$ 12,290.91	To Existing Washington Interceptor
Q	0	23,850	1	800	327	\$ 5,154,000.00	\$ 15,761.47	To Existing Washington Interceptor
R	0	6,750	0	0	100	\$ 1,350,000.00	\$ 13,500.00	To North Branch Interceptor
S	2,250	3,450	0	0	74	\$ 1,365,000.00	\$ 18,445.95	To North Branch Interceptor
T	1,800	4,550	0	0	80	\$ 1,450,000.00	\$ 18,125.00	To North Branch Interceptor
U	0	0	0	0	0	\$ -	N/A	To Existing Sandy Bottom Rd. PS
V	3,000	7,550	0	0	150	\$ 2,410,000.00	\$ 16,066.67	To Existing Washington Interceptor
W	0	16,725	1	450	212	\$ 3,461,000.00	\$ 16,325.47	To Existing Washington Interceptor
X	0	11,650	1	750	175	\$ 2,470,000.00	\$ 14,114.29	To Existing Washington Interceptor. Portions elim. (2009)
Y	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (2009)
Z	0	5,725	1	1,200	87	\$ 1,361,000.00	\$ 15,643.68	To North Branch Interceptor. Portions elim. (2009)
AA	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (2003)
AB	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (2003)
AC	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (1995)
AD	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (2009)
AE	1,500	7,625	0	0	73	\$ 1,975,000.00	\$ 27,054.79	To Existing Sandy Bottom Rd. PS. Portions elim. (2009)
AF	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (2009)
AG	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (1995)
AH	0	5,350	0	0	92	\$ 1,070,000.00	\$ 11,630.43	To Community OWTS System
AI	0	0	0	0	0	\$ -	N/A	Eliminated from Sewer Program (1995)
TOTALS	23,275	263,850	10	9,175	4,400	\$ 62,566,500.00	\$ 14,219.66	

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7 ARRANGEMENTS FOR IMPLEMENTATION

7.0 General

The final step in the facility planning process, after the alternatives have been evaluated and the final plan has been selected, is to begin implementation of the selected wastewater management plan. As part of the 1995 Facilities Plan, the selected plan at that time began implementation based on the recommendations of this section. A three phased recommended sewer plan was created. Currently, Area U was completely served by the municipal sewer and Areas A, B, F, I, J, K, L, O, P, Q, R, S, V, and W have been partially served by the municipal sewer based upon that recommended sewer plan. Future sewer construction contracts 6, 7, 8, 9, 10, 11, Hopkins Hill Road East and Huron Pond have been proposed to sewer additional Phase I and Phase II sewer areas. Contract 6, 9 and 11 will completely serve Area G, Contract 7 will complete Area F, Contract 8 will complete Area P, Contract 10 will complete Area C, Hopkins Hill Road East will serve approximately 60% of Area K (184 parcels), and Huron Pond will serve parcels in the northern portion of Area J. Once the completion of Contracts 6, 7, 8, 9 and 11 occur all Phase I recommended sewers will be constructed. The remaining proposed sewer contracts serve areas in the Phase II recommended sewer program. As part of this report, the implementation of this revised selected three-phased plan, as discussed in Chapter 6 of this report, will be reviewed.

The major factors which must be addressed to continue the wastewater management plan are: to identify the necessary implementation steps, including institutional responsibilities, system operation and maintenance requirements and an implementation schedule; and to establish a financial plan to fund the recommended improvements. The financial plan identifies methods for financing the costs associated with the project, including system construction financing, administration costs and yearly system operation, maintenance and replacement (OM & R) costs. These items are discussed in detail in the following sections.

7.1 Financial Plan

Previous sewer programs prior to the 1995 Facilities Plan were rejected by voters for various reasons, including the costs involved with the system construction. For this reason, perhaps the most important implementation issue to be addressed is the acceptability of financing of the recommended plan. A financial plan for a wastewater collection system must include a system for financing system construction (capital) costs, as well as annual system operation and maintenance (O&M) costs. Since a phased sewer construction program is selected, considerations for financing capital and annual costs for each phase of the recommended system construction must be considered. The financing of construction and O&M costs are emphasized in the following discussions.

7.1.1 Capital (Construction) Costs

Chapter 6 included a discussion of the estimated capital costs associated with each phase of the recommended sewer construction. Also discussed were Coventry's share of capital costs associated with improvements to the West Warwick Regional Wastewater

Collection and Treatment System and the capital costs already expended for the existing sewer system. The existing and future sewer system capital costs are/will be financed by local funds with the assistance of state and/or federal funding programs, as discussed below.

7.1.2 Available Funding Assistance

The last year of the state/EPA Construction Grants Program for the planning, design and construction of wastewater collection and treatment facilities was 1990. That program allowed for state and federal grant funding of wastewater treatment facilities and major interceptor sewers. The major sources of project funds are now essentially limited to two state programs: the State Revolving Loan Fund (SRF) and the Interceptor Bond Fund (IBF). Other federal funding programs currently in existence include the Farmer's Home (FmHA) program.

7.1.2.a State Revolving Loan Fund Program

The SRF program is the principal program for funding wastewater projects in the State of Rhode Island. The SRF program includes low interest loans covering the full project cost (including engineering), and is administered jointly by the Rhode Island Clean Water Finance Agency (CWFA) and the Rhode Island Department of Environmental Management (RI-DEM).

7.1.2.b Interceptor Bond Fund (IBF) Program

The Interceptor Bond Fund (IBF) program provides grants equal to 50% of eligible project costs (to a maximum grant of \$500,000 per project) for interceptor projects, and is administered by the RI-DEM. The only existing project to receive funding as part of this program was the Tiogue Avenue Interceptor East construction included in Contract 5. Currently the funds that were available for this grant program have been substantially depleted. However, it is recommended that this program be monitored. Should the State ever replenish funding to this program, future sewer projects involving construction that would qualify should apply for this program.

7.1.2.c Other Funding Programs

7.1.2.c.1 American Recovery and Reinvestment Act (ARRA) of 2009

The American Recovery and Reinvestment Act is an economic stimulus package enacted by the United States Congress in February 2009. The Act provides funding to finance eligible high-priority infrastructure projects. The program distributes funds directly to States SRF programs. The states set the project priorities to determine project eligibility based on both the effects on public health and the environment, in addition to timeframe to proceed to construction

In Rhode Island the federal allotment for the SRF program was \$26,314,600. Through the SRF loan program, projects on the FY 2010

Project Priority List (as discussed later in this Chapter) that are able to proceed to construction or award construction contracts before February 17, 2010 are eligible for a principal forgiveness on the corresponding SRF loans. Currently, due to the uncertainty of projects that will qualify and be included in this program before the deadline, it is not yet known the actual amount of principal forgiveness that will be granted to projects under this program. Regardless, because it is known that some amount of principal forgiveness will be granted, it is recommended that the Town seek inclusion in this program for, at a minimum, the next proposed sewer construction contract (Contract 6). The RI-DEM draft intended use plan for the ARRA is included in **Appendix I**.

7.1.2.c.2 Miscellaneous Funding Programs

The federal Farmer's Home (FHA) or Rural Development Assistance (RDA) program provides grants and/or loans for projects to communities with limited financial resources. This program uses maximum community income levels (per household) to dictate the eligibility of a community for funds. Unfortunately, income levels in Coventry currently exceed the maximum levels allowable to be eligible for FHA funding. While Coventry is not currently eligible, the availability of FHA funding to the town should continue to be monitored for future projects.

Other funding sources which may become available to the town for sewer projects include federal Housing and Urban Development (HUD) and Community Development Block Grant (CDBG) programs. Coventry has utilized HUD monies in the past to construct the North Road Terrace, Arnold Road, Contentment Drive/Carley Drive and Victor Electric (North Main Street) sewer extensions. The availability of these funds should be rigorously pursued by the town. However, sewer construction financing should not be reliant upon such programs.

7.1.3 Priority Determination System – Project Priority List

The town of Coventry is currently on the state's FY 2010 Project Priority List (PPL) for the design and construction of the proposed sewer construction projects outlined in **Table 7-1**. The PPL is part of the RI-DEM's Office of Water Resources Priority Determination System which determines the priority and ranking of all municipal water pollution abatement projects that seek to receive federal and/or state funding assistance. Point values are determined based on certain categories and need. These cumulative point values determine the ranking for each project on the PPL. The rules and regulations for this program are attached in **Appendix I**.

Placement on the project priority list makes projects eligible for funding under all programs listed above. The best probable scenario for project funding is currently as follows:

- a) Collection (lateral) sewers and small pumping stations will receive low interest loans under the state's SRF loan program, including construction and engineering costs. The most recent sewer construction project's SRF loan interest rate was slightly lower than 2%.
- b) Interceptor sewers and interceptor sewer pumping stations will receive SRF loans for the entire construction cost including engineering costs, as described above for the lateral system. In addition, should the state replenish the IBF program funding, these projects will be eligible for grant funding under the state's Interceptor Bond Fund (IBF) program. For this purpose of this planning report, it will be assumed that the interceptors and pump station costs will be funded strictly through the SRF loan program.

Due to the limited state and/or federal funds available for financing these sewer projects, the majority of funds needed to construct the sewer projects must come from local sources. The following sections discuss allocation of the local project costs. These discussions assume that State Revolving Fund (SRF) loans will be used to finance the Phase I, II and III.

7.1.4 Local Cost Allocation

Perhaps the most significant issue in the development of a municipal sewer program is how the local share of the project costs are to be allocated. Coventry has expended significant funds (approximately \$14 million dollars) to date on its wastewater collection system (**Table 7-1**) through the SRF/IBF programs. Financing future sewer projects though a general tax is possible, however, because currently all Town parcels are not scheduled to be sewered such a methodology, can be criticized since an unsewered taxpayer would pay the same as a sewered taxpayer. For the purposes of this report, it is assumed the Town will continue the current betterment program (as discussed later in the Chapter) employed for the sewer construction program.

The other significant capital cost needing allocation is the share of the West Warwick improvements to the regional collection and treatment system (currently at \$10,861,534). The Town is using funds from the collected sewer betterments to make the payments on the improvements cost. It is the recommendation of this report (and in the previous 1995 FP) that the Town allocate the remaining payments under general taxes. While there may be criticism that the entire tax base is not benefiting from Coventry's share of the West Warwick improvements to the regional collection and treatment system, it would be unreasonable, from a cost perspective, to assess this large sum of monies to the betterments of a small portion of the Town that is/will be sewered. While individual taxpayers may not benefit directly from the West Warwick improvements, the Town as a whole does benefit from the increase in development potential and property values that the sewers bring, and the corresponding increase in tax revenues the Town will receive. Also there can be a case made to the extent that the sewers will increase in environmental quality to public lands (due to the elimination of improperly functioning OWTS and cesspools) that are enjoyed by the entire Town.

7.1.4.a Sewer Betterment Program

Sewer construction costs may be repaid directly through sewer betterment or special assessments, paid by those properties directly benefiting from the improvements. Financing the entire cost of a project through such assessments limits the cost impact to only those properties serviced by the sewers. Sewer assessments can be made based on various methods, including:

- a) the total land area and/or length of frontage of sewer properties,
- b) the assessed (tax base) value of sewer properties, or
- c) the number of equivalent residential dwelling units (EDUs) represented by the sewer property.

Previous to July 2009 the Town assessed residential properties by the EDU methodology and the commercial/industrial properties by the assessed value of the property. Based upon a rate study commissioned by the Town recommendations to the methodology were made and presented. On July 8, 2009 the Town adopted a new sewer ordinance updating their regulations governing the use of public and private sewers. This ordinance is included in **Appendix J**. In the ordinance it outlines a procedure for assessing parcels that currently have access to the sewer, and a procedure on how to assess parcels that will be served by future sewer construction contracts.

Properties that currently have access to an existing sewer line are able to connect to the existing municipal sewer, and have not yet been assessed prior to the adoption of the ordinance, are assessed based on the following guidelines:

- Residential Assessments:
 - Single Family Homes \$12,900 per housing unit
 - Two Family (Duplex) Homes \$12,900 per housing unit
 - Multi-Family Homes, Condos and Apartments \$12,900 per housing unit
 - Mobile Homes \$6,600 per housing unit
- Non-Residential Assessments:
 - Minimum Assessment \$12,900 per housing unit
 - Commercial Properties (includes Condos) \$60 per \$1,000 property valuation
 - Industrial Properties (includes Condos) \$60 per \$1,000 property valuation
 - Hospitals, Nursing and Convalescent Homes \$6,600 per bed
 - All Other Properties (includes Public and Quasi-Public Properties) \$60 per \$1,000 property valuation

There are included provisions in the regulations to examine the assessments annually and increase them based upon the corresponding increase of the Consumer Price Index of the previous year.

For future construction contracts that are completed by the Town sewer districts will be set up to determine the final betterment assessment. Each new sewer project will theoretically represent a new sewer district. The assessment cost is then calculated by taking the final project cost (including construction cost, administration costs, legal services and borrowing fees) and dividing by the corresponding number of EDUs within the district. EDUs will be calculated based on the following criteria:

- 1 EDU for each single family home,
- 0.5 EDUs for each additional attached unit,
- 1 EDU per each condominium unit,
- Commercial and Industrial users EDUs will be calculated by rounding up the average daily water flow divided by the estimated flow for a single family home (345 gpd), with a minimum assessment of 1 EDU.
- Vacant parcels will be assessed as 1 EDU, until the parcel is developed and will be recalculated accordingly.

This equivalent dwelling unit method provides for assessments in proportion to the total number of existing and potential sewer units to be served, with each unit equal to a single family residence. The most recent water use records (from Kent County Water Authority) would be used to estimate the number of equivalent residential units represented by each commercial and industrial user. All properties benefiting from available sewer service would be assessed a minimum of one residential unit. This method results in assessments which are generally proportional to the wastewater flow from each property. Recommendation is made for the Town to continue to continue the repayment of SRF loans for sewer construction funding through the current assessment method as outlined above and in the Town's Sewer Use Ordinance (**Appendix J**) and through sewer user charges (as discussed later in this chapter).

7.1.5 Phase I Construction Cost Allocation

The Phase I sewer construction program consists of the already completed sewer construction contracts 03-01, 03-02, 03-04, 4 and 5, and the proposed sewer construction contracts 6, 7, 8, 9, 10 and 11. The estimated local share of project costs for construction of the recommended Phase I sewer system (see Chapter 6) are shown in Table 7-1. Portions of Phase II have been/will be constructed as part of the sewer contracts listed in Table 7-1 and the costs associated with this construction is included in the table. Additional costs due to West Warwick for regional projects were also estimated, and are discussed separately later in this chapter.

**TABLE 7-1
SUMMARY OF PHASE I CAPITAL COSTS**

Project Description	Total Project Construction Cost	Less IBF Grant	Total Local Cost
Completed Projects			
Contract 03-01 & 03-02 ⁽¹⁾	\$7,271,562	None	\$7,271,562
Contract 03-03	\$381,867	None	\$381,867
Contract 4	\$2,668,310	None	\$2,668,310
Contract 5	\$3,672,320	\$500,000	\$3,172,320
TOTALS	\$13,994,059		

Proposed Future Projects			
Contract 6 – Lakeside Drive Area I	\$1,500,000	None	\$1,500,000
Contract 7 – Tiogue Avenue West	\$800,000	None	\$800,000
Contract 8 – Quidnick Village Area	\$3,380,000	None	\$3,380,000
Contract 9 – Wendell Avenue Area	\$500,000	None	\$500,000
Contract 11 – Lakeside Drive Area II	\$1,045,000	None	\$1,045,000
TOTALS	\$7,225,000		

Note (1) Contract 03-01 and 03-02 cost includes pump station and force main costs.

As stated in the previous section recommendation is made for the Town to finance the repayment of SRF loans for the above listed future sewer construction projects through the current assessment method and through sewer user charges (as discussed later in this chapter).

7.1.6 Future Phase Construction Cost Allocation

The cost of constructing the continuing and future phases of the recommended plan should also be considered in any proposed financing system, since financing used for Phase I will set a precedent for future construction. The estimated costs for construction of the recommended Phase II and Phase III sewer system, as presented in Chapter 6 and **Appendix G**, are summarized in **Table 7-2**. Sewer construction costs were obtained from actual bids by contractors on similar type projects. The costs do not include Phase I sewer construction costs which are included in **Table 7-1**. As noted for Phase I costs, the costs for West Warwick regional projects are not included in this discussion, but are discussed separately later in this chapter.

**TABLE 7-2
SUMMARY OF PHASE II & III CAPITAL CONSTRUCTION COSTS**

Proposed Sewer Construction Projects			
	Phase II	Phase III	Total
Contract 10 – East Shore Drive Area	\$2,190,000	None	\$2,190,000
Hopkins Hill Road East Sewer Project	\$1,355,000	None	\$1,355,000
Huron Pond Sewer Project	\$1,835,000	None	\$1,835,000
Totals	\$5,380,000		

Remaining Sewer System			
	Phase II	Phase III	Total
Lateral Sewers	\$30,660,000	\$10,195,000	\$40,855,000
Interceptors	\$3,622,500	\$990,000	\$4,612,500
Pump Stations and Forcemains	\$1,910,000	\$704,000	\$2,614,000
Totals	\$36,192,500	\$11,889,000	

7.1.7 West Warwick Regional System Costs

Chapter 6 included a summary of Coventry's share of costs of West Warwick regional projects. These costs are for projects completed to date as well as for planned projects. As discussed previously, Coventry has paid over \$10.8 million to date to West Warwick for their share of the improvements to the regional facilities that were designed and constructed to serve Coventry.

In the past West Warwick costs have been paid through funds from the collected sewer betterments. As stated in Section 7.1.4, it is the recommendation of this report (and in the previous 1995 FP) that the Town allocate the remaining payments under general taxes. The criticism that the entire Town does not benefit from the past improvements can be suppressed by the Town as a whole benefiting from the increase in development potential and property values that the sewers bring, corresponding to an increase in potential tax revenues.

7.1.8 Annual Operation and Maintenance Costs

Certain costs are incurred in the administration, operation and maintenance of a sewer system once it has been constructed. These costs include local sewer system operation, maintenance and replacement (OM & R) costs, as well as similar costs associated with the West Warwick Regional WWTF. If any federal funds are involved in the construction of the proposed sewer system, one condition will be the implementation of an agency approved sewer user charge system. To be approved the annual cost of operating and maintaining the sewer system must be apportioned to the individual users of the system based on actual use, or the benefit derived from such use.

The most common method of assessing sewer user charges is on the basis of sewage flow contributed. This method is currently used by the Town and also by West Warwick, and will continue to be used for charging Coventry for wastewater flows to the West Warwick WWTF. Users of the sewer system are billed based on the wastewater flow (as a percentage of metered water use) to the sewer system. The flow contributed by an individual user is typically estimated based on 80 percent of metered drinking water usage. Billings would therefore be based on water meter readings supplied by Kent County Water Authority (as is currently done in West Warwick and for the limited number of sewer users in Coventry).

Currently sewer users in Coventry get charged \$1.55 per hundred cubic feet of eligible water used (80% of actual water use, per Kent County Water Authority) by the Town of Coventry and \$3.19¹ per hundred cubic feet by West Warwick. The Town continually employs the services of a rate study consultant to examine the user charges in place and determine if they are adequate enough to cover the OM & R costs of the system.

While the wastewater treatment and disposal charges which must be paid to West Warwick are strictly dependent on the amount of flow, the Coventry O&M costs are not. Coventry's operation and maintenance budget is composed principally of personnel and equipment costs related to the maintenance and administration of the sewer system. These costs are generally fixed and do not decrease significantly with a decrease in wastewater flows. Therefore, if significantly lower wastewater flows were experienced by the sewer system than those estimated, the sewer user charge (cost per hundred cubic feet) would need to be increased. For this reason it is advantageous for the sewer system to have as many users as possible to help maintain reasonable costs per user. Many communities address this issue by implementing a mandatory connection ordinance, requiring all properties which can connect into the sewer system to do so within a certain amount of time. Another option would be to have a phased approach in instituting a user charge system financed entirely by users. Recommendations are made to continue the annual examination of user charges to ensure that all OM & R costs associated with the municipal sewer system will be covered by the user charges.

Other considerations should be made to deal with delinquent accounts. Currently Coventry's largest user is an out of town industrial facility (Amgen Inc.) that transmits their wastewater through Coventry's municipal sewer. Their flow is pumped from their facility to the gravity sewer in Hopkins Hill Road, where it flows north to the Tiogue Avenue Interceptor, then east to the Sandy Bottom Road Pump Station and is pumped to the Washington Street Interceptor to flow east into the West Warwick system (see **Figure 3-10** for plan of the existing system). The current Amgen wastewater flow represents a large portion of the total flow in Coventry and thus a large portion of the O&M costs to the Coventry sewer system (especially because the flow enters currently the only municipal pump station). The industrial facility has been delinquent on their sewer billings to the Town since the completion of the Contract 03-03 allowing them to connect

¹ West Warwick includes additive charges to their users for debt service repayment. The debt service is not charged to Coventry residents because the Town has paid their portion with the general taxes.

to the Coventry sewer system. Additional information regarding this specific industries wastewater flow and allocations were addressed in the 2003 FP Reaffirmation. Coventry continually bills the industry user fees but payment has yet to be received. Due to the fact that the flows increase the O&M costs to the system, it is recommended that the Town seek assistance from West Warwick and RI-DEM in addressing this large delinquent user.

7.2 Implementation Plan

This section discusses the steps necessary to assure proper implementation of the recommended plan. Included is a discussion of the administrative and institutional responsibilities for implementation, as well as a list of specific implementation steps and a preliminary implementation schedule: Several items are discussed in detail, including the recommended plan for administration and O&M of the sewer system.

7.2.1 Implementation Responsibilities

The parties responsible for implementation of the recommended plan include the town of Coventry, acting through its Town Council and Town Manager, and the town of West Warwick, acting through its Town Council. The town of Coventry has jurisdiction over the construction and operation of a sewer system within the town of Coventry. The town of West Warwick has jurisdiction over the Regional Wastewater Collection System and Treatment Facilities located within the town of West Warwick.

The existing intermunicipal agreement between Coventry and West Warwick, included as **Appendix K** to this facilities plan, outlines the responsibilities of Coventry and West Warwick as they relate to the construction and operation of a wastewater collection system in Coventry. The financial acceptability of the wastewater facilities plan is principally the concern of the town of Coventry (acting through its Town Council). A majority of the financial responsibilities of Coventry to West Warwick for the construction of regional system components to date have been met. Payment of Coventry's share of remaining and future costs for the construction of regional system components are the only financial concern of West Warwick. The construction of sewers in Coventry is solely the financial responsibility of the Town of Coventry. Currently the elected Coventry Town Council is the acting deciding body for the Town. The Coventry Town Council currently has responsibility for the planning, constructing, financing, administration, operating and maintaining of all the Coventry wastewater collection system. The financial acceptability of the recommended sewer system will therefore be decided by the Town Council of Coventry.

The Coventry Sewer Sub-Committee (CSSC) was created in previous years as an advisory board that could provide guidance and recommendations to the Town Council to vote on for implementation. Items relating to planning, construction or connection into the municipal system are first heard by the CSSC, and then a recommendation is made to the Town Council to vote on.

While the O&M of the sewer system is the responsibility of the Town Council, the Coventry Department of Public Works (DPW) is designated by the Town Council to provide the necessary O&M to the sewer system.

Current sewer users in Coventry are billed user charges by both the Town of Coventry billing department and also by West Warwick. Users receive two billings from each municipality. This has led to confusion from residents and the unintentional non-payment of the bills. In order to remedy the confusion Coventry has decided to combine the West Warwick user charges, with the Coventry user charges and issue one single bill to the users. Coordination is on-going between both Coventry's and West Warwick's sewer billing entities and implementation of this billing process is expected to take place for the next fiscal year.

The implementation responsibilities of Coventry and West Warwick are summarized as follows:

Town of Coventry:

Following approval of this facilities plan, the Town of Coventry should take action to assure:

- the appropriation of the funds and the completion of design and construction of the recommended plan;
- the continued review and update as needed to the recently adopted sewer ordinance;
- the continued review and update as needed to the existing intermunicipal agreement with West Warwick;
- and the continued administration, operation and maintenance of the sewer system (including an approved system of sewer user charges).

The completion of these implementation tasks will require appropriate actions by specific town authorities, including the Town Council, the Town Manager, the Director of Public Works, the Director of Planning, the Finance Director and the Tax Assessor.

West Warwick:

The Town of West Warwick should take action to assure the proper administration, operation and maintenance of the regional wastewater facilities.

The final approval of this wastewater facilities plan, should meet no opposition from sources outside of Coventry. The acceptability of this facilities plan to the Town of Coventry will be the subject of a final public hearing to solicit formal public opinion. Prior to this hearing, the Rhode Island Department of Environmental Management (RI-DEM), and other applicable state agencies, will be sent copies of the draft report for review and comment. All substantial comments received from reviewing agencies and the public will be addressed. The final Wastewater Facilities Plan will be submitted to RI-DEM Division of Water Resources for approval.

Barring significant opposition from Coventry residents or state agencies, this facilities plan should be adopted by the Coventry Town Council. This report will also serve as the wastewater portion of the Coventry Community Comprehensive Plan (CCP) which the current update is being drafted by the Town.

7.2.2 Implementation Steps

The purpose of this section is to identify specific events which must take place in order to implement the recommendations presented in this facilities plan. These implementation steps include:

- Submit the draft Wastewater Facility Plan Update to the RI-DEM Division of Water Resources for review and comment. Respond to or incorporate RI-DEM comments as necessary.
- Conduct a formal public hearing to present the conclusions and recommendations of the Wastewater Facility Plan Update.
- Finalize the report and submit the final Wastewater Facility Plan Update to RI-DEM Division of Water Resources for final review and approval.
- Submit project information to RI-DEM to remain on the state's Project Priority List (PPL) for receipt of future design and construction grants/loans. This has already been completed for the state's FY 2010 PPL, but future submissions should continue to be made.
- Perform necessary steps for the design, permitting and construction of the recommended sewer plan, which include in general:
 - Submit formal funding applications to RI-DEM to receive grant and/or loan funds for the design and construction phases. Funding programs to be used include (State Revolving Loan Fund (SRF), or Interceptor Bond Fund (IBF), if applicable/available),
 - Contract with a qualified engineering firm to design and prepare final plans and specifications for the proposed future projects, as discussed in previous Chapters, including permit applications and regulatory agency.
 - Complete the appropriate construction financing arrangements to coincide with the current regulations.
 - Secure competitive bids for the construction of proposed future construction projects.
 - Award construction contract(s).
 - Initiate sewer construction and oversee the completion of the construction.
- Continue to review/revise the local sewer use ordinance, including required industrial pretreatment requirements (at least equivalent to those in place in West Warwick), and the user charge and betterment assessment programs.
- Ensure programs and mechanisms are in place for the proper administration and operation and maintenance of the new sewer system.
- Following approval by the appropriate agencies, commence operation by allowing the connection of properties to the completed sewer system, assessing sewer betterments and collecting user charges.

Following the completion of the above implementation steps, the town of Coventry should continue to administer, operate and maintain the system as required by local ordinance, and state and federal regulations. This Wastewater Facilities Plan should be reviewed, and either reaffirmed or modified every five years to assure future eligibility for state/federal program funding. The applicable steps outlined above should again be followed toward completing the remaining Phase II portions of the recommended sewer plan. Appropriation of funds for completion of remaining Phase II and Phase III areas not included in the proposed future sewer construction contracts would most likely be done on an area by area basis, as needs arise, to maintain affordability of system construction, and thus sewer assessment charges to the property owners.

7.2.3 Coordination with Road and Highway Projects

The town should coordinate the recommended sewer construction program with road and highway projects proposed in the project area. This specifically includes roadway reconstruction projects performed by RI Department of Transportation (RI-DOT) and the town's local road resurfacing program. Close coordination of such projects could result in significant cost savings on pavement replacement work.

7.2.4 Implementation Schedule

Figure 7-1 presents an implementation schedule for the three phased recommended sewer plan. The schedules presented are estimated and based upon the “Anticipated Start Date” listed in the Project Information Forms submitted as part of the RI-DEM Priority Determination System, as discussed previously in this Chapter. This schedule is preliminary and may require modification should conditions change in the future.

7.2.5 Administration, Operation and Maintenance Plan

The wastewater collection system must be properly administered and include a routine operation and maintenance program. The Town Council is the administrative body in charge of the design, construction, ownership, general administration, operation and maintenance of the recommended wastewater collection system. On behalf of the town, and with assistance/recommendations from both the CSSC and DPW, the Council would undertake to the construction of the wastewater collection system, negotiate contracts (with West Warwick, etc.), prepare sewer assessments, and assure proper operation and maintenance of the system.

The Town Council has the authority to prescribe rules and regulations governing the use of the sewer system and the making of building connections, and will receive and pass on petitions for construction of sewers in particular streets. It will conduct hearings for any party or parties desiring service or requesting adjustment, abatement or postponement of sewer assessments. It will take the necessary steps for acquiring land, easements or rights-of-way required for the sewer system. It will also secure legal advice and assure the preparation of annual reports for the town. The Town Council will utilize the available resources of the town in carrying out its responsibility for the sewer system, including the Town Manager, Director of Public Works, Planning Director, Finance Director, Tax Assessor, Town Clerk and other departments or personnel as required.

Upon completion of a considerable amount of Phase I and Phase II sewer areas, it is recommended to examine the need for a municipal Sewer Department to be established, and a qualified Wastewater Superintendent appointed who would handle the day-to-day operation of the sewer system. The Superintendent would be under the direction of, and be directly reportable to the Director of Public Works. The Superintendent would be the individual in charge of the daily administration work required for construction, operation and maintenance of the system. The Superintendent should be able to provide general supervision of the sewer construction work, supervise the making of sewer assessment plans, prepare budgets and budget reviews, laying out of lateral sewers and building connections, as well as the actual operation and maintenance of the collection system (including pumping stations). The Sewer Department should be provided with an adequate budget, manpower and equipment necessary to carry out its duties.

Based on the limited initial workload for the Sewer Department, associated with the Phase I sewer system, the initial operation and maintenance of the sewer system should be handled on a contract basis, under the supervision of the Director of Public Works. The Director of Public Works would act as the Wastewater Superintendent until and if that position is filled. A private contracting firm would be retained on an annual (or longer) basis to perform routine operation and maintenance of the sewer pumping station(s) and collection system, and to oversee repairs as necessary.

The preparation and distribution of sewer user bills is preformed by the Town's billing department currently. As stated before in this Chapter, the Town is planning on providing residents with a single bill that includes both Coventry and West Warwick's sewer user charges. This will occur during the coming fiscal year.

General site maintenance tasks at the pump station (including lawn mowing and snow plowing/shoveling) should be performed by DPW forces, as is currently done for other town buildings.

As mentioned above, when the sewer system expands (through Phases II and beyond), a dedicated Sewer Department should be considered. **Table 7-3** shows a typical staffing plan for the proposed Sewer Department, based on the completion of each phase of the recommended plan.

Normal operation of the sewer system will include daily visits by O&M personnel to wastewater pump stations for inspection and routine maintenance of equipment. Weekly or more frequent visits to major flow metering devices located along the West Warwick border and periodic inspection and maintenance of other collection system components would also be required.

In addition, O&M personnel would respond to system emergencies, including pipeline clogs, sewer overflows and pump station failures. The O & M personnel would include persons trained in the operation and maintenance of wastewater collection systems and pumping stations, and persons familiar with electrical, mechanical and instrumentation work, eating, ventilating and air conditioning (HVAC) systems, and general site, building

**Table 7-3
Coventry Sewer Department Preliminary Staffing Plan**

Position	Phase I Sewer System	Phase II Sewer System	Phase III Sewer System
<u>Supervisory Personnel:</u>			
Wastewater Superintendent	0 ⁽¹⁾	1	1
<u>Operation & Maintenance Personnel</u>			
Maintenance Workers	0 ⁽¹⁾	2	4
<u>Clerical/Administrative Personnel</u>			
Principal Clerk	0 ⁽¹⁾	1 ⁽²⁾	1 ⁽²⁾
Department Assistant	0 ⁽¹⁾	1 ⁽³⁾	1
Total Personnel Required	0 ⁽¹⁾	3+	6

Note: (1) The Phase I sewer system will be administrated by the current DPW/Billing Staff. O&M tasks will be performed by private contractors.

(2) It is the assumption that future billing of Phase II and III sewer system will be handled by the existing Town Billing Clerk.

(3) This is a part-time personnel requirement, and could be combined with other Town administrative positions.

and grounds maintenance.

Additional clerical staff will be required to perform administrative tasks related to the sewer system. Such tasks would include transfer of information and costs with West Warwick, obtaining billing information from Kent County Water Authority, calculating and preparing billings for assessments and user charges, administration of utility and system repair bills, and other general administrative duties.

In addition to personnel costs, additional system administration, operation and maintenance costs would be incurred through power and other utility costs (principally associated with pumping stations), equipment and expendable supplies costs, equipment service calls and other repair costs. The Sewer Department budget should also provide a pool of funds to be used for the replacement of maintenance equipment and/or system components when necessary. All of the costs associated with the administration, operation and maintenance of the sewer system would be paid for through sewer system user charges.

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Appendix A OWTS Repair Records

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
8 Grand View Street	0406-2951	Last name: Keenan	7 / 12	A	Alteration		Y	Y
63 Rawlinson Drive	0506-1292	Corp owner: Hawk Crest Properties, LLC	16 / 57.2	A	New	Eljen Indrain	Y	Y
18 Centre Street	0306-1977	Last name: Cook	23 / 41	A	Repair		Y	Y
34 Lakeside Drive	0406-1842	Last name: Trahan	24 / 63	A	Repair		Y	Y
1 Jade Road (Corner Lydia)	0506-0683	Last name: Sepe	24 / 81	A	Repair		Y	Y
10 Audrey Court	0406-1710	Last name: O'Neill	16 / 81	A	Repair		Y	Y
11 Nancy Street	0506-1636	Last name: Lamoureux	16 / 65	A	Repair		Y	Y
6 Monroe Drive	0406-1532	Last name: Dyer	24 / 54	A	Repair		Y	Y
9 Garfield Drive	0506-0318	Last name: McAfee	24 / 66	A	Repair		Y	Y
127 South Main Street	0606-0773	Last name: Robotaille	16 / 33	A	Repair		Y	Y
Kiley Way (Parcel 3)	0606-0406	Last name: Gosselin	24 / 112	A	Repair		Y	Y
Reservoir Road	0506-1785	Last name: Taylor	24 / 13	A	Repair		Y	Y
1350 Nooseneck Hill Road	0606-2441	Last name: Ascione	24 / 44	A	Repair		Y	Y
96 Wisteria Drive	0506-1215	Last name: Fontaine	24 / 43	A	Repair	Eljen Indrain	Y	Y
5 Wilshire Way	0506-0008	Last name: Hoxsie	16 / 53	A	Soil Eval			
242/244 Pulaski Street	0606-0150	Last name: Durand	7 / 14	A	Soil Eval			
145 Fairview Avenue	0706-0295	Last name: Carson	16 / 88	A	SSD			
222 Fairview Avenue	0306-1034	Last name: Shock	32 / 97	B	Repair		Y	Y
17 Station Street	0506-2025	Last name: Conboy	32 / 36	B	Repair		Y	Y
Station Street	0606-2431	Last name: Oakes	32 / 69	B	Repair		Y	Y
436 Knotty Oak Road	0606-2385	Last name: Ruzzo	32 / 27	B	Repair		Y	Y
13 Chestnut Street	0706-0167	Last name: Olivieri	31 / 72	B	Repair		Y	Y
104 Clarke Road	0506-1623	Last name: Pafume	32 / 121	B	Repair		Y	Y
Knotty Oak Road	0406-0656	Last name: Eddy	32 / 63	B	Repair		Y	Y
865 Knotty Oak Road	0506-2000	Last name: Hackney	32 / 49	B	Repair		Y	Y
21 Glenwood Drive	0506-1688	Last name: Rapose	32 / 31	B	Repair		Y	Y
33 Warners Court	0606-1892	Last name: Hanson	24 / 25	B	Repair		Y	
580 Old Main Street	0606-1093	Last name: Cambra	24 / 35	B	Site Eval		Y	
Leader Street	0606-1094	Last name: Cambra	24 / 35	B	Soil Eval			
11 Sweetwater Drive	0306-1010	Last name: Brouillard	31 / 55	C	Alteration		Y	Y
310 Old Flat River Road	0706-1692	Last name: Studley	31 / 44	C	New		Y	
48 Arabian Drive	0406-1586	Last name: Plouffe	31 / 99	C	Repair		Y	Y
1018 Perry Hill Road	0706-1986	Last name: Conte	31 / 6	C	Repair		Y	Y
106 Benefit Street	0706-1174	Last name: Powers	31 / 96	C	Repair		Y	Y
1438 Victory Highway	0506-1044	Last name: Tougas	31 / 63	C	Repair		Y	Y
170 Whaley Hollow Road	0706-0791	Last name: Fredette	31 / 75	C	Repair		Y	Y
198 Raccoon Run Road	0306-0691	Last name: Laurence	31 / 23	C	Repair		Y	Y
2 Marion Drive	0306-1015	Last name: Dinardi	39 / 52	C	Repair		Y	Y
2409 Flat River Road	0406-1707	Last name: Gieck	31 / 26	C	Repair		Y	Y
250 Lewis Farm Road	0606-1948	Last name: Freitas	39 / 45	C	Repair		Y	Y
255 Chaplin Drive	0406-2624	Last name: McCaugley	31 / 79	C	Repair		Y	Y
27 Three M Road	0606-2250	Last name: Robertson	31 / 37	C	Repair		Y	Y
2829 Harkney Hill Road	0406-1833	Last name: Sprague	31 / 51	C	Repair		Y	Y
35 Pig Hill Road	0406-0016	Last name: Spaulding	31-116 /	C	Repair		Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
4 Tallwoods Drive	0306-2710	Last name: Chabot	39 / 25	C	Repair		Y	
44 Benefit Street	0606-1536	Last name: Dennis	31 / 15.022	C	Repair		Y	
585 Read School House Road	0506-0269	Last name: Travis	31 / 3	C	Repair		Y	
6366 Flat River Road	0406-0700	Last name: Stearly	39 / 48	C	Site Eval			
792 Maple Valley Road	0606-1922	Last name: Farias	31 / 116	C	SSD		Y	
804 Whaley Hollow Road	0706-1161	Last name: Silva	40 / 17	D	Alteration, Variance		Y	Y
960 Town Farm Road	0306-0414	Last name: Turgeon	40 / 10	D	Repair		Y	Y
105 Weeks Hill Road	0606-1219	Last name: Warner	39 / 247	D	Repair		Y	Y
1205 Hill Farm Road	0306-1605	Last name: Sinnott	40 / 7	D	Repair		Y	Y
193 Whaley Hollow Road	0406-0482	Last name: Durand	39 / 239	D	Repair		Y	Y
21 Audubon Lane	0306-2262	Last name: Daras	39 / 144	D	Repair		Y	Y
210 Pine Haven Road	0706-0685	Last name: Doyle	39 / 232	D	Repair		Y	Y
217 Camp Westwood Road	0606-0008	Last name: Medeiros	39 / 156	D	Repair		Y	Y
335 Harkney Hill Road	0506-0653	Last name: Reynolds	39 / 254	D	Repair		Y	Y
3471 Flat River Road	0606-0098	Last name: Melara	39 / 261	D	Repair		Y	Y
425 Camp Westwood Road	0506-1927	Last name: Pesola	39 / 178	D	Repair		Y	Y
49 Sharon Drive	0306-1638	Last name: Lozier	39 / 303	D	Repair		Y	Y
490 Matteson Road	0406-2056	Last name: Troll	39 / 292	D	Repair		Y	Y
Scott Hollow Road	0306-2571	Last name: Grudzien	39 / 187	D	Repair		Y	Y
92 Pembroke Lane	0606-1144	Last name: Monacelli	39 / 291	D	Repair		Y	Y
17 Colorado Street	0306-1227	Last name: Matola Jr.	39 / 235	D	Repair		Y	Y
48 Idaho Street	0406-0401	Last name: Davis	39 / 4	D	Repair		Y	Y
445 Washington Street	0606-1455	Last name: Cournoyer	39 / 132.1	D	Repair		Y	Y
45 Macarthur Blvd.	0706-0603	Last name: Perry	39 / 221	D	Repair		Y	Y
65 Macarthur Blvd. & Gadoury Avenue	0606-0922	Last name: Quintal	39 / 116	D	Repair		Y	Y
50 Ames Street	0406-1187	Last name: Peixots	39 / 299	D	Repair		Y	Y
186 Shady Valley Road	0506-1900	Last name: Lacrosse	39 / 222	D	Repair		Y	Y
412 Shady Valley Road	0406-0606	Last name: DeAngelis	39 / 288	D	Repair		Y	Y
165 Lakehurst Avenue	0706-1737	Last name: Collin	40 / 2	D	Repair		Y	Y
193 Lakehurst Drive	0406-3001	Last name: Bennet	40 / 29	D	Repair		Y	Y
52 Raymond's Point Road	0406-1845	Last name: Goodhart	39 / 219	D	Repair		Y	Y
Plainfield Pike (Parcel B)	0706-2074	Last name: Hanley	39 / 192	D	Repair		Y	Y
125 Acres of Pine Road	0506-1817	Last name: Verrier	39 / 249	D	Repair		Y	Y
15 Osprey Drive	0306-1845	Last name: Santos	39 / 125	D	Repair		Y	Y
340 Richardson Road	0406-0446	Last name: Malbaurn	40 / 4	D	Repair		Y	Y
Rejane Street	0606-1399	Last name: Curtis	39 / 136	D	Repair		Y	Y
120 Mohawk Street	0506-2407	Last name: McGreevy, Nichols	39 / 193	D	Repair		Y	Y
27&29 Pilgrim Avenue	0306-1151	Last name: Weremay	39 / 137	D	Repair		Y	Y
Centre Street	0606-1802	Last name: Fidler	39 / 138	D	Repair		Y	Y
Reservoir & Nooseneck Hill Road	0306-1604	Last name: Pierce	39 / 195	D	Repair		Y	Y
71 Arnold Road	0706-0344	Last name: Castro	40 / 25	D	Repair		Y	Y
44 Beechwood Street	0506-0590	Last name: Simas	39 / 257	D	Repair		Y	Y
Forge Road	0706-1128	Last name: Geoffroy	39 / 227	D	Repair		Y	Y
Sunset Avenue	0306-2644	Last name: Pisaturo	39 / 142	D	Repair		Y	Y
Clark Mill Street	0606-2014	Last name: Fratus	40 / 19	D	Repair		Y	Y
Clark Mill Street	0406-0297	Last name: Fontaine	39 / 200	D	Repair		Y	Y
Clark Mill Street	0506-1110	Last name: Barlow	39 / 293	D	Repair		Y	
Clark Mill Street	0306-0259	Last name: Furey	39 / 175	D	Repair		Y	
Clark Mill Street	0406-2980	Last name: Jakniunas	39 / 220	D	Repair			
Robbins Drive	0506-1663	Last name: Plante	39 / 69	D	Repair	BSF, Advantex AX-20	Y	

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
Woodland Avenue	0606-2011	Last name: Gailenski	39 / 196	D	Repair		Y	
1 & 3 Lisa's Way	0306-0830	Last name: Onuschak	39 / 198	D	Repair		Y	
12 Torch Lane	0506-2193	Last name: DiFranco	55 / 100	E	Alteration		Y	Y
13 Poppin John Lane	0506-1030	Corp owner: Padula Properties	55 / 137	E	New		Y	Y
16 Reservoir Road (A)	0706-0212	Last name: Deprete	55 / 102	E	New			
16 Reservoir Road (B)	0306-1782	Last name: Szczspolik	47 / 148	E	Repair		Y	Y
16 Reservoir Road (C)	0606-2295	Last name: Goff	47 / 5.001	E	Repair		Y	Y
34 Sandra Circle	0306-2317	Last name: Bullocks	47 / 146	E	Repair		Y	Y
4 & 6 Lisa's Way	0406-2505	Last name: Frias	47 / 161	E	Repair		Y	Y
40 Torch Lane	0706-1257	Last name: Valerio	47 / 77	E	Repair		Y	Y
5 & 7 Lisa's Way	0406-2111	Last name: Auger	47 / 206	E	Repair		Y	Y
8 & 10 Lisa's Way	0406-0218	Last name: Blanchette	47 / 28	E	Repair		Y	Y
9 & 12 Lisa's Way	0406-2438	Last name: Lemor	39 / 84	E	Repair		Y	Y
Kiley off Reservoir Road	0406-2158	Last name: Brisette	55 / 128	E	Repair		Y	Y
Kiley Way (Reservoir Road)	0506-0493	Last name: Doucette	47 / 109	E	Repair		Y	Y
Kiley Way and Reservoir Road	0306-2917	Last name: Riggs	55 / 82	E	Repair		Y	Y
Kiley Way and Reservoir Road	0706-1431	Last name: Burke	39 / 97	E	Repair		Y	Y
Reservoir Road	0506-1378	Last name: Zinno	55 / 143	E	Repair		Y	Y
Reservoir Road	0306-1497	Last name: Rapoza	55 / 106	E	Repair		Y	Y
Reservoir Road	0406-1480	Last name: Hopkins	47 / 67	E	Repair		Y	Y
Reservoir Road	0506-1940	Last name: Kotkofski	47 / 19	E	Repair		Y	Y
Reservoir Road	0306-0653	Last name: Goff	47 / 94	E	Repair		Y	Y
Reservoir Road	0506-0717	Last name: St. Jean	47 / 9	E	Repair		Y	Y
Reservoir Road	0606-1258	Last name: Dunn	47 / 150	E	Repair		Y	Y
Reservoir Road	0606-0082	Last name: Downs	47 / 151	E	Repair		Y	Y
19 Valiant Drive	0306-1207	Last name: Sjogren	47 / 57	E	Repair		Y	Y
2 Lisa's Way	0706-1389	Last name: Hackworth	47 / 15	E	Repair		Y	Y
21 Sandra Circle	0506-2609	Last name: Murphy	47 / 71	E	Repair		Y	Y
21 Valiant Drive	0706-0041	Last name: Plante	47 / 40	E	Repair		Y	Y
36 Reservoir Road	0706-0028	Last name: Parmenter	47 / 197	E	Repair		Y	Y
36 Sandra Circle	0606-1703	Corp owner: Freshstart Consulting, LLC	55 / 123	E	Repair		Y	Y
1 Blue Spruce Drive	0506-1581	Last name: Tarbox	39 / 96	E	Repair		Y	Y
Hill Farm Road	0606-1818	Last name: Martinez	47 / 200	E	Repair		Y	
Nooseneck Hill Road	0706-2123	Corp owner: State Department of Mental Health	47 / 108	E	Repair		Y	
2043 Nooseneck Hill Road/Harkney Hill Road	0306-2312	Last name: Deprete	55 / 102	E	Site Eval		Y	
167 Youngs Avenue	0406-0409	Last name: Azevedo	47 / 60	E	Site Eval		Y	
Potter Court	0306-1692	Last name: Caddick	27 / 154	F	New		Y	
Main Street	0306-1125	Last name: Glucksman	29 / 230	F	Repair		Y	
Blackrock Road	0306-0109	Last name: Gendron	27 / 120	F	Site Eval			
Blackrock Road	0506-0599	Last name: Hashway	30 / 41	G	Alteration		Y	Y
Blackrock Road	0406-0189	Last name: Erinakes	38 / 48	G	Alteration, Variance		Y	Y
Blackrock Road	0306-0665	Last name: Tilly	38 / 30	G	Alteration, Variance	BSF, Advantex AX-20	Y	Y
Station Street	0306-1007	Last name: Fisher	30 / 122	G	New		Y	Y
Holden Street	0406-0329	Last name: Messier	30 / 152	G	Repair		Y	Y
Holden Street (off of)	0706-0570	Last name: Ramos	30 / 154	G	Repair		Y	Y
63 Gervais Street (behind)	0306-2871	Last name: Sheer	30 / 48	G	Repair		Y	Y
Knotty Oak Road	0606-1317	Last name: Shippee	38 / 73	G	Repair		Y	Y
Black Rock Road	0406-0684	Last name: Losasso	38 / 151	G	Repair		Y	Y
Black Rock Road	0406-1093	Last name: Jorinscay	30 / 137	G	Repair		Y	Y
Black Rock Road	0506-1158	Last name: Corrella	30 / 79	G	Repair		Y	Y

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Black Rock Road	0406-1485	Last name: Hamelin	30 / 87	G	Repair		Y	Y
Gervais Street/Knotty Oak Road	0406-0402	Last name: David	30 / 101	G	Repair		Y	Y
Black Rock Road	0306-1535	Last name: Nagel	30 / 54	G	Repair		Y	Y
Black Rock Road	0306-2082	Last name: Ouimette	29 / 60	G	Repair		Y	Y
Black Rock Road (Parcel A)	0406-1675	Last name: Beverly	30 / 21	G	Repair		Y	Y
Hornbeam Road	0306-0066	Last name: Pellegrino	38 / 62	G	Repair		Y	Y
Hornbeam Road	0506-2424	Last name: Charpenter	38 / 141	G	Repair		Y	Y
Hornbeam Road	0606-0923	Last name: Arruda	38 / 84	G	Repair		Y	Y
Hornbeam Road	0406-2439	Last name: Lyon	0038 / 71	G	Repair		Y	Y
Hornbeam Road	0506-1093	Last name: Fitzgerald	38 / 33	G	Repair		Y	Y
Hornbeam Road	0706-1421	Last name: Klos	30 / 133	G	Repair		Y	Y
Hornbeam Road	0306-2083	Last name: Petrella Jr.	30 / 73	G	Repair		Y	Y
Hornbeam Road	0506-0903	Last name: Too	30 / 26	G	Repair		Y	Y
Hornbeam Road	0706-1288	Last name: Carlson, Jr.	30 / 84	G	Repair		Y	Y
Hornbeam Road	0306-1407	Last name: Migneault	38 / 22	G	Repair	Eljen Indrain	Y	Y
Hornbeam Road	0406-0089	Last name: Amaral	38 / 45	G	Repair		Y	Y
Hornbeam Road	0606-1415	Last name: Szarko	38 / 82	G	Repair		Y	Y
Hornbeam Road	0606-0204	Last name: Murray	38 / 40	G	Repair			
Hornbeam Road	0306-1176	Last name: Bowder	38 / 61	G	Repair		Y	
Hornbeam Road	0306-2754	Last name: Kong	38 / 20	G	Repair	Eljen Indrain	Y	
Hornbeam Road	0506-0188	Last name: Estrela	38 / 28	G	Site Eval			
Hornbeam Road	0306-2169	Last name: Reinhart	30 / 63	G	SSD		Y	
Hornbeam Road	0306-1291	Last name: Clifford	30 / 85	G	SSD		Y	
Hornbeam Road	0306-0876	Last name: Piacente	14 / 64	H	Alteration		Y	Y
Hornbeam Road	0306-0820	Corp owner: Boston Neck Realty Corp.	22 / 224	H	New	Fixed Acitivated Sludge Treatment, BSF	Y	Y
Hornbeam Road	0306-1556	Last name: DeMicco	22 / 261.1	H	New		Y	Y
Hornbeam Road	0406-2650	Last name: LaFleur	22 / 193	H	New		Y	Y
Hornbeam Road	0506-0971	Last name: Lyons	14 / 43	H	Repair		Y	Y
Hornbeam Road	0306-1163	Last name: Ottaviano	22 / 42	H	Repair		Y	Y
Hornbeam Road	0406-1461	Last name: Bennett	30 / 11	H	Repair		Y	Y
Hornbeam Road	0306-1844	Last name: Charpentier	30 / 7	H	Repair		Y	Y
Hornbeam Road	0506-0496	Last name: Mcniff	14 / 19	H	Repair		Y	Y
Hornbeam Road	0506-1788	Last name: Fortier	14 / 41	H	Repair		Y	Y
Hornbeam Road	0506-1976	Last name: Payne	30 / 16	H	Repair		Y	Y
Hornbeam Road (Mountain Laurel Dr.)	0406-0005	Last name: Pelletier	22 / 181	H	Repair		Y	Y
Mountain Laurel Drive (Hornbeam Road)	0706-2101	Last name: Day	22 / 211	H	Repair		Y	Y
Cedar Street	0706-2073	Corp owner: Bamford Family Ltd. Partnership	22 / 179	H	Repair		Y	Y
Bellemare Road	0306-0031	Last name: Downs	22 / 81	H	Repair		Y	Y
Bellmare Road	0306-2263	Last name: Jordan	22 / 172	H	Repair		Y	Y
Dellemare Road	0606-0317	Last name: Priest	22 / 50	H	Repair		Y	Y
Knotty Oak Road	0706-0973	Last name: Nordmann	22 / 164	H	Repair		Y	Y
15 Knotty Oak Shores Road	0406-1317	Last name: Epmiston	22 / 106	H	Repair		Y	Y
Bellmare Road	0406-2771	Last name: Crowley	22 / 124	H	Repair	Eljen Indrain	Y	Y
Bellmare Road	0606-0911	Last name: Paquet	14 / 60	H	Repair		Y	Y
Bellmare Road	0706-1808	Last name: O'Brien	14 / 9	H	Repair		Y	Y
Knotty Oak Road	0706-0833	Last name: Small	23 / 5	H	Repair		Y	Y
Knotty Oak Shores	0706-2351	Last name: Boyle	14 / 62	H	Repair		Y	Y

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Mary Brooke Lane	0406-1144	Last name: Cabrol	22 / 207	H	Repair		Y	Y
Station Street	0706-0393	Last name: Roberts	22 / 161	H	Repair		Y	Y
26 Alvero Road	0606-1991	Last name: Wilson	14 / 44	H	Repair		Y	Y
1525 Main Street	0706-0563	Last name: Perry	22 / 152	H	Repair		Y	
Ironwood Drive	0506-0922	Last name: Lane	22 / 199.1	H	Soil Eval			
311 Shady Valley Road	0506-0260	Last name: Richer, Jr.	22 / 111	H	SSD			
Shady Valley Road	0406-1745	Last name: Harrower	15 / 72	I	Repair		Y	Y
Carriage Cove Court	0606-1653	Last name: St. Jean	15 / 48	I	Repair		Y	Y
Carriage Cove Court	0306-2786	Last name: Imondi	23 / 28	I	Repair		Y	Y
21 Arabian Drive	0706-0734	Last name: Derrick	15 / 68	I	Repair		Y	Y
Hill Farm Road	0506-1753	Last name: Keough	23 / 13	I	Repair		Y	Y
1 Scenic Ridge Court	0606-2203	Last name: Heroux	15 / 41	I	Repair		Y	Y
1010 Hopkins Hollow Road	0406-1189	Last name: Frappier	15 / 80	I	Repair		Y	Y
1472 Harkney Hill Road	0706-1051	Last name: Banek	15 / 19	I	Repair		Y	Y
2 Doe Run (off Fish Hill Road)	0606-0211	Last name: Daly	15 / 50	I	Repair		Y	Y
2101 Harkney Hill Road	0306-2927	Last name: Finch	15 / 44	I	Repair		Y	
223 Raccoon Run	0606-0170	Last name: Lamkins	23 / 16	I	Repair	Eljen Indrain	Y	
2 Rainone Court/Read School House Road	0306-0605	Last name: Edwards	6 / 39	I	Repair		Y	Y
2360 Victory Highway	0706-1687	Last name: Pecchia	29 / 172	J	Alteration		Y	Y
24 & 26 Park Lane	0706-0768	Last name: Chabot	21 / 39	J	Alteration		Y	Y
2844 Harkney Hill Road	0406-0536	Corp owner: RAM Development, LLC	21 / 106	J	New		Y	Y
3 Scenic Ridge Ct.-off Fish Hill-Breanna	0306-2061	Corp owner: RAM Developement, LLC	21 / PO 106	J	New		Y	Y
317 Barbs Hill Road	0306-2062	Corp owner: RAM Developement, LLC	21 / PO 106	J	New		Y	Y
40 Linda Drive	0306-2063	Corp owner: RAM Developement, LLC	21 / PO 106	J	New		Y	Y
401 Hopkins Hollow Road	0306-2064	Corp owner: RAM Developement, LLC	21 / PO 106	J	New		Y	Y
43 Park Lane	0606-2390	Last name: Petrarca	21 / 25	J	Repair		Y	Y
461 Phillips Hill Road	0306-0548	Last name: Ware	22 / 259	J	Repair		Y	Y
520 Perry Hill Road	0306-1361	Last name: Facker	21 / 40	J	Repair		Y	Y
64 Hill Farm Camp Road	0706-1278	Last name: Madigan	21 / 34	J	Repair		Y	Y
77 Island Drive (Parcel B)	0506-1218	Last name: Naughton	13 / 20	J	Repair		Y	Y
95 Hamburger Road	0306-0491	Last name: Hoyle	21 / 68	J	Repair		Y	Y
Bowen Hill Road	0606-1070	Last name: Giolitti	22 / 19	J	Repair		Y	Y
Cahoone Road & Sisson Road	0306-1961	Last name: Hartley	21 / 118	J	Repair		Y	Y
Carr's Trail	0706-1509	Last name: Gill	30 / 2	J	Repair		Y	Y
Fish Hill Road	0306-0923	Last name: Luther	21 / 36	J	Repair		Y	Y
Fish Hill Road	0506-0568	Last name: Ricci	21 / 32	J	Repair		Y	Y
Fish Hill Road	0306-0547	Last name: Silva	29 / 154	J	Repair		Y	Y
Fish Hill Road	0306-0176	Last name: Smith	21 / 30	J	Repair		Y	Y
Flat River Road (Parcel A)	0306-1421	Last name: Cloutier	21 / 29	J	Repair		Y	Y
Franklin Road	0706-1444	Last name: Perretta	5 / 7	J	Repair		Y	Y
Franklin Road	0406-0623	Last name: Chaignot	12 / 2	J	Repair		Y	Y
Hammet Road	0306-1891	Last name: White	29 /	J	Repair		Y	Y
Hammet Road	0506-0190	Last name: Corio	29 / 76	J	Repair		Y	Y
Hammet Road	0506-1937	Last name: Murphy	29 / 55	J	Repair		Y	Y
Hammet Road	0406-0816	Last name: Bouchard	29 / 50	J	Repair		Y	Y
Hammet Road	0706-0787	Last name: Hazard	29 / 91	J	Repair		Y	Y
Harkney Hill Road	0606-2354	Last name: Laplante	22 / 257	J	Repair		Y	Y
Harkney Hill Road	0306-2937	Last name: Thibault	22 / 15	J	Repair		Y	Y

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Hill Farm Rd	0606-1730	Last name: Moreau	29 / 193	J	Repair		Y	Y
Hill Farm Rd	0706-0618	Last name: Papa	29 / 150	J	Repair		Y	Y
Hill Farm Rd	0306-0355	Last name: Jencks	22 / 1	J	Repair	Eljen Indrain	Y	
Hill Farm Rd	0706-2139	Last name: Forcier	13 / 5	J	Repair	Eljen Indrain	Y	
Hill Farm Rd. (Northup Road)	0706-0040	Last name: Gallant	29 / 201	J	Repair		Y	
Hope Furnace Road	0606-2313	Last name: Fennelly	22 / 2	J	Soil Eval			
Hope Furnace Road	0406-2418	Last name: Voelker	21 / 151	K	Alteration		Y	Y
Jennifer Lane	0606-1029	Last name: Ryan	20 / 40	K	Alteration		Y	Y
John Franklin Road	0706-1646	Corp owner: Premier Aset Services	28 / 38	K	Repair		Y	Y
John Franklin Road	0706-0450	Last name: Cooney	21 / 197	K	Repair		Y	Y
John Franklin Road	0506-1484	Last name: Dicarolo	21 / 218	K	Repair		Y	Y
John Franklin Road	0506-1510	Last name: Crosby	21 / 155	K	Repair		Y	Y
John Franklin Road	0306-2012	Last name: Tallman	20 / 16	K	Repair		Y	Y
Kaitlin Way	0406-0179	Last name: Martin	20 / 38	K	Repair		Y	Y
Nicholas Road	0406-0817	Last name: Marcello	21 / 221	K	Repair		Y	Y
Nooseneck Hill Road	0506-0799	Last name: Wegright	21 / 215	K	Repair		Y	Y
Nooseneck Hill Road	0606-1724	Last name: Yakes	21 / 186	K	Repair		Y	Y
Nooseneck Hill Road	0406-0730	Last name: Owens	21 / 159	K	Repair		Y	Y
Nooseneck Hill Road	0506-1134	Corp owner: Mr. and Mrs. Cole	20 / 5	K	Repair		Y	Y
Northup Rd. (off Hill Farm Rd)	0406-1587	Last name: Longo	21 / 183	K	Repair		Y	Y
Northup Road	0306-1451	Last name: Mancuso	21 / 190	K	Repair		Y	Y
Northup Road	0506-1756	Last name: Silva	21 / 181	K	Repair		Y	Y
Northup Road	0606-1440	Last name: Palmer	21 / 289	K	Repair		Y	Y
Northup Road	0306-1330	Last name: Boswell	21 / 264	K	Repair		Y	Y
Northup Road	0406-2122	Last name: Theroux	21 / 124	K	Repair		Y	Y
Northup Road	0306-2962	Last name: Whitehead	21 / 141	K	Repair		Y	Y
Northup Road	0606-0670	Last name: Tartaglia	20 / 11	K	Repair		Y	Y
Perry Hill Road/Colewood Circle	0706-0437	Last name: Imbruglio	21 / 214	K	Repair		Y	Y
Perry Hill Road/Colewood Circle	0606-0336	Last name: Cilento	21 / 147	K	Repair		Y	Y
Perry Hill Road/Colewood Circle	0706-0048	Last name: Woitkiewicz	21 / 179	K	Repair		Y	Y
Phillips Hill Road	0506-1135	Corp owner: Brookefield Development	29 / 139	K	Repair	Eljen Indrain	Y	Y
Phillips Hill Road	0306-2360	Last name: Byrne	21 / 296	K	Repair		Y	Y
Phillips Hill Road	0706-1852	Last name: Murphy	29 / 128	K	Repair		Y	
Phillips Hill Road	0706-1216	Last name: Stalabion	21 / 258	K	Repair			
Phillips Hill Road	0306-0541	Last name: Martin	20 / 38	K	SSD			
Plainfield Pike (Lot A)	0606-0466	Last name: LaFleur	28 / 32	K	SSD		Y	
Provident Place	0606-1325	Last name: Walsh	37 / 49	L	Alteration		Y	Y
Rainone Court	0406-2041	Last name: Miller	28 / 21	L	New		Y	Y
Rainone Court	0506-0120	Last name: Charbonneau	37 / 132	L	New	BSF, Advantex RX-Denite	Y	
Raven Boulevard	0706-0571	Last name: Silva	37 / 32	L	Repair		Y	Y
Raven Boulevard	0306-1228	Last name: Caplette	45 / 72	L	Repair		Y	Y
Read School House Road	0406-1728	Last name: Hultenius	37 / 164	L	Repair		Y	Y
Read School House Road	0406-2965	Last name: Rebeiro	37 / 39	L	Repair	Eljen Indrain	Y	Y
Read Schoolhouse Road	0706-2214	Last name: Derrick	36 / 9	L	Repair		Y	Y
Reservoir Road (Lot A)	0506-1384	Last name: Porter	45 / 111	L	Repair		Y	Y
Rock Hill Road	0306-2776	Last name: Reynolds	45 / 63	L	Repair		Y	Y
Scenic Ridge Ct-Fish Hill-Breanna lane	0406-1720	Last name: Enos	45 / 108	L	Repair		Y	Y
Sisson Road	0506-0319	Last name: Decelles	29 / 12	L	Repair	Eljen Indrain	Y	Y
Sisson Road	0306-1230	Last name: Perron	45 / 76	L	Repair		Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
Tallwoods Drive	0606-0964	Last name: Barovier	45 / 131	L	Repair		Y	Y
Tallwoods Drive (Parcel "B")	0706-1587	Last name: Vargas	37 / 130	L	Repair		Y	Y
Town Farm Road	0606-1633	Last name: Benoit	37 / 138	L	Repair		Y	Y
Town Farm Road	0306-0260	Last name: Goudreau	37 / 3	L	Repair		Y	Y
Twin Brook Lane	0606-2345	Last name: Nasiatka	37 / 155	L	Repair		Y	Y
Twin Brook Road	0506-1140	Last name: Clark	37 / 90	L	Repair		Y	Y
Victory Highway	0406-0223	Last name: Manish	37 / 135	L	Repair		Y	Y
Weaver Hill Road	0706-2322	Last name: Rogers	45 / 58	L	Repair		Y	
Weaver Hill Road	0606-2408	Last name: Polselli	29 / 3	L	Repair		Y	
Weaver Hill Road	0706-1360	Last name: Leone	37 / 89	L	Site Eval		Y	
Weaver Hill Road	0406-0985	Last name: Ferretti, Sr.	38 / 114	L	SSD			
Weaver Hill Road	0606-1837	Last name: Fusco	43 / 11	M	Alteration		Y	
Weaver Hill Road	0306-1132	Last name: Gervasio	42 / PO 7&8	M	Alteration		Y	
Weaver Hill Road	0406-0239	Corp owner: Westwood Construction, Inc.	35 / 32	M	New	Eljen Indrain	Y	Y
Weaver Hill Road	0606-1699	Corp owner: Westwood Construction, Inc.	43 / 35	M	New		Y	Y
Weaver Hill Road	0606-2263	Corp owner: Westwood Construction Co., Inc.	43 / 35	M	New		Y	Y
Weaver Hill Road (Mason Way)	0506-0400	Corp owner: RAM Development, LLC	27 / 103	M	New		Y	Y
Weaver Hill Road (Parcel B)	0506-0401	Corp owner: RAM Development, LLC	27 / 103	M	New		Y	Y
Windy Hill Lane (off Phillips Hill Rd)	0506-0402	Corp owner: RAM Development, LLC	27 / 103	M	New		Y	Y
110 Hamburger Road	0506-0756	Corp owner: Westwood Const., Inc.	35 / 32 PT	M	New		Y	Y
2405 Nooseneck Hill Road	0406-0194	Corp owner: Westwood Construcion, Inc.	35 / 32	M	New		Y	Y
415 Maple Valley Road	0506-1942	Corp owner: Westwood Construction Inc.	43 / 35	M	New		Y	Y
6785 Flat River Road	0406-0205	Corp owner: Westwood Construction, Inc.	35 / 32	M	New		Y	Y
865 Hill Farm Road	0406-0195	Corp owner: Westwood Construction, Inc.	35 / 32	M	New		Y	Y
911 Plainfield Pike	0406-0204	Corp owner: Westwood Construction, Inc.	35 / 32	M	New		Y	Y
96 Lakehurst Drive	0506-0620	Corp owner: Gervasio Construction	42 / 7&8	M	New		Y	Y
Acres of Pine Road	0406-2973	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
American Avenue	0406-1943	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Barbs Hill Road	0406-1944	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Barbs Hill Road	0306-2144	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Blackrock Road	0406-1312	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Bowens Hill Road	0406-1319	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Carr's Trail	0406-1320	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Colvintown Road	0406-2972	Corp owner: Gervasio Development	42 / 7 & 8	M	New		Y	Y
Fish Hill Road	0306-1133	Last name: Gervasio	42 / 7 & 8	M	New		Y	Y
Flat River Road	0506-0631	Corp owner: Gervasio Construction	42 / 7&8	M	New		Y	Y
Flat River Road	0506-0632	Corp owner: Gervasio Construction	42 / 7&8	M	New	Eljen Indrain	Y	Y
Flat River Road	0706-1613	Corp owner: Westwood Construction Inc.	43 / P/O 35	M	New		Y	
Flat River Road	0406-0238	Corp owner: Westwood Construction, Inc.	35 / 32	M	New		Y	
Flat River Road	0506-0790	Corp owner: Westwood Const. Inc.	35 / PO 32	M	New		Y	
Flat River Road	0606-2262	Corp owner: Westwood construction Co., Inc.	43 / 35	M	New		Y	
Flat River Road	0406-0090	Last name: Baird	35 / 36	M	New		Y	
Flat River Road	0506-0758	Corp owner: Westwood Const., Inc.	35 / 32 PT	M	New		Y	
Flat River Road	0706-0345	Last name: Gillotti	43 / 30	M	Repair		Y	Y
Flat River Road	0306-2722	Last name: Wahl	35 / 2	M	Repair		Y	Y
Flat River Road	0406-0445	Last name: Wardle	43 / 32	M	Repair		Y	Y
Flat River Road	0606-1374	Last name: Masse	43 / 10	M	Repair		Y	Y
Flat River Road	0606-0818	Last name: Fusco	43 / 11	M	Site Eval		Y	
Flat River Road (Parcel B)	0606-0819	Last name: Fusco	43 / 11	M	Site Eval		Y	
Hammet Road	0306-0249	Last name: Baird	35 / 36	M	Soil Eval			

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
Hammet Road	0406-1320	Corp owner: Gervasio Development	42 / 7 & 8	M				
Harkney Hill Road	0406-1434	Last name: DiPrete	19 / 16.1	N	Alteration		Y	Y
Hill Farm Rd	0306-0496	Last name: Kulisch	18 / 129	N	Alteration		Y	
Hill Farm Rd	0306-0227	Last name: Equitani	27 / 93	N	New		Y	Y
Island Drive (Parcel A)	0306-0882	Last name: Hebert	18 / 1.1	N	New		Y	Y
Maple Valley Road	0306-2270	Corp owner: BC Development, LLC	18 / 81.2	N	New		Y	
Maple Valley Road (Parcel A)	0506-0187	Last name: Cesario	10 / 40.11	N	New		Y	
Maple Valley Road (Parcel B)	0406-3002	Last name: Confreda	27 / 97	N	Repair		Y	Y
Mile Road	0606-0674	Last name: Kapuscinski	27 / 6	N	Repair		Y	Y
Northup Road	0306-0719	Last name: Trombi	26 / 67	N	Repair		Y	Y
Northup Road	0406-0004	Last name: Swanholm	26 / 87	N	Repair		Y	Y
Northup Road	0506-1249	Last name: Vinasso	26 / 57	N	Repair		Y	Y
Northup Road	0306-2656	Last name: Medeiros	27 / 15	N	Repair		Y	Y
Northup Road	0406-0735	Last name: Potter	18 / 103	N	Repair		Y	Y
Northup Road	0506-0893	Last name: Zabbo	18 / 60	N	Repair		Y	Y
Northup Road	0306-1976	Last name: Silva	27 / 19	N	Repair		Y	Y
Perry Hill Road	0506-1737	Last name: Conde	18 / 32	N	Repair		Y	Y
Phillips Hill Rd	0606-1013	Last name: Messier	18 / 77	N	Repair		Y	Y
Phillips Hill Road	0606-0980	Last name: Henault	26 / 29	N	Repair		Y	Y
Plainfield Pike (Rt.14)	0306-0095	Last name: Nacci	26 / 36	N	Repair		Y	Y
Raymond's Point Road	0406-1292	Last name: Nelson	27 / 10	N	Repair		Y	Y
Rte 102 Victory Highway	0306-1194	Last name: McGuirk	27 / 90	N	Repair		Y	Y
Sisson Road	0406-2571	Last name: Picard	27 / 11	N	Repair		Y	Y
Town Farm Road	0306-0102	Last name: Cerio	26 / 98	N	Repair		Y	Y
Twin Brook Lane	0706-1830	Last name: Blasbalg	26 / 127	N	Repair		Y	Y
Victory Highway	0706-1511	Last name: Sutula	27 / 52	N	Repair		Y	
Victory Highway	0706-0975	Last name: Robitaille	19 / 4	N	Repair		Y	
Victory Highway	0306-1524	Last name: Chiu	10 / 41	N	Site Eval		Y	
Weaver Hill Road	0506-1846	Last name: Raptakis	10 / 37	N	Site Eval			
Whaley Hollow Road	0506-0364	Last name: Gauvin	10 / 40.11	N	Site Eval		Y	
Whaley Hollow Road	0506-0365	Last name: Gauvin	10 / 40.11	N	Site Eval		Y	
Phillip Street	0606-0041	Last name: Peabody	19 / 12	N	SSD		Y	
Ginger Trail	0306-1661	Last name: Morel	40 / 53	O	Alteration		Y	Y
McMannus Road/Camp Ayoho	0606-0423	Last name: Flamand	48 / 98	O	Alteration		Y	
Victory Highway	0506-1097	Last name: Lawrence	48 / 5	O	Repair		Y	Y
Acres of Pine Road	0706-2122	Last name: Deming	40 / 95	O	Repair		Y	Y
John Tillinghast Road	0406-2998	Last name: Moores	40 / 71	O	Repair		Y	Y
10 Trafford Park Drive	0306-1526	Last name: Kennett	56 / 102	O	Repair		Y	Y
18 Lemis Street	0506-1693	Last name: Sroka	48 / 36	O	Repair		Y	Y
19 Lemis Street	0506-0569	Last name: Lundh	48 / 89	O	Repair		Y	Y
2 Lions Drive	0606-1879	Last name: Holt	48 / 50	O	Repair		Y	Y
25 Valrene Street	0306-2205	Last name: Tucciarone	48 / 41	O	Repair		Y	Y
27 Angus Street	0606-1053	Corp owner: Our Lady of Czenstochowa Church	56 / 19.4	P	Alteration, Variance		Y	Y
28 Lemis Street	0606-0251	Last name: Ingles	63 / 107	P	Repair		Y	Y
44 Martin Street	0306-0563	Last name: Law	63 / 127	P	Repair		Y	Y
62 Old North Road	0606-0713	Last name: Budzyna	64 / 255	P	Repair		Y	Y
63 Old North Road	0506-2135	Last name: Dias	64 / 238	P	Repair		Y	Y
83 Angus Street	0606-0542	Last name: Mancini	64 / 250	P	Repair		Y	Y
85 Angus Street	0506-0682	Last name: Dona	63 / 108	P	Repair		Y	Y

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10 Englewood Drive	0606-1010	Last name: Bruns	64 / 205	P	Repair	Eljen Indrain	Y	Y
12 Bonney Street	0406-1100	Last name: Campopiano	64 / 161	P	Repair		Y	Y
13 Lantern Lane	0706-2250	Last name: McNeill	63 / 109	P	Repair		Y	Y
16 Gillis Street	0606-1469	Last name: Webb	64 / 113	P	Repair		Y	Y
258 Tiogue Avenue	0406-2400	Last name: Letendre	64 / 160	P	Repair		Y	Y
4 Cypress Road	0306-0813	Last name: Sewchuk	63 / 131	P	Repair		Y	Y
6 Lantern Lane	0506-1131	Last name: Parente	56 / 54	P	Repair		Y	Y
8 Dawley Street	0506-0317	Last name: Ucci	64 / 245	P	Repair		Y	Y
9 Gilles Street	0606-0958	Last name: Detonnancourt	64 / 142	P	Repair		Y	Y
39 Old North Road	0406-1109	Last name: Jotie	64 / 46	P	Repair		Y	Y
100 Rawlinson Drive	0606-0554	Last name: Haggarty	63 / 143	P	Repair		Y	Y
13 Seneca Street	0506-0013	Last name: Apollonio	64 / 81	P	Repair	Eljen Indrain	Y	Y
143 East Shore Drive	0506-2446	Last name: Lancellotta	64 / 66	P	Repair		Y	Y
15 Rawlinson Drive	0606-1996	Last name: St. Jean	63 / 112	P	Repair		Y	Y
16 Rawlinson Drive	0306-0340	Last name: Proulx	64 / 86	P	Repair		Y	Y
23 Mohawk Street	0506-0338	Last name: Graveline	64 / 55	P	Repair		Y	Y
26 East Shore Drive	0706-1212	Last name: Cramer	64 / 9	P	Repair		Y	
27 Mead Street	0706-1069	Last name: Lavoie	64 / 207	P	Repair		Y	
29 East Shore Drive	0406-2661	Last name: Smith	56 / 43	P	Repair		Y	
40 Rawlinson Drive	0606-1177	Last name: Verrier	64 / 252	P	Repair		Y	
64 Mohawk Street	0606-0461	Last name: Kaplan	64 / 83	P	Repair		Y	
87 Rawlinson Drive	0306-2785	Last name: St. Pierre	64 / 122	P	Repair		Y	
81 Mohawk Street	0606-2463	Last name: St. Pierre	64 / 122	P	Repair			
19 Elton Street	0706-0873	Last name: Thivierge	56 / 92	P	Repair			
48 Seneca Street	0706-1313	Last name: Cooke	64 / 114	P	Repair		Y	
86 East Shore Road	0306-2539	Last name: Ruzzo	64 / 7	P	Soil Eval			
1 Pettine Street	0606-1189	Corp owner: Padula Properties	72 / 19.1	Q	Alteration, Variance			
10 Colby Drive	0606-1186	Corp owner: Padula Properties	64 / 264	Q	Alteration, Variance			
10 Yale Drive	0306-2730	Last name: Petrarca	64 / 20	Q	New, Variance			
106 Princeton Avenue	0606-0671	Last name: Cobb	64 / 220	Q	Repair		Y	Y
107 Pembroke Lane	0506-1685	Last name: Pare	64 / 201	Q	Repair		Y	Y
108 Columbia Ave	0606-0255	Last name: Iacofano	72 / 84	Q	Repair		Y	Y
123 Pembroke Lane	0606-1990	Last name: Proulx	72 / 103	Q	Repair		Y	Y
125 Columbia Avenue	0606-1275	Last name: Gravier	72 / 112	Q	Repair	Eljen Indrain	Y	Y
13 Pettine Street	0606-2086	Last name: McLaughlin	80 / 124	Q	Repair	Eljen Indrain	Y	Y
16 Pettine Avenue	0606-0080	Last name: Golomb	72 / 95	Q	Repair		Y	Y
17 Columbia Avenue	0606-1606	Last name: Grossi	72 / 8	Q	Repair		Y	Y
23 Princeton Ave	0606-1857	Last name: Coutcher	72 / 9	Q	Repair		Y	Y
23 Yale Drive	0606-1994	Last name: Corcoran	72 / 65	Q	Repair		Y	Y
28 Princeton Ave	0306-1277	Last name: Luchka	72 / 41	Q	Repair		Y	Y
29 Yale Drive	0406-2730	Last name: Krampitz	72 / 87	Q	Repair		Y	Y
33 Pettine Street	0506-0680	Last name: Adams	72 / 67	Q	Repair	Eljen Indrain	Y	Y
336-340 Tiogue Ave	0506-0411	Last name: Yeale	64 / 194	Q	Repair		Y	Y
34 Columbia Avenue	0406-0563	Last name: Fredette	72 / 70	Q	Repair		Y	Y
34 Holloway Avenue	0506-0973	Last name: Bourgeois	72 / 74	Q	Repair		Y	Y
365 Tiogue Avenue	0406-1834	Last name: Schopac	64 / 223	Q	Repair		Y	Y
40 Yale Drive	0306-1843	Last name: McCallum	72 / 100	Q	Repair		Y	
42 Holloway Avenue	0606-0970	Last name: Houghton	64 / 103&	Q	Repair			
47 Yale Ave	0606-2113	Last name: Bourque	72 / 103	Q	Site Eval		Y	
50 Pembroke Lane	0706-0030	Last name: Norton	72 / 5-1	Q	SSD			

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57 Pembroke Lane	0406-1823	Last name: Martin	72 / 90	Q	SSD		Y	
57 Princeton Avenue	0306-0825	Corp owner: Morgan & Sons Masonary	80 / 31	R	Alteration		Y	Y
58 Princeton Avenue	0506-2102	Last name: Stearns	80 / 121	R	Alteration	Eljen Indrain	Y	Y
6 Colby Drive	0606-1481	Last name: Keenan	80 / 84	R	New		Y	Y
6 Columbia Ave	0406-1533	Last name: Paiva	0088 / 12	R	Repair		Y	Y
62 Pembroke Lane	0606-2430	Last name: Sylvesteri	88 / 44	R	Repair		Y	Y
64 Columbia Avenue	0606-1466	Last name: Campbell	88 / 22	R	Repair		Y	Y
64 Princeton Avenue	0506-2360	Last name: Grady	80 / 107	R	Repair		Y	Y
66 Columbia Avenue	0506-0670	Last name: Bennett	88 / 31	R	Repair		Y	Y
72 Columbia Avenue	0506-0970	Last name: Silvester	88 / 38	R	Repair		Y	Y
76 Princeton Ave	0506-1620	Last name: Raymond	80 / 34	R	Repair		Y	Y
79 Pembroke Lane	0406-0683	Last name: Lacolle	88 / 39	R	Repair		Y	Y
8 Pettine Street	0606-0146	Last name: Paiva	88 / 12	R	SSD		Y	
86 Yale Drive	0406-1561	Last name: Craig	96 / 72	S	Alteration, Variance	Eljen Indrain, Norweco Aerobic System	Y	Y
90 Columbia Ave	0506-2012	Last name: Fontaine	88 / 69	S	Repair		Y	Y
96 Pembroke Lane	0406-1996	Last name: Cutler	96 / 71	S	Repair		Y	Y
17 Yale Drive	0406-2500	Last name: Asadoorian	88 / 81	S	Repair		Y	Y
29 Columbia Street	0706-1191	Last name: Cole	96 / 53	S	Repair		Y	
51 Princeton Avenue	0506-1987	Last name: Cotoir	88 / 76.1	S	Repair		Y	
59 Columbia Ave	0506-0580	Last name: Spinard	96 / 83	S	SSD		Y	
82 Princeton	0606-1854	Last name: Bernard, Jr.	104 / 8	T	New		Y	
94 Princeton Ave	0506-1647	Last name: Leveille	104 / 46	T	Repair	Eljen Indrain	Y	Y
102 Pilgrim Ave	0606-1860	Last name: Butler	104/ 78	T	Repair		Y	Y
109 Pilgrim Avenue	0406-2545	Last name: Arno	104 / 59	T	Repair		Y	Y
11 Vanderbilt Terrace	0706-0729	Last name: Maddalena	104 / 58	T	Repair		Y	Y
14 Vanderbilt Terrace	0506-1646	Last name: Denton	104 / 48	T	Repair	Eljen Indrain	Y	Y
142 Princeton Avenue	0606-2275	Last name: Nichols	104 / 86	T	Repair		Y	Y
148 Pilgrim Avenue	0506-1198	Last name: Ashy	104 / 87	T	Repair, Variance		Y	Y
155 Princeton Ave	0306-1282	Last name: Fraser	103 / 5	T	SSD		Y	
177 Pilgrim Avenue	0506-1826	Last name: Phillips	45 / 143.1	U	New		Y	
19 Mattoson Street	0406-2160	Last name: Terry	45 / 17	U	Repair		Y	Y
19 Reddington Street	0506-0750	Last name: St.Jean	45 / 20	U	Repair		Y	Y
20 Taft Street	0506-2391	Last name: Koziol	54 / 117	U	Repair		Y	Y
23 Dexter Street	0606-0448	Last name: Kettle	45 / 41	U	Repair		Y	Y
26 Matteson Street	0606-0002	Last name: Ferragamo	45 / 48	U	Repair	Eljen Indrain	Y	
45 Taft Street	0706-0251	Last name: Soscia	46 / 8	U	Site Eval		Y	
51 Shelta Ave	0406-0357	Corp owner: Cresent Porperties, Inc.	71 / 52	V	New		Y	Y
56 Laurel Avenue	0406-0355	Corp owner: Cresent Properties, Inc.	71 / 52	V	New	Eljen Indrain	Y	Y
59 Laurel Avenue	0406-0356	Corp owner: Cresent Properties, Inc.	71 / 52	V	New		Y	Y
59 Pilgrim Avenue	0406-0358	Corp owner: Cresent Properties, Inc.	71 / 52	V	New		Y	Y
6 Cornell Court	0306-2039	Last name: Cole	63 / 54	V	Repair		Y	Y
7 Vanderbilt Terrace	0306-1352	Last name: Volatile	71 / 102	V	Repair		Y	Y
70 Taft Street	0406-0047	Last name: Dubiel	71 / 57	V	Repair		Y	Y
8 Centre Street	0706-1788	Last name: Lavallee	71 / 87.1	V	Repair		Y	Y
83 Sheltra Avenue	0606-0075	Last name: Pendleton, Jr.	71 / 54	V	Repair	Eljen Indrain	Y	Y
87 Taft Street	0306-2261	Last name: Laliberte	63 / 79	V	Repair		Y	Y
98 Pilgrim Avenue	0606-0896	Last name: Jones	62 / 80	V	Repair		Y	Y
Corner Of Laurel Avenue+Centre Street	0606-0535	Last name: Castillo	63 / 30	V	Repair		Y	Y

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Dexter Street	0606-1154	Last name: Hemphill	62 / 83	V	Repair		Y	Y
114 Pilgrim Avenue	0306-2655	Last name: Silbaggio	62 / 94	V	Repair		Y	Y
18 Reddington Street	0506-1689	Last name: Browne	71 / 7	V	Repair		Y	
884 Tiogue Avenue	0406-1274	Last name: Gauvin	63 / 50	V	Repair		Y	
110 Arnold Road	0606-0198	Last name: Brennan	71 / 66.2	V	Site Eval			
114 Arnold Road	0406-1750	Last name: Shaw	45 / 29	W	Alteration		Y	Y
131 Arnold Road	0406-0885	Last name: Shaw	45 / 29	W	Alteration		Y	Y
15 Arizona Street	0506-2186	Corp owner: Frenchtown Builders, Inc.	61 / 11.1	W	New		Y	Y
18 Clearview Drive	0406-2285	Last name: Gunderman	53 / 74	W	New		Y	
18 Lakeside Drive	0606-2419	Last name: Nolan	45 / 35	W	New		Y	
2 Oak Road	0606-2411	Last name: Hozzer	54 / 27	W	Repair		Y	Y
2 Ridge Ave	0306-1229	Last name: Coyne	54 / 69	W	Repair		Y	Y
20 Overview Drive	0506-1431	Last name: Lindstrom	54 / 166	W	Repair		Y	Y
24 Pine Ave	0506-1580	Last name: Morin	54 / 83	W	Repair		Y	Y
3 Larchmont Drive	0706-0373	Last name: Boucher	54 / 22	W	Repair		Y	Y
30 Twin Lakes Ave.	0606-1662	Last name: Consondine	54 / 61	W	Repair		Y	Y
33 Idaho Street	0606-1247	Last name: Plante	53 / 42	W	Repair		Y	Y
34 Whitman Street	0506-1851	Last name: Spearman	53 / 64	W	Repair		Y	Y
39 Arnold Road	0706-1832	Last name: Tullson	62 / 4	W	Repair		Y	Y
41 Arizona Street	0706-0601	Last name: Corbeil	62 / 5	W	Repair	Eljen Indrain	Y	Y
50 Arizona Street	0406-1999	Last name: Haruben	54 / 47	W	Repair		Y	Y
60 Arnold Road	0506-2137	Last name: Dryer	62 / 60	W	Repair		Y	Y
8 Larchmont Drive	0606-0978	Last name: Gasior	45 / 32	W	Repair	Eljen Indrain	Y	Y
8 Loretta Avenue	0406-2570	Last name: Denoncout	54 / 34	W	Repair		Y	Y
8 Ridge Avenue	0506-0367	Last name: Masse	54 / 16	W	Repair		Y	Y
82 Lakeside Drive	0706-1180	Last name: Mattias	54 / 39	W	Repair		Y	Y
9 Alaska Street	0506-2557	Last name: Tatro	54 / 36	W	Repair		Y	Y
Arnold Road	0406-0974	Last name: Potvin	53 / 60	W	Repair		Y	Y
18 Montaua Ave	0406-0685	Last name: Robidoux	54 / 62	W	Repair		Y	Y
37-39 Idaho Street	0706-0144	Last name: Cortes	62 / 54	W	Repair	Eljen Indrain	Y	Y
70 Lakeside Drive	0306-1769	Last name: Szydlo	54 / 85	W	Repair		Y	Y
11 Jade Street	0306-0617	Last name: Hopper	54/27	W	Repair		Y	
124 Johnson Blvd.	0406-2242	Last name: Cornell	53 / 46	W	Repair		Y	
14 Colonial Drive	0606-1715	Last name: Carbeil	62 / 45	W	Repair			
14 Colonial Road	0306-2190	Last name: North	53 / 44	W	Repair		Y	
14 Holmes Road	0706-1343	Last name: Ward	45 / 34	W	Repair		Y	
17 Jade Road	0606-0714	Last name: Seoane	62 / 50	W	Repair		Y	
181 Arnold Road	0706-1828	Last name: Verrier	53 / 78	W	Repair		Y	
187 Arnold Road	0706-1092	Last name: Mather	53 / 61	W	Site Eval		Y	
19 Beechwood Street	0306-2256	Corp owner: Cumberland Farms	70 / 65	X	Alteration	Fixed Acitivated Sludge Treatment, BSF	Y	Y
207 Arnold Road	0506-2381	Last name: Gervais	70 / 93	X	New		Y	Y
21 Florida Ave	0506-0119	Last name: Gaudette	62 / 21.2	X	New		Y	Y
257 Arnold Road	0606-1328	Last name: Bamford	79 / P/O72	X	New	Eljen Indrain	Y	
28 Dixie Road	0606-1329	Last name: Bamford	79 / P/O72	X	New	Eljen Indrain	Y	
3 Grant Drive	0606-1330	Last name: Bamford	79 / P/O72	X	New	Eljen Indrain	Y	
3 West Shore Drive	0606-1354	Last name: Bamford	79 / POR 72	X	New	Eljen Indrain	Y	
350 Arnold Road	0306-2197	Last name: Laurence	78 / 49	X	New		Y	
38 Lydia Drive	0606-1880	Last name: Desjardins	79 / 18-012	X	Repair	Eljen Indrain	Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
4 Holmes Road	0606-0154	Last name: Brown	78 / 65.2	X	Repair		Y	Y
41 Florida Avenue	0706-0931	Last name: Murley	79 / 1	X	Repair		Y	Y
42 Lydia Road	0606-0051	Last name: Stanley	71 / 21	X	Repair		Y	Y
5 Acorn St.	0606-1654	Last name: Siembab	79 / 66	X	Repair		Y	Y
9 Grant Drive	0706-0968	Last name: Socha	71 / 22	X	Repair		Y	Y
9 Jade Road	0606-0394	Last name: Johnson	71 / 10	X	Repair		Y	Y
17 Vera Street	0306-2379	Last name: Nagel	62/18	X	Repair		Y	Y
11 Crestwood Drive	0606-0436	Last name: Tvenstrup	79 / 18.3	X	Repair	Eljen Indrain	Y	Y
11 Larchmont	0306-1525	Last name: Lavoie	70 / 92	X	Repair		Y	Y
11 North Glen Drive	0706-0967	Last name: Fooks	79 / 62	X	Repair		Y	Y
17 Harrington Road	0706-0124	Last name: Desrosiers	70 / 88	X	Repair		Y	Y
23 South Glen Drive	0606-2454	Last name: Narcisi	78 / 50	X	Repair	Eljen Indrain	Y	
34 Harrington Way	0706-1714	Last name: Hammond, Trust	71 / 46	X	Repair		Y	
4 N. Glen Drive	0506-1442	Last name: Bamford	70 / 64.3	X	Soil Eval			
450 Arnold Road	0306-2534	Last name: Pizzi, Jr.	79 / 95.002	Y	New		Y	Y
54 Larch Drive	0306-2247	Corp owner: Harkney Hill LLC	79 / PO 74	Y	New		Y	Y
7 North Glen Drive	0306-2533	Corp owner: Kirk Andrews Associates	79 / 95.001	Y	New		Y	Y
10 North Glen Drive	0406-2048	Corp owner: Sturbridge Home Builders	87 / 22.01	Y	New		Y	Y
46 Harrington Road	0406-2586	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
12 Johnsons Pond Blvd	0406-2587	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
12 Lydia Road	0406-2588	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
15 Nancy Street	0406-2589	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
16 Johnson Blvd	0406-2590	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
17 Minda Lane	0406-2591	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
18 Carolyn Street	0406-2592	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
18 York Drive	0406-2593	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
21 Clark Mill Road	0406-2594	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
23 York Drive	0406-2697	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
24 Johnson Blvd	0406-2698	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
25 Rosemary Street	0406-2699	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
34 Morris Street	0406-2700	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
35 Rosemary Street	0406-2701	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
36 Rosemary Drive	0506-1271	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
395 Hopkins Hill Road	0506-1272	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
43 Clark Mill Road	0506-1273	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
44 York Drive	0506-1274	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
46 York Drive	0506-1276	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
47 York Drive	0506-1277	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
48 Coventry Drive	0506-1278	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
6 Lawnwood Road	0506-1279	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
6 Lydia Road	0506-1280	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
6 York Drive	0506-1281	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
60 Lionel Avenue	0506-1282	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New	Eljen Indrain	Y	Y
81 Coventry Drive	0506-1283	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
2 WestLake Drive	0506-1285	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
355 Hopkins Hill Road	0506-1286	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
43 Lionel Avenue	0506-1275	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
1 Hancock Drive	0506-1284	Corp owner: Sturbridge Home Builders, Inc.	87 / 22.01	Y	New		Y	Y
1 Laurie Avenue	0306-0197	Last name: Blake	87 / 66	Y	Repair		Y	Y
10 Noella Avenue	0306-1811	Last name: Thornton	87 / 16	Y	Repair		Y	Y
14 Monroe Drive	0506-1306	Last name: Souza	87 / 63	Y	Repair		Y	Y

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15 Adams Drive	0406-2646	Last name: Bergeron	87 / 14	Y	Repair		Y	Y
15 Garfield Drive	0706-0828	Last name: Johnson	79 / 77	Y	Repair	Eljen Indrain	Y	Y
16 Noella Ave	0406-2824	Last name: Frappier	87 / 60	Y	Repair		Y	Y
2 Noella Avenue	0506-2104	Last name: King	79 / 87	Y	Repair		Y	Y
22 Linwood Drive	0506-1287	Last name: Geoffroy	87 / 19	Y	Repair		Y	Y
22 Monroe Drive	0606-1414	Last name: Ciccaroni	87 / 20	Y	Repair		Y	Y
28 Monroe Drive	0506-1258	Last name: Lemois	87 / 8	Y	Repair		Y	Y
31 Linwood Drive	0606-1006	Last name: Olsen	79 / 81	Y	Repair	Eljen Indrain	Y	Y
32 Linwood Drive	0706-0732	Last name: Tammelleo	87 / 10	Y	Repair	Eljen Indrain	Y	
33 Noella Avenue	0606-1845	Last name: Rosa	79 / 80	Y	Repair		Y	
37 Helen Avenue	0406-0571	Last name: Carr	103 / 33.1	Z	Alteration		Y	Y
43 Maude Street	0606-0652	Last name: Krawczuk	103 / 36	Z	New			
6 Helen Avenue	0506-2445	Last name: Amend	103 / 35	Z	Repair		Y	Y
64 Helen Ave	0606-1009	Last name: Hunt	95 / 133	Z	Repair		Y	Y
7 Hoover Street	0306-1783	Last name: Breaud	95 / 107	Z	Repair		Y	Y
7 Noella Avenue	0306-1725	Last name: Benjamin	103 / 23.007	Z	Repair		Y	Y
76 Helen Avenue	0506-1094	Last name: DeGraide	95 / 116	Z	Repair	Eljen Indrain	Y	Y
79 Helen Avenue	0506-1092	Last name: Lemoi	103 / 40	Z	Repair		Y	Y
9 Clifton Avenue	0606-0775	Last name: Roma	95 / 105	Z	Repair		Y	Y
9 Helen Ave	0606-2194	Last name: Fiske	103 / 58	Z	Repair	Eljen Indrain	Y	Y
19 Linwood Drive	0706-0822	Last name: Paull	103 / 6	Z	Repair		Y	Y
67 Helen Avenue	0506-1786	Last name: Ozel	96 / 107	Z	Repair		Y	Y
10 Manor Drive	0306-0694	Last name: Herbert	103 / 63	Z	Repair		Y	Y
13 Ferncrest Ave	0306-1637	Last name: Chabot	103 / 54	Z	Repair		Y	Y
17 Williams Street	0306-0958	Last name: Elliott	95 / 95	Z	Repair		Y	Y
21 Manor Drive	0706-1188	Last name: Lussier	95 / 78	Z	Repair		Y	Y
23 Robbins Drive	0606-0134	Last name: Weiss	103 / 71	Z	Repair		Y	Y
25 Cady Street	0506-1083	Corp owner: Northstar Development Corp.	95 / 10	Z	Repair		Y	
25 Parker Street	0706-1715	Last name: Catalfamo	103 / 64	Z	Repair		Y	
25 Sunapee Court	0706-0083	Last name: Bettencourt	103 / 11	Z	Repair		Y	
260 South Main Street	0506-1754	Last name: Otis	88 / 66	Z	Repair		Y	
31 Fern Crest Ave	0706-0111	Last name: Larrivee	95 / 80	Z	Site Eval		Y	
37 Bank Street	0306-1355	Last name: O'Leary	95 / 151.1	Z	SSD			
37 Williams Street	0606-1126	Last name: Bankauskas	103 / 38.5	Z	SSD		Y	
37 Woodland Avenue	0306-0211	Last name: Fallow	95 / 55	Z	SSD		Y	
6 Ian Street	0606-0847	Last name: Rull, Jr.	102 / 25	AA	Alteration		Y	Y
6 Woodland Avenue	0606-1497	Last name: Fratrus	102 / 24	AA	Repair	Eljen Indrain	Y	Y
81 South Main Street	0606-1896	Last name: Slate	102 / 5	AA	Repair		Y	Y
9 Wildwood Street	0506-0214	Last name: Russo	102 / 6	AA	Repair		Y	Y
13 Harding Street	0406-0116	Last name: Langshaw	95 / 38	AA	Repair		Y	Y
275 South Main Street	0506-1909	Last name: Poccia	95 / 37	AA	Repair		Y	Y
15 Airport Road	0606-2440	Last name: Brooks	94 / 36	AA	Repair		Y	Y
28 Reservoir Road	0406-0622	Last name: Pristana	102 / 68	AA	Repair		Y	Y
71 Reservoir Road	0306-0546	Last name: Kaplan	102 / 106	AA	Repair		Y	Y
74 Reservoir Road	0606-1152	Last name: Dorgan	102 / 87	AA	Repair		Y	Y
1 Wisteria Drive	0406-1836	Last name: Mauldin	102 / 76	AA	Repair		Y	Y
12 Wisteria Lane	0506-2199	Last name: Brodeur	0102 / 92	AA	Repair		Y	
15 Peach Tree Lane	0506-0406	Last name: Voisinnet, Jr.	94 / 42	AA	Soil Eval			
19 Apple Blossom Lane	0306-1753	Last name: Torres	102 / 26	AA	SSD		Y	
2 Jack Pine Road	0306-2198	Last name: Dumont	78 / 5	AB	Alteration	Eljen Indrain	Y	Y
20 Cherry Blossom Lane	0406-1970	Last name: Colvin	94 / 17	AB	Alteration	Eljen Indrain	Y	

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3 Dogwood Drive	0506-2328	Last name: Williams	78 / P/O 5	AB	New	Eljen Indrain	Y	Y
32 Circlewood Drive	0606-0132	Corp owner: Salt Pond Development, LLC	78 / PO 5	AB	New		Y	Y
35 Wisteria Drive	0506-2329	Corp owner: Meridian Custom Homes, Inc.	78 / P/O 5	AB	New	Eljen Indrain	Y	Y
37 Wood Cove Drive	0606-1343	Last name: Allen Jr.	78 / 5	AB	New	Eljen Indrain	Y	Y
4 Circlewood Drive	0706-0411	Last name: Dulin	94 / 22	AB	New		Y	
48 Wisteria Drive	0606-0131	Last name: Dumont	78 / PO 5	AB	New		Y	
59 Wood Cove Road	0606-1049	Last name: Dumont	78 / PO 5	AB	New	Eljen Indrain	Y	
6 Cherry Blossom Lne	0606-1050	Last name: Dumont	78 / PO 5	AB	New	Eljen Indrain	Y	
7 Blue Spruce Drive	0406-0155	Last name: Simpson	94 / 32	AB	New		Y	
8 Cherry Blossom Lane	0406-0604	Last name: Stanley	84 / 23	AB	New		Y	
91 Wood Cove Drive	0706-0559	Last name: Anctil	86 / 71	AB	New		Y	
98 Wood Cove Drive	0406-0847	Last name: Mackisey	78 / 36	AB	Repair		Y	Y
10 West View Drive	0706-0898	Corp owner: West Bay Residential	78 / 27	AB	Repair		Y	Y
16 Circlewood Drive	0406-2547	Last name: Cary	78 / 32	AB	Repair		Y	Y
139 Windsor Park Drive	0706-0457	Last name: Pelletier	86 / 26	AB	Repair		Y	Y
18 Sheffield Avenue	0706-0867	Last name: Angelone	87 / 94	AB	Repair	Eljen Indrain	Y	Y
2 Creighton Place	0606-1183	Last name: Allen	86 / 50	AB	Repair		Y	Y
288 Pulaski Street	0406-2845	Last name: Zarokojtas	78/1.1	AB	Repair	Eljen Indrain	Y	Y
38 Winsor Park	0506-1494	Last name: Heber	78 / 4	AB	Repair		Y	Y
53 Roundway Drive	0406-1769	Last name: Marxson	78 / 10	AB	Repair		Y	Y
9 Kennington Avenue	0406-1708	Last name: Moan	94 / 15.2	AB	Repair	Eljen Indrain	Y	Y
9 Kimberly Ave	0306-0588	Last name: Steere	94 / 15	AB	Repair		Y	Y
10 Chopin Street	0506-0009	Last name: Gadoury	86 / 44	AB	Site Eval		Y	
10 Knight Street	0506-0005	Last name: Gadoury	86 / 45	AB	Site Eval		Y	
107 Doolittle Street	0506-1175	Last name: Menard	94 / 21	AB	Site Eval		Y	
112 Dolittle Street	0406-2207	Last name: Collard	70 / 38	AC	Alteration		Y	Y
115 Doolittle Street	0506-0015	Last name: Wilkinson	61 / 24	AC	New		Y	Y
16 Chopin Street	0406-1037	Corp owner: Highwood Associates	69 / 78	AC	New, Variance			
160 Mac Arthur Blvd.	0506-0814	Last name: Doelling	70 / 14	AC	Repair		Y	Y
18 Dion Ave	0706-1657	Last name: Angell	61 / 17	AC	Repair		Y	Y
20 Chopin Street	0506-2260	Last name: Smith	61 / 26	AC	Repair		Y	Y
20 Raymond Street	0506-1435	Last name: Inman	70 / 53	AC	Repair		Y	Y
3 Dion Avenue	0306-1675	Last name: Hattoy	70 / 59	AC	Repair		Y	Y
32 Hazard Street	0606-1664	Corp owner: Myles & Christine Beese	70 / 18	AC	Repair		Y	Y
33 Read Avenue	0706-0225	Last name: Couto	70 / 44	AC	Repair		Y	
39 Edward Street	0606-0359	Last name: Valentim	70 / 45	AC	SSD			
41 Dion Avenue	0606-1710	Last name: Lepore	60 / 143.1	AD	Alteration		Y	Y
42 Willow Street	0306-1130	Last name: Gustafson	60 / 140	AD	New		Y	Y
450 Fairview Avenue	0306-0956	Last name: Chappell	60 / 115	AD	Repair		Y	Y
64 Read Avenue	0606-0741	Last name: Caires	61 / 6.2	AD	Repair		Y	Y
67 Read Avenue	0406-2380	Corp owner: Washington Village Condo Assoc.	61 / 13.1	AD	Repair		Y	Y
80 Edward Street	0406-0590	Corp owner: Washington Village Condo Assoc.	61 / 13.1	AD	Repair		Y	Y
80 Read Ave	0306-2611	Last name: Mitchell	60 / 68	AD	Repair		Y	Y
9 Bassett Street	0506-0360	Last name: Fitts	60 / 126	AD	Repair		Y	Y
122 Read Avenue	0306-1338	Last name: McPherson	61 / 4	AD	Repair		Y	Y
176 Macarthur Blvd	0306-1206	Last name: Hodge	60 / 139	AD	Repair		Y	Y
20 Read Avenue	0606-1777	Last name: Lacombe	60 / 83	AD	Repair		Y	Y
22 Raymond Street	0406-0504	Last name: Boudreau	60 / 96	AD	Repair		Y	Y
71 Edward Street	0606-1202	Last name: Caplette	60 / 123	AD	Repair		Y	Y
72 Read Avenue	0406-2692	Corp owner: Washington Village Cond. Association	61 / 13.1	AD	Repair		Y	Y

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88 Read Ave	0706-2279	Last name: Smith	52 / 40	AD	Repair		Y	Y
88 Read Avenue	0406-2451	Last name: Skorski	53 / 8	AD	Repair		Y	Y
Washington Street	0406-2605	Last name: Marcotte	53 / 10	AD	Repair		Y	Y
118 Mac Arthur Blvd.	0706-1160	Corp owner: Washington Village Condo Assoc.	61 / 13.1	AD	Repair		Y	
107 Macarther Blvd.	0506-1302	Last name: Page	60 / 93	AD	Repair		Y	Y
14 Rosella Street	0306-1337		61 / 4	AD				
155 Gough Avenue	0406-0987	Last name: Neveu	60 / 46	AE	Alteration		Y	Y
158 Gough Avenue	0706-0116	Last name: Stevens	60 / 3.1	AE	Alteration		Y	Y
18 Marshall Circle	0506-2126	Corp owner: SKJR Properties, Inc.	60 / 151	AE	New		Y	Y
24 Hope View Street	0506-0833	Corp owner: Bamford Lakeside Properties, LLC	58 / 15	AE	New, Variance	Advantex RX-Denite	Y	Y
282 Fairview Avenue	0506-2447	Last name: Cabral	60 / 9	AE	Repair		Y	Y
300 Fairview Avenue	0506-1806	Last name: Colantonio	52 / 14	AE	Repair		Y	Y
46 Marshall Circle	0506-1437	Last name: Matczak	52 / 15	AE	Repair		Y	Y
46 Patton Street	0706-0395	Last name: Heath	52 / 16	AE	Repair		Y	Y
49 Marshall Circle	0306-2188	Last name: Warner	60 / 151	AE	Repair		Y	Y
54 Marshall Circle	0506-1246	Last name: Ducharme	60 / 10	AE	Repair		Y	Y
6 Eisenhower Street	0606-1228	Last name: Hartley	67 / 1	AE	Repair		Y	Y
66 Marshall Circle	0706-1309	Last name: Pimental	52 / 29	AE	Repair		Y	Y
82 Marshall Circle	0706-0286	Last name: Robitaille	52 / 31	AE	Repair		Y	Y
95 Mac Arthur Blvd	0706-0548	Last name: Fish	58 / 9	AE	Repair		Y	Y
251 Read Ave	0506-2414	Last name: Shaw	60 / 43	AE	Repair		Y	Y
28 Yates Avenue	0306-0492	Last name: Bagshan	60 / 44	AE	Repair		Y	Y
18 Card Street	0306-2784	Last name: Ruhle	52 / 54	AE	Repair		Y	Y
2 Bee Street	0706-1267	Last name: Grenier	52 / 43	AE	Repair		Y	
29 Card Street	0706-1992	Last name: Olivieri	60 / 1.1	AE	Site Eval		Y	
313 Read Avenue	0306-2187	Last name: Warner	60 / 151	AE				
38 Hillside Avenue	0406-1266	Last name: McShane	60 / 63	AF	Repair		Y	Y
6 Dennis Street	0606-1441	Last name: Carr	68 / 76	AF	Repair		Y	Y
80 Fairview Avenue	0306-2913	Last name: Pride	68 / 113	AF	Repair		Y	Y
9 Dennis Street	0506-0999	Last name: Orgiesen	68 / 17	AF	Repair		Y	Y
21 Brown Street	0406-2147	Last name: Kelly	60 / 30	AF	Repair		Y	Y
48 Ames Street	0406-1746	Last name: Isacco	68 / 126	AF	Repair		Y	Y
9 Hillside Avenue	0406-2559	Last name: Gallogly	68 / 53	AF	Repair		Y	Y
31 Ames Street	0506-0258	Last name: Loffredo	76 / 55	AG	Alteration	Eljen Indrain	Y	Y
41 Hillside Avenue	0406-0901	Corp owner: Pine Edge, Inc.	76 / 123	AG	New		Y	
22-24 Harris Street	0506-1327	Last name: Gostomski	76 / 10	AG	Repair		Y	Y
26 Highland Avenue	0406-1415	Last name: Day	77 / 13	AG	Site Eval		Y	
27 Highland Avenue	0506-0143	Last name: Gadouas	68 / 5	AG	SSD		Y	
31 Highland Avenue	0506-2266	Last name: Hill	49 / 20	AH	Alteration, Variance	BSF, Advantex AX-20	Y	Y
34 Harris Street	0406-0127	Last name: Theroux	318 / 113	AH	Alteration, Variance		Y	Y
568 Main Street (Route 115)	0506-2046	Last name: Gravier	49 / 35.2	AH	New		Y	Y
1189 Main Street	0606-1851	Last name: Mailloux	49 / 43	AH	New		Y	Y
18/20 Newell Ct.	0706-0915	Last name: Carrozza	41 / 1	AH	New		Y	
33-35 Mapledale Street	0306-1033	Last name: Janikies	41 / 1.1	AH	New		Y	
5 Wolf Court	0306-2884	Last name: St. Jean	49 / 60	AH	Repair		Y	Y
1124 Main Street	0306-1946	Last name: Messier	49 / 64	AH	Repair		Y	Y
12 Puritan Ave	0406-2281	Last name: Wolfe	49 / 45	AH	Repair		Y	Y
165 Boston Street	0606-0950	Last name: Terracciano	49 / 35.1	AH	Repair		Y	Y
171 Black Rock Road	0406-1921	Last name: Selter	49 / 42	AH	Repair		Y	
174 Black Rock Road	0606-1592	Last name: Lorensen	323 / 218	AI	Alteration		Y	Y
215 Black Rock Road	0406-1015	Last name: Smith	318 / 71	AI	Alteration		Y	

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27 Nancy Court	0406-0225	Last name: LaMore	318 / 76	AI	New		Y	Y
30 Benoit Street	0706-0021	Last name: Colicchio	318 / 70	AI	New		Y	
35 Benoit Street	0606-1184	Last name: Blais	324 / 13.1	AI	Repair		Y	Y
42 Benoit Street	0606-0963	Last name: Leonard	318 / 217	AI	Repair		Y	Y
51 Benoit Street	0306-1960	Last name: Hopper	318 / 157	AI	Repair		Y	Y
172 Boston Street	0506-2001	Last name: Cuppels	318 / 218	AI	Repair		Y	Y
21 Irene Lane	0306-2787	Last name: Leonard	318 / 217	AI	Repair		Y	Y
10 Meridith Drive	0406-1271	Last name: Leonard		AI	Repair		Y	Y
11 Meadow Lane	0506-2429	Last name: Schlitz	318 / 162	AI	Repair		Y	
11 Tero Drive	0506-2550	Last name: Crisp (Executor)	318 / 125.1	AI	Site Eval			
117 Knotty Oak Road	0506-2551	Last name: Crisp (Executor)	318 / 125.1	AI	Site Eval			
126 Knotty Oak Road	0306-1649	Last name: Baird	318 / 2	AI	SSD		Y	Y
15 Cindy Lane	0606-1243	Last name: Young	318 / 216	AI	SSD			
158 Station Street	0306-2899	Corp owner: The Greene Company	309 / 1	ZZ	Alteration		Y	Y
17 Maple Street	0506-0316	Last name: Anderson	314 / 57	ZZ	Alteration		Y	Y
170 Knotty Oak Road	0506-1635	Last name: Albro	316 / 137	ZZ	Alteration		Y	Y
172 Knotty Oak Road	0706-0714	Last name: Maggio	311 / 40.1	ZZ	Alteration		Y	Y
19 Valley Crest Drive	0606-1800	Last name: Cummings	318 / 100	ZZ	Alteration		Y	Y
2 Dawn Lane	0506-0332	Last name: Assalone	34 / 14	ZZ	Alteration		Y	Y
30 Holden Street	0406-2795	Last name: Hall	65 / 67	ZZ	Alteration		Y	Y
34 Valley Crest Road	0606-2450	Last name: Simpanen	314 / 90	ZZ	Alteration		Y	Y
5 Foster Drive	0506-0964	Last name: Grenier	329 / 16.19	ZZ	Alteration	Eljen Indrain	Y	Y
57 Valley Crest Road	0306-1992	Last name: Pegnam	310 / 162	ZZ	Alteration		Y	Y
69 Valley Crest Road	0506-1597	Last name: Deutsch	328 / 9	ZZ	Alteration		Y	Y
8 Pearl Street	0506-1598	Last name: Loring	50 / 39	ZZ	Alteration		Y	Y
9 Cindy Lane	0606-1764	Last name: Argall	314 / 53	ZZ	Alteration		Y	Y
9 Meridith Drive	0506-0198	Last name: Airhart	82 / 6	ZZ	Alteration		Y	Y
97 Knotty Oak Road	0606-0641	Last name: Oliveira	314 / 83	ZZ	Alteration		Y	Y
10 Meridith Drive	0406-0001	Last name: Dion	323 / 91	ZZ	Alteration		Y	Y
149 Station Street	0306-1113	Last name: Giorgianni	311 / 33	ZZ	Alteration		Y	Y
171 Knotty Oak Road	0506-1821	Last name: Johnston	324 / 101.2	ZZ	Alteration		Y	Y
29-31 Holden Street	0506-1479	Last name: Wyrofsky	316 / 127	ZZ	Alteration		Y	
4 Long Pond Road	0506-2322	Last name: Rooney	25 / 5	ZZ	Alteration	Eljen Indrain	Y	
41 Holden Street	0606-2447	Last name: Primrose	311 / 42	ZZ	Alteration		Y	
1 Sheri Drive	0606-1475	Last name: Tvenstrup	330 / 58	ZZ	Alteration	Eljen Indrain	Y	
118 Gervis Drive	0606-0374	Last name: Mopps	57 / 8	ZZ	Alteration		Y	
126 Gervais Street	0506-0908	Last name: Titus	316 / 115	ZZ	Alteration		Y	
16 Pond View Drive	0306-1098	Last name: Cahoon	9 / 21.2	ZZ	Alteration		Y	
166 Gervais Street	0506-0685	Last name: Greene	323 / 16	ZZ	Alteration		Y	
20 Pond View Drive	0306-0089	Last name: Standish	316 / 110	ZZ	Alteration		Y	
224 Blackrock Road	0406-2232	Last name: Hopkins	50 / 7	ZZ	Alteration		Y	
244 Knotty Oak Road	0406-1228	Last name: Lulli	329 / 44	ZZ	Alteration	Eljen Indrain	Y	
6 Sheri Drive	0606-0817	Last name: Jackman	316 / 71	ZZ	Alteration		Y	
174 Station Street	0406-1412	Last name: Lacaillade	9 / 45	ZZ	Alteration		Y	Y
65 Gervais Street	0306-1129	Last name: Simas	17 / 17	ZZ	Alteration, Variance	BSF, Advantex RX Denite	Y	Y
7 Laforge Avenue	0306-0454	Last name: Morse	17 / 21	ZZ	Alteration, Variance	BSF, Advantex RX Denite, Ultra Violet Disinfection	Y	Y
95 Gervais Street	0306-2104	Last name: Schupp	57 / 4	ZZ	Alteration, Variance		Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
18 Gervais Street	0406-1892	Last name: Lavoie	313 / 12.1	ZZ	Alteration, Variance	Eljen Indrain, Norweco Aerobic System	Y	Y
41 Breezy Lake Drive	0306-1820	Last name: Minda	57 / 27	ZZ	Alteration, Variance	BSF, Advantex AX-20	Y	
12 Manning Court	0406-2963	Last name: Coppolelli	34 / 4	ZZ	Alteration, Variance	Eljen Indrain, Norweco Aerobic System	Y	
17 Hornbeam Road	0506-2318	Last name: Dowling	310 / 115	ZZ	Alteration, Variance	BSF, Advantex AX-20	Y	
2 Manning Court	0306-2759	Last name: Lowe	305 / 99	ZZ	New		Y	Y
21 Hornbeam Road	0306-1821	Last name: Curtis	302 / 10	ZZ	New		Y	Y
4 Sandlewood Court	0306-2389	Last name: McKinney	311 / 79	ZZ	New		Y	Y
585 Black Rock Road	0306-2536	Last name: Curci	305 / (PO 83	ZZ	New		Y	Y
6 Hickory Road	0306-0514	Last name: Rondeau	82 / PO 2	ZZ	New		Y	Y
7 Hornbeam Road	0306-2901	Last name: Bousquet	311 / 18	ZZ	New	Eljen Indrain	Y	Y
8 Hawthorne Road	0406-0894	Last name: Dion	318 / 94	ZZ	New		Y	Y
8 Hornbeam Road	0606-1613	Corp owner: ACS Builders, LLC	304 / 22	ZZ	New		Y	Y
9 Hickory Drive	0506-1856	Corp owner: Mapleroot Housing Cooperative Corp.	520 / 181	ZZ	New	Eljen Indrain	Y	Y
12 Hornbeam Road	0406-1624	Last name: Ruelle	310 / 58	ZZ	New		Y	Y
7 Hickory Road	0406-0094	Last name: Elliott	305 / 83 &	ZZ	New		Y	Y
14 Chestnut Street	0506-2385	Last name: Repose Jr.	326 / 2	ZZ	New		Y	Y
18 Elmonte Drive	0406-2560	Corp owner: Mapleroot Housing Cooperative Corp.	520 / 71	ZZ	New		Y	Y
21 Rebecca Street	0306-1616	Last name: Rustigian	308 / 26	ZZ	New		Y	Y
215 Howard Avenue	0506-1784	Corp owner: Mapleroot Housing Cooperative Corp.	520 / 164	ZZ	New		Y	Y
220 Hill Street	0606-2364	Last name: Dupuis	318 / 204.02	ZZ	New		Y	Y
234 Howard Drive	0406-0892	Last name: Capwell	309 / 4	ZZ	New		Y	Y
33 Rebecca Street	0306-1183	Last name: Monfils		ZZ	New		Y	Y
33R Hill Street	0406-1043	Last name: Goodwin	26 / 12	ZZ	New		Y	Y
34 Pierce Street	0406-0669	Last name: Jew	323 / 124	ZZ	New		Y	Y
481 Hill Street	0406-0884	Last name: Jaeger	316 / 64.1	ZZ	New		Y	Y
5 Hill Street	0306-2624	Corp owner: RDH Construction Inc.	321 / 73	ZZ	New	BSF, Advantex RX Denite	Y	Y
59 Hill Street	0306-1681	Corp owner: North Star Development Corporation	315 / 24	ZZ	New	BSF, Advantex RX Denite	Y	Y
63 Cedar Street	0306-2763	Last name: Marini	305 / 83&90	ZZ	New		Y	Y
91 Howard Street	0306-2761	Last name: Oral	305 / 83&90	ZZ	New		Y	Y
Henry Court	0306-2537	Corp owner: T W Associates, LLC	305 / PO 83	ZZ	New		Y	Y
172 Hill Street	0306-2538	Last name: Cerce	305 / PO 83	ZZ	New		Y	Y
18 1/2 Leveillee Street	0306-2390	Corp owner: AMC Construction Services	314 / 27	ZZ	New		Y	Y
25 Pierce Street	0406-0570	Last name: Themuda	322 / 48	ZZ	New		Y	Y
405 Hill Street	0306-0141	Last name: Hudson	322 / 53.01	ZZ	New		Y	Y
102 Clark Road	0406-0709	Corp owner: Indian Hill Development Group, LLC	323 / 57	ZZ	New		Y	Y
18 Clarke Road	0406-0710	Corp owner: Indian Hill Development Group, LLC	323 / 57	ZZ	New		Y	Y
20 Clarke Road	0406-0711	Corp owner: Indian Hill Development Group, LLC	323 / 57	ZZ	New		Y	Y
203 Hill Street	0506-0441	Last name: Petrarca	329 / 7.1	ZZ	New		Y	Y
205 Hill Street	0306-0688	Last name: Cayouette	329 / PO 7.1	ZZ	New		Y	Y
3 Birchwood Drive	0306-0453	Last name: Roch	310 / 136 &	ZZ	New	Eljen Indrain	Y	Y

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31 Clarke Road	0406-1724	Last name: Mourato	311 / PO 93	ZZ	New		Y	Y
5 Red Oak Drive	0406-1214	Corp owner: Hawk Crest Properties, LLC	25 / P/O 14	ZZ	New	Eljen Indrain	Y	Y
6 Honey Locust Ct.	0406-1213	Corp owner: Norman Properties, LLC	25 / P/O 14	ZZ	New		Y	Y
8 Red Oak Drive	0406-1209	Last name: Azvede	25 / P/O 14	ZZ	New		Y	Y
22 Red Oak Drive	0406-1210	Last name: Tetreault	25 / P/O 14	ZZ	New	Eljen Indrain	Y	Y
11 Marie Drive	0506-1362	Last name: Mooty	25 / P/O 14	ZZ	New	Eljen Indrain	Y	Y
16 Marie Drive	0406-0515	Last name: Barnes	98 / 7.2	ZZ	New		Y	Y
19 Marie Drive	0706-0299	Last name: LeClair	99 / 3	ZZ	New		Y	Y
34 Knotty Oak Shores	0306-2009	Corp owner: Tri Star Construction	31 / 69	ZZ	New		Y	Y
34 South Pond Drive	0406-2361	Last name: Aguiar	99 / 3.001	ZZ	New		Y	Y
47 Knotty Oak Shores	0606-0752	Last name: LeClair	99 / 3.2	ZZ	New		Y	Y
476 Knotty Oak Road	0606-0900	Last name: Angell	99 / 3.3	ZZ	New	Eljen Indrain	Y	Y
512 Knotty Oak Road	0306-1869	Corp owner: Major Development Corporation	99 / PO 3	ZZ	New	BSF, Advantex RX Denite	Y	Y
629 Knotty Oak Road	0306-1141	Last name: Cameron	99 / PO 3	ZZ	New		Y	Y
929 Knotty Oak Road	0306-2760	Last name: Harbour	305 / 83&90	ZZ	New		Y	Y
935 Knotty Oak Road	0506-0315	Last name: Briggs	308 / 9.1	ZZ	New		Y	Y
17 Driftwood Drive	0506-1514	Corp owner: Specific Properties LLC	2 / 1.2	ZZ	New	Eljen Indrain	Y	Y
206 Station Street	0506-1186	Corp owner: Specific Properties, LLC	2 / 1.2	ZZ	New		Y	Y
237 Station Street	0506-1511	Corp owner: Specific Properties, LLC	2 / 1.2	ZZ	New	Eljen Indrain	Y	Y
27 Maplewood Drive	0506-1513	Corp owner: Specific Properties, LLC	2 / 1.2	ZZ	New	Eljen Indrain	Y	Y
5 Maplewood Drive	0406-1216	Corp owner: Resouce Construction	25 / P/O 14	ZZ	New		Y	Y
7 Driftwood Drive	0406-2153	Corp owner: R B Homes Inc.	25 / P/O 14	ZZ	New		Y	Y
21 Highwood Drive	0406-1215	Corp owner: Resouce Construction	25 / P/O 14	ZZ	New		Y	Y
1 Hopkins Court	0406-2154	Corp owner: Resource Construction	25 / P/O 14	ZZ	New		Y	Y
1 Linda Court	0406-2919	Last name: DeBaene	25 / P/O 14	ZZ	New		Y	Y
118 Abbots Crossing Road	0406-2076	Last name: McCoy	25 / P/O 14	ZZ	New		Y	Y
131-137 Fairway Drive	0406-2152	Last name: Pearson	25 / P/O 14	ZZ	New		Y	Y
160-164 Fairway Drive	0506-1407	Last name: Slaughter	25 / P/O 14	ZZ	New		Y	Y
2 Llyod Drive	0306-0747	Corp owner: RAM Dev. LLC	310 / 20.01	ZZ	New		Y	Y
21 Llyod Drive	0306-0748	Corp owner: RAM Dev. LLC	310 / 20.01	ZZ	New		Y	Y
23 Cynthia Drive	0306-0749	Corp owner: RAM Dev. LLC	310 / 20.01	ZZ	New	Eljen Indrain	Y	Y
24 Alvero Road	0406-1976	Last name: Francis	318 / 195.1	ZZ	New		Y	Y
28 Llyod Drive	0306-2236	Corp owner: J & R Contractors	318 / 204.03	ZZ	New		Y	Y
34 Cynthia Drive	0406-1741	Corp owner: The Natick Factor	318 / 222	ZZ	New		Y	Y
5 Patty Street	0406-1742	Corp owner: The Natick Factor	318 / 225	ZZ	New		Y	Y
51-57 Niblick	0406-1743	Corp owner: The Natick Factor	318 / 226	ZZ	New		Y	Y
7 Cynthia Drive	0306-1669	Last name: Haynes	313 / 2	ZZ	New		Y	Y
70 Abotts Crossings	0306-0824	Last name: Houghton, Jr.	318 / 175	ZZ	New	Eljen Indrain	Y	Y
82 Abotts Crossing Road	0506-0442	Last name: Rainone	82 /	ZZ	New		Y	Y
90-96 Fairway Drive	0306-0525	Last name: Mc Adams	82 / PO 2	ZZ	New		Y	Y
1 Leader Street	0306-0555	Last name: Marsocci	310 / PO 73	ZZ	New	Eljen Indrain	Y	Y
1440 Main Street	0306-0556	Last name: Marsocci	310 / PO 73	ZZ	New	Eljen Indrain	Y	Y
1444 Main Street	0306-0513	Last name: Aguiar	82 / 2	ZZ	New	Eljen Indrain	Y	Y
1448 Main Street	0406-0910	Last name: Richard	90 / 1	ZZ	New		Y	Y
1525 Main Street	0306-0892	Last name: Carnevale	82 / 2	ZZ	New		Y	Y
1582 Main Street	0306-1858	Last name: White, Jr.	50 / 22	ZZ	New		Y	Y
1711 Flat River Road	0406-1893	Last name: Lang	312 / 21	ZZ	New	Eljen Indrain	Y	Y
2 Second Street	0406-0095	Last name: Derocher	305 / 83 &	ZZ	New		Y	Y
3 Second Street	0306-0817	Last name: Palmer	321 / 26	ZZ	New		Y	Y
5 Brenda Drive	0306-0769	Last name: Thornton	321 / 28	ZZ	New	Eljen Indrain	Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
570 Old Main Street	0306-0739	Corp owner: Wood Estates, Inc.	50 / PO 43	ZZ	New		Y	Y
576 Old Main Street	0306-0738	Corp owner: Wood Estates, Inc.	50 / 43	ZZ	New		Y	Y
9 Gail Court	0606-0392	Last name: Greene	323 / 109	ZZ	New		Y	Y
3 Alvero Street	0306-1462	Last name: Johnston	324 / 101	ZZ	New		Y	Y
23 Colvintown Road	0306-0331	Last name: Hopkins	311 / 100	ZZ	New		Y	Y
27 Diane Drive	0406-2813	Last name: Henault	305 / 61	ZZ	New		Y	Y
33 Chandler Drive	0406-0663	Corp owner: Jaros Properties LLC	322 / 86.3	ZZ	New	Eljen Indrain	Y	Y
35 Colvintown Road	0306-1503	Corp owner: Property Designs Co.	305 / 29	ZZ	New	Eljen Indrain	Y	Y
39 Diane Drive	0306-2072	Corp owner: Property Designs Company	305 / 29	ZZ	New		Y	Y
5 Chandler Drive	0306-1215	Corp owner: Property Designs Corporation	305 / 29	ZZ	New		Y	Y
7 Metro Drive	0306-1214	Last name: Feole	305 / 29	ZZ	New		Y	Y
8 Deer Run Drive	0306-1216	Last name: Greene	305 / 29	ZZ	New	Eljen Indrain	Y	Y
160 Shady Valley Road	0306-2073	Last name: Pullano	305 / 29	ZZ	New	Eljen Indrain	Y	Y
211 Shady Valley Road	0306-1142	Corp owner: Property Designs Corporation	305 / PO 29	ZZ	New		Y	Y
244 Shady Valley Road	0306-1143	Corp owner: Property Designs Corporation	305 / PO 29	ZZ	New		Y	Y
311 Shady Valley Road	0406-1195	Last name: Rathbun	311 / 2.2	ZZ	New	Eljen Indrain	Y	Y
Shady Valley Road	0306-1505	Corp owner: Property Designs, Co.	305 / 29	ZZ	New	Eljen Indrain	Y	Y
195 Old Flat River Road	0406-1376	Last name: Morse	311 / 122	ZZ	New		Y	Y
2+4 Hill Farm Road	0406-1744	Last name: Horn	318 / 196.1	ZZ	New		Y	Y
229 Hill Farm Road	0306-2554	Last name: Gormley	323 / 115	ZZ	New		Y	
2824 Flat River Road	0706-1763	Last name: Whitehill	323 / 43	ZZ	New		Y	
5&7 Gillespie Court	0606-0373	Last name: Griffin	314 / 15-2	ZZ	New		Y	
9+11 Gillespie Ct	0706-2180	Last name: Noonan	312 / 22	ZZ	New		Y	
71 Hill Farm Road	0606-0490	Last name: Sherblum	320 / 64	ZZ	New		Y	
#5 + #7 Lane A	0706-0878	Last name: Santos	17 / 29.2	ZZ	New		Y	
1 Whitman Road	0606-1765	Last name: Dionne	318 / 20	ZZ	New		Y	
10 Long Pond Drive	0506-1172	Corp owner: D'Libro Excavating, Inc.	42 / 126.34	ZZ	New		Y	
105 Town Farm Road	0406-0200	Last name: Baird	326 / 11	ZZ	New	Eljen Indrain	Y	
109 Reservoir Road	0706-0911	Last name: Soscia	326 / 11	ZZ	New		Y	
11 Redwood Drive	0606-0286	Corp owner: Cresent Properties, Inc.	71 / 52-5	ZZ	New		Y	
120 Hopkins Hollow Road	0706-0236	Last name: Beliveau	316 / 68	ZZ	New		Y	
1229 Hill Farm Road	0406-2679	Last name: Poulin	321 / 72	ZZ	New		Y	
1279 Hill Farm Road	0606-0391	Corp owner: Gomes Manuel and Ivone	100 / 22	ZZ	New		Y	
13 King Fisher Drive	0406-0088	Corp owner: Padula Builders, Inc.	305 / 53 &	ZZ	New		Y	
1312 Perry Hill Road	0706-1060	Last name: White	314 / 85.7	ZZ	New		Y	
1328 Hill Farm Road	0506-1111	Corp owner: Lewis/Clark Enterprises	317 / PO 93	ZZ	New		Y	
133 Reservoir Road	0506-1890	Corp owner: Lewis/Clark Enterprises	317 / PO 93	ZZ	New		Y	
135 Hamburger Road	0706-2333	Corp owner: Northstar Development Corp	323 / 229	ZZ	New		Y	
135 Reservoir Road	0706-2334	Corp owner: Northstar Development Corp	323 / 229	ZZ	New		Y	
14 Paige Drive	0706-2335	Corp owner: Northstar Development Corp	323 / 229	ZZ	New		Y	
140 Hamburger Road	0706-2336	Corp owner: Northstar Development Corp	323 / 229	ZZ	New	Eljen Indrain	Y	
1405 Harkney Hill Road	0706-2337	Corp owner: Northstar Development Corp	323 / 229	ZZ	New		Y	
158 Read School House Road	0706-2338	Corp owner: Northstar Development Corp	323 / 229	ZZ	New	Eljen Indrain	Y	
1614 Victory Highway	0706-2339	Corp owner: Northstar Development Corp	323 / 229	ZZ	New	Eljen Indrain	Y	
17 Nichole Lane	0706-2340	Corp owner: Northstar Development Corp	323 / 229	ZZ	New	Eljen Indrain	Y	
172 Acres of Pine Road	0706-2342	Corp owner: Northstar Development Corp	323 / 229	ZZ	New	Eljen Indrain	Y	
177 Perry Hill Road	0706-2341	Corp owner: Northstar Development Corp	323 / 229	ZZ	New			
179 Acres Of Pine Road	0306-2391	Corp owner: AMC Construction Services	314 / 27	ZZ	New		Y	
18 Cobblestone Terrace	0406-0708	Corp owner: Indian Hill Development Group, LLC	323 / 57	ZZ	New		Y	
18 Fieldstone Drive	0406-0712	Corp owner: Indian Hill Development Group, LLC	323 / 57	ZZ	New		Y	
181 Whitehead Road	0706-0917	Last name: Faraone	311 / 120	ZZ	New	Eljen Indrain	Y	

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1816 Flat River Road	0406-1212	Corp owner: Norman Properties, LLC	25 / P/O 14	ZZ	New	Eljen Indrain	Y	
182 Log Bridge Road	0406-1208	Corp owner: Resource Construction	25 / P/O 14	ZZ	New		Y	
186 Raccoon Run Road	0406-1042	Last name: Goodwin	26 / 12	ZZ	New		Y	
20 Paige Drive	0306-1504	Last name: Wallace	322 / 72.1	ZZ	New	Eljen Indrain	Y	
200 Colvintown Road	0406-0390	Corp owner: Slincy Land Development	322 / 43	ZZ	New		Y	
200 Shippe Plat Road	0406-0391	Last name: Samos	322 / 43	ZZ	New	Eljen Indrain	Y	
2074 Flat River Road	0706-1614	Last name: Martino	330 / 32.1	ZZ	New		Y	
2080 Harkney Hill Road	0506-1405	Last name: Dave	25 / 59	ZZ	New		Y	
21 Moss Lane	0506-1406	Corp owner: Hawk Crest Properties, LLC	25 / P/O 14	ZZ	New		Y	
210 Shippee Plat Road	0706-1679	Corp owner: Hawk Crest Properties, LLC	25 / P/O 14	ZZ	New		Y	
211 Read School House Road	0606-0111	Corp owner: Hawk Crest Properties, LLC	25 / P/O 14	ZZ	New		Y	
2158 Flat River Road	0506-0471	Corp owner: WBR, LLC c/o Dipprete Engineering Asscoc	25 / P/O 14	ZZ	New		Y	
2224 Flat River Road	0606-0112	Last name: Moulton	25 / P/O 14	ZZ	New		Y	
224 Maple Valley Road	0506-0102	Last name: Tomasso	25 / P/O 14	ZZ	New	Eljen Indrain	Y	
2298 Harkney Hill Road	0606-0058	Last name: Guastini	309 / 13	ZZ	New		Y	
23 Juniper Hill Drive	0406-1593	Last name: Maroney	311 / 41.1	ZZ	New		Y	
23 Red Wood Drive	0606-2363	Corp owner: Phillips Hill Farm, LLC c/o John Ruzzo	318 / 204.02	ZZ	New		Y	
234 Chaplin Drive	0506-1031	Last name: Salemi	320 / 68	ZZ	New		Y	
24 Acres Of Pine Road	0506-0886	Last name: Sutton	57 / 4	ZZ	New		Y	
252 Log Bridge Road	0306-1560	Last name: West	322 / 3	ZZ	New	Eljen Indrain	Y	
255 Weeks Hill Road	0606-1122	Last name: Palmer	321 / 26	ZZ	New		Y	
26 Stuart Drive	0606-1766	Last name: Martira	324 / 108	ZZ	New		Y	
27 Knotty Oak Shores	0706-1839	Last name: Idzahl	305 / 73	ZZ	New		Y	
2812 Harkney Hill Road	0306-2932	Corp owner: Johnston Corp.	310 / 2	ZZ	New			
3 Lane A	0406-0662	Corp owner: Jaros Properties, LLC	322 / 86.2	ZZ	New	Eljen Indrain	Y	
30 Lori Lane	0306-2268	Corp owner: Jaros Properties LLC	322 / 86.4	ZZ	New	Eljen Indrain	Y	
314 Harkney Hill Road	0306-2074	Corp owner: Property Designs Company	305 / 29	ZZ	New	Eljen Indrain	Y	
315 Maple Valley Road	0606-2473	Corp owner: J & R contractors	311 / 43	ZZ	New		Y	
32 Pine Tree Road	0506-2344	Corp owner: J & R Contractors, Inc.	311 / 43	ZZ	New		Y	
32 Sharon Drive	0706-2091	Last name: Shapiro	2 / 2	ZZ	New		Y	
320 Plainfield Pike	0506-2368	Last name: Maggiacomo	316 / 46	ZZ	New, Variance	BSF, Advantex AX-20	Y	Y
34 Cobblestone Terrace	0606-2183	Last name: Robitaille	318 / 22	ZZ	New, Variance			
34 Pine Tree Road	0506-0062	Corp owner: Desmar Paving & Const. Corp.	321 / 49	ZZ	New, Variance	BSF, Advantex RX-Denite	Y	
356 Waterman Hill Road	0606-1458	Corp owner: Mapleroot Housing Cooperative Corp.	530 / 5.0001	ZZ	Repair		Y	Y
3575 Flat River Road	0506-0245	Corp owner: State of Rhode Island	323 / 210	ZZ	Repair		Y	Y
367 Log Bridge Road	0706-0348	Last name: Beauchamp	65 / 57	ZZ	Repair		Y	Y
39 Pine Tree Road	0506-1199	Last name: Markham	50 / 36	ZZ	Repair	Eljen Indrain	Y	Y
390 Hammet Road	0306-0795	Last name: Chapelle	9 / 82	ZZ	Repair		Y	Y
4 Stuart Drive	0406-2724	Last name: Terrell	314 / 62	ZZ	Repair	Eljen Indrain	Y	Y
40 Sharon Drive	0306-1785	Last name: Ruzzo	25 / 4	ZZ	Repair		Y	Y
40 Twin Brook Lane	0506-0570	Last name: Hanratty Jr.	25 / 2.001	ZZ	Repair		Y	Y
41 Pine Tree Road	0406-2620	Last name: Kozela Jr.	26 / 3	ZZ	Repair		Y	Y
416 Lewis Farm Road	0606-2372	Last name: Johnson	308 / 35	ZZ	Repair		Y	Y
42 Lane F	0506-1963	Last name: Morera	25 / 22	ZZ	Repair		Y	Y
48 Fieldstone Drive	0306-0005	Last name: White	50 / 25	ZZ	Repair		Y	Y
497 Harkney Hill Road	0706-0503	Last name: Vessella	323 / 118.2	ZZ	Repair		Y	Y
498 Camp Westwood Road	0706-1586	Last name: White	50 / 24	ZZ	Repair		Y	Y

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5 Giblin Lne	0506-0719	Last name: Desanto	65 / 35	ZZ	Repair	Eljen Indrain	Y	Y
50 Hunters Crossing Road	0306-0652	Last name: Waleryszak	323 / 118.00	ZZ	Repair		Y	Y
50 Vaughn Hollow Road	0406-2810	Last name: Houle	311 / 88	ZZ	Repair		Y	Y
51 Hamburger Road	0406-2899	Last name: D'Maria	66 / 22	ZZ	Repair		Y	Y
51 Isle of Capri Road	0406-2204	Last name: Kirkland	310 / 53	ZZ	Repair		Y	Y
51 John Franklin Road	0606-1142	Last name: Gaumitz	57 / 17	ZZ	Repair		Y	Y
527 Williams Crossing Road	0406-0975	Last name: Paolantonio	310 / 20-21	ZZ	Repair		Y	Y
5337 Flat River Road	0406-0582	Last name: Bianco	57 / 44	ZZ	Repair		Y	Y
5433 Flat River Road	0706-0339	Last name: Kent	75 / 15	ZZ	Repair		Y	Y
56 Cobblestone Terrace	0706-1256	Last name: Bergantino	82 / 21	ZZ	Repair		Y	Y
569 Williams Crossing Road	0606-2230	Last name: Phillips	58 / 37	ZZ	Repair		Y	Y
6 Clover Drive	0506-1465	Last name: Langdon	58 / 42	ZZ	Repair		Y	Y
6 Melrose Drive	0706-2324	Last name: Dupuis	310 / 33	ZZ	Repair		Y	Y
615 Hammet Road	0306-2132	Last name: Dorosko	318 / 102	ZZ	Repair		Y	Y
64 Linda Court	0706-1867	Last name: Blackwell	65 / 29	ZZ	Repair		Y	Y
657 Fish Hill Road	0706-0653	Last name: Marietti	100 / 6	ZZ	Repair		Y	Y
66 Acres of Pine	0406-1365	Last name: Cripps Jr.	318 / 81	ZZ	Repair		Y	Y
76 Acres of Pine Road	0306-1784	Last name: Perry	57 / 3	ZZ	Repair		Y	Y
769 Phillips Hill Road	0506-1899	Last name: Lessard	311 / 66.001	ZZ	Repair		Y	Y
8 East Gate Drive	0506-1767	Last name: Maracco	77 / 132	ZZ	Repair	Eljen Indrain	Y	Y
8 Paige Drive	0506-0592	Last name: Mattias	318 / 83	ZZ	Repair		Y	Y
825 Matteson Road	0406-0312	Last name: Hawkins	74 / 1	ZZ	Repair		Y	Y
87 Bramble Bush Road	0306-2133	Last name: McGovern	65 / 5	ZZ	Repair		Y	Y
9 Fieldstone Drive	0306-0812	Last name: Falconio	65 / 8	ZZ	Repair		Y	Y
9 Paige Drive	0306-0828	Last name: Potter	323 / 169	ZZ	Repair		Y	Y
9 Sugar Maple Drive	0606-0667	Last name: Carr	316 / 104	ZZ	Repair		Y	Y
9 Veronica Court	0306-2643	Last name: Donofrio	42 / 58	ZZ	Repair		Y	Y
9+11 Lane A	0506-1466	Last name: Smith	9 / 79	ZZ	Repair		Y	Y
902 Whaley Hollow Road	0506-0591	Last name: Petteruto	329 / 16.031	ZZ	Repair		Y	Y
93 Capri Road (isle of)	0406-1945	Last name: Hudson	318 / 55	ZZ	Repair		Y	Y
981 Hill Farm Road	0306-1124	Last name: Randall	310 / 34	ZZ	Repair		Y	Y
991 Victory Highway	0306-0461	Last name: Senil	316 / 124	ZZ	Repair		Y	Y
Plainfield Pike (Parcel A)	0606-1323	Corp owner: Mapleroot Housing Cooperative Corp.	520 / 22	ZZ	Repair		Y	Y
Tukaluk Trail	0506-1036	Last name: Dunn	17 / 68/195	ZZ	Repair		Y	Y
Weaver Hill Road	0506-2519	Last name: Palardy	310 / 60	ZZ	Repair		Y	Y
101 Meadowbrook Farm Road	0606-1324	Corp owner: Mapleroot Housing Cooperative Corp.	530 / 3.001	ZZ	Repair		Y	Y
11 Allison Ave	0706-1598	Last name: Forcier	324 / 22	ZZ	Repair	Eljen Indrain	Y	Y
11 Camp Westwood Road	0506-0916	Last name: Carigan	9 / 69	ZZ	Repair	Eljen Indrain	Y	Y
13 Marion Drive	0406-0347	Last name: Ellinwood	323 / 39	ZZ	Repair		Y	Y
17 Three M Road	0606-2106	Last name: James	306 / 20	ZZ	Repair		Y	Y
1786 Flat River Road	0506-0609	Last name: Ashley	33 / 439	ZZ	Repair		Y	Y
195 Lakehurst Drive	0606-1989	Last name: Chambers	327 / 26	ZZ	Repair		Y	Y
2245 Victory Highway	0706-1211	Last name: Cafferky	75 / 55	ZZ	Repair		Y	Y
2294 Flat River Road	0606-1655	Last name: Dumas	306 / 19	ZZ	Repair		Y	Y
25 Old Summit Road	0506-0514	Last name: Rubin	321 / 34	ZZ	Repair		Y	Y
280 Hopkins Hollow Road	0706-1171	Last name: Lundh	323 / 10	ZZ	Repair		Y	Y
5433 Flat River Road	0606-1287	Last name: Zarlenga	310 / 23	ZZ	Repair	Eljen Indrain	Y	Y
75 Hope Furnace Road	0506-0951	Last name: Rojas	306 / 12	ZZ	Repair		Y	Y
8 Hill Farm Camp Road	0606-1151	Last name: Collard	323 / 55	ZZ	Repair		Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
9 Marion Drive	0706-0935	Last name: Saccoccio	33 / 424	ZZ	Repair		Y	Y
574 Main Street	0606-0957	Last name: Tuchon	305 / 75	ZZ	Repair		Y	Y
36 Old North Road	0606-0740	Last name: Ferris	306 / 13	ZZ	Repair		Y	Y
East Shore Dr. & North Road	0506-2246	Last name: Hankins	314 / 95	ZZ	Repair		Y	Y
Centre Street	0706-0270	Corp owner: Ramblewood Estates Housing Cooperative	530 / 42,006	ZZ	Repair		Y	Y
Sheltra Avenue	0506-0378	Last name: Greenless	83 / 34	ZZ	Repair		Y	Y
Nooseneck Hill Road	0506-1908	Last name: Hudson	316 / 102	ZZ	Repair		Y	Y
Montana Avenue	0406-1844	Last name: Brouillette	42 / 55,018	ZZ	Repair		Y	Y
93 South Main Street	0506-0782	Last name: Mcintosh	77 / 76	ZZ	Repair		Y	Y
Kiley Way (Parcel A)	0406-1021	Last name: Cleverly	320 / 100	ZZ	Repair		Y	Y
Kiley Way (Parcel B)	0606-2276	Last name: Davenport	323 / 128	ZZ	Repair		Y	Y
2011 Nooseneck Hill Road	0506-0386	Last name: Birmingham	17 / 2.1	ZZ	Repair	BSF, Eljen Indrain	Y	Y
Nooseneck Hill Road	0506-1835	Last name: Sullivan	99 / 313	ZZ	Repair		Y	Y
Nooseneck Hill Road (Route 3)(Parcel C)	0406-1206	Last name: Whitehead	317 / 3	ZZ	Repair		Y	Y
Nooseneck Hill Road(Route 3)(Parcel D)	0706-1913	Last name: Archambault	315 / 73	ZZ	Repair		Y	Y
155 Gough Avenue	0406-1644	Last name: Ericson	315 / 68	ZZ	Repair		Y	Y
Batthey Avenue	0306-2398	Last name: Wallbari	66 / 17.1	ZZ	Repair		Y	Y
4 Hilldan Street	0406-2468	Last name: Clarkin	317 / 2	ZZ	Repair		Y	Y
45 Holden Street	0306-2670	Last name: Riecke	41 / 140	ZZ	Repair		Y	Y
84 Howard Avenue	0606-1141	Last name: Rachiele	4 / 4.037	ZZ	Repair		Y	Y
Knotty Oak Shores	0506-1578	Last name: Castone	329 / 4.2	ZZ	Repair		Y	Y
Knotty Oak Shores	0506-1664	Corp owner: Mapleroot Housing Cooperative Corp.	520 / 77	ZZ	Repair	Eljen Indrain	Y	Y
Knotty Oak Shores	0306-1278	Last name: Gustafson	305 / 89	ZZ	Repair		Y	Y
1532 Main Street	0306-1000	Last name: Landi	318 / 36	ZZ	Repair		Y	Y
Colvintown Road (Behind 89)	0706-0121	Last name: Bettez	318 / 33.1	ZZ	Repair	Eljen Indrain	Y	Y
Rock Hill Road (Lot A)	0406-1840	Last name: Garibedian	312 / 29	ZZ	Repair		Y	Y
Rock Hill Road (Lot B)	0606-1274	Last name: Card	43 / 2	ZZ	Repair		Y	Y
110 Piggy Lane	0306-2709	Last name: Polk	65 / 41	ZZ	Repair		Y	Y
115 Sisson Road	0406-1081	Last name: Ferri	329 / 14	ZZ	Repair		Y	Y
160 Perry Hill Road	0706-0103	Last name: Tierney	317 / 31	ZZ	Repair		Y	Y
184 Phillips Hill Road	0306-1283	Last name: Quinlan	82 / 17	ZZ	Repair		Y	Y
49 Isle of Capri Road	0306-2606	Last name: Parenteau	65 / 40	ZZ	Repair		Y	Y
Barbs Hill Road	0306-0829	Last name: White	35 / 38	ZZ	Repair		Y	Y
Cahoone Road	0406-2202	Last name: Assalone	42 / 4	ZZ	Repair	Eljen Indrain	Y	Y
Flat River Road	0606-1425	Corp owner: Mapleroot Housing Cooperative Cord.	530 / 9.001	ZZ	Repair		Y	Y
Flat River Road	0306-1091	Last name: Igliazzi	311 / 30	ZZ	Repair		Y	Y
John Franklin Road	0506-1662	Last name: Audet	17 / 11	ZZ	Repair		Y	Y
Maple Valley Road	0406-2999	Last name: Brown	312 / 16	ZZ	Repair		Y	Y
Maple Valley Road	0606-1916	Last name: Fisher	316 / 44	ZZ	Repair		Y	Y
Mapleroot Road (Lot B)	0406-1891	Last name: Lavoie	313 / 12	ZZ	Repair		Y	Y
Oak Street	0406-0187	Last name: Capuano	305 / 81	ZZ	Repair		Y	Y
Phillips Hill Road	0506-2083	Last name: Marcotte	305 / 33	ZZ	Repair		Y	Y
Twin Brook Lane	0706-0881	Last name: Fish	93 / 12	ZZ	Repair		Y	Y
Twin Brook Lane	0306-1584	Last name: Bell	323 / 205	ZZ	Repair		Y	Y
Twin Brook Lane	0506-1928	Last name: Mitchell	316 / 117	ZZ	Repair		Y	Y
Twin Brook Lane	0706-0702	Last name: Brisson	42 / 37	ZZ	Repair		Y	Y

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
Weaver Hill Road (Parcel A)	0706-0966	Last name: Nadeau	58 / 16	ZZ	Repair		Y	
Gay Street & Salvas Avenue	0706-1307	Last name: Moulton	17 / 22	ZZ	Repair			
Rejane Street	0606-2040	Last name: Ryan	304 / 7	ZZ	Repair			
36 Old North Road	0506-1129	Last name: Reuter	324 / 1.1	ZZ	Repair			
Acorn Street	0506-2358	Last name: Skaling	316 / 150	ZZ	Repair	BSF, Advantex AX-20	Y	
4 West Lake Drive	0506-0425	Last name: Shroka	308 / 30	ZZ	Repair		Y	
Reservoir Road	0706-0058	Last name: Little	315 / 68	ZZ	Repair		Y	
Doolittle Street	0606-2432	Last name: Johnson	101 / 19	ZZ	Repair		Y	
Knotty Oak Road	0506-1205	Last name: Charpentier	318 / 77	ZZ	Repair			
Pin Oak Court	0706-1166	Last name: Thiele	42 / 39	ZZ	Repair		Y	
Plainfield Pike	0306-0690	Last name: Jordan	2 / 56	ZZ	Repair		Y	Y
Plainfield Pike	0706-0790	Last name: Higgins	4 / 6	ZZ	Repair		Y	Y
Plainfield Pike (Lot B)	0306-1402	Last name: Keefe	9 / 12	ZZ	Repair		Y	Y
Rock Hill Road	0606-0827	Corp owner: State of RI "Big River"	1 / 1	ZZ	Repair		Y	Y
312 Sisson Road	0506-0213	Last name: Lafazia	9 / 42	ZZ	Repair		Y	
5080 Flat River Road	0606-1059	Last name: Ballew	310 / 20.28	ZZ	Site Eval		Y	
Gibson Hill Road	0306-1808	Last name: Hughes	322 / 9	ZZ	Site Eval		Y	
Gibson Hill Road	0506-1471	Last name: DaSilveira	310 / 22	ZZ	Site Eval		Y	
Hope Furnace Road	0406-2266	Last name: Andriote	318 / 186	ZZ	Site Eval		Y	
23 Longfellow Drive	0706-1079	Last name: Bennett	17 / 2	ZZ	Site Eval		Y	
81 Mohawk Street	0706-0568	Last name: Sullivan	326 / 3	ZZ	Site Eval		Y	
21 Larchmount Street	0506-1174	Last name: Iuliano	321 / 74	ZZ	Site Eval			
6 Ridge Avenue	0306-2031	Corp owner: Padula Builders, Inc.	315 / 80	ZZ	Site Eval		Y	
230 Arnold Road	0506-1345	Corp owner: Flat River Development Group, LLC	58 / 47	ZZ	Site Eval		Y	
15 Garfield Drive	0406-2968	Last name: Jay	91 / 4	ZZ	Site Eval			
2 Hancock Drive	0706-2150	Last name: Perry	323 / 41	ZZ	Site Eval		Y	
17 Brentwood Drive	0306-2810	Last name: Donovan	323 / 92	ZZ	Site Eval		Y	
7 Circlewood Drive	0506-0210	Last name: Gauvin	10 / 40.11	ZZ	Site Eval		Y	
2 Woodmist Circle	0506-2045	Last name: Gravier	49 / 35.1	ZZ	Site Eval		Y	
7 Hope View Street	0306-2528	Last name: Ruzzo	318 / 204.02	ZZ	Site Eval		Y	
18 Card Street	0706-0541	Last name: Leary	313 / 10	ZZ	Site Eval		Y	
35 Mumford Street	0706-0359	Last name: Battey	313 / 7	ZZ	Site Eval		Y	
26 Pierce Street	0306-1670	Last name: Haynes	313 / 2	ZZ	Site Eval		Y	
11 Pioneer Road	0406-0052	Corp owner: Westwood Construction, Inc.	318 / 129.1	ZZ	Site Eval			
214 Howard Avenue	0306-2370	Last name: Pancarowicz	305 / 110.2	ZZ	Site Eval			
35 Paulette Drive	0306-1298	Last name: Pancarowicz	305 / 92	ZZ	Site Eval		Y	
106 Clarke Road	0706-1905	Last name: Pancarowicz	311 / 110.2	ZZ	Site Eval		Y	
17 Highwood Drive	0506-2301	Last name: Paquette	311 / 118.2	ZZ	Site Eval		Y	
61 Colvintown Road	0406-1377	Last name: Somyk	311 / 122	ZZ	Site Eval		Y	
2885 Flat River Road	0306-1366	Last name: Fontes	321 / 53	ZZ	Soil Eval			
15 Hill Farm Road	0306-1188	Last name: Styles	316 / 10	ZZ	Soil Eval			
8 Allison Avenue	0306-1777	Last name: Ezzell	319 / 5	ZZ	Soil Eval			
96 Isle of Capri Road	0306-1778	Last name: Ezzell	319 / 5.01	ZZ	Soil Eval			
1136 Hill Farm Road	0506-2456	Corp owner: Franklin Construction Services	89 / 3	ZZ	Soil Eval			
1276 Plainfield Pike	0306-0808	Last name: Vanover	323 / 184	ZZ	SSD		Y	Y
13 Clover Drive	0406-1554	Last name: Costa	17 / 53	ZZ	SSD		Y	Y
143 Bowen Hill Road	0506-0298	Last name: Salvo	25 / 11	ZZ	SSD		Y	
16 Nichole Lane	0606-1246	Last name: Fleming	320 / 26	ZZ	SSD			
1855 Victory Highway	0706-2248	Last name: Payne	311 / 74.030	ZZ	SSD			
199 Colvintown Road	0506-0201	Last name: Duquette	316 / 60	ZZ	SSD		Y	
215 Bowen Hill Road	0406-3046	Last name: Myers	310 / 7	ZZ	SSD		Y	

ADDRESS	APPLICATION NUMBER	OWNER	AP/LOT	Planning Area	Type	I/A	Approved	Conformance
245 Whitehead Road	0406-0430	Last name: Blain	100 / 19	ZZ	SSD			
285 Victory Highway	0506-0336	Last name: O'Rourke	316 / 59.2	ZZ	SSD		Y	
311 Harkney Hill Road	0506-0579	Last name: Enos	58 / 34	ZZ	SSD		Y	
34 Tiffany Road	0306-0299	Last name: Cafaro	322 / 32	ZZ	SSD		Y	
356 Perry Hill Road	0706-0174	Last name: Cady	15 / 84	ZZ	SSD		Y	
4281 Flat River Road	0606-1543	Last name: Rose	309 / 7.22	ZZ	SSD		Y	
79 Vaughn Hollow Road	0506-0486	Last name: Quintero	316 / 73.4	ZZ	SSD		Y	
800 Sisson Road	0706-0203	Last name: Moore	320 / 31.003	ZZ	SSD		Y	
871 Read School House Road	0306-0205	Last name: Ferguson	321 / 31	ZZ	SSD			
960 Town Farm Road	0506-1176	Last name: Dyer	98 / 11	ZZ	SSD		Y	
Audubon Lane	0506-1383	Last name: Johnston	324 / 101	ZZ	SSD			
Reservoir Road	0606-1121	Last name: Tvenstrup	330 / 14.1	ZZ	SSD		Y	
23 Cynthia Drive	0406-1714	Last name: Labriole	4 / 24	ZZ	SSD		Y	
1525 Main Street	0306-2065	Last name: LePain	9 / 18	ZZ	SSD			
Hill Farm Rd	0406-1208	Corp owner: Norman Properties, LLC	25 / P/O 14	ZZ				

O:\Coventry R\IFP Update 2008\Facility Plan Update Document\Figures\Appendix\Appendix A - OWTS Repair Records.xls]Sheet1

Appendix B Calculation of Sewer Flows

Area #	Design Year	Domestic Flow				Industrial Flows ⁽¹⁾			Commercial Flows ⁽¹⁾			Institutional Flows		Infiltration/Inflow		Total Flow (ADF) gpd	Peaking Factor ⁽²⁾		Peak Flow gpd	
		SF Units	Multi Lots	Family Units	Total Pop.	Flow gpd	Total Lots	Total Acres	Flow gpd	Total Lots	Total Acres	Flow gpd	Type of Use	Flow gpd	Pipeline Inch-Miles		Flow gpd	Res. & Comm.		Industrial
A	1995	256	2	8	792	55,440	6	12.8	1,906	5	9.1	1,230	N/A	0	37	9,250	67,826	3.86	2	231,979
	2010	281	2	8	865	60,550	6	12.8	1,906	5	9.1	1,230	N/A	0	37	9,250	72,936	3.84	2	250,280
	2015	290	2	8	894	62,580	6	12.8	1,906	5	9.1	1,230	N/A	0	37	9,250	74,966	3.83	2	257,508
	2020	301	2	8	925	64,750	6	12.8	1,906	5	9.1	1,230	N/A	0	37	12,950	80,836	3.82	2	268,909
	2030	316	2	8	971	67,970	6	12.8	1,906	5	9.1	1,230	N/A	0	37	12,950	84,056	3.81	2	280,290
	2060	344	2	8	1056	73,920	6	12.8	1,906	5	9.1	1,230	N/A	0	37	14,800	91,856	3.78	2	303,026
	BO	344	2	8	1056	73,920	9	51.6	25,800	5	9.1	2,730	N/A	0	37	18,500	120,950	3.78	2	360,191
B	1995	150	4	15	495	34,650	0	0	0	5	2.2	1,037	EHO1	7,200	15.5	3,875	46,762	3.98	2	174,414
	2010	166	4	15	541	37,870	0	0	0	5	2.2	1,037	EHO1	7,560	15.5	3,875	50,342	3.96	2	187,716
	2015	172	4	15	559	39,130	0	0	0	5	2.2	1,037	EHO1	7,560	15.5	3,875	51,602	3.95	2	192,340
	2020	178	4	15	578	40,460	0	0	0	5	2.2	1,037	EHO1	7,560	15.5	5,425	54,482	3.94	2	198,759
	2030	188	4	15	607	42,490	0	0	0	5	2.2	1,037	EHO1	8,165	15.5	5,425	57,117	3.93	2	208,545
	2060	210	4	15	675	47,250	0	0	0	5	2.2	1,037	EHO1	8,165	15.5	6,200	62,652	3.90	2	226,567
	BO	208	4	15	669	46,830	0	0	0	5	2.2	660	EHO1	8,165	15.5	7,750	63,405	3.91	2	225,128
C (Note 3)	1995	164	3	8	516	36,120	0	0	0	0	0	0	SCHT	8,250	11.9	2,975	47,345	3.97	2	178,997
	2010	180	3	8	564	47,670	0	0	0	0	0	0	SCHT	8,663	11.9	2,975	59,308	3.95	2	225,307
	2015	186	3	8	582	48,930	0	0	0	0	0	0	SCHT	8,663	11.9	2,975	60,568	3.94	2	229,856
	2020	193	3	8	603	50,400	0	0	0	0	0	0	SCHT	8,663	11.9	4,165	63,228	3.93	2	236,342
	2030	196	3	8	612	51,030	0	0	0	0	0	0	SCHT	9,356	11.9	4,165	64,551	3.93	2	241,329
	2060	3	3	8	612	51,030	0	0	0	0	0	0	SCHT	9,356	11.9	4,760	65,146	3.93	2	241,924
	BO	196	3	8	612	51,030	0	0	0	0	0	0	SCHT	9,356	11.9	5,950	66,336	3.93	2	243,114
D	1995	243	2	8	753	52,710	0	0	0	4	1.7	1,872	SCHO	6,750	21.8	5,450	66,782	3.88	2	243,177
	2010	244	2	8	756	52,920	0	0	0	5	1.9	1,932	SCHO	7,068	21.8	5,450	67,370	3.88	2	245,393
	2015	244	2	8	756	52,920	0	0	0	5	1.9	1,932	SCHO	7,068	21.8	5,450	67,370	3.88	2	245,393
	2020	244	2	8	756	52,920	0	0	0	5	1.9	1,932	SCHO	7,655	21.8	7,630	70,137	3.88	2	249,848
	2030	244	2	8	756	52,920	0	0	0	5	1.9	1,932	SCHO	7,655	21.8	7,630	70,137	3.88	2	249,848
	2060	244	2	8	756	52,920	0	0	0	5	1.9	1,932	SCHO	7,655	21.8	8,720	71,227	3.88	2	250,938
	BO	244	2	8	756	52,920	0	0	0	5	1.9	570	SCHO	7,655	21.8	10,900	72,045	3.88	2	247,840
E	1995	280	17	90	1110	77,700	1	7	246	3	1.2	4,052	NUR1	3,500	31.5	7,875	93,373	3.77	2	329,794
	2010	315	17	90	1213	84,910	1	7	246	3	1.2	4,052	NUR1	3,675	31.5	7,875	100,758	3.74	2	355,234
	2015	328	17	90	1252	87,640	1	7	246	3	1.2	4,052	NUR1	3,675	31.5	7,875	103,488	3.73	2	364,558
	2020	328	17	90	1254	87,780	1	7	246	3	1.2	4,052	NUR1	3,675	31.5	11,025	106,778	3.73	2	368,185
	2030	328	17	90	1254	87,780	1	7	246	3	1.2	4,052	NUR1	3,969	31.5	11,025	107,072	3.73	2	369,283
	2060	328	17	90	1254	87,780	1	7	246	3	1.2	4,052	NUR1	3,969	31.5	12,600	108,647	3.73	2	370,858
	BO	328	17	90	1254	87,780	1	7	3,500	3	1.2	360	NUR1	3,969	31.5	15,750	111,359	3.73	2	366,728
F (Note 4)	1995	19	4	20	117	8,190	1	0.8	184	98	110	60,364	N/A	0	43	10,750	79,488	4.22	2	300,709
	2010	23	4	20	128	8,960	1	0.8	400	107	164	97,980	N/A	0	43	10,750	118,090	4.21	2	462,051
	2015	24	4	20	132	9,240	1	0.8	400	110	165	98,280	N/A	0	43	10,750	118,670	4.21	2	464,055
	2020	26	4	20	137	9,590	1	0.8	400	111	166.1	98,610	N/A	0	43	15,050	123,650	4.20	2	470,675
	2030	28	4	20	144	10,080	1	0.8	400	111	166.1	98,610	N/A	0	43	15,050	124,140	4.20	2	471,993
	2060	29	4	20	147	10,290	1	0.8	400	111	166.1	98,610	N/A	0	43	17,200	126,500	4.19	2	474,712
	BO	29	4	20	147	10,290	1	0.8	400	111	166.1	71,246	N/A	0	43	21,500	103,436	4.19	2	364,251
G (Note 5)	1995	205	2	5	630	44,100	1	0.3	246	3	1.6	492	N/A	0	20.2	5,050	49,888	3.92	2	180,364
	2010	225	2	5	689	59,270	1	0.3	246	3	1.6	492	N/A	0	20.2	5,050	65,058	3.90	2	238,525
	2015	227	2	5	696	59,760	1	0.3	246	3	1.6	492	N/A	0	20.2	5,050	65,548	3.90	2	240,283
	2020	227	2	5	696	59,760	1	0.3	246	3	1.6	492	N/A	0	20.2	7,070	67,568	3.90	2	242,303
	2030	227	2	5	696	59,760	1	0.3	246	3	1.6	492	N/A	0	20.2	7,070	67,568	3.90	2	242,303
	2060	227	2	5	696	59,760	1	0.3	246	3	1.6	492	N/A	0	20.2	8,080	68,578	3.90	2	243,313
	BO	227	2	5	696	59,760	1	0.3	150	3	1.6	480	N/A	0	20.2	10,100	70,490	3.90	2	245,095
H	1995	343	3	6	1047	73,290	0	0	0	1	0.2	246	N/A	0	35	8,750	82,286	3.79	2	287,235
	2010	362	3	6	1104	77,280	0	0	0	1	0.2	246	N/A	0	35	8,750	86,276	3.77	2	301,169
	2015	362	3	6	1104	77,280	0	0	0	1	0.2	246	N/A	0	35	8,750	86,276	3.77	2	301,169
	2020	362	3	6	1104	77,280	0	0	0	1	0.2	246	N/A	0	35	12,250	89,776	3.77	2	304,669
	2030	362	3	6	1104	77,280	0	0	0	1	0.2	246	N/A	0	35	12,250	89,776	3.77	2	304,669
	2060	362	3	6	1104	77,280	0	0	0	1	0.2	246	N/A	0	35	14,000	91,280	3.77	2	305,491
	BO	362	3	6	1104	77,280	0	0	0	1	0.2	60	N/A	0	35	17,500	94,840	3.77	2	309,218

Appendix B Calculation of Sewer Flows

Area #	Design Year	Domestic Flow				Industrial Flows ⁽¹⁾			Commercial Flows ⁽¹⁾			Institutional Flows		Infiltration/Inflow		Total Flow (ADF) gpd	Peaking Factor ⁽²⁾		Peak Flow gpd	
		SF Units	Multi Lots	Family Units	Total Pop.	Flow gpd	Total Lots	Total Acres	Flow gpd	Total Lots	Total Acres	Flow gpd	Type of Use	Flow gpd	Pipeline Inch-Miles		Flow gpd	Res. & Comm.		Industrial
I	1995	103	3	6	327	22,890	2	28.2	5,308	1	19	246	N/A	0	10.8	2,700	31,144	4.06	2	107,300
	2010	114	3	6	358	25,060	2	28.2	5,308	1	19	246	N/A	0	10.8	2,700	33,314	4.04	2	115,668
	2015	115	3	6	363	25,410	2	28.2	5,308	1	19	246	N/A	0	10.8	2,700	33,664	4.04	2	117,013
	2020	115	3	6	363	25,410	3	82.2	32,308	1	19	246	N/A	0	10.8	3,780	61,744	4.04	2	172,093
	2030	115	3	6	363	25,410	3	82.2	32,308	1	19	246	N/A	0	10.8	3,780	61,744	4.04	2	172,093
	2060	115	3	6	363	25,410	3	82.2	32,308	1	19	246	N/A	0	10.8	4,320	62,284	4.04	2	172,633
	BO	115	3	6	363	25,410	5	118.2	59,100	1	19	5,700	N/A	0	10.8	5,400	95,610	4.04	2	249,341
J (Note 6) (Note 7)	1995	310	1	2	936	65,520	2	2.8	984	3	9.3	738	SCHH	6,750	32.8	8,200	82,192	3.82	2	288,937
	2010	339	1	2	1023	256,910	2	2.8	1,400	3	9.3	738	SCHH	7,088	32.8	8,200	274,336	3.79	2	1,015,305
	2015	350	1	2	1056	259,220	3	50.4	24,784	3	9.3	738	SCHH	7,088	32.8	8,200	300,030	3.78	2	1,068,435
	2020	363	1	2	1093	261,810	3	50.4	24,784	3	9.3	738	SCHH	7,088	32.8	11,480	305,900	3.77	2	1,078,861
	2030	381	1	2	1148	265,660	3	50.4	24,784	3	9.3	738	SCHH	7,655	32.8	11,480	310,317	3.76	2	1,091,639
	2060	387	1	2	1167	266,990	3	50.4	24,784	3	9.3	738	SCHH	7,655	32.8	13,120	313,287	3.76	2	1,096,959
	BO	387	1	2	1167	266,990	5	84	42,000	3	9.3	2,790	SCHH	7,655	32.8	16,400	335,835	3.76	2	1,142,378
K	1995	287	1	2	867	60,690	0	0	0	2	6.5	248	N/A	0	27.8	6,950	67,888	3.84	2	240,897
	2010	296	1	2	894	62,580	0	0	0	3	8	2,400	N/A	0	27.8	6,950	71,930	3.83	2	255,878
	2015	296	1	2	894	62,580	0	0	0	4	10	3,000	N/A	0	27.8	6,950	72,530	3.83	2	258,177
	2020	296	1	2	894	62,580	0	0	0	4	10	3,000	N/A	0	27.8	9,730	75,310	3.83	2	260,957
	2030	296	1	2	894	62,580	0	0	0	4	10	3,000	N/A	0	27.8	9,730	75,310	3.83	2	260,957
	2060	296	1	2	894	62,580	0	0	0	4	10	3,000	N/A	0	27.8	11,120	76,700	3.83	2	262,347
	BO	296	1	2	894	62,580	0	0	0	7	8.4	2,520	N/A	0	27.8	13,900	79,000	3.83	2	263,288
L	1995	353	20	57	1230	86,100	2	0.6	2,548	9	17.8	2,255	SCHA	1,500	38.5	9,625	102,028	3.74	2	350,800
	2010	391	20	57	1344	94,080	2	0.6	2,548	9	17.8	2,255	SCHA	1,575	38.5	9,625	110,083	3.71	2	378,314
	2015	406	20	57	1387	97,090	2	0.6	2,548	9	17.8	2,255	SCHA	1,575	38.5	9,625	113,093	3.70	2	388,518
	2020	422	20	57	1436	100,520	2	0.6	2,548	9	17.8	2,255	SCHA	1,575	38.5	13,475	120,373	3.69	2	403,953
	2030	446	20	57	1508	105,560	2	0.6	2,548	9	17.8	2,255	SCHA	1,701	38.5	13,475	125,539	3.68	2	421,358
	2060	503	20	57	1679	117,530	2	0.6	2,548	9	17.8	2,255	SCHA	1,701	38.5	15,400	139,434	3.64	2	463,145
	BO	519	20	57	1728	120,960	2	0.6	300	9	17.8	5,340	SCHA	1,701	38.5	19,250	147,551	3.63	2	485,042
M	1995	36	1	2	114	7,980	1	1	246	4	79	57,408	SCHS	31,040	4.7	1,175	97,849	4.23	2	409,322
	2010	40	1	2	125	8,750	1	1	246	3	79	57,408	SCHS	32,592	4.7	1,175	100,171	4.22	2	417,974
	2015	41	1	2	129	9,030	1	1	246	3	79	57,408	SCHS	32,592	4.7	1,175	100,451	4.21	2	418,744
	2020	43	1	2	134	9,380	1	1	246	3	79	57,408	SCHS	32,592	4.7	1,645	101,271	4.21	2	420,184
	2030	45	1	2	140	9,800	1	1	246	3	79	57,408	SCHS	35,199	4.7	1,645	104,298	4.20	2	432,309
	2060	50	1	2	155	10,850	1	1	246	3	79	57,408	SCHS	35,199	4.7	1,880	105,583	4.19	2	435,482
	BO	54	1	2	168	11,760	1	1	500	4	79	23,700	SCHS	35,199	4.7	2,350	73,509	4.17	2	298,329
N	1995	296	1	2	894	62,580	0	0	0	6	19.7	9,945	N/A	0	48.5	12,125	84,650	3.83	2	289,957
	2010	7	0	0	21	1,470	0	0	0	6	19.7	5,910	N/A	0	1.8	450	7,830	4.38	2	32,757
	2015	7	0	0	21	1,470	0	0	0	6	19.7	5,910	N/A	0	1.8	450	7,830	4.38	2	32,757
	2020	7	0	0	21	1,470	0	0	0	6	19.7	5,910	N/A	0	1.8	630	8,010	4.38	2	32,937
	2030	7	0	0	21	1,470	0	0	0	6	19.7	5,910	N/A	0	1.8	630	8,010	4.38	2	32,937
	2060	7	0	0	21	1,470	0	0	0	6	19.7	5,910	N/A	0	1.8	720	8,100	4.38	2	33,027
	BO	7	0	0	21	1,470	0	0	0	6	19.7	5,910	N/A	0	1.8	900	8,280	4.38	2	33,207
O	1995	204	7	22	678	47,460	2	0.35	175	1	0.2	60	N/A	0	26.9	6,725	54,420	3.90	2	192,522
	2010	75	7	22	291	20,370	2	0.35	175	1	0.2	60	N/A	0	13.6	3,400	24,005	4.08	2	87,188
	2015	75	7	22	291	20,370	2	0.35	175	1	0.2	60	N/A	0	13.6	3,400	24,005	4.08	2	87,188
	2020	75	7	22	291	20,370	2	0.35	175	1	0.2	60	N/A	0	13.6	4,760	25,365	4.08	2	88,548
	2030	75	7	22	291	20,370	2	0.35	175	1	0.2	60	N/A	0	13.6	4,760	25,365	4.08	2	88,548
	2060	75	7	22	291	20,370	2	0.35	175	1	0.2	60	N/A	0	13.6	5,440	26,045	4.08	2	89,228
	BO	75	7	22	291	20,370	2	0.35	175	1	0.2	60	N/A	0	13.6	6,800	27,405	4.08	2	90,588
P (Note 8)	1995	247	43	112	1077	75,390	0	0	0	22	13.4	7,888	SCHQ	2,862	29.6	7,400	93,540	3.78	2	332,923
	2010	257	43	112	1107	77,490	0	0	80,000	23	15	8,368	SCHQ	3,026	29.6	7,400	176,284	3.77	2	502,591
	2015	257	43	112	1107	77,490	0	0	80,000	23	15	8,368	SCHQ	3,026	29.6	7,400	176,284	3.77	2	502,591
	2020	257	43	112	1107	77,490	0	0	80,000	23	15	8,368	SCHQ	3,026	29.6	10,360	179,244	3.77	2	505,551
	2030	257	43	112	1107	77,490	0	0	80,000	23	15	8,368	SCHQ	3,288	29.6	10,360	179,506	3.77	2	506,539
	2060	257	43	112	1107	77,490	0	0	80,000	23	15	8,368	SCHQ	3,288	29.6	11,840	180,986	3.77	2	508,019
	BO	257	43	112	1107	77,490	0	0	80,000	23	15	8,368	SCHQ	3,288	29.6	14,800	183,946	3.77	2	510,979

Appendix B Calculation of Sewer Flows

Area #	Design Year	Domestic Flow				Industrial Flows ⁽¹⁾			Commercial Flows ⁽¹⁾			Institutional Flows		Infiltration/Inflow		Total Flow (ADF) gpd	Peaking Factor ⁽²⁾		Peak Flow gpd	
		SF Units	Multi Lots	Family Units	Total Pop.	Flow gpd	Total Lots	Total Acres	Flow gpd	Total Lots	Total Acres	Flow gpd	Type of Use	Flow gpd	Pipeline Inch-Miles		Flow gpd	Res. & Comm.		Industrial
Q	1995	288	26	81	1107	77,490	0	0	0	1	0.7	210	N/A	0	38.6	9,650	87,350	3.77	2	302,665
	2010	306	26	81	1161	81,270	0	0	0	1	0.7	210	N/A	0	38.6	9,650	91,130	3.76	2	315,792
	2015	306	26	81	1161	81,270	0	0	0	1	0.7	210	N/A	0	38.6	9,650	91,130	3.76	2	315,792
	2020	306	26	81	1161	81,270	0	0	0	1	0.7	210	N/A	0	38.6	13,510	94,990	3.76	2	319,652
	2030	306	26	81	1161	81,270	0	0	0	1	0.7	210	N/A	0	38.6	13,510	94,990	3.76	2	319,652
	2060	306	26	81	1161	81,270	0	0	0	1	0.7	210	N/A	0	38.6	15,440	96,920	3.76	2	321,582
	BO	306	26	81	1161	81,270	0	0	0	1	0.7	210	N/A	0	38.6	19,300	100,780	3.76	2	325,442
R	1995	85	4	10	285	19,950	0	0	0	1	0.4	246	N/A	0	12.1	3,025	23,221	4.09	2	85,584
	2010	92	4	10	306	21,420	0	0	0	1	0.4	246	N/A	0	12.1	3,025	24,691	4.07	2	91,309
	2015	92	4	10	306	21,420	0	0	0	1	0.4	246	N/A	0	12.1	3,025	24,691	4.07	2	91,309
	2020	92	4	10	306	21,420	0	0	0	1	0.4	246	N/A	0	12.1	4,235	25,901	4.07	2	92,519
	2030	92	4	10	306	21,420	0	0	0	1	0.4	246	N/A	0	12.1	4,235	25,901	4.07	2	92,519
	2060	92	4	10	306	21,420	0	0	0	1	0.4	246	N/A	0	12.1	4,840	26,506	4.07	2	93,124
	BO	92	4	10	306	21,420	0	0	0	1	0.4	120	N/A	0	12.1	6,050	27,590	4.07	2	93,821
S	1995	77	13	42	357	24,990	0	0	0	0	0	0	N/A	0	10.8	2,700	27,690	4.05	2	103,788
	2010	87	13	42	387	27,090	0	0	0	0	0	0	N/A	0	10.8	2,700	29,790	4.03	2	111,844
	2015	87	13	42	387	27,090	0	0	0	0	0	0	N/A	0	10.8	2,700	29,790	4.03	2	111,844
	2020	87	13	42	387	27,090	0	0	0	0	0	0	N/A	0	10.8	3,780	30,870	4.03	2	112,924
	2030	87	13	42	387	27,090	0	0	0	0	0	0	N/A	0	10.8	3,780	30,870	4.03	2	112,924
	2060	87	13	42	387	27,090	0	0	0	0	0	0	N/A	0	10.8	4,320	31,410	4.03	2	113,464
	BO	87	13	42	387	27,090	0	0	0	0	0	0	N/A	0	10.8	5,400	32,490	4.03	2	114,544
T (Note 9)	1995	89	20	61	450	31,500	1	3.6	19,742	2	3.2	5,156	NUR2	8,500	15.8	3,950	68,848	4.00	2	223,938
	2010	103	20	61	492	43,675	1	3.6	19,742	2	3.2	5,156	NUR2	6,825	15.8	3,950	79,348	3.98	2	264,824
	2015	106	20	61	501	44,305	1	3.6	19,742	2	3.2	5,156	NUR2	6,825	15.8	3,950	79,978	3.97	2	267,102
	2020	106	20	61	501	44,305	1	3.6	19,742	2	3.2	5,156	NUR2	6,825	15.8	5,530	81,558	3.97	2	268,682
	2030	106	20	61	501	44,305	1	3.6	19,742	2	3.2	5,156	NUR2	7,371	15.8	5,530	82,104	3.97	2	270,852
	2060	106	20	61	501	44,305	1	3.6	19,742	2	3.2	5,156	NUR2	7,371	15.8	6,320	82,894	3.97	2	271,642
	BO	106	20	61	501	44,305	1	3.6	1,800	2	3.2	960	NUR2	7,371	15.8	7,900	62,336	3.97	2	220,664
U (Note 10)	1995	65	41	146	633	44,310	2	4.3	7,541	51	51.2	24,782	N/A	0	37.8	9,450	86,083	3.92	2	295,327
	2010	65	41	146	633	44,310	2	4.3	7,541	52	52	44,493	N/A	0	37.8	9,450	105,794	3.92	2	372,581
	2015	65	41	146	633	44,310	2	4.3	7,541	52	52	44,493	N/A	0	37.8	9,450	105,794	3.92	2	372,581
	2020	65	41	146	633	44,310	2	4.3	7,541	52	52	44,493	N/A	0	37.8	13,230	109,574	3.92	2	376,361
	2030	65	41	146	633	44,310	2	4.3	7,541	52	52	44,493	N/A	0	37.8	13,230	109,574	3.92	2	376,361
	2060	65	41	146	633	44,310	2	4.3	7,541	52	52	44,493	N/A	0	37.8	15,120	111,464	3.92	2	378,251
	BO	65	41	146	633	44,310	2	4.3	2,150	52	52	35,311	N/A	0	37.8	18,900	100,671	3.92	2	335,261
V	1995	110	53	226	1008	70,560	1	0.5	250	2	13.2	246	N/A	0	13.1	3,275	74,331	3.80	2	272,680
	2010	141	53	226	1101	77,070	1	0.5	250	2	13.2	246	N/A	0	13.1	3,275	80,841	3.77	2	295,463
	2015	153	53	226	1137	79,590	1	0.5	250	2	13.2	246	N/A	0	13.1	3,275	83,361	3.76	2	304,226
	2020	167	53	226	1177	82,390	1	0.5	250	2	13.2	246	N/A	0	13.1	4,585	87,471	3.75	2	315,239
	2030	181	53	226	1221	85,470	1	0.5	250	2	13.2	246	N/A	0	13.1	4,585	90,551	3.74	2	325,870
	2060	181	53	226	1221	85,470	1	0.5	250	2	13.2	246	N/A	0	13.1	5,240	91,206	3.74	2	326,525
	BO	181	53	226	1221	85,470	1	0.5	250	2	13.2	3,960	N/A	0	13.1	6,550	96,230	3.74	2	341,734
W (Note 11)	1995	166	24	76	726	50,820	0	0	0	4	2	738	SCHJ, EHO2	37,195	21.1	5,275	94,028	3.89	2	350,114
	2010	189	24	76	793	59,420	0	0	0	4	2	738	SCHJ, EHO2	39,055	21.1	5,275	104,488	3.86	2	388,504
	2015	191	24	76	801	59,980	0	0	0	4	2	738	SCHJ, EHO2	39,055	21.1	5,275	105,048	3.86	2	390,406
	2020	191	24	76	801	59,980	0	0	0	4	2	738	SCHJ, EHO2	39,055	21.1	7,385	107,158	3.86	2	392,516
	2030	191	24	76	801	59,980	0	0	0	4	2	738	SCHJ, EHO2	42,179	21.1	7,385	110,282	3.86	2	404,675
	2060	191	24	76	801	59,980	0	0	0	4	2	738	SCHJ, EHO2	42,179	21.1	8,440	111,337	3.86	2	405,630
	BO	191	24	76	801	59,980	0	0	0	4	2	600	SCHJ, EHO2	42,179	21.1	10,550	113,309	3.86	2	407,207
X	1995	181	2	4	555	38,850	1	0.7	350	4	23.3	6,990	SCHB	8,250	25.9	6,475	60,915	3.95	2	220,857
	2010	112	2	4	346	24,220	1	0.7	350	4	23.3	6,990	SCHB	0	18.25	4,563	36,123	4.05	2	131,703
	2015	118	2	4	365	25,550	1	0.7	350	4	23.3	6,990	SCHB	0	18.25	4,563	37,453	4.04	2	136,748
	2020	125	2	4	387	27,090	1	0.7	350	4	23.3	6,990	SCHB	0	18.25	6,388	40,818	4.03	2	144,393
	2030	136	2	4	420	29,400	1	0.7	350	4	23.3	6,990	SCHB	0	18.25	6,388	43,128	4.01	2	153,084
	2060	136	2	4	420	29,400	1	0.7	350	4	23.3	6,990	SCHB	0	18.25	7,300	44,040	4.01	2	153,997
	BO	136	2	4	420	29,400	1	0.7	350	4	23.3	6,990	SCHB	0	18.25	9,125	45,865	4.01	2	155,822

Appendix B Calculation of Sewer Flows

Area #	Design Year	Domestic Flow					Industrial Flows ⁽¹⁾			Commercial Flows ⁽¹⁾			Institutional Flows		Infiltration/Inflow		Total Flow (ADF) gpd	Peaking Factor ⁽²⁾		Peak Flow gpd
		SF Units	Multi Lots	Family Units	Total Pop.	Flow gpd	Total Lots	Total Acres	Flow gpd	Total Lots	Total Acres	Flow gpd	Type of Use	Flow gpd	Pipeline Inch-Miles	Flow gpd		Res. & Comm.	Industrial	
Y	1995	90	1	2	276	19,320	0	0	0	2	11.2	3,360	N/A	0	14.9	3,725	26,405	4.09	2	96,570
	2010	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2015	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2030	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2060	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	BO	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
Z (Note 12)	1995	186	10	31	651	45,570	2	0.8	400	0	0	0	SCHR	500	25.4	6,350	52,820	3.91	2	187,399
	2010	56	10	31	261	28,394	2	0.8	400	0	0	0	SCHR	525	8.66	2,165	31,484	4.10	2	121,637
	2015	64	10	31	285	30,074	2	0.8	400	0	0	0	SCHR	525	8.66	2,165	33,164	4.09	2	128,050
	2020	73	10	31	310	31,824	2	0.8	400	0	0	0	SCHR	525	8.66	3,031	35,780	4.07	2	135,567
	2030	86	10	31	349	34,554	2	0.8	400	0	0	0	SCHR	567	8.66	3,031	38,552	4.05	2	146,057
	2060	86	10	31	349	34,554	2	0.8	400	0	0	0	SCHR	567	8.66	3,464	38,985	4.05	2	146,490
	BO	86	10	31	349	34,554	2	0.8	400	0	0	0	SCHR	567	8.66	4,330	39,851	4.05	2	147,356
AA Elim 2003	1995	214	0	0	642	44,940	0	0	0	0	0	0	N/A	0	21.0	6,475	50,415	3.92	2	181,456
	2010	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2015	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2030	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2060	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	BO	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
AB Elim 2003	1995	432	5	42	432	30,240	0	0	0	4	4	246	N/A	0	24.4	6,350	36,836	4.04	2	127,479
	2010	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2015	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2030	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2060	-12	5	12	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	BO	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
AC Elim. 1995	1995	448	0	0	354	24,780	0	0	0	0	0	0	N/A	0	24	6,250	30,930	4.05	2	105,530
	2010	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2015	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2030	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2060	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	BO	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
AD	1995	150	1	2	456	31,920	4	71.4	492	1	0.7	210	N/A	0	15	3,750	36,372	3.99	2	133,076
	2010	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2015	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2030	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2060	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	BO	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
AE	1995	108	3	12	360	25,200	9	8.7	4,350	8	8.1	2,430	SCHF, TH	20,250	16.3	4,075	56,305	4.04	2	206,377
	2010	93	3	12	313	21,910	10	19.7	9,850	8	8.1	2,430	SCHF, TH	21,283	13.95	3,488	58,961	4.07	2	208,898
	2015	97	3	12	325	22,750	10	19.7	9,850	8	8.1	2,430	SCHF, TH	21,283	13.95	3,488	59,801	4.06	2	211,985
	2020	102	3	12	340	23,800	11	20.8	10,400	8	8.1	2,430	SCHF, TH	21,283	13.95	4,883	62,796	4.05	2	218,334
	2030	109	3	12	361	25,270	11	20.8	10,400	8	8.1	2,430	SCHF, TH	22,964	13.95	4,883	65,947	4.04	2	230,513
	2060	109	3	12	361	25,270	11	20.8	10,400	8	8.1	2,430	SCHF, TH	22,964	13.95	5,580	66,644	4.04	2	231,211
	BO	109	3	12	361	25,270	12	21.9	10,950	8	8.1	2,430	SCHF, TH	22,964	13.95	6,975	68,589	4.04	2	233,706
AF	1995	146	0	0	438	30,660	1	0.4	246	0	0	0	N/A	0	22.6	5,650	36,556	4.00	2	128,878
	2010	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2015	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2020	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2030	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	2060	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0
	BO	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0

Appendix B Calculation of Sewer Flows

Area #	Design Year	Domestic Flow				Industrial Flows ⁽¹⁾			Commercial Flows ⁽¹⁾			Institutional Flows		Infiltration/Inflow		Total Flow (ADF) gpd	Peaking Factor ⁽²⁾		Peak Flow gpd	
		SF Units	Multi Lots	Family Units	Total Pop.	Flow gpd	Total Lots	Total Acres	Flow gpd	Total Lots	Total Acres	Flow gpd	Type of Use	Flow gpd	Pipeline Inch-Miles		Flow gpd	Res. & Comm.		Industrial
AG Elim. 1995	1995	117	0	0	351	24,670	0	0	0	0	0	0	0	18.8	4,700	29,270	4.05	2	104,174	
	2010	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2015	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2020	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2030	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2060	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
BO	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0		
AH Elim. 1995	1995	66	0	0	198	13,860	0	0	0	0	0	0	0	8.1	2,025	16,885	4.15	2	59,539	
	2010	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2015	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2020	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2030	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
	2060	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0	
BO	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0		
AI Elim. 1995	1995	115	1	3	354	24,780	0	0	0	1	10.5	246	0	0	0	25,026	4.05	2	101,275	
	2010	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	4.50	2	0	
	2015	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	4.50	2	0	
	2020	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	4.50	2	0	
	2030	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	4.50	2	0	
	2060	0	0	0	0	0	0	0	0	0	0	0	0	N/A	0	0	4.50	2	0	
BO	0	0	0	0	0	0	0	0	0	0	N/A	0	0	0	0	4.50	2	0		
Total	1995	5,999	318	1,073	21,216	1,485,120	39	144	45,214	245	416	192,941	0	0	796	199,025	2,064,847			7,426,029
	2010	4,559	309	1,052	16,816	1,404,919	35	83	130,608	252	451	244,863	138,935	566	141,415	2,060,740			7,373,904	
	2015	4,659	309	1,052	17,124	1,426,479	36	131	153,992	256	454	245,763	138,935	566	141,415	2,106,584			7,498,630	
	2020	4,751	309	1,052	17,395	1,445,449	38	186	181,542	257	455	246,093	139,522	566	197,981	2,210,587			7,678,962	
	2030	4,870	309	1,052	17,756	1,470,719	38	186	181,542	257	455	246,093	150,069	566	197,981	2,246,404			7,807,045	
	2060	4,781	314	1,056	18,117	1,495,989	38	186	181,542	256	455	245,847	150,069	566	226,264	2,299,711			7,919,583	
	BO	5,007	309	1,052	18,173	1,499,909	46	296	227,825	261	454	181,075	150,069	566	282,830	2,341,708			7,810,273	

- (1) - Actual water use records from 1995 Facilities Plan used for industrial and commercial flows if/when they were obtained. Otherwise estimated future flows using the gallon per acre day calculation factor was used.
- (2) - Residential & Commercial Peaking factor calculated per RI-DEM standards, $\frac{18 + \sqrt{P}}{4 + \sqrt{P}}$ where P = population in thousands
- (3) - Additional 8,190 gpd added to Year 2010 DOMESTIC FLOWS for Village at East Shore Drive subdivision
- (4) - Additional 21,416 gpd added to Year 2010 COMMERCIAL FLOWS for the Brookside Development.
- (5) - Additional 11,040 gpd added to Year 2010 DOMESTIC FLOWS for the Coventry Housing Authority's Coventry Meadow Development.
- (6) - Additional 90,000 gpd and 17,300 gpd added into Year 2010 DOMESTIC FLOWS for the Center of New England Development and the Pine Ridge Subdivision respectively. This was done as part of the 2003 Facilities Plan Reaffirmation.
- (7) - Additional 75,000 gpd have been added to Year 2010 DOMESTIC FLOWS for additional Center of New England Development Projects.
- (8) - Additional 56,000 gpd and 24,000 gpd have been added into Year 2010 INDUSTRIAL FLOWS for Rhodes Technologies and Clariant Corporation respectively.
- (9) - Additional 1,510 gpd and 7,725 gpd added to Year 2010 DOMESTIC FLOWS for the Riverside Landing development and Village at Harris Mill redevelopment project respectively.
- (10) - Additional 19,711 added into Year 2010 COMMERCIAL FLOWS for the Anthony Mill redevelopment project.
- (11) - Additional 3,910 gpd added into Year 2010 DOMESTIC FLOWS for the additional development on the Coventry Housing Authority's property on Contentment Drive.
- (12) - Additional 10,370 gpd added to Year 2010 DOMESTIC FLOWS for the Riverwalk Commons development.

O:\Coventry RI\FP Update 2008\Facility Plan Update Document\Figures\Appendix\Appendix B - Calc and Projection of Sewer Flows.xls\Appendix B Calc of Sewer Flows

Appendix C



141 James P. Murphy Highway, West Warwick, Rhode Island 02893
Telephone (401) 615-8600 Fax (401) 615-8606

August 3, 2009

Ms. Stephani In
Town of Coventry Town Hall
1670 Flat River Road
Coventry, Rhode Island 02816

**RE: Sanitary Sewer Flow Projection for Facilities Plan Update
Centre of New England
Centre of New England Boulevard
Coventry, Rhode Island
Project File: 10.528**

Dear Ms. In:

The enclosed represents the sanitary sewer flow projection for the above referenced property and is submitted for inclusion in the updated Facilities Plan for the Town of Coventry. It is estimated that the Centre of New England will require an additional allocation of 78,000 gallons per day (average daily sanitary flow) for the development. Enclosed herewith, please find the following for the above referenced project:

1. Ten (10) copies of the Centre of New England – Average Daily Flows for Existing and Proposed Establishments to Be Served, dated July 2009.
2. Ten (10) copies of a plan entitled “Buildout Projections for Updated Facilities Plan; Centre of New England; Dante Boulevard / Hopkins Hill Road; Coventry, Rhode Island; Prepared for Universal Properties Group, Inc.; Prepared by John P. Caito Corporation; Dated July 2009; Sheet 1 of 1.”

Should you have any questions or require additional information, please do not hesitate to contact this office at your convenience.

Very Truly Yours,
John P. Caito Corporation


Benjamin J. Caito, P.E.
Project Manager

Cc: Mr. Scott Nelson, Universal Properties Group, with enclosures

528BC072909SI.doc



Appendix C

**CENTRE OF NEW ENGLAND - AVERAGE DAILY SEWER FLOWS
EXISTING AND PROPOSED ESTABLISHMENTS TO BE SERVED
PREPARED FOR INCLUSION IN THE UPDATED FACILITIES PLAN
TOWN OF COVENTRY, RHODE ISLAND
July 2009**

LOCATION	USE	Town of Coventry	
		EXISTING AVERAGE SEWER FLOW ¹ GALLONS/DAY	PROPOSED AVERAGE SEWER FLOW ² GALLONS/DAY
Coventry - New London Turnpike	Hampton Inn & Suites	4,960	--
	Applebee's	3,330	--
	BJ's Wholesale Club	2,290	--
	Randolph Savings Bank	65	--
	Home Depot	780	--
	Wal-Mart Supercenter	5,740	--
	Retail Pad A	615	--
	Retail Pad B	140	--
	Fairfield Inn & Suites (Formerly Wingate Hotel)	2,745	--
	Phase 6 - Village Green Residential - 87Units ³	28,100	--
	Phase 6 - Assisted Living ³	13,080	--
	Phase 8I - Multi-Family - 28 Units		8,400
	Infiltration ⁴	1,250	--
	Sub Total - New London Turnpike		61,095
Coventry - Hopkins Hill Road	DHL	490	--
	ASCO Health (Neighbor Care)	1,020	--
	Champion Windows	335	--
	Primary Colors Daycare (Formerly)	1,150	--
	Ri Mack Truck (Formerly)	1,010	--
	Hertz Equipment Rental (Formerly)	1,600	--
	100 Phase I - 311 Multi-family units ³	93,300	--
	Phase II - 250 Multi-family units	--	75,000
	Phase 7A - Commercial Condominiums	970	--
	Phase 7B & 7C - 52 Multi-family units	--	15,600
Infiltration ⁴	1,250	1,500	
Sub Total - Hopkins Hill Road		101,125	92,100

1 Existing uses calculated per Town Engineer e-mail correspondence of June 27, 2007: Sewer use = 80% of documented water use.

2 Proposed uses calculated per Town Engineer e-mail correspondence of June 27, 2007 (copy attached): average residential daily sewer flow = 300 gpd / household. See "Flow Estimation Policy for Design of Sanitary Sewers", Rhode Island Department of Environmental Management, Office of Water Resources, Rev. 10/96 (copy attached).

3 Approved use currently under construction. Calculations according to Note 2.

4 Estimated using "Flow Estimation Policy for Design of Sanitary Sewer", Rhode Island Department of Environmental Management, Office of Water Resources, Rev. 10/96. Proposed infiltration is an estimate for future uses.



Appendix C

SUMMARY - EXISTING AND PROPOSED COVENTRY SEWER USE	
	Town of Coventry Gallons/Day of Sewer Use
Grand Total - Coventry Sewer Use	262,720
Allocation per Order Of Approval	185,000
Requested Additional Allocation for Facilities Plan	77,720 Say 78,000

**Town of Coventry, Rhode Island
Wastewater Facilities Plan**

Wastewater Management Needs Questionnaire Survey

As part of the Town of Coventry's wastewater facilities planning effort, a needs survey questionnaire was distributed to homes in the densely populated eastern portion of the town. A copy of the needs questionnaire form as sent is attached hereto. The purpose of this questionnaire was to determine the current condition of existing individual sewage disposal systems (ISDS), and obtain information on the probable suitability of ISDS systems as a long term wastewater disposal option in the study area. In addition to ISDS operational information, the questionnaire requested opinions on issues such as the need for sanitary sewers in general, costs of sanitary sewer system construction to homeowners, and the institution of a town-wide ISDS maintenance program.

The wastewater questionnaires were sent to approximately 6,250 homes and businesses in eastern Coventry, in March of 1992. All responses received through August 1992 were incorporated into the Questionnaire Results database. In order to evaluate the wastewater management needs of eastern Coventry, the study area was divided into thirty-five (35) numbered sub-areas. The limits of these sub-areas are shown on the attached Figure D-1 and are generally described in the following Table D-1 ..

TABLE D-1
DESCRIPTION OF NEEDS STUDY AREAS

<u>Area</u>		<u>Description</u>
1995 FP	2009 FP	
1	A	New London Turnpike area, southeast of Tiogue Lake.
2	B	Tiogue Avenue area, east of Oak Haven.
3	C	East Shore Drive area, northeast of Tiogue Lake.
4	D	Oak Haven area, north of Tiogue Avenue.
5	E	Laurel Avenue area, north of Oak Haven School.
6	F	Tiogue Avenue, Pilgrim Avenue to Reservoir Road.
7	G	Arnold Road area (north), northwest of Tiogue Lake.
8	H	Arnold Road area (central), west of Tiogue Lake.
9	I	Arnold Road area (south), southwest of Tiogue Lake.
10	J	Hopkins Hill Road area, east of Hopkins Hill Road.
11	K	Jefferson Drive area, west of Hopkins Hill Road.
12	L	South Main Street area, north of Tiogue Avenue.
13	M	Reservoir Road area, near Coventry High School.
14	N	Wood Estates area, west of Reservoir Road.
15	O	Pulaski Street and Windsor Park Drive area.
16	P	Fairview Avenue area (south), south of Cecile Street.
17	Q	Fairview Avenue area (central), south of Youngs Avenue.
18	R	Fairview Avenue area (north), south of Hillside Avenue.
19	S	Ames Street area, eastern end of Hill Street.
20	T	Harris area, northeast of North Main Street.
21	U	Main Street/Washington Street, west of Fairview Avenue.
22	V	Boston Street area, west of Black Rock Road.
23	W	Maple Street area, east of Station Street.
24	X	Gervais Road area, west of Black Rock Road.

TABLE D-1 (CONTINUED)

<u>Area</u>	<u>Description</u>
1995 2009	
25 Y	Black Rock Road area, north of Gervais Road.
26 Z	Hill Street area, west of Brown Street.
27 AA	Black Walnut Drive area, east of Knotty Oak Road.
28 AB	Knotty Oak Road, north of Gervais Road.
29 AC	Highwood Drive area, west of Knotty Oak Road.
30 AD	Alvero Road area, east of Colvintown Road.
31 AE	Flat River Road, east of Read Schoolhouse Road.
32 AF	Chandler Drive area, west of Colvintown Road.
33 AG	Teakwood Drive area, west of Colvintown Road.
34 AH	Shady Valley Road area, east of Hill Farm Road.
35 AI	Coventry Center, Hill Farm Road and Flat River Road.

The results of several key questions were tabulated for each area and are summarized in the attached Table D-2 . The results are also shown individually for each area on the attached Questionnaire Summary pages. The following is a brief description of the data shown in Table D-2 .

Column A (Area No.) indicates the number of the area for which data in that row applies. As described above, the study area includes thirty-five sub-areas.

Column B (No. Records) indicates the number of questionnaire responses which were received for that area. A total of 2,444 questionnaire responses were received.

Column C (No. Homes) indicates the number of developed properties (homes and businesses) which exist in that area. This number is based on a count of the buildings in each area from the town's base maps. A total of 6,227 developed properties exist in the thirty-five areas. Questionnaires were sent to 6,250 properties. The difference between these numbers is mainly due to the distribution of some questionnaires outside the study areas as delineated.

Column D (Percent Response) indicates the percent response for each area, based on the ratio of the number of questionnaires received (Column B) to the number sent (Column C). The overall response to the questionnaire survey for the study area was thirty-nine percent (39%).

Column E (Persons per Building) indicates the average number of people typically occupying a residence, based on the responses to question 6 on the questionnaire. The average number of persons per building from the questionnaires is 3.1. This average does not include the responses from areas 6 and 20, which were significantly higher due to responses from commercial and industrial properties located therein.

Column F (% Aware of a Problem) indicates the percent of respondents (Column B) who indicated that they were aware of a wastewater disposal problem in Coventry, based on question 20 on the questionnaire. Twenty-six percent (26%) of the respondents were aware of a wastewater disposal problem in the Town of Coventry.

Columns G through L (System Problems) are based on the responses to question 13 on the questionnaire, which asked about problems with the property owner's wastewater disposal system (ISDS). Percentages for each column are based on the number of persons responding to question 13, therefore columns G and H add up to 100%, as do columns I through L.

Column G (No) indicates the percent of respondents who stated that they have not experienced any problems with their wastewater disposal system. Approximately seventy-six percent (76%) of those responding to question 13 did not have problems with their system.

Column H (Yes) indicates the percent of respondents who stated that they have experienced problems with their wastewater disposal system. Approximately twenty-four percent (24%) of those responding to question 13 did have problems with their system.

Column I (Weekly) indicates the percent of respondents who noted weekly problems with their system. Column J (Monthly) indicates the percent of respondents who noted monthly problems with their system. Column K (Yearly) indicates the percent of respondents who noted yearly problems with their system. Column L (Unknown) indicates the percent of responses to question 13 for which no problem frequency was stated.

Columns M through Q (Types of Problems) are based on the responses to question 15 on the questionnaire, which asks what types of problems are being experienced by people who responded yes to question 13. Percentages are based on the number of positive responses to question 13.

Column M (Frequent Cleanouts) indicates the percent of respondents to question 13 who cited frequent pumping and cleanouts as common problems with their system. Thirty-eight percent (38%) of respondents cited frequent cleanouts as a problem which they have experienced with their system.

Column N (System Backups) indicates the percent of respondents to question 13 who cited system backups or slow drainage as common problems with their system. Fifty-three percent (53%) of respondents cited system backups as a problem which they have experienced with their system.

Column O (Odors) indicates the percent of respondents to question 13 who cited sewage odors as common problems with their system. Twenty-four percent (24%) of respondents cited sewage odors as a problem which they have experienced with their system.

Column P (Visible on Surface) indicates the percent of respondents to question 13 who cited septage visible or flowing on the ground surface as a common problem with their system. Twenty-three percent (23%) of respondents cited visible sewage on the ground surface as a problem which they have experienced with their system.

Column Q (Limited Use of System) indicates the percent of respondents to question 13 who cited limited use of their system as a common problem. Fifty-two percent (52%) of respondents cited limitations on the use of their systems as a problem which they have experienced.

Columns R, S and T are based on the responses to question 18, which asks if the homeowner has had the wastewater disposal system repaired, replaced or modified. Numbers of responses, instead of percentages, are shown.

Column R (Number Repaired Systems) indicates the total number of yes responses to question 18.

Column S (Pre-1987) indicates the number of systems which were repaired prior to 1987.

Column T (Post-1987) indicates the number of systems which were repaired in and after 1987. A total of 519 system repairs or replacements were indicated on the questionnaires, 195 of these occurred prior to 1987, and 240 occurred after 1987. The remaining 84 repairs had no date cited.

Columns U through Y are based on the responses received to question 21 on the questionnaire. This question asks whether homeowners feel their neighborhood should be sewered if the cost to each sewered homeowner is \$2,500, \$5,000 or \$7,500. The percentages shown are based on the total number of questionnaire responses received.

Column U (\$2,500) indicates the percentage of respondents willing to pay \$ 2,500 or more to have their neighborhood sewered. In general, forty-nine percent (49%) of the people responding to the questionnaire are willing to pay \$ 2,500 or more for sewers in their neighborhood.

Column V (\$5,000) indicates the percentage of respondents willing to pay \$ 5,000 or more to have their neighborhood sewered. In general, thirteen percent (13%) of the people responding to the questionnaire are willing to pay \$ 5,000 or more.

Column W (\$7,500) indicates the percentage of respondents willing to pay \$ 7,500 or more to have their neighborhood sewered. In general, five percent (5%) of the people responding to the questionnaire are willing to pay \$ 7,500 or more.

Column X (Neither) indicates the percentage of respondents (44%) not willing to pay \$ 2,500 for the installation of sewers in their neighborhood.

Column Y (No Opinion) indicates the percentage of respondents (7%) not answering question 21 on the questionnaire.

Columns Z, AA and BB are based on the responses to question 23 on the questionnaire, which asks for an opinion on the Town of Coventry taking over the maintenance of all wastewater treatment (ISDS) systems in the Town. The percentages shown are based on the total number of questionnaire responses received.

Column Z (Yes) indicates the percentage of respondents (27%) who would be in favor of the Town assuming responsibility for ISDS maintenance.

Column AA (No) indicates the percentage of respondents (48%) who would not be in favor of the Town assuming responsibility for ISDS maintenance.

Column BB (No Opinion) indicates the percentage of respondents (17%) who showed no opinion on this question.

Columns CC, DD and EE are based on the responses to question 24 on the questionnaire, which asks for an opinion on whether some areas of the Town of Coventry should be sewered. The percentages shown are based on the total number of questionnaire responses received.

Column CC (Yes) indicates the percent of respondents (59% overall) who agreed that some areas of Coventry should be sewered.

Column DD (No) indicates the percent of respondents (10% overall) who do not agree that some areas should be sewered.

Column EE (No Opinion) indicates the percentage of respondents (31% overall) who showed no opinion on this question.

Columns FF through JJ deal with the types of wastewater disposal systems existing in the study area, and are based on the responses to question 9 on the questionnaire.

Column FF (Cesspool) indicates the percentage of respondents (37% overall) who have a cesspool for an ISDS.

Column GG (Holding Tank) indicates the percentage of respondents (1% overall) who have a holding tank for an ISDS.

Column HH (Drywell for Washer) indicates the percentage of respondents (less than 1% overall) who have a separate drywell for their washing machine.

Column II (Septic w/Leach Field) indicates the percentage of respondents (55% overall) who have a septic tank with a leaching field for an ISDS.

Column JJ (Septic w/Leach Pit) indicates the percentage of respondents (4% overall) who have a septic tank with a leaching pit for an ISDS.

Other questions were included on the questionnaire and not summarized on the attached table. The responses to these questions, as well as written comments from respondents, were reviewed as part of the study. The following are some general comments on the information not included above.

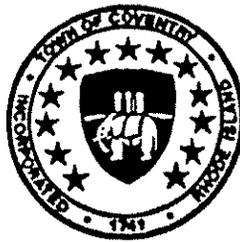
- A large number of people cited the Tiogue Lake area, and the eastern end of town in general, as areas of need.
- A majority of persons opposed to sewers in the town commented that the reason for their opposition is cost, not lack of need.
- Many people commented that they needed sewers desperately, but due to the sluggish economy could not afford them at this time.
- Many people voiced a concern over the effect of high sewer assessments and user costs on the elderly.
- Many people commented that sewers should be installed in areas of need, and should be paid for exclusively by those serviced.
- Several people noted that people without ISDS problems should not be forced to pay for sewers in the neighborhood if they do not need them.

- Several people noted that although they personally did not need sewers, sewer installation would improve property values and quality of life.

- Several people noted that they believed sewers would benefit the town by encouraging commercial and industrial development.

- Overall, the cost of sewer installation was the issue most often commented upon.

(c:\kmn\coventry\fpqdescr)



TOWN OF COVENTRY

Town Hall, 1670 Flat River Road, Coventry, RI 02816-8911
Tel. (401) 822-9183 • FAX (401) 822-9132

REQUEST FOR SEPTIC SYSTEM INFORMATION AND PUBLIC OPINION

This is a request for information regarding wastewater disposal in the Town of Coventry, which will be used in the preparation of the town's on-going Wastewater Facilities Plan. The information on this form will be kept strictly confidential. Specific information will not be released to any state or local agency, or for public review. Please answer the following questions to the best of your ability.

1. Street _____ Number (optional) _____
2. Lot Size _____ square feet
3. Do you: _____ own _____ rent
4. Check the seasons during which your building is occupied:
_____ winter _____ spring _____ summer _____ fall
5. Is your building a:
_____ one _____ two _____ three or more family home
_____ commercial (Describe use: _____)
6. How many people usually occupy your building? _____
7. How long have you owned or rented this building? _____
How old is the building? _____
8. Your drinking water is: _____ private well _____ Kent County Water
9. What type of wastewater disposal system do you have?
a. _____ cesspool d. _____ septic tank & leaching field
b. _____ holding tank e. _____ septic tank & leaching pit
c. _____ separate drywell f. _____ other, please describe
for washing machine _____
10. How old is your wastewater disposal system? _____
11. What appliances are presently connected to your disposal system?
_____ dishwasher _____ garbage disposal _____ other (describe)
_____ sump pump _____ washing machine _____
12. How often do you have your septic tank/cesspool pumped?
_____ two or more times per year _____ once every _____ years
_____ once per year _____ never
_____ once every 2 or 3 years _____ other _____
13. Have you had any problems with your wastewater disposal system?
yes _____ no _____ How often? _____ weekly _____ monthly _____ yearly

14. If yes to question 13, check which season(s) during which you have problems: winter spring summer fall
15. If yes to question 13, what type of problems have you had?
 a. disposal system requires many cleanouts/pumping
 b. disposal system backs up or drains slowly
 c. disposal system has sewage odors
 d. disposal system has sewage flowing on ground surface
 e. disposal system limits showering, washing, etc.
 f. other (describe) _____
16. If yes to question 13, what causes your disposal problems?
 a. high groundwater
 b. poor soil conditions
 c. undersized system
 d. steep sloping ground
 e. other (describe) _____
17. Do you attempt to prevent wastewater disposal problems by:
 a. water conservation
 b. chemical addition
 c. keep grease out of drains
 d. other _____
18. Have you had your disposal system replaced, repaired or modified?
 yes no What year? _____ What cost? _____
19. How much have you invested in your disposal system over the past five years? 0 - \$250 \$250 - \$500 \$ 500 - \$1,000
 \$1,000 - \$2,500 \$2,500 - \$5,000 over \$5,000
20. Are you aware of any wastewater disposal problems in Coventry?
 yes no Describe: _____
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be (circle yes or no):
 \$ 2,500 (yes/no) \$ 5,000 (yes/no) \$ 7,500 (yes/no)
22. What is the basis for your answer to question 21?
 (many/few) wastewater disposal system problems in area
 (problems/lack of problems) with your disposal system
 recent investment to repair your disposal system
 existing problems too minor to justify cost
 sewers too costly despite wastewater disposal problems
 other (describe) _____
23. How would you feel about the Town assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues (i.e. property taxes, user fees, etc.)? in favor opposed no opinion
24. Do you agree that **some areas** of Coventry should be sewered?
 yes no no opinion Where? _____
25. Do you have any comments or suggestions? _____

Please return your completed questionnaire in the enclosed pre-paid envelope to ensure that recommendations can be developed which best represent your interests and the most reliable information. Thank you.

9187.1 COVENTRY RI. FACILITIES PLAN - QUESTIONNAIRE RESULTS

A AREA NO.	B NO. RECORDS	C NO. HOMES (1)	D PERCENT RESPONSE	E PERSONS PER BUILDING	F % AWARE OF A PROBLEM	SYSTEM PROBLEMS					
						G NO	H YES	I PROBLEM FREQUENCY			
								J WKLY	K MONTHLY	L YEARLY	UNKNOWN
1 A	103	269	38%	3.7	22%	78%	22%	14%	14%	55%	18%
2 B	60	154	39%	3	43%	64%	36%	5%	0%	62%	33%
3 C	54	167	32%	2.6	17%	78%	22%	17%	0%	67%	17%
4 D	113	245	46%	2.8	37%	82%	18%	6%	24%	12%	59%
5 E	114	297	38%	2.9	25%	70%	30%	6%	9%	71%	15%
6 F	21	99	21%	-	57%	47%	53%	10%	30%	20%	40%
7 G	94	207	45%	2.7	38%	69%	31%	7%	4%	68%	21%
8 H	129	346	37%	3.1	26%	77%	23%	0%	10%	60%	30%
9 I	51	109	47%	2.8	18%	66%	34%	6%	24%	35%	35%
10 J	122	316	39%	3.2	27%	71%	29%	11%	11%	51%	26%
11 K	143	288	50%	3.2	24%	73%	27%	8%	21%	61%	11%
12 L	143	373	38%	2.9	29%	78%	22%	0%	19%	38%	44%
13 M	4	17 (2)	24%	2.8	25%	50%	50%	0%	0%	50%	50%
14 N	43	149 (3)	29%	4.5	21%	77%	23%	10%	10%	50%	30%
15 O	59	194	30%	2.9	25%	73%	27%	0%	6%	56%	38%
16 P	130	290	45%	2.9	30%	69%	31%	5%	5%	75%	15%
17 Q	126	314	40%	2.8	26%	81%	19%	9%	4%	61%	26%
18 R	37	89	42%	2.5	32%	79%	21%	0%	14%	86%	0%
19 S	35	90	39%	2.8	26%	79%	21%	14%	0%	57%	29%
20 T	31	109	28%	-	29%	89%	11%	0%	33%	33%	33%
21 U	51	143	36%	4.3	35%	80%	20%	0%	22%	78%	0%
22 V	53	163	33%	3.6	25%	70%	30%	0%	6%	56%	38%
23 W	90	190	47%	2.9	22%	72%	28%	8%	0%	48%	44%
24 X	93	183	51%	3.3	24%	79%	21%	0%	16%	63%	21%
25 Y	35	91	38%	3.4	26%	71%	29%	10%	10%	50%	30%
26 Z	82	196	42%	3.2	26%	76%	24%	0%	10%	65%	25%
27 AA	66	214	31%	3.5	21%	77%	23%	20%	7%	53%	20%
28 AB	58	137	42%	2.6	22%	89%	11%	17%	33%	17%	33%
29 AC	47	118	40%	3.4	4%	87%	13%	33%	17%	33%	17%
30 AD	69	151	46%	2.7	22%	78%	22%	7%	0%	60%	33%
31 AE	8	74	11%	2.4	13%	88%	13%	0%	0%	100%	0%
32 AF	65	146	45%	3.5	31%	74%	26%	6%	6%	53%	35%
33 AG	52	117	44%	3.4	19%	88%	12%	0%	0%	83%	17%
34 AH	27	66	41%	2.7	22%	81%	19%	0%	0%	100%	0%
35 AI	36	116	31%	3.1	28%	89%	11%	0%	0%	50%	50%
TOTAL	2444	6227	39%	3.1	26%	76%	24%	6%	10%	57%	27%

Notes: (1) Includes commercial and industrial buildings.

(2) This area includes 37 homes, 17 of which were sent questionnaires.

(3) This area includes 303 homes, 149 of which were sent questionnaires.

9187.1 COVENTRY RI. FACILITIES PLAN - QUESTIONNAIRE RESULTS

A AREA NO.	B NO. RECORDS	C NO. HOMES	M N O P Q R					R NUMBER REPAIRED SYSTEMS	S T	
			TYPES OF PROBLEMS						YEAR REPAIRED	
			FREQUENT CLEANOUTS	SYSTEM BACKUPS	ODORS	VISIBLE ON SURFACE	LIMITED USE OF SYSTEM		PRE 1987	POST 1987
1 A	103	269	41%	64%	41%	36%	50%	19	2	16
2 B	60	154	62%	43%	29%	14%	57%	17	5	10
3 C	54	167	42%	58%	25%	25%	50%	10	5	5
4 D	113	245	88%	71%	41%	59%	0%	28	17	7
5 E	114	297	35%	53%	29%	26%	44%	23	6	13
6 F	21	99	80%	30%	20%	10%	70%	4	0	4
7 G	94	207	18%	71%	25%	14%	61%	23	12	6
8 H	129	346	27%	67%	10%	13%	77%	29	8	16
9 I	51	109	29%	59%	29%	35%	35%	16	5	9
10 J	122	316	49%	57%	20%	17%	63%	23	10	9
11 K	143	288	37%	58%	26%	29%	45%	25	11	12
12 L	143	373	53%	41%	19%	9%	72%	33	15	14
13 M	4	17	50%	50%	0%	0%	100%	1	0	1
14 N	43	149	60%	50%	40%	30%	30%	9	3	6
15 O	59	194	50%	44%	19%	31%	50%	10	4	4
16 P	130	290	33%	45%	13%	15%	73%	26	11	10
17 Q	126	314	22%	48%	22%	35%	43%	29	10	10
18 R	37	89	43%	71%	43%	14%	43%	10	7	3
19 S	35	90	43%	43%	14%	29%	57%	9	5	2
20 T	31	109	0%	0%	0%	33%	67%	6	1	3
21 U	51	143	44%	33%	44%	33%	22%	12	6	3
22 V	53	163	38%	69%	19%	25%	56%	12	7	3
23 W	90	190	24%	60%	24%	28%	48%	30	14	14
24 X	93	183	32%	32%	26%	26%	47%	12	4	7
25 Y	35	91	50%	50%	20%	20%	60%	10	1	6
26 Z	82	196	40%	55%	30%	25%	45%	20	7	10
27 AA	66	214	7%	40%	40%	20%	40%	9	1	5
28 AB	58	137	33%	50%	33%	33%	33%	8	3	3
29 AC	47	118	33%	33%	0%	17%	83%	7	1	4
30 AD	69	151	27%	53%	13%	13%	73%	19	3	10
31 AE	8	74	0%	100%	0%	0%	100%	2	2	0
32 AF	65	146	35%	65%	35%	18%	47%	12	1	9
33 AG	52	117	17%	33%	50%	50%	0%	3	1	2
34 AH	27	66	60%	40%	0%	20%	80%	5	2	1
35 AI	36	116	0%	25%	0%	0%	100%	8	5	3
TOTAL	2444	6227	38%	53%	24%	23%	52%	519	195	240

9187.1 COVENTRY RI. FACILITIES PLAN - QUESTIONNAIRE RESULTS

A AREA NO.	B NO. RECORDS	C NO. HOMES	U V W X Y % WILLING TO PAY FOR SEWERS SERVICE					Z AA BB TOWN ASSUMING RESPONSIBILITY			CC DD EE SHOULD SOME AREAS BE SEWERED?		
			\$2,500	\$5,000	\$7,500	NEITHER	NO OPINION	YES	NO	NO OPINION	YES	NO	NO OPINION
1 A	103	269	49%	14%	5%	49%	3%	24%	42%	25%	57%	6%	37%
2 B	60	154	65%	18%	7%	28%	7%	32%	43%	15%	68%	8%	23%
3 C	54	167	57%	13%	9%	37%	6%	24%	35%	26%	50%	11%	39%
4 D	113	245	57%	13%	4%	38%	5%	27%	47%	19%	64%	9%	27%
5 E	114	297	49%	17%	7%	42%	9%	29%	46%	19%	61%	7%	32%
6 F	21	99	81%	29%	19%	14%	5%	29%	43%	24%	90%	5%	5%
7 G	94	207	56%	13%	4%	38%	6%	37%	43%	13%	70%	10%	20%
8 H	129	346	54%	12%	3%	43%	3%	26%	52%	19%	57%	12%	31%
9 I	51	109	55%	24%	2%	35%	10%	27%	53%	14%	73%	6%	22%
10 J	122	316	52%	10%	2%	44%	4%	36%	48%	7%	66%	11%	23%
11 K	143	288	52%	14%	5%	43%	5%	26%	50%	17%	57%	11%	32%
12 L	143	373	52%	11%	4%	40%	9%	28%	41%	22%	65%	8%	27%
13 M	4	17	50%	0%	0%	50%	0%	25%	50%	25%	75%	0%	25%
14 N	43	149	48%	29%	12%	43%	10%	28%	53%	12%	58%	12%	30%
15 O	59	194	56%	17%	7%	37%	7%	27%	46%	19%	61%	7%	32%
16 P	130	290	54%	17%	6%	34%	12%	29%	41%	16%	58%	7%	35%
17 Q	126	314	39%	10%	6%	49%	12%	21%	44%	20%	52%	9%	39%
18 R	37	89	51%	20%	3%	34%	14%	19%	51%	14%	65%	3%	32%
19 S	35	90	46%	6%	3%	43%	11%	20%	51%	17%	49%	14%	37%
20 T	31	109	45%	10%	0%	35%	19%	13%	39%	29%	55%	19%	26%
21 U	51	143	53%	18%	12%	39%	8%	16%	53%	12%	65%	8%	27%
22 V	53	163	51%	15%	2%	40%	9%	30%	45%	19%	64%	8%	28%
23 W	90	190	49%	15%	2%	47%	3%	26%	53%	13%	58%	13%	29%
24 X	93	183	46%	8%	1%	51%	3%	29%	51%	17%	49%	13%	38%
25 Y	35	91	46%	9%	6%	46%	9%	23%	63%	11%	51%	11%	37%
26 Z	82	196	52%	20%	7%	41%	6%	32%	46%	15%	65%	7%	28%
27 AA	66	214	46%	15%	5%	52%	2%	29%	53%	12%	50%	11%	39%
28 AB	58	137	26%	2%	2%	63%	11%	10%	69%	14%	50%	3%	47%
29 AC	47	118	32%	9%	2%	64%	4%	30%	57%	11%	53%	17%	30%
30 AD	69	151	36%	14%	7%	54%	10%	32%	41%	14%	54%	6%	41%
31 AE	8	74	50%	13%	0%	38%	13%	25%	63%	0%	75%	13%	13%
32 AF	65	146	42%	11%	5%	57%	2%	22%	54%	17%	51%	15%	34%
33 AG	52	117	33%	10%	4%	60%	8%	35%	48%	15%	40%	15%	44%
34 AH	27	66	38%	15%	4%	46%	15%	30%	37%	26%	56%	19%	26%
35 AI	36	116	42%	6%	0%	58%	0%	17%	53%	22%	72%	11%	17%
TOTAL	2444	6227	49%	13%	5%	44%	7%	27%	48%	17%	59%	10%	31%

9187.1 COVENTRY RI. FACILITIES PLAN - QUESTIONNAIRE RESULTS

A	B	C	FF	GG	HH	II	JJ					
								TYPES OF SYSTEMS				
								AREA NO.	NO. RECORDS	NO. HOMES	CESSPOOL	HOLDING TANK
1	A	103	269	25%	1%		67%	5%				
2	B	60	154	35%	2%		57%	3%				
3	C	54	167	43%		2%	46%	7%				
4	D	113	245	23%			70%	7%				
5	E	114	297	26%	1%		62%	9%				
6	F	21	99	38%			57%	0%				
7	G	94	207	37%	4%	1%	44%	5%				
8	H	129	346	17%	2%		75%	5%				
9	I	51	109	20%	2%	2%	69%	6%				
10	J	122	316	36%	1%		57%	3%				
11	K	143	288	24%	1%		73%	1%				
12	L	143	373	63%	1%		34%	2%				
13	M	4	17	100%			0%	0%				
14	N	43	149	9%			86%	2%				
15	O	59	194	78%			15%	5%				
16	P	130	290	66%	1%	1%	23%	4%				
17	Q	126	314	54%	1%	3%	33%	4%				
18	R	37	89	51%	3%		27%	5%				
19	S	35	90	60%			34%	3%				
20	T	31	109	55%			16%	10%				
21	U	51	143	57%			33%	2%				
22	V	53	163	58%	2%		34%	4%				
23	W	90	190	39%			57%	3%				
24	X	93	183	27%		1%	69%	2%				
25	Y	35	91	29%			69%	3%				
26	Z	82	196	49%		1%	40%	10%				
27	AA	66	214	3%			94%	3%				
28	AB	58	137	34%			55%	5%				
29	AC	47	118	26%			70%	2%				
30	AD	69	151	38%			58%	3%				
31	AE	8	74	50%			38%	13%				
32	AF	65	146	5%			94%	0%				
33	AG	52	117	8%			90%	0%				
34	AH	27	66	41%			48%	11%				
35	AI	36	116	25%	0%		72%	3%				
TOTALS	2444	6227	37%	1%	0%	55%	4%					

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA A

No. records	<u>103</u>	No. homes	<u>269</u>	Response	<u>38%</u>
6. Average number of persons occupying a building.				<u>3.7</u>	
9. What type of wastewater disposal system do you have?					
	<u>26 / 26%</u>			<u>69 / 68%</u>	cesspool septic tank & leach field
	<u>1 / 1%</u>			<u>5 / 5%</u>	holding tank septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>22 / 21%</u>			<u>78 / 76%</u>	yes no
if yes, how often?					
	<u>3 / 14%</u>	<u>3 / 14%</u>	<u>12 / 55%</u>	<u>4 / 18%</u>	weekly monthly yearly unknown
15. What types of problems have you had?					
	<u>9 / 41%</u>				disposal system needs many cleanouts / pumping
	<u>14 / 64%</u>				disposal system backs up or drains slowly
	<u>9 / 41%</u>				disposal system has sewage odors
	<u>8 / 36%</u>				disposal system has sewage flowing on the ground surface
	<u>11 / 50%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>19 / 18%</u>	<u>16 / 84%</u>	<u>2 / 11%</u>		YES pre 1987 post 1987
	<u>84 / 82%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>23 / 22%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>36 / 49%</u>	<u>9 / 14%</u>	<u>5 / 5%</u>	<u>50 / 49%</u>	\$2,500 \$5,000 \$7,500 neither
		<u>3 / 3%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>25 / 24%</u>	<u>43 / 42%</u>	<u>26 / 25%</u>		in favor opposed no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>59 / 57%</u>	<u>6 / 6%</u>	<u>38 / 37%</u>		yes no no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA B

No. records	<u>60</u>	No. homes	<u>154</u>	Response	<u>39%</u>	
6. Average number of persons occupying a building.			<u>3</u>			
9. What type of wastewater disposal system do you have?						
	<u>21 / 36%</u>	cesspool		<u>34 / 59%</u>	septic tank & leach field	
	<u>1 / 2%</u>	holding tank		<u>2 / 3%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?						
	<u>21 / 35%</u>	yes		<u>38 / 63%</u>	no	
if yes, how often?						
	<u>1 / 5%</u>	weekly	<u>0 / 0%</u>	monthly	<u>13 / 62%</u>	yearly
				<u>7 / 33%</u>	unknown	
15. What types of problems have you had?						
	<u>13 / 62%</u>	disposal system needs many cleanouts / pumping				
	<u>9 / 43%</u>	disposal system backs up or drains slowly				
	<u>6 / 29%</u>	disposal system has sewage odors				
	<u>3 / 14%</u>	disposal system has sewage flowing on the ground surface				
	<u>11 / 52%</u>	disposal system limits showering, washing, etc.				
18. Have you had your disposal system replaced, repaired or modified?						
	<u>17 / 28%</u>	YES	<u>8 / 47%</u>	pre 1987	<u>9 / 53%</u>	post 1987
	<u>43 / 72%</u>	NO				
20. Number of people aware of a disposal problem in Coventry, RI				<u>26 / 43%</u>		
21. Do you feel that your neighborhood should be sewerred even if the installation cost to the homeowner could be:						
	<u>28 / 65%</u>	\$2,500	<u>7 / 18%</u>	\$5,000	<u>4 / 7%</u>	\$7,500
			<u>17 / 28%</u>	neither		
			<u>4 / 7%</u>	no opinion		
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }						
	<u>19 / 32%</u>	in favor	<u>26 / 43%</u>	opposed	<u>9 / 15%</u>	no opinion
24. Do you agree that some areas of the Town of Coventry should be sewerred?						
	<u>41 / 68%</u>	yes	<u>5 / 8%</u>	no	<u>11 / 18%</u>	no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA C

No. records	<u>54</u>	No. homes	<u>167</u>	Response	<u>32%</u>
6. Average number of persons occupying a building.				<u>2.6</u>	
9. What type of wastewater disposal system do you have?					
	<u>23 / 44%</u>			<u>25 / 48%</u>	cesspool
	<u>0 / 0%</u>			<u>4 / 8%</u>	holding tank
					septic tank & leach field
					septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>12 / 22%</u>			<u>42 / 78%</u>	yes
					no
if yes, how often?					
	<u>2 / 17%</u>		<u>0 / 0%</u>	<u>8 / 67%</u>	weekly
					monthly
					yearly
				<u>2 / 17%</u>	unknown
15. What types of problems have you had?					
	<u>5 / 42%</u>				disposal system needs many cleanouts / pumping
	<u>7 / 58%</u>				disposal system backs up or drains slowly
	<u>3 / 25%</u>				disposal system has sewage odors
	<u>3 / 25%</u>				disposal system has sewage flowing on the ground surface
	<u>6 / 50%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>10 / 19%</u>		<u>5 / 50%</u>	<u>5 / 50%</u>	YES
					pre 1987
					post 1987
	<u>44 / 81%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>9 / 17%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>24 / 57%</u>	<u>2 / 13%</u>	<u>5 / 9%</u>	<u>20 / 37%</u>	\$2,500
					\$5,000
					\$7,500
					neither
		<u>3 / 6%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>13 / 24%</u>	<u>19 / 35%</u>	<u>14 / 26%</u>		in favor
					opposed
					no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>27 / 50%</u>	<u>6 / 11%</u>	<u>17 / 31%</u>		yes
					no
					no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA D

No. records	<u>113</u>	No. homes	<u>245</u>	Response	<u>46%</u>
6. Average number of persons occupying a building.			<u>2.8</u>		
9. What type of wastewater disposal system do you have?					
	<u>26 / 23%</u>	cesspool	<u>79 / 70%</u>	septic tank & leach field	
	<u>0 / 0%</u>	holding tank	<u>8 / 7%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?					
	<u>17 / 15%</u>	yes	<u>78 / 69%</u>	no	
if yes, how often?					
	<u>1 / 6%</u>	weekly	<u>4 / 24%</u>	monthly	<u>2 / 12%</u> yearly
					<u>10 / 59%</u> unknown
15. What types of problems have you had?					
	<u>15 / 88%</u>	disposal system needs many cleanouts / pumping			
	<u>12 / 71%</u>	disposal system backs up or drains slowly			
	<u>7 / 41%</u>	disposal system has sewage odors			
	<u>10 / 59%</u>	disposal system has sewage flowing on the ground surface			
	<u>13 / 76%</u>	disposal system limits showering, washing, etc.			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>28 / 25%</u>	YES	<u>4 / 14%</u>	pre 1987	<u>24 / 86%</u> post 1987
	<u>85 / 75%</u>	NO			
20. Number of people aware of a disposal problem in Coventry, RI				<u>42 / 37%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>49 / 57%</u>	\$2,500	<u>10 / 13%</u>	\$5,000	<u>5 / 4%</u> \$7,500
					<u>43 / 38%</u> neither
			<u>6 / 5%</u>	no opinion	
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>31 / 27%</u>	in favor	<u>53 / 47%</u>	opposed	<u>21 / 19%</u> no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>72 / 64%</u>	yes	<u>10 / 9%</u>	no	<u>23 / 20%</u> no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA E

No. records	<u>114</u>	No. homes	<u>297</u>	Response	<u>38%</u>
6. Average number of persons occupying a building.			<u>2.9</u>		
9. What type of wastewater disposal system do you have?					
	<u>30 / 27%</u>			<u>71 / 63%</u>	septic tank & leach field
	<u>1 / 1%</u>			<u>10 / 9%</u>	septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>34 / 30%</u>			<u>80 / 70%</u>	no
if yes, how often?					
	<u>2 / 6%</u>		<u>3 / 9%</u>	<u>24 / 71%</u>	yearly
				<u>5 / 15%</u>	unknown
15. What types of problems have you had?					
	<u>12 / 35%</u>				disposal system needs many cleanouts / pumping
	<u>18 / 53%</u>				disposal system backs up or drains slowly
	<u>10 / 29%</u>				disposal system has sewage odors
	<u>9 / 26%</u>				disposal system has sewage flowing on the ground surface
	<u>14 / 41%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>23 / 20%</u>		<u>12 / 52%</u>	<u>11 / 48%</u>	pre 1987 post 1987
	<u>91 / 80%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>28 / 25%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>37 / 49%</u>	<u>11 / 17%</u>	<u>8 / 7%</u>	<u>48 / 42%</u>	\$2,500 \$5,000 \$7,500 neither
		<u>10 / 9%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>33 / 29%</u>	<u>52 / 46%</u>	<u>22 / 19%</u>		in favor opposed no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>69 / 61%</u>	<u>8 / 7%</u>	<u>24 / 21%</u>		yes no no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA F

No. records	<u>21</u>	No. homes	<u>99</u>	Response	<u>21%</u>
6. Average number of persons occupying a building.				<u>22.9</u>	
9. What type of wastewater disposal system do you have?					
	<u>8 / 40%</u>			<u>12 / 60%</u>	
	<u>0 / 0%</u>			<u>0 / 0%</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>10 / 48%</u>			<u>9 / 43%</u>	
if yes, how often?					
	<u>1 / 10%</u>	<u>3 / 30%</u>	<u>2 / 20%</u>	<u>4 / 40%</u>	
15. What types of problems have you had?					
	<u>8 / 80%</u>				
	<u>3 / 30%</u>				
	<u>2 / 20%</u>				
	<u>1 / 10%</u>				
	<u>1 / 10%</u>				
18. Have you had your disposal system replaced, repaired or modified?					
	<u>4 / 19%</u>	<u>3 / 75%</u>	<u>1 / 25%</u>		
	<u>17 / 81%</u>				
20. Number of people aware of a disposal problem in Coventry, RI				<u>12 / 57%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>11 / 81%</u>	<u>2 / 29%</u>	<u>4 / 19%</u>	<u>3 / 14%</u>	
		<u>1 / 5%</u>			
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>6 / 29%</u>	<u>9 / 43%</u>	<u>5 / 24%</u>		
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>19 / 90%</u>	<u>1 / 5%</u>	<u>0 / 0%</u>		

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA G

No. records	<u>94</u>	No. homes	<u>207</u>	Response	<u>45%</u>
6. Average number of persons occupying a building.			<u>2.7</u>		
9. What type of wastewater disposal system do you have?					
	<u>35 / 41%</u>			<u>41 / 48%</u>	cesspool
	<u>4 / 5%</u>			<u>5 / 6%</u>	holding tank
				<u>41 / 48%</u>	septic tank & leach field
				<u>5 / 6%</u>	septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>28 / 30%</u>			<u>63 / 67%</u>	yes
					no
if yes, how often?					
	<u>2 / 7%</u>		<u>1 / 4%</u>	<u>19 / 68%</u>	weekly
					monthly
				<u>6 / 21%</u>	yearly
					unknown
15. What types of problems have you had?					
	<u>5 / 18%</u>				disposal system needs many cleanouts / pumping
	<u>20 / 71%</u>				disposal system backs up or drains slowly
	<u>7 / 25%</u>				disposal system has sewage odors
	<u>4 / 14%</u>				disposal system has sewage flowing on the ground surface
	<u>14 / 50%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>23 / 24%</u>		<u>5 / 22%</u>	<u>18 / 78%</u>	YES
					pre 1987
					post 1987
	<u>71 / 76%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>36 / 38%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>40 / 56%</u>	<u>8 / 13%</u>	<u>4 / 4%</u>	<u>35 / 38%</u>	\$2,500
					\$5,000
					\$7,500
					neither
		<u>6 / 6%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>35 / 37%</u>	<u>40 / 43%</u>	<u>12 / 13%</u>		in favor
					opposed
					no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>66 / 70%</u>	<u>9 / 10%</u>	<u>13 / 14%</u>		yes
					no
					no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA H

No. records	<u>129</u>	No. homes	<u>346</u>	Response	<u>37%</u>
6. Average number of persons occupying a building.			<u>3.1</u>		
9. What type of wastewater disposal system do you have?					
	<u>22 / 17%</u>			<u>97 / 76%</u>	
	<u>2 / 2%</u>			<u>7 / 5%</u>	
					cesspool holding tank septic tank & leach field septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>30 / 23%</u>			<u>99 / 77%</u>	
					yes no
if yes, how often?					
	<u>0 / 0%</u>	<u>3 / 10%</u>	<u>18 / 60%</u>	<u>9 / 30%</u>	
					weekly monthly yearly unknown
15. What types of problems have you had?					
	<u>.8 / 27%</u>				
	<u>20 / 67%</u>				
	<u>3 / 10%</u>				
	<u>4 / 13%</u>				
	<u>9 / 30%</u>				
					disposal system needs many cleanouts / pumping disposal system backs up or drains slowly disposal system has sewage odors disposal system has sewage flowing on the ground surface disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>29 / 22%</u>	<u>9 / 31%</u>	<u>20 / 69%</u>		
					YES pre 1987 post 1987
	<u>100 / 78%</u>				
					NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>33 / 26%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>55 / 54%</u>	<u>11 / 12%</u>	<u>4 / 3%</u>	<u>55 / 43%</u>	
					\$2,500 \$5,000 \$7,500 neither
		<u>4 / 3%</u>			
					no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>33 / 26%</u>	<u>67 / 52%</u>	<u>24 / 19%</u>		
					in favor opposed no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>74 / 57%</u>	<u>15 / 12%</u>	<u>33 / 26%</u>		
					yes no no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA I

No. records	<u>51</u>	No. homes	<u>109</u>	Response	<u>47%</u>
6. Average number of persons occupying a building. <u>2.8</u>					
9. What type of wastewater disposal system do you have?					
<u>10 / 20%</u>	cesspool	<u>35 / 71%</u>	septic tank & leach field		
<u>1 / 2%</u>	holding tank	<u>3 / 6%</u>	septic tank & leach pit		
13. Have you had any problems with your wastewater disposal system?					
<u>17 / 33%</u>	yes		<u>33 / 65%</u>	no	
if yes, how often?					
<u>1 / 6%</u>	weekly	<u>4 / 24%</u>	monthly	<u>6 / 35%</u>	yearly
<u>6 / 35%</u>	unknown				
15. What types of problems have you had?					
<u>5 / 29%</u>	disposal system needs many cleanouts / pumping				
<u>10 / 59%</u>	disposal system backs up or drains slowly				
<u>5 / 29%</u>	disposal system has sewage odors				
<u>6 / 35%</u>	disposal system has sewage flowing on the ground surface				
<u>10 / 59%</u>	disposal system limits showering, washing, etc.				
18. Have you had your disposal system replaced, repaired or modified?					
<u>16 / 31%</u>	YES		<u>7 / 44%</u>	pre 1987	<u>9 / 56%</u>
				post 1987	
<u>35 / 69%</u>	NO				
20. Number of people aware of a disposal problem in Coventry, RI <u>9 / 18%</u>					
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
<u>16 / 55%</u>	\$2,500	<u>11 / 24%</u>	\$5,000	<u>1 / 2%</u>	\$7,500
<u>18 / 35%</u>	neither				
<u>5 / 10%</u>	no opinion				
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
<u>14 / 27%</u>	in favor		<u>27 / 53%</u>	opposed	
<u>7 / 14%</u>	no opinion				
24. Do you agree that some areas of the Town of Coventry should be sewered?					
<u>37 / 73%</u>	yes		<u>3 / 6%</u>	no	
<u>9 / 18%</u>	no opinion				

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA J

No. records 122 No. homes 316 Response 39%

6. Average number of persons occupying a building. 3.2

9. What type of wastewater disposal system do you have?

<u>44 / 37%</u> cesspool	<u>69 / 58%</u> septic tank & leach field
<u>1 / 1%</u> holding tank	<u>4 / 3%</u> septic tank & leach pit

13. Have you had any problems with your wastewater disposal system?

35 / 29% yes 87 / 71% no

if yes, how often?

4 / 11% weekly 4 / 11% monthly 18 / 51% yearly 9 / 26% unknown

15. What types of problems have you had?

<u>17 / 49%</u> disposal system needs many cleanouts / pumping	
<u>20 / 57%</u> disposal system backs up or drains slowly	
<u>7 / 20%</u> disposal system has sewage odors	
<u>6 / 17%</u> disposal system has sewage flowing on the ground surface	
<u>15 / 43%</u> disposal system limits showering, washing, etc.	

18. Have you had your disposal system replaced, repaired or modified?

23 / 19% YES 6 / 26% pre 1987 17 / 74% post 1987
99 / 81% NO

20. Number of people aware of a disposal problem in Coventry, RI 33 / 27%

21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:

51 / 52% \$2,500 9 / 10% \$5,000 3 / 2% \$7,500 53 / 44% neither
5 / 4% no opinion

23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)

44 / 36% in favor 59 / 48% opposed 9 / 7% no opinion

24. Do you agree that some areas of the Town of Coventry should be sewered?

81 / 66% yes 13 / 11% no 24 / 20% no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA K

No. records <u>143</u>	No. homes <u>288</u>	Response <u>50%</u>
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6. Average number of persons occupying a building. 3.2

9. What type of wastewater disposal system do you have?

<u>34 / 24%</u> cesspool	<u>104 / 73%</u> septic tank & leach field
<u>2 / 1%</u> holding tank	<u>2 / 1%</u> septic tank & leach pit

13. Have you had any problems with your wastewater disposal system?

<u>38 / 27%</u> yes	<u>105 / 73%</u> no
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if yes, how often?

<u>3 / 8%</u> weekly	<u>8 / 21%</u> monthly	<u>23 / 61%</u> yearly	<u>4 / 11%</u> unknown
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15. What types of problems have you had?

<u>14 / 37%</u> disposal system needs many cleanouts / pumping	
<u>22 / 58%</u> disposal system backs up or drains slowly	
<u>10 / 26%</u> disposal system has sewage odors	
<u>11 / 29%</u> disposal system has sewage flowing on the ground surface	
<u>18 / 47%</u> disposal system limits showering, washing, etc.	

18. Have you had your disposal system replaced, repaired or modified?

<u>25 / 17%</u> YES	<u>8 / 32%</u> pre 1987	<u>17 / 68%</u> post 1987
<u>118 / 83%</u> NO		

20. Number of people aware of a disposal problem in Coventry, RI 34 / 24%

21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:

<u>55 / 52%</u> \$2,500	<u>13 / 14%</u> \$5,000	<u>7 / 5%</u> \$7,500	<u>61 / 43%</u> neither
<u>7 / 5%</u> no opinion			

23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)

<u>37 / 26%</u> in favor	<u>72 / 50%</u> opposed	<u>25 / 17%</u> no opinion
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24. Do you agree that some areas of the Town of Coventry should be sewered?

<u>81 / 57%</u> yes	<u>16 / 11%</u> no	<u>36 / 25%</u> no opinion
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TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA L

No. records	<u>143</u>	No. homes	<u>373</u>	Response	<u>38%</u>
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6. Average number of persons occupying a building. 2.9

9. What type of wastewater disposal system do you have?

<u>90 / 63%</u> cesspool	<u>48 / 34%</u> septic tank & leach field
<u>2 / 1%</u> holding tank	<u>3 / 2%</u> septic tank & leach pit

13. Have you had any problems with your wastewater disposal system?

<u>32 / 22%</u> yes	<u>111 / 78%</u> no
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if yes, how often?

<u>0 / 0%</u> weekly	<u>6 / 19%</u> monthly	<u>12 / 38%</u> yearly	<u>14 / 44%</u> unknown
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15. What types of problems have you had?

<u>17 / 53%</u> disposal system needs many cleanouts / pumping	
<u>13 / 41%</u> disposal system backs up or drains slowly	
<u>6 / 19%</u> disposal system has sewage odors	
<u>3 / 9%</u> disposal system has sewage flowing on the ground surface	
<u>12 / 38%</u> disposal system limits showering, washing, etc.	

18. Have you had your disposal system replaced, repaired or modified?

<u>33 / 23%</u> YES	<u>11 / 33%</u> pre 1987	<u>22 / 67%</u> post 1987
<u>110 / 77%</u> NO		

20. Number of people aware of a disposal problem in Coventry, RI 41 / 29%

21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:

<u>58 / 52%</u> \$2,500	<u>10 / 11%</u> \$5,000	<u>5 / 4%</u> \$7,500	<u>56 / 40%</u> neither
<u>12 / 9%</u> no opinion			

23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)

<u>40 / 28%</u> in favor	<u>58 / 41%</u> opposed	<u>31 / 22%</u> no opinion
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24. Do you agree that some areas of the Town of Coventry should be sewered?

<u>93 / 65%</u> yes	<u>12 / 8%</u> no	<u>31 / 22%</u> no opinion
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TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA M

No. records	<u>4</u>	No. homes	<u>17</u>	Response	<u>24%</u>
6. Average number of persons occupying a building.			<u>2.8</u>		
9. What type of wastewater disposal system do you have?					
	<u>4 / 100%</u>	cesspool	<u>0 / 0%</u>	septic tank & leach field	
	<u>0 / 0%</u>	holding tank	<u>0 / 0%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?					
	<u>2 / 50%</u>	yes	<u>2 / 50%</u>	no	
if yes, how often?					
	<u>0 / 0%</u>	weekly	<u>0 / 0%</u>	monthly	
			<u>1 / 50%</u>	yearly	
			<u>1 / 50%</u>	unknown	
15. What types of problems have you had?					
	<u>1 / 50%</u>	disposal system needs many cleanouts / pumping			
	<u>1 / 50%</u>	disposal system backs up or drains slowly			
	<u>0 / 0%</u>	disposal system has sewage odors			
	<u>0 / 0%</u>	disposal system has sewage flowing on the ground surface			
	<u>0 / 0%</u>	disposal system limits showering, washing, etc.			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>1 / 25%</u>	YES	<u>1 / 100%</u>	pre 1987	
			<u>0 / 0%</u>	post 1987	
	<u>3 / 75%</u>	NO			
20. Number of people aware of a disposal problem in Coventry, RI					<u>1 / 25%</u>
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>2 / 50%</u>	\$2,500	<u>0 / 0%</u>	\$5,000	
			<u>0 / 0%</u>	\$7,500	
			<u>2 / 50%</u>	neither	
			<u>0 / 0%</u>	no opinion	
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>1 / 25%</u>	in favor	<u>2 / 50%</u>	opposed	
			<u>1 / 25%</u>	no opinion	
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>3 / 75%</u>	yes	<u>0 / 0%</u>	no	
			<u>1 / 25%</u>	no opinion	

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA N

No. records	<u>43</u>	No. homes	<u>149</u>	Response	<u>29%</u>
6. Average number of persons occupying a building.			<u>4.5</u>		
9. What type of wastewater disposal system do you have?					
	<u>4 / 10%</u>	<u>0 / 0%</u>	<u>37 / 88%</u>	<u>1 / 2%</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>10 / 23%</u>			<u>33 / 77%</u>	
if yes, how often?					
	<u>1 / 10%</u>	<u>1 / 10%</u>	<u>5 / 50%</u>	<u>3 / 30%</u>	
15. What types of problems have you had?					
	<u>6 / 60%</u>				
	<u>5 / 50%</u>				
	<u>4 / 40%</u>				
	<u>3 / 30%</u>				
	<u>4 / 40%</u>				
18. Have you had your disposal system replaced, repaired or modified?					
	<u>9 / 21%</u>	<u>5 / 56%</u>	<u>4 / 44%</u>		
	<u>34 / 79%</u>				
20. Number of people aware of a disposal problem in Coventry, RI				<u>9 / 21%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>8 / 48%</u>	<u>7 / 29%</u>	<u>5 / 12%</u>	<u>18 / 43%</u>	
		<u>4 / 10%</u>			
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>12 / 28%</u>	<u>23 / 53%</u>	<u>5 / 12%</u>		
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>25 / 58%</u>	<u>5 / 12%</u>	<u>11 / 26%</u>		

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA O

No. records	<u>59</u>	No. homes	<u>211</u>	Response	<u>28%</u>
6. Average number of persons occupying a building.			<u>2.9</u>		
9. What type of wastewater disposal system do you have?					
	<u>46 / 79%</u>			<u>9 / 16%</u>	cesspool
	<u>0 / 0%</u>			<u>3 / 5%</u>	holding tank
				<u>9 / 16%</u>	septic tank & leach field
				<u>3 / 5%</u>	septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>16 / 27%</u>			<u>43 / 73%</u>	yes
					no
if yes, how often?					
	<u>0 / 0%</u>	<u>1 / 6%</u>	<u>9 / 56%</u>	<u>6 / 38%</u>	weekly
					monthly
					yearly
					unknown
15. What types of problems have you had?					
	<u>8 / 50%</u>				disposal system needs many cleanouts / pumping
	<u>7 / 44%</u>				disposal system backs up or drains slowly
	<u>3 / 19%</u>				disposal system has sewage odors
	<u>5 / 31%</u>				disposal system has sewage flowing on the ground surface
	<u>7 / 44%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>10 / 17%</u>	<u>2 / 20%</u>	<u>8 / 80%</u>		YES
					pre 1987
					post 1987
	<u>49 / 83%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>15 / 25%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>23 / 56%</u>	<u>6 / 17%</u>	<u>4 / 7%</u>	<u>22 / 37%</u>	\$2,500
					\$5,000
					\$7,500
					neither
		<u>4 / 7%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>16 / 27%</u>	<u>27 / 46%</u>	<u>11 / 19%</u>		in favor
					opposed
					no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>36 / 61%</u>	<u>4 / 7%</u>	<u>15 / 25%</u>		yes
					no
					no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA P

No. records	<u>130</u>	No. homes	<u>290</u>	Response	<u>45%</u>	
6. Average number of persons occupying a building.				<u>2.9</u>		
9. What type of wastewater disposal system do you have?						
	<u>86 / 70%</u>			<u>30 / 25%</u>	septic tank & leach field	
	<u>1 / 1%</u>			<u>5 / 4%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?						
	<u>40 / 31%</u>			<u>87 / 67%</u>	no	
if yes, how often?						
	<u>2 / 5%</u>	weekly	<u>2 / 5%</u>	monthly	<u>30 / 75%</u>	yearly
					<u>6 / 15%</u>	unknown
15. What types of problems have you had?						
	<u>13 / 33%</u>	disposal system needs many cleanouts / pumping				
	<u>18 / 45%</u>	disposal system backs up or drains slowly				
	<u>5 / 13%</u>	disposal system has sewage odors				
	<u>6 / 15%</u>	disposal system has sewage flowing on the ground surface				
	<u>21 / 53%</u>	disposal system limits showering, washing, etc.				
18. Have you had your disposal system replaced, repaired or modified?						
	<u>26 / 20%</u>	YES	<u>8 / 31%</u>	pre 1987	<u>18 / 69%</u>	post 1987
	<u>104 / 80%</u>	NO				
20. Number of people aware of a disposal problem in Coventry, RI					<u>39 / 30%</u>	
21. Do you feel that your neighborhood should be sewerred even if the installation cost to the homeowner could be:						
	<u>48 / 54%</u>	\$2,500	<u>14 / 17%</u>	\$5,000	<u>8 / 6%</u>	\$7,500
			<u>44 / 34%</u>	neither		
			<u>16 / 12%</u>	no opinion		
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)						
	<u>38 / 29%</u>	in favor	<u>53 / 41%</u>	opposed	<u>21 / 16%</u>	no opinion
24. Do you agree that some areas of the Town of Coventry should be sewerred?						
	<u>75 / 58%</u>	yes	<u>9 / 7%</u>	no	<u>31 / 24%</u>	no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA Q

No. records	<u>126</u>	No. homes	<u>314</u>	Response	<u>40%</u>
6. Average number of persons occupying a building.				<u>2.8</u>	
9. What type of wastewater disposal system do you have?					
	<u>68 / 59%</u>			<u>42 / 36%</u>	
	<u>1 / 1%</u>			<u>5 / 4%</u>	
				<u>36% septic tank & leach field</u>	
				<u>4% septic tank & leach pit</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>23 / 18%</u>			<u>98 / 78%</u>	
				<u>yes</u>	<u>no</u>
if yes, how often?					
	<u>2 / 9%</u>	<u>1 / 4%</u>	<u>14 / 61%</u>	<u>6 / 26%</u>	
					<u>weekly</u>
					<u>monthly</u>
					<u>yearly</u>
					<u>unknown</u>
15. What types of problems have you had?					
	<u>5 / 22%</u>				
					<u>disposal system needs many cleanouts / pumping</u>
	<u>11 / 48%</u>				
					<u>disposal system backs up or drains slowly</u>
	<u>5 / 22%</u>				
					<u>disposal system has sewage odors</u>
	<u>8 / 35%</u>				
					<u>disposal system has sewage flowing on the ground surface</u>
	<u>13 / 57%</u>				
					<u>disposal system limits showering, washing, etc.</u>
18. Have you had your disposal system replaced, repaired or modified?					
	<u>29 / 23%</u>	<u>4 / 14%</u>	<u>25 / 36%</u>		
					<u>YES</u>
					<u>pre 1987</u>
					<u>post 1987</u>
	<u>97 / 77%</u>				
					<u>NO</u>
20. Number of people aware of a disposal problem in Coventry, RI				<u>33 / 26%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>36 / 39%</u>	<u>4 / 10%</u>	<u>8 / 6%</u>	<u>61 / 49%</u>	
					<u>\$2,500</u>
					<u>\$5,000</u>
					<u>\$7,500</u>
					<u>neither</u>
		<u>15 / 12%</u>			
					<u>no opinion</u>
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>27 / 21%</u>	<u>56 / 44%</u>	<u>25 / 20%</u>		
					<u>in favor</u>
					<u>opposed</u>
					<u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>66 / 52%</u>	<u>11 / 9%</u>	<u>40 / 32%</u>		
					<u>yes</u>
					<u>no</u>
					<u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA R

No. records	<u>37</u>	No. homes	<u>89</u>	Response	<u>42%</u>
6. Average number of persons occupying a building.			<u>2.5</u>		
9. What type of wastewater disposal system do you have?					
	<u>19 / 59%</u>	<u>1 / 3%</u>	<u>10 / 31%</u>	<u>2 / 6%</u>	<u>septic tank & leach field</u>
					<u>septic tank & leach pit</u>
13. Have you had any problems with your wastewater disposal system?					
	<u>7 / 19%</u>			<u>27 / 73%</u>	<u>yes</u>
					<u>no</u>
if yes, how often?					
	<u>0 / 0%</u>	<u>1 / 14%</u>	<u>6 / 86%</u>	<u>0 / 0%</u>	<u>weekly</u>
					<u>monthly</u>
					<u>yearly</u>
					<u>unknown</u>
15. What types of problems have you had?					
	<u>3 / 43%</u>				<u>disposal system needs many cleanouts / pumping</u>
	<u>5 / 71%</u>				<u>disposal system backs up or drains slowly</u>
	<u>3 / 43%</u>				<u>disposal system has sewage odors</u>
	<u>1 / 14%</u>				<u>disposal system has sewage flowing on the ground surface</u>
	<u>6 / 86%</u>				<u>disposal system limits showering, washing, etc.</u>
18. Have you had your disposal system replaced, repaired or modified?					
	<u>10 / 27%</u>	<u>2 / 20%</u>	<u>8 / 80%</u>		<u>YES</u>
					<u>pre 1987</u>
					<u>post 1987</u>
	<u>27 / 73%</u>				<u>NO</u>
20. Number of people aware of a disposal problem in Coventry, RI				<u>12 / 32%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>11 / 51%</u>	<u>6 / 20%</u>	<u>1 / 3%</u>	<u>12 / 34%</u>	<u>\$2,500</u>
					<u>\$5,000</u>
					<u>\$7,500</u>
					<u>neither</u>
		<u>5 / 14%</u>			<u>no opinion</u>
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>7 / 19%</u>	<u>19 / 51%</u>	<u>5 / 14%</u>		<u>in favor</u>
					<u>opposed</u>
					<u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>24 / 65%</u>	<u>1 / 3%</u>	<u>8 / 22%</u>		<u>yes</u>
					<u>no</u>
					<u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA S

No. records	<u>35</u>	No. homes	<u>90</u>	Response	<u>39%</u>
6. Average number of persons occupying a building.				<u>2.8</u>	
9. What type of wastewater disposal system do you have?					
	<u>21 / 62%</u>	<u>0 / 0%</u>	<u>12 / 35%</u>	<u>1 / 3%</u>	<u>septic tank & leach field</u> <u>septic tank & leach pit</u>
13. Have you had any problems with your wastewater disposal system?					
	<u>7 / 20%</u>			<u>26 / 74%</u>	<u>yes</u> <u>no</u>
if yes, how often?					
	<u>1 / 14%</u>	<u>0 / 0%</u>	<u>4 / 57%</u>	<u>2 / 29%</u>	<u>weekly</u> <u>monthly</u> <u>yearly</u> <u>unknown</u>
15. What types of problems have you had?					
	<u>3 / 43%</u>				<u>disposal system needs many cleanouts / pumping</u>
	<u>3 / 43%</u>				<u>disposal system backs up or drains slowly</u>
	<u>1 / 14%</u>				<u>disposal system has sewage odors</u>
	<u>2 / 29%</u>				<u>disposal system has sewage flowing on the ground surface</u>
	<u>3 / 43%</u>				<u>disposal system limits showering, washing, etc.</u>
18. Have you had your disposal system replaced, repaired or modified?					
	<u>9 / 26%</u>	<u>2 / 22%</u>	<u>7 / 78%</u>		<u>YES</u> <u>pre 1987</u> <u>post 1987</u>
	<u>26 / 74%</u>				<u>NO</u>
20. Number of people aware of a disposal problem in Coventry, RI					<u>9 / 26%</u>
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>14 / 46%</u>	<u>1 / 6%</u>	<u>1 / 3%</u>	<u>15 / 43%</u>	<u>\$2,500</u> <u>\$5,000</u> <u>\$7,500</u> <u>neither</u>
		<u>4 / 11%</u>			<u>no opinion</u>
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>7 / 20%</u>	<u>18 / 51%</u>	<u>6 / 17%</u>		<u>in favor</u> <u>opposed</u> <u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>17 / 49%</u>	<u>5 / 14%</u>	<u>12 / 34%</u>		<u>yes</u> <u>no</u> <u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA T

No. records	<u>31</u>	No. homes	<u>143</u>	Response	<u>22%</u>
6. Average number of persons occupying a building.				<u>15.5</u>	
9. What type of wastewater disposal system do you have?					
	<u>17 / 68%</u>			<u>5 / 20%</u>	
	<u>0 / 0%</u>			<u>3 / 12%</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>3 / 10%</u>			<u>25 / 81%</u>	
if yes, how often?					
	<u>0 / 0%</u>	<u>1 / 33%</u>	<u>1 / 33%</u>	<u>1 / 33%</u>	
15. What types of problems have you had?					
	<u>0 / 0%</u>				
	<u>0 / 0%</u>				
	<u>0 / 0%</u>				
	<u>1 / 33%</u>				
	<u>0 / 0%</u>				
18. Have you had your disposal system replaced, repaired or modified?					
	<u>6 / 19%</u>	<u>2 / 33%</u>	<u>4 / 67%</u>		
	<u>25 / 81%</u>				
20. Number of people aware of a disposal problem in Coventry, RI					<u>9 / 29%</u>
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>11 / 45%</u>	<u>3 / 10%</u>	<u>0 / 0%</u>	<u>11 / 35%</u>	
		<u>6 / 19%</u>			
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>4 / 13%</u>	<u>12 / 39%</u>	<u>9 / 29%</u>		
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>17 / 55%</u>	<u>6 / 19%</u>	<u>3 / 10%</u>		

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA U

No. records	<u>51</u>	No. homes	<u>106</u>	Response	<u>48%</u>
6. Average number of persons occupying a building.			<u>4.3</u>		
9. What type of wastewater disposal system do you have?					
	<u>29 / 62%</u>	cesspool	<u>17 / 36%</u>	septic tank & leach field	
	<u>0 / 0%</u>	holding tank	<u>1 / 2%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?					
	<u>9 / 18%</u>	yes	<u>37 / 73%</u>	no	
if yes, how often?					
	<u>0 / 0%</u>	weekly	<u>2 / 22%</u>	monthly	
			<u>7 / 78%</u>	yearly	
			<u>0 / 0%</u>	unknown	
15. What types of problems have you had?					
	<u>4 / 44%</u>	disposal system needs many cleanouts / pumping			
	<u>3 / 33%</u>	disposal system backs up or drains slowly			
	<u>4 / 44%</u>	disposal system has sewage odors			
	<u>3 / 33%</u>	disposal system has sewage flowing on the ground surface			
	<u>5 / 56%</u>	disposal system limits showering, washing, etc.			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>12 / 24%</u>	YES	<u>1 / 8%</u>	pre 1987	<u>11 / 92%</u>
					<u>post 1987</u>
	<u>39 / 76%</u>	NO			
20. Number of people aware of a disposal problem in Coventry, RI				<u>18 / 35%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>18 / 53%</u>	\$2,500	<u>3 / 18%</u>	\$5,000	<u>6 / 12%</u>
					<u>20 / 39%</u>
			<u>4 / 8%</u>	no opinion	
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>9 / 18%</u>	in favor	<u>27 / 53%</u>	opposed	<u>6 / 12%</u>
					<u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>33 / 65%</u>	yes	<u>4 / 8%</u>	no	<u>12 / 24%</u>
					<u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA V

No. records	<u>53</u>	No. homes	<u>163</u>	Response	<u>33%</u>
6. Average number of persons occupying a building.			<u>3.6</u>		
9. What type of wastewater disposal system do you have?					
	<u>31 / 60%</u>			<u>18 / 35%</u>	septic tank & leach field
	<u>1 / 2%</u>			<u>2 / 4%</u>	septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>16 / 30%</u>			<u>37 / 70%</u>	no
if yes, how often?					
	<u>0 / 0%</u>		<u>1 / 6%</u>	<u>9 / 56%</u>	<u>6 / 38%</u>
					weekly
					monthly
					yearly
					unknown
15. What types of problems have you had?					
	<u>6 / 38%</u>				disposal system needs many cleanouts / pumping
	<u>11 / 69%</u>				disposal system backs up or drains slowly
	<u>3 / 19%</u>				disposal system has sewage odors
	<u>4 / 25%</u>				disposal system has sewage flowing on the ground surface
	<u>55 / 344%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>12 / 23%</u>		<u>2 / 17%</u>	<u>10 / 83%</u>	pre 1987
					post 1987
	<u>41 / 77%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>13 / 25%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>19 / 51%</u>	<u>7 / 15%</u>	<u>1 / 2%</u>	<u>21 / 40%</u>	\$2,500
					\$5,000
					\$7,500
					neither
		<u>5 / 9%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>16 / 30%</u>	<u>24 / 45%</u>	<u>10 / 19%</u>		in favor
					opposed
					no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>34 / 64%</u>	<u>4 / 8%</u>	<u>10 / 19%</u>		yes
					no
					no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA W

No. records	<u>90</u>	No. homes	<u>190</u>	Response	<u>47%</u>
6. Average number of persons occupying a building.			<u>2.9</u>		
9. What type of wastewater disposal system do you have?					
	<u>35 / 39%</u>	cesspool	<u>51 / 57%</u>	septic tank & leach field	
	<u>0 / 0%</u>	holding tank	<u>3 / 3%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?					
	<u>25 / 28%</u>	yes	<u>63 / 70%</u>	no	
if yes, how often?					
	<u>2 / 8%</u>	weekly	<u>0 / 0%</u>	monthly	
			<u>12 / 48%</u>	yearly	
			<u>11 / 44%</u>	unknown	
15. What types of problems have you had?					
	<u>6 / 24%</u>	disposal system needs many cleanouts / pumping			
	<u>15 / 60%</u>	disposal system backs up or drains slowly			
	<u>6 / 24%</u>	disposal system has sewage odors			
	<u>7 / 28%</u>	disposal system has sewage flowing on the ground surface			
	<u>10 / 40%</u>	disposal system limits showering, washing, etc.			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>30 / 33%</u>	YES	<u>11 / 37%</u>	pre 1987	<u>19 / 63%</u>
				post 1987	
	<u>60 / 67%</u>	NO			
20. Number of people aware of a disposal problem in Coventry, RI				<u>20 / 22%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>31 / 49%</u>	\$2,500	<u>11 / 15%</u>	\$5,000	<u>2 / 2%</u>
				\$7,500	<u>42 / 47%</u>
			<u>3 / 3%</u>	no opinion	
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>23 / 26%</u>	in favor	<u>48 / 53%</u>	opposed	<u>12 / 13%</u>
				no opinion	
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>52 / 58%</u>	yes	<u>12 / 13%</u>	no	<u>21 / 23%</u>
				no opinion	

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA X

No. records	<u>93</u>	No. homes	<u>183</u>	Response	<u>51%</u>
6. Average number of persons occupying a building.				<u>3.3</u>	
9. What type of wastewater disposal system do you have?					
	<u>25 / 27%</u>			<u>64 / 70%</u>	
	<u>0 / 0%</u>			<u>2 / 2%</u>	
				<u>64 / 70%</u>	
				<u>2 / 2%</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>19 / 20%</u>			<u>73 / 78%</u>	
if yes, how often?					
	<u>0 / 0%</u>	<u>3 / 16%</u>	<u>12 / 63%</u>	<u>4 / 21%</u>	
15. What types of problems have you had?					
	<u>6 / 32%</u>				
	<u>6 / 32%</u>				
	<u>5 / 26%</u>				
	<u>5 / 26%</u>				
	<u>5 / 26%</u>				
18. Have you had your disposal system replaced, repaired or modified?					
	<u>12 / 13%</u>	<u>5 / 42%</u>	<u>7 / 58%</u>		
	<u>81 / 87%</u>				
20. Number of people aware of a disposal problem in Coventry, RI				<u>22 / 24%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>36 / 46%</u>	<u>6 / 8%</u>	<u>1 / 1%</u>	<u>47 / 51%</u>	
		<u>3 / 3%</u>			
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>27 / 29%</u>	<u>47 / 51%</u>	<u>16 / 17%</u>		
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>46 / 49%</u>	<u>12 / 13%</u>	<u>32 / 34%</u>		

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA Y

No. records	<u>35</u>	No. homes	<u>91</u>	Response	<u>38%</u>
6. Average number of persons occupying a building.			<u>3.4</u>		
9. What type of wastewater disposal system do you have?					
	<u>10 / 29%</u>	cesspool	<u>24 / 69%</u>	septic tank & leach field	
	<u>0 / 0%</u>	holding tank	<u>1 / 3%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?					
	<u>10 / 29%</u>	yes	<u>25 / 71%</u>	no	
if yes, how often?					
	<u>1 / 10%</u>	weekly	<u>1 / 10%</u>	monthly	
			<u>5 / 50%</u>	yearly	
			<u>3 / 30%</u>	unknown	
15. What types of problems have you had?					
	<u>5 / 50%</u>	disposal system needs many cleanouts / pumping			
	<u>5 / 50%</u>	disposal system backs up or drains slowly			
	<u>2 / 20%</u>	disposal system has sewage odors			
	<u>2 / 20%</u>	disposal system has sewage flowing on the ground surface			
	<u>3 / 30%</u>	disposal system limits showering, washing, etc.			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>10 / 29%</u>	YES	<u>5 / 50%</u>	pre 1987	
			<u>5 / 50%</u>	post 1987	
	<u>25 / 71%</u>	NO			
20. Number of people aware of a disposal problem in Coventry, RI					<u>9 / 26%</u>
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>13 / 46%</u>	\$2,500	<u>1 / 9%</u>	\$5,000	
			<u>2 / 6%</u>	\$7,500	
			<u>16 / 46%</u>	neither	
			<u>3 / 9%</u>	no opinion	
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>8 / 23%</u>	in favor	<u>22 / 63%</u>	opposed	
			<u>4 / 11%</u>	no opinion	
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>18 / 51%</u>	yes	<u>4 / 11%</u>	no	
			<u>11 / 31%</u>	no opinion	

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA Z

No. records	<u>82</u>	No. homes	<u>196</u>	Response	<u>42%</u>
6. Average number of persons occupying a building.			<u>3.2</u>		
9. What type of wastewater disposal system do you have?					
	<u>40 / 49%</u>	<u>0 / 0%</u>	<u>33 / 41%</u>	<u>8 / 10%</u>	<u>septic tank & leach field</u>
					<u>septic tank & leach pit</u>
13. Have you had any problems with your wastewater disposal system?					
	<u>20 / 24%</u>		<u>62 / 76%</u>		<u>yes</u>
					<u>no</u>
if yes, how often?					
	<u>0 / 0%</u>	<u>2 / 10%</u>	<u>13 / 65%</u>	<u>5 / 25%</u>	<u>weekly</u>
					<u>monthly</u>
					<u>yearly</u>
					<u>unknown</u>
15. What types of problems have you had?					
	<u>8 / 40%</u>				<u>disposal system needs many cleanouts / pumping</u>
	<u>11 / 55%</u>				<u>disposal system backs up or drains slowly</u>
	<u>6 / 30%</u>				<u>disposal system has sewage odors</u>
	<u>5 / 25%</u>				<u>disposal system has sewage flowing on the ground surface</u>
	<u>8 / 40%</u>				<u>disposal system limits showering, washing, etc.</u>
18. Have you had your disposal system replaced, repaired or modified?					
	<u>20 / 24%</u>	<u>5 / 25%</u>	<u>15 / 75%</u>		<u>YES</u>
					<u>pre 1987</u>
					<u>post 1987</u>
	<u>62 / 76%</u>				<u>NO</u>
20. Number of people aware of a disposal problem in Coventry, RI				<u>21 / 26%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>27 / 52%</u>	<u>10 / 20%</u>	<u>6 / 7%</u>	<u>34 / 41%</u>	<u>\$2,500</u>
					<u>\$5,000</u>
					<u>\$7,500</u>
					<u>neither</u>
		<u>5 / 6%</u>			<u>no opinion</u>
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>26 / 32%</u>	<u>38 / 46%</u>	<u>12 / 15%</u>		<u>in favor</u>
					<u>opposed</u>
					<u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>53 / 65%</u>	<u>6 / 7%</u>	<u>18 / 22%</u>		<u>yes</u>
					<u>no</u>
					<u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AA

No. records	<u>66</u>	No. homes	<u>214</u>	Response	<u>31%</u>
6. Average number of persons occupying a building.			<u>3.5</u>		
9. What type of wastewater disposal system do you have?					
	<u>2 / 3%</u>	cesspool	<u>62 / 94%</u>	septic tank & leach field	
	<u>0 / 0%</u>	holding tank	<u>2 / 3%</u>	septic tank & leach pit	
13. Have you had any problems with your wastewater disposal system?					
	<u>15 / 23%</u>	yes	<u>51 / 77%</u>	no	
if yes, how often?					
	<u>3 / 20%</u>	weekly	<u>1 / 7%</u>	monthly	<u>8 / 53%</u>
				yearly	<u>3 / 20%</u>
				unknown	
15. What types of problems have you had?					
	<u>1 / 7%</u>	disposal system needs many cleanouts / pumping			
	<u>6 / 40%</u>	disposal system backs up or drains slowly			
	<u>6 / 40%</u>	disposal system has sewage odors			
	<u>3 / 20%</u>	disposal system has sewage flowing on the ground surface			
	<u>6 / 40%</u>	disposal system limits showering, washing, etc.			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>9 / 14%</u>	YES	<u>3 / 33%</u>	pre 1987	<u>6 / 67%</u>
				post 1987	
	<u>57 / 86%</u>	NO			
20. Number of people aware of a disposal problem in Coventry, RI				<u>14 / 21%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>20 / 46%</u>	\$2,500	<u>7 / 15%</u>	\$5,000	<u>3 / 5%</u>
				\$7,500	<u>34 / 52%</u>
				neither	
			<u>1 / 2%</u>	no opinion	
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>19 / 29%</u>	in favor	<u>35 / 53%</u>	opposed	<u>8 / 12%</u>
				no opinion	
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>33 / 50%</u>	yes	<u>7 / 11%</u>	no	<u>21 / 32%</u>
				no opinion	

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AB

No. records <u>58</u>	No. homes <u>137</u>	Response <u>42%</u>
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6. Average number of persons occupying a building. 2.6

9. What type of wastewater disposal system do you have?

<u>20 / 36%</u> cesspool	<u>32 / 58%</u> septic tank & leach field
<u>0 / 0%</u> holding tank	<u>3 / 5%</u> septic tank & leach pit

13. Have you had any problems with your wastewater disposal system?

<u>6 / 10%</u> yes	<u>51 / 88%</u> no
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if yes, how often?

<u>1 / 17%</u> weekly	<u>2 / 33%</u> monthly	<u>1 / 17%</u> yearly	<u>2 / 33%</u> unknown
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15. What types of problems have you had?

<u>2 / 33%</u> disposal system needs many cleanouts / pumping	
<u>3 / 50%</u> disposal system backs up or drains slowly	
<u>2 / 33%</u> disposal system has sewage odors	
<u>2 / 33%</u> disposal system has sewage flowing on the ground surface	
<u>2 / 33%</u> disposal system limits showering, washing, etc.	

18. Have you had your disposal system replaced, repaired or modified?

<u>8 / 14%</u> YES	<u>3 / 38%</u> pre 1987	<u>5 / 63%</u> post 1987
<u>50 / 86%</u> NO		

20. Number of people aware of a disposal problem in Coventry, RI 13 / 22%

21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:

<u>14 / 26%</u> \$2,500	<u>0 / 2%</u> \$5,000	<u>1 / 2%</u> \$7,500	<u>36 / 63%</u> neither
	<u>6 / 11%</u> no opinion		

23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }

<u>6 / 10%</u> in favor	<u>40 / 69%</u> opposed	<u>8 / 14%</u> no opinion
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24. Do you agree that some areas of the Town of Coventry should be sewered?

<u>29 / 50%</u> yes	<u>2 / 3%</u> no	<u>16 / 28%</u> no opinion
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TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AC

No. records	<u>47</u>	No. homes	<u>118</u>	Response	<u>40%</u>
6. Average number of persons occupying a building.			<u>3.4</u>		
9. What type of wastewater disposal system do you have?					
	<u>12 / 26%</u>	<u>0 / 0%</u>	<u>33 / 72%</u>	<u>1 / 2%</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>6 / 13%</u>		<u>40 / 85%</u>		
if yes, how often?					
	<u>2 / 33%</u>	<u>1 / 17%</u>	<u>2 / 33%</u>	<u>1 / 17%</u>	
15. What types of problems have you had?					
	<u>2 / 33%</u>				
	<u>2 / 33%</u>				
	<u>0 / 0%</u>				
	<u>1 / 17%</u>				
	<u>0 / 0%</u>				
18. Have you had your disposal system replaced, repaired or modified?					
	<u>7 / 15%</u>	<u>4 / 57%</u>	<u>3 / 43%</u>		
	<u>40 / 85%</u>				
20. Number of people aware of a disposal problem in Coventry, RI				<u>2 / 4%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>11 / 32%</u>	<u>3 / 9%</u>	<u>1 / 2%</u>	<u>30 / 64%</u>	
		<u>2 / 4%</u>			
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>14 / 30%</u>	<u>27 / 57%</u>	<u>5 / 11%</u>		
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>25 / 53%</u>	<u>8 / 17%</u>	<u>13 / 28%</u>		

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AD

No. records	<u>69</u>	No. homes	<u>151</u>	Response	<u>46%</u>
6. Average number of persons occupying a building.				<u>2.7</u>	
9. What type of wastewater disposal system do you have?					
	<u>26 / 38%</u>			<u>40 / 59%</u>	septic tank & leach field
	<u>0 / 0%</u>			<u>2 / 3%</u>	septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>15 / 22%</u>			<u>53 / 77%</u>	no
if yes, how often?					
	<u>1 / 7%</u>			<u>0 / 0%</u>	monthly
				<u>9 / 60%</u>	yearly
				<u>5 / 33%</u>	unknown
15. What types of problems have you had?					
	<u>4 / 27%</u>				
	<u>8 / 53%</u>				
	<u>2 / 13%</u>				
	<u>2 / 13%</u>				
	<u>6 / 40%</u>				
18. Have you had your disposal system replaced, repaired or modified?					
	<u>19 / 28%</u>			<u>6 / 32%</u>	pre 1987
				<u>13 / 68%</u>	post 1987
	<u>50 / 72%</u>				
20. Number of people aware of a disposal problem in Coventry, RI				<u>15 / 22%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>15 / 36%</u>			<u>5 / 14%</u>	\$5,000
				<u>5 / 7%</u>	\$7,500
				<u>37 / 54%</u>	neither
				<u>7 / 10%</u>	no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>22 / 32%</u>			<u>28 / 41%</u>	opposed
				<u>10 / 14%</u>	no opinion
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>37 / 54%</u>			<u>4 / 6%</u>	no
				<u>24 / 35%</u>	no opinion

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AE

No. records	<u>8</u>	No. homes	<u>74</u>	Response	<u>.11%</u>
6. Average number of persons occupying a building. <u>2.4</u>					
9. What type of wastewater disposal system do you have?					
<u>4 / 50%</u>	cesspool	<u>3 / 38%</u>	septic tank & leach field		
<u>0 / 0%</u>	holding tank	<u>1 / 13%</u>	septic tank & leach pit		
13. Have you had any problems with your wastewater disposal system?					
<u>1 / 13%</u>	yes		<u>7 / 88%</u>	no	
if yes, how often?					
<u>0 / 0%</u>	weekly	<u>0 / 0%</u>	monthly	<u>1 / 100%</u>	yearly
<u>0 / 0%</u>	unknown				
15. What types of problems have you had?					
<u>0 / 0%</u>	disposal system needs many cleanouts / pumping				
<u>1 / 100%</u>	disposal system backs up or drains slowly				
<u>0 / 0%</u>	disposal system has sewage odors				
<u>0 / 0%</u>	disposal system has sewage flowing on the ground surface				
<u>0 / 0%</u>	disposal system limits showering, washing, etc.				
18. Have you had your disposal system replaced, repaired or modified?					
<u>2 / 25%</u>	YES	<u>0 / 0%</u>	pre 1987	<u>2 / 100%</u>	post 1987
<u>6 / 75%</u>	NO				
20. Number of people aware of a disposal problem in Coventry, RI <u>1 / 13%</u>					
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
<u>3 / 50%</u>	\$2,500	<u>1 / 13%</u>	\$5,000	<u>0 / 0%</u>	\$7,500
<u>3 / 38%</u>	neither				
<u>1 / 13%</u>	no opinion				
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
<u>2 / 25%</u>	in favor		<u>5 / 63%</u>	opposed	
<u>0 / 0%</u>	no opinion				
24. Do you agree that some areas of the Town of Coventry should be sewered?					
<u>6 / 75%</u>	yes		<u>1 / 13%</u>	no	
<u>0 / 0%</u>	no opinion				

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AF

No. records	<u>65</u>	No. homes	<u>146</u>	Response	<u>45%</u>
6. Average number of persons occupying a building.				<u>3.5</u>	
9. What type of wastewater disposal system do you have?					
	<u>3 / 5%</u>	<u>0 / 0%</u>	<u>61 / 95%</u>	<u>0 / 0%</u>	<u>95%</u>
					<u>septic tank & leach field</u>
					<u>septic tank & leach pit</u>
13. Have you had any problems with your wastewater disposal system?					
	<u>17 / 26%</u>			<u>48 / 74%</u>	<u>no</u>
if yes, how often?					
	<u>1 / 6%</u>	<u>1 / 6%</u>	<u>9 / 53%</u>	<u>6 / 35%</u>	<u>weekly</u>
					<u>monthly</u>
					<u>yearly</u>
					<u>unknown</u>
15. What types of problems have you had?					
	<u>6 / 35%</u>				<u>disposal system needs many cleanouts / pumping</u>
	<u>11 / 65%</u>				<u>disposal system backs up or drains slowly</u>
	<u>6 / 35%</u>				<u>disposal system has sewage odors</u>
	<u>3 / 18%</u>				<u>disposal system has sewage flowing on the ground surface</u>
	<u>10 / 59%</u>				<u>disposal system limits showering, washing, etc.</u>
18. Have you had your disposal system replaced, repaired or modified?					
	<u>12 / 18%</u>	<u>9 / 75%</u>	<u>3 / 25%</u>		<u>YES</u>
					<u>pre 1987</u>
					<u>post 1987</u>
	<u>53 / 82%</u>				<u>NO</u>
20. Number of people aware of a disposal problem in Coventry, RI				<u>20 / 31%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>20 / 42%</u>	<u>4 / 11%</u>	<u>3 / 5%</u>	<u>37 / 57%</u>	<u>\$2,500</u>
					<u>\$5,000</u>
					<u>\$7,500</u>
					<u>neither</u>
		<u>1 / .2%</u>			<u>no opinion</u>
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>14 / 22%</u>	<u>35 / 54%</u>	<u>11 / 17%</u>		<u>in favor</u>
					<u>opposed</u>
					<u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>33 / 51%</u>	<u>10 / 15%</u>	<u>17 / 26%</u>		<u>yes</u>
					<u>no</u>
					<u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AG

No. records	<u>52</u>	No. homes	<u>117</u>	Response	<u>44%</u>
6. Average number of persons occupying a building.			<u>3.4</u>		
9. What type of wastewater disposal system do you have?					
	<u>4 / 8%</u>	<u>0 / 0%</u>	<u>47 / 92%</u>	<u>0 / 0%</u>	<u>septic tank & leach field</u> <u>septic tank & leach pit</u>
13. Have you had any problems with your wastewater disposal system?					
	<u>6 / 12%</u>		<u>46 / 88%</u>		<u>yes</u> <u>no</u>
if yes, how often?					
	<u>0 / 0%</u>	<u>0 / 0%</u>	<u>5 / 83%</u>	<u>1 / 17%</u>	<u>weekly</u> <u>monthly</u> <u>yearly</u> <u>unknown</u>
15. What types of problems have you had?					
	<u>1 / 17%</u>				<u>disposal system needs many cleanouts / pumping</u>
	<u>2 / 33%</u>				<u>disposal system backs up or drains slowly</u>
	<u>3 / 50%</u>				<u>disposal system has sewage odors</u>
	<u>3 / 50%</u>				<u>disposal system has sewage flowing on the ground surface</u>
	<u>3 / 50%</u>				<u>disposal system limits showering, washing, etc.</u>
18. Have you had your disposal system replaced, repaired or modified?					
	<u>3 / 6%</u>	<u>1 / 33%</u>	<u>2 / 67%</u>		<u>YES</u> <u>pre 1987</u> <u>post 1987</u>
	<u>49 / 94%</u>				<u>NO</u>
20. Number of people aware of a disposal problem in Coventry, RI				<u>10 / 19%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>12 / 33%</u>	<u>3 / 10%</u>	<u>2 / 4%</u>	<u>31 / 60%</u>	<u>\$2,500</u> <u>\$5,000</u> <u>\$7,500</u> <u>neither</u>
		<u>4 / 8%</u>			<u>no opinion</u>
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. (i.e. property taxes, user fees, etc.)					
	<u>18 / 35%</u>	<u>25 / 48%</u>	<u>8 / 15%</u>		<u>in favor</u> <u>opposed</u> <u>no opinion</u>
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>21 / 40%</u>	<u>8 / 15%</u>	<u>20 / 38%</u>		<u>yes</u> <u>no</u> <u>no opinion</u>

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AH

No. records	<u>27</u>	No. homes	<u>66</u>	Response	<u>41%</u>
6. Average number of persons occupying a building.				<u>2.7</u>	
9. What type of wastewater disposal system do you have?					
	<u>11 / 41%</u>			<u>13 / 48%</u>	cesspool
	<u>0 / 0%</u>			<u>3 / 11%</u>	septic tank & leach field
					septic tank & leach pit
13. Have you had any problems with your wastewater disposal system?					
	<u>5 / 19%</u>			<u>22 / 81%</u>	yes
					no
if yes, how often?					
	<u>0 / 0%</u>	<u>0 / 0%</u>	<u>5 / 100%</u>	<u>0 / 0%</u>	weekly
		monthly	yearly	unknown	
15. What types of problems have you had?					
	<u>3 / 60%</u>				disposal system needs many cleanouts / pumping
	<u>2 / 40%</u>				disposal system backs up or drains slowly
	<u>0 / 0%</u>				disposal system has sewage odors
	<u>1 / 20%</u>				disposal system has sewage flowing on the ground surface
	<u>1 / 20%</u>				disposal system limits showering, washing, etc.
18. Have you had your disposal system replaced, repaired or modified?					
	<u>5 / 19%</u>	<u>1 / 20%</u>	<u>4 / 80%</u>		YES
		pre 1987	post 1987		
	<u>22 / 81%</u>				NO
20. Number of people aware of a disposal problem in Coventry, RI				<u>6 / 22%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>6 / 38%</u>	<u>3 / 15%</u>	<u>1 / 4%</u>	<u>12 / 46%</u>	\$2,500
		\$5,000	\$7,500	neither	
		<u>4 / 15%</u>			no opinion
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>8 / 30%</u>	<u>10 / 37%</u>	<u>7 / 26%</u>		in favor
		opposed	no opinion		
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>15 / 56%</u>	<u>5 / 19%</u>	<u>4 / 15%</u>		yes
		no	no opinion		

TOWN OF COVENTRY
Town Hall, 1670 Flat River Road Coventry, RI 02816 - 8911

Questionnaire Summary

AREA AI

No. records	<u>36</u>	No. homes	<u>116</u>	Response	<u>31%</u>
6. Average number of persons occupying a building.			<u>3.1</u>		
9. What type of wastewater disposal system do you have?					
	<u>9 / 25%</u>	<u>cesspool</u>	<u>26 / 72%</u>	<u>septic tank & leach field</u>	
	<u>0 / 0%</u>	<u>holding tank</u>	<u>1 / 3%</u>	<u>septic tank & leach pit</u>	
13. Have you had any problems with your wastewater disposal system?					
	<u>4 / 11%</u>	<u>yes</u>	<u>31 / 86%</u>	<u>no</u>	
if yes, how often?					
	<u>0 / 0%</u>	<u>weekly</u>	<u>0 / 0%</u>	<u>monthly</u>	<u>2 / 50%</u>
			<u>2 / 50%</u>	<u>yearly</u>	<u>2 / 50%</u>
				<u>unknown</u>	
15. What types of problems have you had?					
	<u>0 / 0%</u>	<u>disposal system needs many cleanouts / pumping</u>			
	<u>1 / 25%</u>	<u>disposal system backs up or drains slowly</u>			
	<u>0 / 0%</u>	<u>disposal system has sewage odors</u>			
	<u>0 / 0%</u>	<u>disposal system has sewage flowing on the ground surface</u>			
	<u>0 / 0%</u>	<u>disposal system limits showering, washing, etc.</u>			
18. Have you had your disposal system replaced, repaired or modified?					
	<u>8 / 22%</u>	<u>YES</u>	<u>3 / 38%</u>	<u>pre 1987</u>	<u>5 / 63%</u>
			<u>5 / 63%</u>	<u>post 1987</u>	
	<u>28 / 78%</u>	<u>NO</u>			
20. Number of people aware of a disposal problem in Coventry, RI				<u>10 / 28%</u>	
21. Do you feel that your neighborhood should be sewered even if the installation cost to the homeowner could be:					
	<u>13 / 42%</u>	<u>\$2,500</u>	<u>2 / 6%</u>	<u>\$5,000</u>	<u>0 / 0%</u>
			<u>0 / 0%</u>	<u>\$7,500</u>	<u>21 / 58%</u>
					<u>neither</u>
	<u>0 / 0%</u>	<u>no opinion</u>			
23. How would you feel about the Town of Coventry assuming responsibility for pumping, maintenance and repair of all wastewater disposal systems as a municipal service funded from special revenues. {i.e. property taxes, user fees, etc. }					
	<u>6 / 17%</u>	<u>in favor</u>	<u>19 / 53%</u>	<u>opposed</u>	<u>8 / 22%</u>
				<u>no opinion</u>	
24. Do you agree that some areas of the Town of Coventry should be sewered?					
	<u>26 / 72%</u>	<u>yes</u>	<u>4 / 11%</u>	<u>no</u>	<u>5 / 14%</u>
				<u>no opinion</u>	

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources

**Rules Establishing Minimum Standards Relating to
Location, Design, Construction and Maintenance of Onsite Wastewater
Treatment Systems**



January 1, 2008

AUTHORITY: These rules are adopted in accordance with Chapter 42-35 pursuant to Chapters 42-17.1, 5-56, 5-56.1, 23-19.5, and 23-24.3, of the Rhode Island General Laws of 1956, as amended.

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STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources

RULES ESTABLISHING MINIMUM STANDARDS
RELATING TO LOCATION, DESIGN, CONSTRUCTION, AND
MAINTENANCE OF ONSITE WASTEWATER TREATMENT SYSTEMS (OWTSs)

RULE 1. PURPOSE

The purpose of these Rules is to protect public health and the environment by establishing minimum standards for the proper location, design, construction and maintenance of onsite wastewater treatment systems (OWTSs) used for the treatment and dispersal of wastewater.

RULE 2. AUTHORITY

These Rules are promulgated pursuant to Chapter 42-17.1 Environmental Management; Chapter 5-56 Installers of Individual Sewage Disposal Systems; Chapter 5-56.1 Designers of Individual Sewage Disposal Systems; Chapter 23-19.5 Percolation Tests and Water Table Elevations; Chapter 23-24.3 Substances or Compounds Used as Sewerage System Cleaners; in accordance with Chapter 42-35 Administrative Procedures, of the Rhode Island General Laws of 1956, as amended.

RULE 3. LIBERAL APPLICATION

The terms and provisions of these Rules shall be liberally construed to allow the Department to effectuate the purposes of state laws, goals, and policies.

RULE 4. SEVERABILITY

If any provision of these Rules, or application thereof to any person or circumstances, is held invalid by a court of competent jurisdiction, the validity of the remainder of the Rules shall not be affected thereby.

RULE 5. APPLICABILITY

5.1 These Rules apply to the discharge of wastewater to an OWTS. Other wastewater that does not meet the definition in Rule 7 discharged to the subsurface must be done in accordance with the Department's "Underground Injection Program Rules and Regulations". Where an OWTS is approved for discharge of wastewater from commercial or industrial uses, the Director may require the applicant to obtain an approval from the Underground Injection Control Program if in the opinion of the Director, there is a reasonable risk that materials used in commercial or industrial processing may be discharged to the system.

5.2 These Rules provide minimum requirements for the design of an OWTS and its components. In addition, the Rules provide for the approval of alternative or experimental technologies (Rule 37) that may be used in conjunction with, or as an alternative to, the OWTSs and components specified herein.

5.3 No provision of these Rules nor permit granted hereunder shall be construed to prevent enforcement of any other state, federal or local laws and regulations duly adopted for the purpose of protecting the public health or environmental quality.

5.4 Nothing in these Rules shall affect the Director's power and duty to issue an immediate compliance order or take any other action pursuant to the General Laws of Rhode Island, 1956, as amended.

5.5 These Rules shall apply to all applications submitted to the Department after the effective date of these Rules established in Rule 55. Applications submitted to the Department prior to the effective date of these Rules shall be governed by the Rules in effect at that time.

RULE 6. ADMINISTRATIVE FINDINGS

6.1 OWTSs are an integral part of our total wastewater infrastructure representing the decentralized systems on the Rhode Island landscape. The people of the State should be assured that adequate OWTSs have been and are being provided and maintained for all dwellings and buildings not served by public sewage systems.

6.2 OWTSs must be viewed as wastewater treatment and dispersal systems, not merely as disposal systems. OWTSs must be located, designed, constructed, operated, and maintained in a manner to produce an effluent that, when released into the environment, will not cause adverse public health or environmental impacts.

6.3 The improper location, design, construction, operation and maintenance of OWTSs may have the following harmful effects:

6.3.1 Public health may be imperiled by diseases and other health hazards relating to inadequately treated wastewater;

6.3.2 The public health and interest may be harmed by contamination of groundwater resources that are now used or which may be used in the future as sources of public or private drinking water supply;

6.3.3 The public health and interest may be harmed by contamination of public or private drinking water wells and other water supplies or tributaries thereto;

6.3.4 Freshwater and coastal waters of the State may be imperiled by high nutrient and bacteriological contamination;

6.3.5 The people of the State may be inconvenienced or harmed by nuisance conditions such as odors and OWTS overflows; and

6.3.6 The public use and enjoyment of the water resources of the State for recreational endeavors may be disrupted or imperiled by contamination of those resources.

6.4 The science and technology for onsite wastewater treatment and disposal is rapidly advancing, necessitating that licensed professionals and the Department continue to evaluate and share information and knowledge in order to more effectively protect the public health and the environment.

6.5 Properly functioning OWTS, other than those employing nitrogen reducing technologies, remove only a small percent of nitrogen in the wastewater. Excess nitrogen is a contaminant in drinking water. Excess nitrogen in estuarine environments causes eutrophication, which results in depleted dissolved oxygen conditions and habitat loss.

6.6 Phosphorus in OWTS wastewater is a contaminant that can cause eutrophication in fresh water environments, which results in habitat loss.

6.7 Cesspools are not an approved method of wastewater disposal under these Rules, and all existing cesspools are considered to be substandard.

RULE 7. DEFINITIONS

As used in these Rules, the following terms shall, where the context permits, be construed as follows:

“Alternative OWTS Component” means any part of an OWTS that does not meet the design or construction requirements as provided by these Rules, but has been demonstrated through field testing, calculations and other engineering evaluations to be equal to, or provide the equivalent performance of any part of an OWTS within these Rules or to enhance or facilitate treatment, maintenance, longevity or efficiency of an OWTS, and for which a certification from DEM has been issued.

“Alternative Technology” means any OWTS technology for which design parameters are not specified in these Rules, but has been demonstrated through field testing, calculations and other engineering evaluations to comply with performance standards consistent with these Rules, and for which a certification from DEM has been issued.

“Applicant” means the owner or owners of the property or easement that is the subject of the application, or it must be the person who holds a valid purchase and sales agreement for said property.

“Area Subject to Storm Flowage” means drainage swales and channels which lead into, out of, pass through, or connect other watercourses, and which carry flows resulting from storm events but may remain relatively dry at other times.

“Bedrock” means rock, commonly called ledge, that forms the earth’s crust. Bedrock includes rotten rock.

“Bedroom” means any room in a residential structure which is greater than seventy (70) square feet in area, which is susceptible to present or future use as a private sleeping area and which satisfies all of the following requirements:

- (1) Has at least one (1) window that meets the four point four (4.4) square foot minimum size and all other requirements of the “Rhode Island State Building Code SBC-1 or SBC-2”;
- (2) Has at least one (1) interior method of entry and egress, excluding closets and bathrooms, allowing the room to be closed off from the remainder of the residence for privacy; and
- (3) Is a heated living space that is unrestricted for year-round use.

Rooms located below grade that are not recognized as bedrooms by the “Rhode Island State Building Code SBC-1 or SBC-2” are not recognized as bedrooms under these Rules.

“Blackwater” means liquid and solid human body waste and the carriage waters generated through toilet usage.

“Building Sewer” means the pipe that begins outside the building foundation wall and extends to the septic tank, the pipe that begins outside the building foundation wall and extends to the grease tank, the pipe from a grease tank to a septic tank, or the pipe carrying laundry wastes directly to a leachfield.

“Cesspool” means any buried chamber, including, but not limited to, any perforated metal tank, perforated concrete vault or covered hollow or excavation, which receives discharges of wastewater from a building sewer for the purpose of collecting solids and discharging liquids to the surrounding soil.

“Change of Use” means any change in use or occupancy of any structure or part thereof which would violate any provision of the Rhode Island State Building Code, R.I. General Laws Chapter 23-27.3, as amended, or any regulation promulgated thereto without first obtaining a certificate of occupancy indicating that the structure complies with the provisions of the state building code for the proposed new use. Change of use shall also be held to mean a conversion of a seasonally used structure to a structure for year-round use.

“Coastal Shoreline Feature” means a part of the shore as categorized by the State of Rhode Island Coastal Resources Management Program using the following categories: coastal beaches; barrier islands and spits; coastal wetlands; coastal headlands, bluffs and cliffs; rocky shores; manmade shorelines; and dunes.

“Compost Toilet” means any self-contained toilet from which no liquid or solid waste materials are regularly discharged and from which a humus-like end product is produced.

“Department” or “DEM” means the Rhode Island Department of Environmental Management.

“Director” means the Director of the Rhode Island Department of Environmental Management or any subordinate(s) to whom the Director has delegated the powers and duties vested in him/her pursuant to Rhode Island General Laws Chapters 46-12 and 42-17.1, as amended, or any other duly authorized Agent.

“Dispersal Trench” means a shallow ditch with vertical sides, filled with stone, in which a single perforated distribution line or other suitable distribution device is laid and over which a cover of earth is placed.

“Distribution Box” means a watertight compartment that receives effluent and distributes it in approximately equal portions to two (2) or more distribution lines leading to some type of leachfield.

“Distribution Line” means the imperforated and perforated pipe or other suitable distribution device used to disperse effluent that extends from the distribution box.

“Dosing” means the pumped or regulated flow of wastewater.

“Experimental Technology” means any OWTS technology that does not meet the location, design or construction requirements as provided by these Rules, but has been demonstrated in theory to meet the requirements of these Rules and may not be in use in Rhode Island or elsewhere as an approved technology for wastewater treatment.

“Failed OWTS” means any OWTS that does not adequately treat and disperse wastewater so as to create a public or private nuisance or threat to public health or environmental quality, as evidenced by, but not limited to, one or more of the following conditions:

- (1) Failure to accept wastewater into the building sewer;
- (2) Discharge of wastewater to a basement; subsurface drain; stormwater collection, conveyance, or treatment device; or watercourse unless expressly permitted by the Department;
- (3) Wastewater rising to the surface of the ground over or near any part of OWTS or seeping from the absorption area at any change in grade, bank or road cut;
- (4) The invert of the inlet or the invert of the outlet for a septic tank, distribution box, or pump tank is submerged;
- (5) The liquid depth in a cesspool is less than six (6) inches from the inlet pipe invert;
- (6) Pumping of the cesspool or septic tank is required more than two (2) times per year;
- (7) OWTS is shown to have contaminated a drinking water well or watercourse;
- (8) If a septic tank, pump tank, distribution box, or cesspool is pumped and groundwater seeps into it; or
- (9) Any deterioration, damage, or malfunction relating to any OWTS that would preclude adequate treatment and dispersal of wastewater.
- (10) Excessive solids are evident in the distribution box or distribution lines.

“Financial Surety” means a general obligation bond, revenue bond, performance bond, or any other type of financial guaranty, in fully marketable form, as evidence to the commitment of the construction of a sewer project.

“Floodplain” means that land area adjacent to a river or stream or other body of flowing water which is, on the average, likely to be covered with flood waters resulting from a one hundred (100) year frequency storm. A one hundred (100) year frequency storm is one that is to be expected to be equaled or exceeded once in one hundred (100) years; or may be said to have a one percent (1%) probability of being equaled or exceeded in any given year. Rainfall intensity data for a one hundred (100) year frequency storm are those established for New England locations by the National Weather Service.

“Foundation Drain” means any mechanical or gravity drainage system, including all porous media installed to facilitate drainage, that lowers the groundwater elevation beneath a building foundation and which has an outlet for the collected groundwater.

“Freshwater Wetland” is defined as set forth in Rhode Island General Laws Section 2-1-20(4), as amended, and as further defined by the Department's "Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act." The term shall further be held to include those wetland types defined by the remainder of section 2-1-20 and the wetland regulations, including, but not limited to: marshes, swamps, bogs, ponds, rivers, river and stream floodplains and banks, areas subject to flooding or stream water, including rivers and streams, and that area of land within fifty (50) feet of the edge of any bog, marsh, swamp or pond or that area within one hundred (100) feet of a flowing body of water less than ten (10) feet wide or that area within two hundred (200) feet of a flowing body of water greater than ten (10) feet in width.

“Graywater” means wastewater drained from sinks, tubs, showers, dishwashers, clothes washers, and other non-toilet sources.

“Groundwater Table” means the upper surface of the zone of saturation in an unconfined aquifer; includes a perched groundwater table.

“Holding Tank” means a closed watertight structure used to contain wastewater prior to being removed from the premises. A holding tank does not discharge wastewater to the surface of the ground or to the subsurface.

“Human Transported Material” means any materials, other than those emplaced pursuant to these Rules, including but not limited to artifacts, organic materials, soil, rock, or sediment moved horizontally by directed human activity.

“Invert” means the lowest portion of the interior of a pipe or fitting.

“Large Onsite Wastewater Treatment System” means an OWTS that meets any of the following:

- (1) Any single OWTS designed to treat five thousand (5,000) gallons or more per day;
- (2) Multiple OWTSs for any project on one or more parcels of land, excluding residential subdivisions, where the total design flow for the project is five thousand (5,000) gallons or more per day; or
- (3) All OWTSs serving more than one (1) unit in a residential subdivision, provided that the total design flow of these OWTSs, each serving more than one unit, is five thousand (5000) gallons or more per day.

“Large Capacity Cesspool” means a cesspool that serves any non-residential facility that has the capacity to serve more than twenty (20) people per day or serves any multi-family residence or apartment building.

“Leachfield” means a group of one or more dispersal chambers or trenches designed for the final treatment and dispersal of wastewater into the underlying soil. The leachfield shall be held to mean the horizontal and vertical lines circumscribing the outermost edges including the area between the chambers or trenches and the depth to the bottom of stone.

“Linear Loading Rate” means the loading rate per linear foot of leachfield (gallons per day per linear foot) along the land’s contour.

“Maintenance” means the regular cleaning of any concrete chamber, cesspool, septic tank, building sewer, distribution lines or any other component of an OWTS for the purpose of removing accumulated liquid, scum or sludge. The term, "maintenance," shall also be held to include regularly required servicing or replacement of any related mechanical, electrical, or other component equipment.

“Nitrogen reducing technology” means a wastewater treatment technology that is accepted by the Department as capable of reducing the total nitrogen concentrations by at least 50% and meeting an effluent concentration of less than or equal to 19 mg/l.

“Onsite Wastewater Treatment System (OWTS)” means any system of piping, tanks, dispersal areas, alternative toilets or other facilities designed to function as a unit to convey, store, treat or disperse wastewater by means other than discharge into a public sewer system.

“Original Ground” means those soils that have been deposited or developed by natural processes, excluding storm deposited sand in the backdune environment.

“Owner” means any person who holds legal title to any real property; or has possession or control of any real property through any agent, executor, executrix, administrator, administratrix, trustee or guardian of the estate of a holder of a legal title. Each such person is bound to comply with the provisions of these Rules.

“Person” means any individual, group of individuals, firm, corporation, association, partnership or any federal, state or municipal governmental entity.

“Private Drinking Water Well” means any manmade opening into the ground developed for the purpose of meeting a person's current potable drinking water needs provided said well does not supply a public water system. This definition shall include proposed private drinking water wells on an applicant's property and on other properties with an approved OWTS permit. Wells serving non-potable or non-drinking water needs are not considered private drinking water wells under these Rules. A well on a property that is served by a public water system is not considered a private drinking water well under these Rules.

“Probe” means any exploratory test employing a driving rod, tool or other device to establish the depth of bedrock.

“Public Drinking Water Supply Well” or “Public Well” means any manmade opening into the ground developed for the purpose of meeting all or part of a public water system needs.

“Public Water System” means any water system that provides piped water to the public for human consumption, provided that such system has at least fifteen (15) service connections or serves an average of twenty-five (25) individuals daily at least sixty (60) days out of the year. A public water system shall include all sources and facilities involved in collecting, treating, storing and distributing the water.

“Pump Tank” means a watertight structure equipped with one or more pumps designed to discharge wastewater intermittently into a leachfield.

“Residence” means any structure used for housing purposes, including, but not limited to, single or multiple family dwellings, duplexes, tenements, apartment buildings, residential condominiums, mobile homes, recreational vehicles or trailers.

“Restrictive Layer” means a soil horizon that is assigned to a soil category 10 as defined in Rule 15.11.

“Rotten Rock” means any decomposed but still coherent rock. Rotten Rock is greater than 50% coherent rock and lies above equal or more coherent rock.

“Seasonal High Groundwater Table” means the elevation of the groundwater table during that time of the year at which it is highest as determined by direct observation or by interpretation of hydromorphic features in the soil profile.

“Septage” means any solid, liquid or semi-solid removed from septic tanks, cesspools, privies, domestic wastewater holding tanks or other similar onsite wastewater treatment systems.

“Septic Tank” means a watertight receptacle which receives the discharge of wastewater from a building sewer, and is designed and constructed to permit the deposition of settled solids, the digestion of the matter deposited, and the discharge of the liquid portion into the next treatment component or distribution box.

“Septic Tank Effluent Pipe” means the gravity-flow pipe that begins at the outlet of the septic tank or other treatment tank and extends to the next treatment component or distribution box.

“Single-service articles” means tableware, carry-out utensils, and other items such as bags, containers, placemats, stirrers, straws, toothpicks, and wrappers that are designed and constructed for use one time by one individual.

“Storm Drain” means any pipe or structure designed to collect, carry and divert surface water runoff.

“Structure” means any residence (as defined herein), building, garage, shack, trailer or other permanent or semi-permanent facility, whether commercial or non-commercial in use, which is proposed to be placed or has been built or otherwise placed on a parcel of real property.

“Subdivision” means the division or re-division of a lot, tract, or parcel of land into two (2) or more lots, tracts, or parcels. For the purpose of these Rules, subdivisions will also include two (2) or more contiguous lots of record under common ownership when either located on a paper street or where property line changes are proposed.

“Subdivision Layout” means any proposed design or arrangement of lots, roads, structures, easements, utilities or other features to be incorporated into a subdivision.

“Subsurface Drains” means any system of below surface piping or highly permeable material intended to lower the groundwater table of an area, and which has an outlet to the surface for the collected groundwater.

“Test Hole” means any excavation in the proposed leachfield area to collect information on the soil profile, depth to a restrictive layer or bedrock, depth to seasonal high groundwater table or any other applicable field information.

“Tributary” means any flowing body of water or watercourse that provides intermittent or perennial flow to down-gradient watercourses that eventually discharge to the waters of concern (e.g., reservoir impoundment or salt pond).

“Tributary Wetland” means freshwater wetlands within a watershed that are connected via a watercourse to the waters of concern (e.g., drinking water supply impoundment or coastal wetland or tidal waters).

“Wastewater” means human or animal excremental liquid or substance, putrescible animal or vegetable matter or garbage and filth, including, but not limited to, water discharged from toilets, bath tubs, showers, laundry tubs, washing machines, sinks, and dishwashers. Both blackwater and graywater are considered wastewater under these Rules.

“Watercourse” means any river, stream, brook, pond, lake, swamp, marsh, bog, fen, wet meadow, area subject to storm flowage, or any other standing or flowing body of water, including such watercourses that may be affected by the tides.

“Wellhead Protection Area” means the area as designated by the Director in the DEM “Rules and Regulations for Groundwater Quality” surrounding a public well or wellfield through which water will move toward and reach such well or wellfield.

RULE 8. PROHIBITIONS

8.1 No individual shall prepare plans, applications, certifications or specifications for the design of an OWTS that is to be submitted to the Department pursuant to these Rules, unless such individual has a valid license in accordance with the provisions of these Rules to conduct such activity.

8.2 No individual shall install, construct, alter, or repair an OWTS pursuant to these Rules unless such individual has a valid license in accordance with the provisions of these Rules to conduct such activity. This prohibition does not apply to a property owner installing, constructing, altering, or repairing an OWTS to serve a building the owner occupies or will occupy as the owner's intended permanent domicile, provided that the owner has obtained written permission for that work and has obtained the Director's approval of the plans and specifications for that work prior to the start of any construction.

8.3 No person shall install, construct, alter or repair or cause to be installed, constructed, altered or repaired any OWTS without first obtaining the Director's written approval of the plans and specifications for such work and without adhering to each and every term of the approval. OWTS repairs in accordance with Rule 17.7.4 are exempt from this prohibition.

8.4 No person shall utilize an OWTS permitted under these Rules:

8.4.1 In a manner that causes wastewater flow to exceed the OWTS's design capacity;

8.4.2 For other wastewater that doesn't meet the definition in Rule 7;

8.4.3 For disposal of wastes from marine pump-out facilities; or

8.4.4 In a manner that does not conform with the terms of the Department issued permit.

8.5 Use of a failed OWTS is prohibited except in accordance with the requirements of an enforcement notice or order issued by the Director.

8.6 No person shall install an OWTS leachfield in an area designated as a freshwater wetland unless approved by the DEM Freshwater Wetlands Program.

8.7 No person shall discharge or allow the entrance of wastewater, treated or untreated, into any watercourse, nor shall they discharge or permit the entrance of such wastewater into any open or covered drain tributary to such watercourse, without the approval of the Director.

8.8 No person shall discharge any treated or untreated wastewater to the surface of the ground without the approval of the Director. However, this shall not interfere with the spreading of animal manure or compost containing wastewater biosolids originating from a DEM-approved municipal composting facility on the surface of the ground in accordance with normal agricultural practices.

8.9 The use of acid and organic chemical solvents in any OWTS is hereby prohibited. The Department does not recognize any additive product as being beneficial to the operation of an OWTS.

8.10 No person shall engage in the business of pumping, cleaning or transporting septage unless such person has obtained a Hazardous Waste Transporter Permit from the Director in accordance with the Rhode Island Rules and Regulations for Hazardous Waste Management, as amended.

8.11 Commercial laundromat(s) shall not be permitted to discharge to an OWTS. Self-service laundry facilities operating in compliance with R.I.G.L. 46-29-3, "Phosphate Reduction," are exempt from this prohibition.

8.12 Deep concrete chambers (galleys) as described in Rule 34 are prohibited for OWTSs Applications for New Building Construction and OWTS Applications for Alterations to a Structure (Rule 17).

8.13 Roof drains, surface drains, and subsurface drains shall not be permitted to discharge to an OWTS.

8.14 Floor drains that receive wastewater that does not meet the definition in Rule 7 shall not be permitted to discharge to an OWTS. The Department may prohibit any floor drain from discharging to an OWTS where there is a reasonable likelihood that such wastewater may enter such floor drain.

8.15 Holding tanks for wastewater are prohibited for new construction and alterations.

8.16 Siphons are prohibited for OWTS with a design flow less than five thousand (5000) gallons per day unless used as part of an approved Alternative or Experimental Technology approved pursuant to Rule 38.

8.17 The use of large capacity cesspools is prohibited in accordance with US Environmental Protection Agency "Revisions to the Underground Injection Control Regulations for Class V Injection Wells", December 7, 1999, 40 CFR Parts 9, 144, 145 and 146. Any such large cesspool shall cease to be used and shall be properly removed or abandoned in accordance with Rule 52.

RULE 9. CLASS I, II, III, AND IV LICENSES

9.1 Class I Designer's License- A Class I license authorizes the design of a repair to an OWTS, or any component thereof, provided that the repaired OWTS meets one of the criteria below:

9.1.1 OWTS, other than alternative or experimental systems, permitted under these Rules for residential use with a design flow of less than or equal to nine hundred (900) gallons per day; or

9.1.2 Alternative or experimental OWTS for residential use designated by the Director as suitable for a Class I designer with a design flow of less than or equal to nine hundred (900) gallons per day.

9.2 Class II Designer's License- A Class II license authorizes the design of the following:

9.2.1 The design of an OWTS Repair or OWTS for an Alteration to a Structure as defined in Rule 17, provided that the OWTS meets one of the criteria below:

(A) OWTS, other than alternative or experimental systems, permitted under these Rules for residential use with a design flow of less than or equal to two thousand (2000) gallons per day;

(B) Alternative or experimental OWTS for residential use designated by the Director as suitable for a Class II designer with a design flow of less than or equal to two thousand (2000) gallons per day;

(C) OWTS, other than alternative or experimental systems, permitted under these Rules for commercial use with a design flow of less than or equal to nine hundred (900) gallons per day; or

(D) Alternative or experimental OWTS for commercial use designated by the Director as suitable for a Class II designer with a design flow of less than or equal to nine hundred (900) gallons per day.

9.2.2 The design of an OWTS for New Building Construction as defined in Rule 17, provided that the OWTS meets one of the criteria in Rule 9.2.1 (A)-(D) and the OWTS is on a lot that does not require a variance from any of the following provisions of the Rules:

(A) Rule 32- in regards to OWTS installation in areas where there is a shallow depth to the seasonal high groundwater table or to a restrictive layer or bedrock from the original ground surface;

(B) Setbacks in Table 22.2 and Table 22.5 for drinking water supplies; or

(C) Setbacks in Table 22.3 for the Salt Pond and Narrow River Critical Resource Areas.

9.3 Class III Designer's License- A Class III license authorizes the design of any OWTS provided for under these Rules.

9.4 Class IV Soil Evaluator's License- A Class IV license authorizes the performance of soil evaluations described in Rule 15. Individuals holding a Class IV license will be referred to herein as soil evaluators.

9.5 Class I, II, III, and IV licenses shall be in effect for a period not to exceed three (3) years following the date of issuance.

RULE 10. OBTAINING A CLASS I, II, III OR IV LICENSE

10.1 Examination- Any individual seeking a license under these Rules will be required to pass the appropriate examination administered or sanctioned by the Department. An examination shall be given for each class at least once per year. Each applicant for an examination shall submit a completed application to the Director, which shall include the non-refundable examination and new license application fee. In the event that an individual fails an examination given pursuant to these Rules, the individual shall pay the examination and new license fee for each subsequent time an examination is taken.

10.2 Minimum Qualifications- In order to qualify for an examination, the applicant must demonstrate to the Department with appropriate documentation that the minimum qualifications below are met for the respective examination:

10.2.1 Class I- A valid installer's license authorizing the installation of OWTSs pursuant to Rule 13, or registration as a Professional Land Surveyor with the Rhode Island State Board of Registration for Professional Land Surveyors, or Registration as a Professional Engineer with the Rhode Island State Board of Registration for Professional Engineers. Professional Engineers registered in Rhode Island after December 31, 1994 must be registered as a Civil Engineer or Environmental Engineer.

10.2.2 Class II- Registration as a Professional Land Surveyor with the Rhode Island State Board of Registration for Professional Land Surveyors or Registration as a Professional Engineer with the Rhode Island State Board of Registration for Professional Engineers. Professional Engineers registered in Rhode Island after December 31, 1994 must be registered as a Civil Engineer or Environmental Engineer.

10.2.3 Class III- Registration as a Professional Engineer with the Rhode Island State Board of Registration for Professional Engineers. Professional Engineers registered in Rhode Island after December 31, 1994 must be registered as a Civil Engineer or Environmental Engineer.

10.2.4 Class IV-

(A) The minimum qualifications for the Class IV exam shall be satisfied by meeting any one of the following:

(i) Registration as a professional soil scientist by the Society of Soil Scientists of Southern New England or the American Registry of Certified Professionals in Agronomy, Crops and Soils;

(ii) Four (4) years professional experience in soil studies for OWTS design in Rhode Island or in soil classification, mapping, interpretation or a combination thereof; and successful completion of nine (9) semester hours in soil science from an accredited college or university; or

(iii) Two (2) years professional experience in soil studies for OWTS design in Rhode Island or in soil classification, mapping, interpretation or a combination thereof; and a bachelor's degree or graduate degree from an accredited college or university in soil science, geology, engineering or similar discipline with successful completion of nine (9) semester hours in soil science.

(B) The Director reserves the right to determine which courses are acceptable in meeting the requirement for nine (9) semester hours in soil science in (A)(ii) and (iii) above. The Director may determine that certain courses or training other than those from an accredited college or university are an equivalent and acceptable alternative to all or part of the requirement in (A)(ii) and (iii) above for nine (9) semester hours in soil science.

10.3 Examination Descriptions

10.3.1 The examination for a Class I designer's license shall be a written examination that, at minimum, addresses the following:

(A) Principles of on-site wastewater treatment and dispersal;

(B) Understanding of the applicable state rules;

(C) Analysis of OWTS failures; and

(D) Design and construction of OWTS repairs, with consideration given to soil types and related constraints.

10.3.2 The examination for a Class II designer's license shall, at minimum, address the following: Principles of on-site wastewater treatment and dispersal;

(A) Analysis of OWTS failures;

(B) Design and construction of OWTS repairs, with consideration given to soil types and related constraints;

(C) Advanced principles of on-site wastewater treatment and dispersal;

- (D) Understanding of the applicable state rules; and
- (E) Design and construction of new OWTs, including constraints to design imposed by soils.

10.3.3 The examination for a Class III designer's license shall be a two (2) part written examination, each of which will be graded separately. The first part shall consist of the test given for the Class II license. Passage of the first part makes the applicant eligible for the Class II designer's license. The two parts of the Class III examination do not have to be passed concurrently. However, if more than three (3) years elapse after the applicant passes one of the components of the examination, the applicant must retake that portion of the examination originally passed more than three (3) years earlier. In addition to including the Class II examination, the Class III examination shall address the following:

- (A) Understanding of additional applicable state rules;
- (B) Groundwater hydrology;
- (C) Commercial wastewater treatment;
- (D) Advanced wastewater treatment technologies; and
- (E) Operation of electrical and mechanical components of OWTs.

10.3.4 The examination for a Class IV soil evaluator's license shall have a written and field component, each of which shall be graded separately. The written and field examinations for Class IV do not have to be passed concurrently. However, if more than three (3) years elapses after the applicant passes one of the components of the examination, the applicant must retake that portion of the examination originally passed more than three (3) years earlier. The soil evaluator's examination shall at minimum address the following:

- (A) Principles of on-site wastewater treatment and dispersal;
- (B) Understanding of the applicable state rules;
- (C) Geology and soils of Rhode Island;
- (D) Soil textural analysis and profile descriptions;
- (E) Estimating mean seasonal high groundwater elevations using soil morphology; and
- (F) Soil moisture and drainage characteristics of soils.

10.4 Examination Application Submission- Completed applications for examinations, fees and evidence that the applicant meets the minimum qualifications specified in Rule 10.2 shall be received by the DEM at least forty-five (45) days prior to the date of the applicable examination. Within thirty (30) days of receipt of an application for an examination, the applicant shall be notified as to whether the minimum qualifications in Rule 10.2 have been met, if more information is needed, or if the applicant is eligible for the examination. If the applicant is determined ineligible, the Department shall provide the applicant with reasons for the determination. The applicant may appeal the Director's decision of ineligibility with the Administrative Adjudication Division.

10.5 Examination Results- The Department shall notify the applicant of examination results no later than sixty (60) days after the examination date. Minimum passing score for an examination shall be a seventy percent (70%) correct response for all questions comprising the examination. For those applicants that pass the examination, the notification will include a license.

10.6 The license shall be issued to natural persons only and is not transferable or assignable.

RULE 11. EXPIRATION AND RENEWAL OF A CLASS I, II, III OR IV LICENSE

11.1 Expiration- Once a license issued pursuant to this Rule has expired, the individual that held such license is prohibited to practice as a licensed designer or soil evaluator.

11.2 Renewal Prior to Expiration- A license issued pursuant to this Rule may be renewed provided that:

11.2.1 The applicant pays the renewal fee;

11.2.2 The applicant certifies that he/she continues to hold the professional license(s) required as a minimum qualification to obtain the designer's license in Rule 10.2;

11.2.3 The applicant demonstrates satisfactory completion of a minimum of four (4) continuing education units of appropriate professional development per year since the applicant's license was issued or renewed. Events eligible for this continuing education shall be rated by the Director with consideration of their value and applicability to the relevant design class. Eligible events will be assigned "continuing education units." The Director shall maintain a list of approved continuing education events and the units assigned to each; and

11.2.4 The applicant demonstrates satisfactory compliance with any unresolved OWTS regulatory requirements, including submission of properly completed Certificates of Construction.

11.3 Renewal After Expiration- If a license has expired for less than one year, the license may be renewed in accordance with Rule 11.2. If the license has expired for greater than one year, the license may be renewed provided the request is made within three years of the license expiration, the applicant pays the renewal fee, a late fee, and the applicant demonstrates compliance with Rule 11.2.2, 11.2.3 and 11.2.4. The licensing exam may not be taken in lieu of satisfying the renewal provisions herein. If the license is not renewed within the three (3) year period after expiration, the applicant must retake and pass the appropriate examination, then reapply for the license.

RULE 12. DISCIPLINARY ACTION FOR CLASS I, II, III AND IV LICENSEES

12.1 Where the Director has identified negligence, incompetence or misconduct on the part of a licensee in fulfilling the requirements of these Rules, the Director may issue a notification letter to the licensee documenting the transgression. A copy of the notification shall be placed in the licensee's file, and a copy shall be provided to the Review Panel established pursuant to Rule 12.5.

12.2 Denial, Suspension, or Revocation of License- The Director may deny, suspend or revoke a license if the individual has failed to comply with the requirements in these Rules or where the individual:

12.2.1 Provided incorrect, incomplete or misleading information in obtaining the license;

12.2.2 Demonstrated gross or repeated negligence, incompetence or misconduct in representation of site conditions; design of an OWTS; preparation of any plans, certifications or applications submitted to the Department; in the inspection of an installation of an OWTS; in the supervision of subordinates performing work covered under these rules; or by lack of responsiveness to inquiry by the Department pursuant to a complaint being investigated by the Department;

12.2.3 Committed a felony involving moral turpitude; or

12.2.4 Has a professional license that is a minimum qualification to obtain the designer's license in Rule 10.2 which has expired, is suspended or is revoked.

12.3 Penalties- The Director may assess penalties in association with any suspension or revocation of a license or where a licensee has failed to comply with the requirements in these Rules. Penalties shall be assessed in accordance with the Department's "Rules and Regulations for the Assessment of Administrative Penalties."

12.4 Denial of License Renewal- The Director may deny the renewal of a license if the individual has failed to comply with the requirements in these Rules or where the individual:

12.4.1 Provided incorrect, incomplete or misleading information in obtaining the license;

12.4.2 Demonstrated gross or repeated negligence, incompetence or misconduct in representation of site conditions; design of an OWTS; preparation of any plans, certifications or applications submitted to the Department; in the inspection of an installation of an OWTS; or in the supervision of subordinates performing work covered under these rules;

12.4.3 Committed a felony involving moral turpitude;

12.4.4 Failed or neglected to comply with the professional development continuing education requirements;

12.4.5 Failed to comply with a quality control plan submission or requirements as required by the Department to address deficiencies in application submittals; or

12.4.6 Has a professional license that is a minimum qualification to obtain the designer's license in Rule 10.2 which has expired, is suspended or is revoked.

12.5 Review Panel- The Director shall appoint a Review Panel which shall consist of five (5) members, at least three (3) of whom shall be licensed under this Rule and not be employed by the Director. Members of the Review Panel shall be appointed for a two year term. The Review Panel shall conduct regular meetings as needed, but shall meet not less than once every six (6) months. The Review Panel shall have the authority to:

12.5.1 Review complaints against licensed designers and soil evaluators, including requesting information to aid such review;

12.5.2 Review the performance related deficiencies identified pursuant to Rule 12.1; and

12.5.3 Recommend to the Director to suspend or revoke a license, including the time period for the suspension or revocation, and other remedial action that may be appropriate, which would depend on the characterization of the severity of the violations involved.

12.6 The Director shall be responsible for all final decisions regarding denial, suspension and revocation of licenses issued pursuant to these Rules as well as any other disciplinary actions to be brought against a licensee. Nothing herein shall prevent or restrict the Director from initiating any disciplinary action regarding denial, suspension or revocation of a license without the recommendation of the Review Panel.

12.7 Complaint Review- The procedure for Departmental review of complaints regarding Licensed Designers or Soil Evaluators is described below. At any time during the review of the complaint, the Director may request an informal meeting with the licensee to discuss the complaint.

12.7.1 Upon receipt of a written complaint regarding a licensed designer or soil evaluator, the Director shall contact the licensee and all relevant parties to the complaint as part of the Director's preliminary review.

12.7.2 If as a result of the preliminary review, the Director concludes that the complaint lacks merit or is not within the Department's jurisdiction under these Rules, the Director shall dismiss the complaint and no record of the complaint shall be placed in the licensee's file.

12.7.3 If as a result of the preliminary review, the Director concludes that the complaint may have merit, the Director shall forward the complaint and a report of any findings to the Review Panel.

12.7.4 The Review Panel shall review the complaint and make recommendations appropriate to its authority to the Director.

12.8 Notice of Intent- In accordance with R.I.G.L. Section 42-35-14, before the Director denies renewal of, suspends or revokes a license, the Director will issue a Notice of Intent by certified mail or hand delivery to the licensee notifying the licensee of the Director's intention to deny renewal of, revoke or suspend the license and the reasons why the Director intends to take such action. The licensee receiving the Notice of Intent may request a preliminary hearing before the Director or his or her designee to show cause why the Director should not deny, revoke or suspend the license. Such hearing shall be held within thirty (30) days of the Director's receipt of a written request by the licensee or an attorney representing the licensee for such preliminary hearing. If the licensee fails to request a preliminary hearing within twenty (20) days of receipt of the Notice of Intent, fails to make himself or herself reasonably available to attend a preliminary hearing, or fails to show cause to the Director or his or her designee why the Director should not deny renewal, revoke or suspend the license, the Director may deny renewal, revoke or suspend the license in accordance with these Rules and other applicable statutes or regulations. If the Director finds that public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its order, summary suspension may be ordered pending proceedings for revocation or other action.

12.9 Request for Hearing- Requests for a hearing on the denial of examination eligibility, denial of renewal, suspension, or revocation of a license must be filed with a the clerk of the Department of Environmental Management, Administrative Adjudication Division within thirty (30) days of the date of the licensee's receipt of such notice by certified mail or hand delivery.

12.10 Censure- The Director may publicly censure any licensed designer or soil evaluator whose license has been subject to an official enforcement action.

12.11 Suspension- Any individual with a suspended license is prohibited from practicing any work allowed under the license, renewing the license, or applying for a new license for the period of the suspension.

12.12 Revocation- Any individual who has a license revoked pursuant to this Rule shall not petition the Director for reinstatement for a period of time to be determined by the Director.

RULE 13. INSTALLER'S LICENSE

13.1 Installer's License- An Installer's License authorizes an individual to install, construct, alter or repair an OWTS. A licensed installer shall install an OWTS in accordance with Rule 43.

13.2 Obtaining an Installer's License

13.2.1 Each applicant for an Installer's License shall submit a completed application to the Director along with a non-refundable application fee.

13.2.2 Applicants for an Installer's License will be required to demonstrate possession of and ability to properly use a level or transit and to obtain a passing grade on a written examination given by the Director. The examination shall be intended to demonstrate an applicant's understanding of the Rules and the ability to read and interpret approved plans and specifications for OWTSs.

13.2.3 Installer's licenses are not transferable or assignable and shall automatically become invalid upon suspension or revocation.

13.2.4 Installer's licenses shall be in effect for a period not to exceed three (3) years following the date of issuance.

13.3 Expiration, Renewal, and Reinstatement of Installer's Licenses

13.3.1 Once an installer's license issued pursuant to this Rule has expired, the individual that held such license is prohibited to practice as a licensed installer.

13.3.2 An installer's license shall be renewed upon payment of a renewal fee and the submittal of proof of completion of any professional development continuing education required by the Director.

13.3.3 If an installer's license has expired for less than one year, the license may be reinstated in accordance with 13.3.2. If the license has expired for greater than one year, the license may be reinstated provided the request is made within three years of the license expiration; the applicant pays a reinstatement fee; and the applicant demonstrates completion of any professional development continuing education as required by the Director. If the license is not reinstated within the three (3) year period after expiration, the applicant must reapply for the license and take the installer's examination.

13.4 Denial, Suspension and Revocation of Installer's Licenses

13.4.1 The Director may deny, suspend or revoke an installer's license if the individual has failed to comply with the requirements in these Rules or where the individual:

(A) Provided incorrect, incomplete or misleading information in obtaining the license; or

(B) Demonstrated gross or repeated negligence, incompetence or misconduct in installing OWTSs.

13.4.2 In accordance with R.I.G.L. Section 42-35-14, before the Director suspends or revokes a license, the Director will issue a Notice of Intent to Revoke/Suspend a license by certified mail or hand delivery to the licensee notifying the licensee of the Director's intention to revoke or suspend the license and the reasons why the Director intends to take such action. The licensee receiving the Notice of Intent to

Revoke/Suspend may request a preliminary hearing before the Director or his or her designee to show cause why the Director should not revoke or suspend the license. Such hearing shall be held within thirty (30) days of the Director's receipt of a written request by the licensee or an attorney representing the licensee for such preliminary hearing. If the licensee fails to request a preliminary hearing within twenty (20) days of receipt of the Notice of Intent to Revoke/Suspend, fails to make himself or herself reasonably available to attend a preliminary hearing, or fails to show cause to the Director or his or her designee why the Director should not revoke or suspend the license, the Director may revoke or suspend the license in accordance with these Rules. If the Director finds that public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its order, summary suspension may be ordered pending proceedings for revocation or other action.

13.4.3 The licensee may request a hearing on the denial, suspension, or revocation of a license with the Department of Environmental Management, Administrative Adjudication Division within thirty (30) days of the date of receipt of such notice.

13.4.4 The Director may publicly censure any licensed installer whose license has been suspended or revoked.

13.4.5 Any individual with a suspended installer's license is prohibited from practicing any work allowed under the license, renewing the license, or applying for a new license for the period of the suspension.

13.4.6 Any individual who has an installer's license revoked pursuant to this Rule shall not petition the Director for reinstatement for a period of time to be determined by the Director.

RULE 14. ONSITE WASTEWATER TREATMENT SYSTEMS -- GENERAL

14.1 Any dwelling or other building having plumbing fixtures from which wastewater is produced, in a location where no public wastewater system is available or accessible, shall be provided with an OWTS of type and design approved by the Director. All of the components of such OWTS shall be located within the property boundary upon which the building or dwelling is located. Exemption to this requirement may be granted for OWTSs serving more than one (1) unit in a proposed subdivision or for any OWTS repair.

14.2 Household Laundry Systems- For OWTS designed to receive household laundry waste only, a leachfield sized to accept twenty percent (20%) of the design flow may be used without the installation of a septic tank.

14.3 Issuance of Building Permits For Activities Requiring Approval Under These Rules- A municipality shall not issue a building permit pursuant to Rhode Island General Laws Chapter 23-27.3, as amended, unless all written approvals by the Director required by these Rules have been presented to the municipality and said approvals are valid at the time of the issuance of the building permit.

14.4 Connection to a Public Sanitary Sewer- An OWTS application shall not be approved if such OWTS is proposed to serve a premises for which a public sanitary sewer is reasonably accessible as determined by the Director, and for which permission to enter the public sanitary sewer can be obtained from the authority having jurisdiction. The Director shall require the owner or occupant to connect the structure to a public sanitary sewer within a specified period of time if the following occur:

14.4.1 The OWTS is failing;

14.4.2 Public sanitary sewer is reasonably accessible as determined by the Director; and

14.4.3 Permission to connect to the public sanitary sewer can be obtained from the authority having jurisdiction over it.

14.5 Component Substitution- For an OWTS approved, but not yet installed, with a septic tank, grease tank, pump tank, or distribution box that does not meet the updated construction standards in these Rules, a substitution of components complying with these Rules may be made provided as-built plans are submitted to the Department upon completion of construction.

14.6 Data Quality- Effluent samples and water quality samples shall be collected, stored, transported, and analyzed in accordance with the United States Environmental Protection Agency approved procedures.

RULE 15. SOIL EVALUATION

15.1 Soil Evaluation Required- Except as provided for in Rule 15.1.1 and 15.1.2, a soil evaluation shall be required for an OWTS Application for New Building Construction and for an OWTS Application for Alteration of a Structure in accordance with Rule 17. A soil evaluation will not be required for the following, provided the applicant has groundwater table elevations compiled prior to January 31, 2001 that have been approved by the Department.

15.1.1 Applications submitted to the Director for lots within a subdivision that have a valid determination of suitability pursuant to a Subdivision Site Suitability Certification, provided that groundwater table elevations were compiled after July 20, 1987;

15.1.2 Applications submitted to the Director for lots not within a subdivision where the following criteria are met:

(A) The groundwater table elevations were compiled after Dec 31, 1992;

(B) The approved groundwater table is at a depth of four (4) feet or greater from the original grade; and

(C) The test hole where the groundwater table elevations were collected is not located in any of the following areas:

(i) Within one hundred (100) feet of any watercourse;

(ii) Within two hundred (200) feet of the shoreline of the Narrow River or the shoreline of one of the South Shore Salt Ponds as specified in Rule 38.3.1; or

(iii) Within two hundred (200) feet of a surface water drinking water supply impoundment and adjacent wetlands.

15.2 Validity of Field Data- Field data shall be considered valid for a period of five (5) years from the time of initial certification by the Department or five (5) years from the date of initial approval of any OWTS application, design, or subdivision suitability where the data were used, whichever occurred most recently. Field data older than five (5) years may be used provided that 15.2.1 – 15.2.3 are met. Field data can not be renewed independent of an OWTS application or subdivision suitability application.

15.2.1 The field conditions are essentially unchanged;

15.2.2 The field data was initially compiled and certified after July 20, 1987 for subdivisions or after December 31, 1992 for individual lots; and

15.2.3 Its continuing validity is properly certified on the OWTS application or Application for Subdivision Site Suitability Certification.

15.3 Soil Evaluation Requirements- The soil evaluation shall be prepared on forms approved by the Director. The soil evaluation shall contain a site sketch and the information in 15.3.1 – 15.3.6. The information in 15.3.1 and 15.3.2 shall be completed by a Class IV soil evaluator, and may be required to be witnessed by the Director in accordance with Rule 15.5. The information in items 15.3.3 –15.3.6 shall be determined by a Class II or III designer or Class IV soil evaluator. The soil test holes excavated for the soil evaluation shall be within the area of the proposed leachfield as described in Rule 15.9.

15.3.1 Comprehensive soil profile description and textural analysis identifying the characteristics of the soil and using the terminology in the DEM Soil Evaluation Guidance Document;

15.3.2 Identification of the seasonal high groundwater table in accordance with Rule 15.12;

15.3.3 General description of slope;

15.3.4 Presence of any watercourse, wetlands, or surface water bodies within two hundred (200) feet of the proposed leachfield;

15.3.5 Presence of any drains that may influence the seasonal high groundwater table; and

15.3.6 Approximate location of property lines.

15.4 Soil Evaluation Application- An application form shall be submitted to the Director prior to conducting the soil evaluation field work on the site. Such application will be on forms approved by the Director and will require at minimum a locus map and photocopy of the relevant page or section thereof from the US Department of Agriculture Soil Survey with the site location marked. The Director shall determine if the soil evaluation must be witnessed by the Department. The Director shall notify the applicant within ten (10) business days of receipt of the application as to whether or not the soil evaluation must be witnessed by the Department.

15.5 Soil Evaluation Witnessed by the Department

15.5.1 At the time of the notification in Rule 15.4, an appointment will be scheduled for the Department to witness the soil evaluation. This appointment shall be within fifteen (15) business days of the Director's notification in Rule 15.4.

15.5.2 Requests for cancellation of the soil evaluation appointment will be accepted by the Director a minimum of twenty-four (24) hours in advance of the scheduled appointment, and if requested, will be rescheduled for the next available date. All other cancellations, including instances where the Director is on-site and the licensed designer or soil evaluator is not present, will require reapplication to the Director. If the Director is not on-site for the scheduled appointment, the completed soil evaluation shall be submitted to the Director prior to the submission of the application for an OWTS permit.

15.5.3 The soil evaluator shall complete the soil evaluation form prior to the arrival of the Director on-site for the scheduled appointment with the Department. While in the field, the Director shall determine which of the following apply:

(A) The Director concurs with the determination of the soil evaluation;

(B) The Director and the soil evaluator concur that results of the seasonal high groundwater table determination are inconclusive, and a determination will have to be made during the wet season in accordance with Rule 15.12.4; or

(C) The Director does not concur with the soil evaluation. If soil conditions are in dispute, the Department, upon request of the soil evaluator, shall provide an additional field review in an effort to resolve the dispute.

(i) If the determination of the seasonal high groundwater table remains in dispute after the additional field review and all other elements of the soil evaluation are agreed upon, the soil evaluator has the option to conduct a wet season determination of the seasonal high groundwater table in accordance with Rule 15.12.4.

(ii) If elements of the soil evaluation other than the seasonal high groundwater table remain in dispute after the additional field review, the Department shall disclaim the determinations of the soil evaluation and provide an explanation for not accepting it.

15.6 Soil Evaluation Not Witnessed by the Department- If the Director determines that the Department need not witness the soil evaluation, the licensed designer or soil evaluator shall notify the Department during normal business hours by telephone of the date and time of the soil evaluation at least twenty-four (24) hours prior to conducting the soil evaluation. The Department, at its discretion, may make unannounced inspections of any soil evaluation. The soil evaluation shall be submitted to the Director prior to the submission of the application for an OWTS permit. After review of the soil evaluation, the Director shall either:

15.6.1 Accept the determination of the soil evaluation;

15.6.2 Determine that the soil evaluation is not in compliance with these Rules or that more information must be collected, in which case a revised soil evaluation must be submitted to the Director; or

15.6.3 Disclaim the determinations of the soil evaluation, and provide an explanation for not accepting it.

15.7 Soil Evaluation Certification- Individuals conducting a soil evaluation shall certify that the soil evaluation was conducted in a manner consistent with these Rules and that it is an accurate portrayal of site conditions on the day and time it was conducted. If more than one individual licensed under these Rules participated in the development of the soil evaluation it must be specified who prepared which part and include a certification from each licensee.

15.8 Department Acceptance- Acceptance of a soil evaluation indicates only that the Department accepts the data for design of an OWTS, however, the Department reserves the right to question the data. This acceptance is not an indication of the correctness or quality of the soil evaluation.

15.9 Soil Profile Analysis

15.9.1 A minimum of two soil test holes within twenty-five (25) feet of the proposed leachfield, shall be excavated at least twenty-five (25) feet apart with one pit on the uphill side and one on the down hill side of the proposed leachfield. The Director may waive the requirement for a second soil test hole where the conditions indicate that such test hole is not necessary.

15.9.2 The test holes shall be excavated to a depth of five (5) feet, unless site conditions prevent doing so (e.g., a flooded pit due to a high water table) in order to allow detailed examination by the soil evaluator. The soil evaluator shall complete the soil evaluation form provided by the Director using the terminology in the DEM Soil Evaluation Guidance Document.

15.9.3 From the depth excavated for Rule 15.9.2 to a minimum of ten (10) feet, to the extent possible, the soil evaluator shall provide the information requested on the soil evaluation form from material removed from the test hole without entering the test hole. This information shall include at minimum the soil texture, structure and consistence for each soil horizon observed. This can be done in an additional soil test hole, or in the test hole used to complete work for Rule 15.9.2 after such work has been witnessed by the Department, if required.

15.9.4 If a restrictive layer or bedrock is encountered or the soil test hole becomes unstable due to lack of soil cohesion or the presence of groundwater, the test hole may be terminated at a depth of less than ten (10) feet. Sites with test holes which have been terminated at less than ten (10) feet may require additional testing as determined by the Director.

15.9.5 It is recommended that individuals performing the soil evaluation not enter into portions of a soil test hole that have been excavated to depths greater than five (5) feet below the surrounding ground surface. It is the responsibility of individuals performing or witnessing the soil evaluation to comply with all applicable federal, state and local laws and regulations governing occupational safety.

15.10 Soil Class- The information collected from the soil test hole shall be used to assign the soil to one of the soil classes below, except for Class G soils in which case the soil class for the substratum shall also be indicated. (Additional information about each soil class is located in the DEM Soil Evaluation Guidance Document.)

15.10.1 Class A- Glacial Lodgement Till: Silt loam to loamy sand texture. Lower profiles tend to have a platy structure and are dense to very dense. Excavation is difficult. High probability of hydraulically restrictive lower layers. Angular rock fragments and occasional cobbles and stones.

15.10.2 Class B - Glacial Ablation Till: Silt loam to loamy sand throughout the profile. Lower horizons tend to be more sandy. These soils tend to be looser than lodgement tills and typically do not have hydraulically restrictive layers. Lower horizons may be firm. Angular rock fragments and occasional cobbles and stones.

15.10.3 Class C - Proglacial Outwash: Also referred to as stratified drift, soil textures range from silt loam to loamy sand (in the upper horizons) to a sandy/gravelly substratum. Stratified layers of water sorted materials may be present. Entire profile tends to be loose and easy to dig except saturated horizons may be firm or cemented or both. Horizons of rounded rock fragments are common.

15.10.4 Class D - Glacial Ice Contact Deposit: Outwash deposits of well to poorly sorted sands and gravel. Texture can be highly variable over short distances and may include pockets or lenses of silt or silt loam. Stratification may be irregular or absent. Sub-rounded to rounded stones and cobbles are possible.

15.10.5 Class E – Coastal Dune: Fine to coarse sands, well sorted, often finely stratified. Little or no silt and clay. Typically no sediment larger than coarse sand. Deposited by wind action or storm overwash.

15.10.6 Class F – Alluvial Deposits: Material transported and deposited by streams and rivers. Typically well sorted, stratified, fine textured sediment that may have dark layers in the substratum which were at one time surface layers. Subject to seasonal flooding.

15.10.7 Class G – Eolian Deposits: Wind blown silts deposited after the retreat of the Wisconsin glaciation ranging in thickness of several inches to several feet. Underlain by outwash, ablation till, or lodgement till.

15.11 Soil Category- Each observed soil horizon shall be assigned to one of the soil categories from Table 15.11 below. Soil category will be used to determine the minimum leaching area by the licensed Class II or III designer in accordance with Rule 32.

Table 15.11 Soil Category

Soil Category	Soil Texture	Soil Structure	Soil Consistence		Typical Soil Class
			Consistence In-Hand Using Soil Clods	Excavation Difficulty	
1	cos, s, lcos, ls, cosl, fs	structureless- single grain subangular blocky	loose friable	N/A	Outwash (Class C), ice contact (Class D) and coarse ablation till (Class B) deposits
2	vfs, lvfs	structureless- single grain	loose	N/A	Outwash (Class C) and ice contact (Class D) deposits
3	ls, sl, l	granular, subangular blocky	very friable to friable	low	Lodgement Till (Class A), Ablation Till (Class B), Outwash (Class C), or Ice Contact (Class D)
4	lfs, lvfs, fsl, vfs	granular, subangular blocky	very friable to friable	low	Lodgement Till (Class A), Ablation Till (Class B), Outwash (Class C), or Ice Contact (Class D)
5	sil, si, vfsl	subangular blocky	very friable to friable	low	Typically Eolian deposits (Class G)
6	lcos, cosl, lfs, ls, sl, l	structureless massive	very friable to friable	low	Ablation till (Class B)
7	fsl, vfsl, sil, si, vfs	structureless-massive	very friable to friable	low to moderate	Ablation till (Class B)
8	all textures	structureless-massive	firm to very firm	moderate	Lodgement till (Class A)
9	all textures	platy, structureless-massive	firm to very firm	high	Lodgement till (Class A)
10	all textures	platy, structureless-massive	extremely firm	very high to extremely high	Lodgement till (Class A)

Note 1: Refer to the DEM Soil Evaluation Guidance Document for explanation of soil texture, soil structure, soil consistence and excavation difficulty.

15.12 Determination of Seasonal High Groundwater Table- Using the soil test holes required in Rule 15.9, the seasonal high groundwater table determination that is closest to the original ground surface shall be used for OWTS design.

15.12.1 The soil evaluator shall use the depth to, type, location and abundance of hydromorphic features and other characteristics to determine the depth to the seasonal high groundwater table. The criteria to use in evaluating hydromorphic features include, but are not limited to the following:

- (A) Redox depletions and redox concentrations occupy two percent (2%) or more of the exposed horizon surface;
- (B) Soil matrix and redox concentrations or depletions vary two (2) or more units in chroma; or
- (C) Presence of a depleted horizon, which is a soil layer that has a chroma of two (2) or less and a value of four (4) or more that develops or maintains gleyed colors because of substantial saturation.

15.12.2 In cases where the soil is class C or D as determined in Rule 15.10 and there are no observable hydromorphic features to use to make a determination in accordance with Rule 15.12.1, an adjustment factor may be applied to the observed groundwater table in order to correct to the seasonal high groundwater table. This adjustment factor shall be determined by the Director. When groundwater is not encountered in a soil test hole at least ten (10) feet deep, the adjustment factor may be applied as measured from the bottom of the test hole.

15.12.3 A perforated pipe at least four (4) inches in diameter shall be installed to the full depth of the excavation in each soil test hole at the conclusion of the soil evaluation, unless such requirement is waived by the Director. The pipe shall be wrapped in filter fabric that meets the requirements of Rule 32.11, capped at the top and mounded to prevent the accumulation of surface water.

15.12.4 Wet Season Determinations- Determination of the seasonal high groundwater table during the wet season done pursuant to Rule 15.5.3 shall be made by a licensed Class II, III, or IV designer January 1 through April 1.

- (A) The groundwater table observations shall be made using the pipe placed in the soil test holes in accordance with Rule 15.12.3 or using a pipe that meets these requirements placed in a minimum of two (2) excavations to a depth of ten (10) feet within the area in Rule 15.9.1. Such pipe should remain in place until a permit has been issued by the Director.
- (B) Groundwater table observations shall be made no sooner than forty-eight (48) hours after excavation and shall be verified by the Director unless otherwise waived. At least three (3) groundwater table observations shall be made and the observations shall be a minimum of five (5) days apart. The groundwater table observations shall be submitted for review by April 1 on forms approved by the Director.
- (C) Wet season determinations are intended to measure the groundwater table at its annual highest level. Yearly fluctuations in the groundwater table may necessitate that the Department add adjustment factors to compensate for periods of low groundwater recharge that results in the seasonal high groundwater table to be lower than normal.

15.12.5 The soil evaluation that is submitted to the Director by the Class IV soil evaluator shall include wet season data, if applicable, along with the final determination of the seasonal high groundwater table.

RULE 16. ADDITIONAL SITE TESTING

16.1 Determination of depth to bedrock and the presence of storm deposited sand in the backdune environment or human transported material, as required in Rule 16.2 and Rule 16.3, shall be made by a licensed Class II, III or IV designer on forms approved by the Director.

16.2 Determination of Depth to Bedrock

16.2.1 Bedrock test holes, conducted in accordance with Rule 16.2.2, shall be required when any of the following occur:

- (A) Bedrock is encountered within eight (8) feet of original ground surface in the excavation of any of the soil test holes for the soil evaluation;
- (B) Bedrock outcrops are visible in the surrounding area; or
- (C) Landscape conditions warrant bedrock test holes.

16.2.2 Bedrock test holes

(A) Bedrock test holes shall be excavated to a depth of ten (10) feet in the center and four corners of the proposed leachfield. Additional test holes or probe tests shall be required within twenty-five (25) feet of the proposed leachfield, the number and location depending on the site. Bedrock depth shall be determined on all sides of the proposed leachfield. In order for DEM approval, testing must demonstrate that:

- i) Bedrock is at least five (5) feet below the bottom elevation of the stone in the leachfield in the area of the proposed leachfield and within twenty-five (25) feet of the proposed leachfield. The five (5) foot vertical separation requirement may be waived on the up-gradient side as long as bedrock is no higher than the bottom of the stone in the leachfield within twenty-five (25) feet of the proposed leachfield (Figure 1); and
- ii) Depth to Bedrock from original ground surface must be a minimum of four (4) feet within twenty five (25) feet on all sides of the leachfield, including the upgradient side.

(B) A bedrock test hole shall be witnessed by an agent of the Director unless the Director waives this requirement in writing. If bedrock is encountered within a soil test hole during a soil evaluation not witnessed by the Department, the licensed designer shall apply to the Department for bedrock testing. If during the bedrock exploration work the Director determines that additional bedrock test holes or probes tests are not warranted, then the Director may waive such additional testing.

16.3 Human Transported Material and Storm Deposited Sand- If storm deposited sand in the backdune environment or human transported is encountered in the excavation of any test hole or is evident within twenty-five (25) feet of any test hole, an adequate number of additional test holes shall be excavated to a sufficient depth to determine the lateral and vertical extent of this material within twenty-five (25) feet of the leachfield. Limitations for OWTS design regarding depth to groundwater and depth to bedrock shall be determined from original ground surface. The Director may require that this material existing in the area of the proposed leachfield be removed. Test holes in storm deposited sand in the backdune environment or human transported material shall be witnessed by the Director unless the Director waives this requirement in writing.

16.4 Percolation Test

16.4.1 Percolation test data can be used to determine the minimum leaching area for the OWTS if the applicant has valid seasonal high groundwater table determinations, as defined by Rule 15.2, collected prior to January 31, 2001. The percolation test shall be conducted in accordance with (A) - (F) below:

(A) Dig two or more test holes within the area of the proposed leachfield, not less than ten (10) feet apart. One of the holes should be at the depth of the bottom elevation of the proposed leachfield, and the second hole should be at a depth of three (3) feet below the bottom elevation of the proposed leachfield. This is to evaluate the consistency with depth of the seepage qualities of the soil. The size of the leachfield must be based on the slowest percolation rate obtained. The holes shall not be less than six (6) inches in diameter or six (6) inches square, nor should they be greater than eight (8) inches in diameter or eight (8) inches square.

(B) Scarify the bottom and sides of the test holes and remove all loose material. Place about two (2) inches of coarse sand or fine gravel in the holes to prevent bottom scouring.

(C) Fill the holes with clear water to a minimum depth of twelve (12) inches above the coarse sand or fine gravel. Keep water in each hole for at least four hours and preferably overnight by refilling. If necessary to maintain water in each hole for this period, provide a reservoir of water and an automatic siphon to deliver it to the holes intermittently, or the percolation test holes should be soaked and maintained full for not less than four hours before the percolation test is made. In uncompacted sandy soils containing no clay or silt, the above saturation procedure is not necessary, the test can be made as soon as the water from one filling has seeped away.

(D) The percolation test should be made following the saturation process. When the saturation process is complete, the water depth should be adjusted to six (6) inches over the coarse sand or fine gravel before the test is begun. The drop in water level should be measured from a fixed reference place, such as a board laid across the hole, over thirty (30) minute intervals, refilling the holes to a depth of six (6) inches as necessary.

(E) When three consecutive readings at thirty (30) minute intervals read the same rate, the test may be considered complete. If no stability is reached between three (3) thirty (30) minute readings, not less than four (4) hours of readings must be followed. The drop in water level which occurs during the final thirty (30) minute period is used to calculate the percolation rate. This rate is expressed in minutes per inch.

(F) Soils in which the first six (6) inches of water seeps away in less than thirty (30) minutes, after the saturation period, the time interval between measurements should be reduced to ten (10) minutes and the test run over a period of one hour. The drop in water level which occurs during the final ten (10) minute period is used to calculate the percolation rate. This rate is expressed in minutes per inch.

16.4.2 If an unanticipated cut in topography is made, the results of any percolation test made prior to the cut is invalid. A new percolation test shall be made under the changed conditions.

16.4.3 In no case shall a percolation test be made in filled or frozen ground. If a leachfield is to be located in filled ground, a percolation test must be made in the original ground.

16.4.4 Additional testing may be required if the soil is highly variable or if a large OWTS (greater than five thousand (5,000) gallons per day) is required.

16.4.5 Percolation tests shall be carried out by a licensed Class II, III or IV designer, Rhode Island Registered Professional Land Surveyor, or Rhode Island Registered Professional Engineer.

RULE 17. OWTS APPLICATIONS

17.1 Applicant's Responsibilities- The applicant shall be responsible for providing all information required by these Rules in a complete, accurate, clear and legible manner. The applicant for an OWTS must be the owner or owners of the property or easement that is the subject of the application, or it must be the person who holds a valid purchase and sales agreement for said property.

17.2 Designer's Responsibility- Licensed Class I, II and III designers shall design an OWTS for a site that is in compliance with these Rules. The design shall be based on the information provided in the soil evaluation report. This design shall be submitted to the Director in accordance with Rules 17 and 18.

17.3 Local Ordinances- It is the applicant's responsibility to ensure that the OWTS application to the Department is in compliance with local ordinances regarding the location, design, construction and maintenance of an OWTS prior to submission to the Department. Municipalities may petition the Department to require municipal review for compliance with local ordinances prior to DEM initiating its review. The petition must state the local standard(s) that is more stringent than the standard(s) in these Rules and the municipal official responsible for local review. In municipalities where the petition has been approved, applicants must submit documentation to DEM on forms approved by DEM that the municipality has certified that the application is in compliance with all local ordinances.

17.4 OWTS Suitability Determination- An OWTS Suitability Determination is a determination as to whether or not an existing OWTS is suitable for a proposed building construction, renovation or change of use so as to protect public health and the environment. An OWTS Suitability Determination Application to the Department is required only when explicitly indicated herein or requested by the Department or a local building official. However, an OWTS Suitability Determination Application may be submitted to the Department in order to determine the applicability of this Rule. OWTS suitability is determined by the following:

17.4.1 For OWTSs installed with state approval on or after April 9, 1968:

(A) The OWTS is suitable and no application to the Department is necessary for any building construction, renovation or change in use, that does not result in an increase in the number of bedrooms in a residential structure beyond the number in the original state approval; or an increase in the wastewater flow greater than the OWTS approved design flow for any OWTS. However, the OWTS is unsuitable and an OWTS Application for Alteration to a Structure must be submitted when any of the following in (i)-(iii) apply, even if there is no increase in flow:

(i) Whenever the proposed construction or renovation changes the structure's footprint such that the OWTS is not in compliance with these Rules;

(ii) If the proposed change of use is from a facility that does not prepare food to a restaurant or other facility that prepares food; or

(iii) For a change in use, if the OWTS for the new use meets the definition of a large OWTS pursuant to Rule 35.1.

(B) The OWTS is unsuitable for any building construction, renovation or change of use, that results in an increase in the number of bedrooms in a residential structure beyond the number in the original state approval; or an increase in the wastewater flow greater than the OWTS approved design flow for any OWTS. An OWTS Application for New Building Construction or an OWTS Application for Alteration to a Structure shall be required in accordance with Rule 17.5 or Rule 17.6, respectively, whichever is applicable, before the proposed building construction, renovation or change of use may be allowed.

17.4.2 For OWTSs installed without state approval, OWTSs installed prior to April 9, 1968 and cesspools: Whenever a person proposes any building construction, renovation, or change of use (as defined in Rule 7) of a structure served by such an OWTS, the OWTS is unsuitable and shall be upgraded to the standards herein. An OWTS Application for New Building Construction or an OWTS Application for Alteration to a Structure shall be required in accordance with Rule 17.5 or Rule 17.6, respectively, whichever is applicable. For the purposes of this Rule, the term "building construction or renovation," shall be defined as any addition, replacement, demolition and reconstruction, or modification of a structure on the subject property which:

(A) Results in any increase in wastewater flow into the OWTS, which for residential structures is equivalent to the addition of one (1) or more bedrooms;

(B) Involves demolition or replastering or replacement of interior wallboard, interior walls, ceilings, flooring, windows, plumbing fixtures, electrical wiring or kitchen cabinetry, which in total affects over fifty percent (50%) or more of the living area of the existing structure;

(C) Involves adding an additional floor level or portion of floor level of living space to the structure; or

(D) Increases the footprint of the living space of the structure.

17.4.3 Imminent Sewer Exemption- An owner subject to the requirements of Rule 17.4.1(B) or Rule 17.4.2 whose property is proposed to be sewered in the future shall be exempt from those requirements, provided an OWTS Suitability Determination Form is submitted to the local building official demonstrating that all of the conditions in Rule 17.4.3(A) and (B) are met. A copy of the completed form shall be provided to the Department.

(A) A licensed Class II or Class III designer, as applicable, certifies that:

(i) The OWTS is not failed;

(ii) For a residential structure, any increase in wastewater flow to the OWTS is limited to that equivalent to one bedroom. For all other uses, no increase in wastewater flow to the OWTS is allowed; and

(iii) The municipality holds a form of financial surety for expansion of sewers to the area of the structure served by the OWTS within five (5) years of the date of the submission of the OWTS Suitability Determination Form; and

(B) The owner certifies that the structure will be connected within sixty (60) days of sewers becoming available.

17.5 OWTS Application for New Building Construction- All OWTS Applications for New Building Construction shall be made in conformance with all requirements under these Rules. Applications not in conformance with these Rules may be approved only through the variance procedures set forth in Rule 47.

17.5.1 An OWTS Application for New Building Construction shall be made whenever an applicant proposes to:

(A) Construct a new structure from which wastewater will be disposed of by means of an OWTS;

(B) Modify a structure, not previously permitted to dispose of wastewater, to require the disposal of wastewater to an OWTS;

(C) Increase wastewater flow to an OWTS by an amount greater than twenty-five percent (25%) of the original design flow with all flows adjusted using the design flows in Rule 21, provided that using the design flows and loading rates in these Rules would result in a leachfield larger than that previously approved by the Department; or

(D) Improve a residence through the addition of more than one bedroom.

17.5.2 All plans and specifications for an OWTS Application for New Building Construction shall be prepared by a Class II or Class III designer licensed in accordance with Rules 9 and 10.

17.5.3 No person shall submit applications, plans and specifications to the Director for an OWTS for New Building Construction without first obtaining the Director's acceptance of a soil evaluation or field concurrence with the soil evaluation in accordance with Rule 15. If the Director concurs with the determination of the soil evaluation in accordance with Rule 15.5.3(A) and the soil conditions meet the minimum requirements of these Rules, the soil evaluation may be submitted with the application for an OWTS permit.

17.6 OWTS Application for Alteration to a Structure

17.6.1 An OWTS Application for Alteration to a Structure shall be made whenever an applicant proposes any physical alteration to a structure that meets any of the following:

(A) In the case of a residence, the addition of not more than one bedroom;

(B) In all other cases, an increased flow of wastewater in an amount less than or equal to twenty-five percent (25%) of the original design flow adjusted using the design flows in Rule 21 provided that using the design flows and loading rates in these Rules would result in a leachfield larger than that previously approved by the Department;

(C) Structures served by OWTSs installed without state approval, OWTSs installed prior to April 9, 1968 and cesspools -- Whenever a person proposes any addition, replacement, demolition and reconstruction, or modification of a structure on the subject property which:

(i) Involves demolition or replastering or replacement of interior wallboard, interior walls, ceilings, flooring, windows, plumbing fixtures, electrical wiring or kitchen cabinetry, which in total affects over fifty percent (50%) or more of the living area of the existing structure;

(ii) Involves adding an additional floor level or portion of floor level of living space to the structure; or

- (iii) Increases the footprint of the living space of the structure;
- (D) Whenever the proposed construction changes the structure's footprint such that the OWTS is not in compliance with these Rules; or
- (E) Change of use with no increase in flow pursuant to Rule 17.4.1(A).

17.6.2 All plans and specifications for an OWTS Application for Alteration to a Structure shall be prepared by a licensed Class II or Class III designer in accordance with Rules 9 and 10. The Director reserves the right to require that the plans and specifications for an OWTS Application for Alteration to a Structure be prepared by a Class III designer.

17.6.3 No person shall submit applications, plans and specifications to the Director for an OWTS for an Alteration to a Structure without first obtaining the Director's acceptance of a soil evaluation or field concurrence with the soil evaluation in accordance with Rule 15. If the Director concurs with the determination of the soil evaluation in accordance with Rule 15.5.3(A) and the soil conditions meet the minimum requirements of these Rules, the soil evaluation may be submitted with the application for an OWTS permit. Soil evaluations for residential OWTS applications for an Alteration to a Structure where the total design flow is less than or equal to six hundred ninety (690) gallons per day are not required to be witnessed by the Department.

17.6.4 Applicants shall meet the requirements of these Rules to the greatest extent possible. The applicant shall identify which Rules, if any, the proposed OWTS fails to meet. If necessary, certain requirements under these Rules may be relaxed at the discretion of the Director, provided that the applicant considers the Department approved alternative or experimental technology in accordance with Rule 37 that may allow the applicant to meet most of the requirements of these Rules. The protection of the public health and the environment shall be given priority over all other considerations. Nothing herein shall prevent the Director from requesting additional information or imposing any requirement under these Rules. Variance application procedures will only apply to OWTS Applications for Alteration to a Structure that propose an increase in wastewater flow or where the existing OWTS is determined to be unsuitable pursuant to Rule 17.3.1(D). OWTS Applications for Alteration to a Structure that include a request for a variance from the provisions of these Rules are exempt from the notification requirements in Rule 47.7.1.

17.7 OWTS Application for Repair- An application for a repair of any OWTS, or any component thereof, shall be made when an OWTS or component has failed, as defined by Rule 7. An application for repair shall not propose any change of use, building renovation or any increased flow to the OWTS. The Department may allow an OWTS Application for Repair to be submitted when, after the effective date of these Rules, a fire or other catastrophic occurrence necessitates that a structure served by an OWTS be replaced. The applicant may also submit an OWTS Application for Repair when the property owner desires to upgrade or modernize the OWTS (e.g., replacement of cesspool).

17.7.1 All plans and specifications for an OWTS application for Repair shall be prepared by a licensed Class I, II or III designer in accordance with Rules 9 and 10. The applicant is not required to have a soil evaluation pursuant to Rule 15 prepared unless the Department specifies otherwise. The Director reserves the right to require that the plans and specifications for a repair be prepared by a licensed Class II or Class III designer.

17.7.2 Applicants shall meet the requirements of these Rules to the greatest extent possible. If necessary, certain requirements under these Rules may be relaxed at the discretion of the Director, provided that such modification is consistent with the protection of the public health and the

environment. In reviewing any request for relaxation of these Rules, the protection of the public health and the environment shall be given priority over all other considerations.

17.7.3 Deep concrete chambers will not be permitted for OWTS Applications for Repair where an alternate type of leachfield can be utilized. The licensed designer must demonstrate that the repair alternatives to a deep concrete chamber are not feasible.

17.7.4 Exemptions for OWTS Application for Repair- Under the limited circumstances in Rule 17.7.4 (A)–(E), an OWTS Application for Repair will not be necessary prior to repairing the OWTS. Any repair or installation work done in accordance with Rule 17.7.4(A) – (E) that is found not to be in compliance with these Rules, will have to be corrected and will be considered a violation of these Rules.

(A) Septic Tank Replacement- When a crushed tank or other failure necessitates replacement to maintain wastewater handling capacity at a facility and averting a public health threat, the installer must receive verbal authorization from the Department prior to septic tank installation and the owner must submit a proper and complete repair application by the end of the next business day.

(B) Building Sewer- Replacing a crushed or otherwise repairing a faulty building sewer between the building and the septic tank does not require prior authorization of the Department or notification to the Department once the work is completed.

(C) Access openings- The following work on access openings does not require prior authorization of the Department or notification to the Department once the work is completed:

(i) Installation of access openings to finished grade; and

(ii) Compliance with the requirements to upgrade the cover of existing tanks that have access openings to finished grade in accordance with Rule 25.11 (grease tank), Rule 26.14 (septic tank), Rule 28.6 (holding tank), Rule 29.8 (pump tank), and Rule 34.6.2(D) (concrete chambers).

(D) Retrofitting for a septic tank effluent screen- Such work does not require prior authorization of the Department or notification to the Department once the work is completed.

(E) In-kind emergency replacement of a failed mechanical or electrical device does not require prior authorization of the Department or notification to the Department once the work is completed.

17.8 Unacceptable Application- When the Department determines that an application is unacceptable for any reason, the application shall expire if any of the events in Rule 17.8.1 – 17.8.3 occur. Once the application is deemed expired a new application and application fee shall be required.

17.8.1 The applicant or the applicant’s designer fails to rectify the deficiencies identified by the Department within one year of the date the “unacceptable notice” is forwarded to the applicant or the applicant’s designer by the Department;

17.8.2 The applicant or the applicant’s designer fails to demonstrate to the Director’s satisfaction, in writing, of attempts to rectify the deficiencies within one year of the date the “unacceptable notice” is forwarded to the applicant or the applicant’s designer; or

17.8.3 The file remains inactive for one year.

17.9 Public Records- All applications received by the Department of Environmental Management are subject to the Public Records Act, R.I. General Laws Chapter 38-2, and are available in accordance with the Act for public inspection and copying at the OWTS Program of DEM between the hours of 8:30 AM and 4:00 PM; a prior appointment may be required. A fee for such copying shall be charged in accordance with Rhode Island General Laws Section 38-2-4, as amended.

RULE 18. REQUIRED CONTENT OF OWTS SUBMISSIONS

18.1 Application- All applications for the approval of plans and specifications for OWTS permits shall be made on forms approved by the Director. Nothing in these Rules shall prevent the Director from requiring any additional information deemed necessary to carry out obligations in enforcing these Rules.

18.2 Plan- All applications shall be accompanied by four (4) sets of plans that include a plan view of the entire property drawn to scale, a plan view of the pertinent portion of the property at a minimum scale of one (1) inch equals forty (40) feet, a profile of the system from the building foundation to the limits of the leachfield with invert elevations shown, and a cross-section of the leachfield. The plans shall include the items below. The Director reserves the right to require any additional information that is deemed necessary.

18.2.1 Location map;

18.2.2 Rhode Island Coastal Resources Management Council jurisdictional line, if applicable;

18.2.3 The size and location of the OWTS;

18.2.4 A fixed benchmark within one hundred fifty (150) feet of the OWTS that will not be disturbed during construction;

18.2.5 The location of all soil test holes;

18.2.6 The existing and proposed finished grades in the vicinity of the OWTS;

18.2.7 The size and location of all existing and proposed buildings and the number of bedrooms and other building features used to determine the maximum daily flow contained therein;

18.2.8 The location of any public sewer line within two hundred (200) feet of the property lines;

18.2.9 The location of any drinking water line within fifty (50) feet of the proposed OWTS;

18.2.10 The location of existing and proposed private drinking water wells within the setback distance from the leachfield specified in Table 22.5 plus one hundred (100) feet;

18.2.11 The location of all existing and proposed wells serving non-potable uses within one hundred (100) feet;

18.2.12 The location of existing and proposed public drinking water supply wells within five hundred (500) feet of the proposed OWTS and a determination as to whether the public well is a bedrock well or a gravel packed, gravel developed or driven well;

18.2.13 The location of all watercourses, wetlands, and drains within two hundred (200) feet of the proposed OWTS;

18.2.14 The location of all storm and subsurface drains within two hundred (200) feet of the proposed OWTS and a determination and whether said drain discharges, directly or indirectly, into a critical resource area as identified in Rule 38;

18.2.15 Plans must indicate if the proposed OWTS is within the watershed of a public water supply or other Critical Resource Area as identified in Rule 38, and must specify the distance to the nearest critical resource of concern.

18.2.16 The location and design flow of all existing OWTSs within two hundred (200) feet of any well to be installed on the subject property. Plans must also show the location and design flow of any existing OWTS with a design flow of greater than one thousand (1000) gallons per day within four hundred (400) feet of any well to be installed on the subject property. Records and data on file with the Department may be used to obtain information on proposed OWTSs and wells;

18.2.17 Areas on the subject property where soil has been excavated and where storm deposited sand in the backdune environment or human transported material has been deposited;

18.2.18 Replacement dispersal field area, if required pursuant to Rule 32.21;

18.2.19 Details of all system components;

18.2.20 Erosion controls;

18.2.21 Plat and lot boundaries and numbers;

18.2.22 Title block, legend and north arrow; and

18.2.23 Signature and stamp of the licensed designer.

18.3 Additional Information- Other information to be provided by the applicant shall include, but not be limited to, the items listed below:

18.3.1 Soil evaluation for OWTS Applications for New Building Construction and for OWTS Applications for an Alteration to a Structure and those that were required by the Director for OWTS Applications for Repair;

18.3.2 Results of seasonal high groundwater table determinations and percolation tests for lots not required to conduct a soil evaluation;

18.3.3 Determination of the potential for flooding on the subject property; and

18.3.4 Statement as to whether or not any proposed well on the applicant's property requires a variance from the Department's "Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells."

18.4 Applications for Large OWTSs- Each application for a large OWTS (Rule 35) shall be accompanied by a list identifying the names and addresses of the local building official, the water supply agency whose water supply is drawn from the watershed or wellhead protection area wherein the property is located, if applicable, all property owners within four hundred (400) feet of any component of the proposed OWTS, and all abutting property owners. Applicants must also comply with the large OWTS requirements in Rule 36.

18.4.1 Upon application, the applicant shall notify each person identified in Rule 18.4 above, of the application by certified mail, return receipt requested.

18.4.2 Each notice shall substantially conform to a form to be provided by the Director and shall include the application number and a certificate of service.

18.4.3 The applicant shall clearly mark each return receipt with the application number and the words "5000 Gallon OWTS."

18.4.4 All persons subject to the notice shall be permitted twenty (20) days from the date specified in the certificates of service within which to submit written comments or information bearing upon the subject application.

18.4.5 All timely submitted comments or information bearing upon the subject application and relating to the intent and purpose of these Rules shall be considered by the OWTS Program staff as part of their review of the application.

18.4.6 When all certified receipts have been returned to the applicant, copies of each notice, accompanied by the appropriate certified receipt, shall be filed with the OWTS Program along with a letter requesting that the application be reviewed for final determination.

18.4.7 If a correctly addressed, certified notice is returned to the applicant, the applicant may submit the returned envelope and certified receipt, unopened, along with the other return receipts as proof of the applicant's good faith attempt to serve the notice.

RULE 19. APPLICATIONS INVOLVING THE DEM FRESHWATER WETLANDS PROGRAM AND THE COASTAL RESOURCES MANAGEMENT COUNCIL

19.1 Applications Involving the DEM Freshwater Wetlands Program

19.1.1 All applications pursuant to these Rules associated with a construction project which may affect a freshwater wetlands regulated by the Department shall be submitted in accordance with either 19.1.1(A) or (B):

(A) The OWTS application may be accompanied by the appropriate determination or permit required by the DEM Freshwater Wetlands Program. Accordingly, where an applicant proposes to construct OWTS, the applicant must apply for and receive the appropriate determination or permit from the Freshwater Wetlands Program prior to submission to the OWTS Program; or

(B) The applicant may submit applications to the Freshwater Wetlands Program and the OWTS Program at the same time. No OWTS Application for a construction project which may affect a freshwater wetlands will be approved without the appropriate determination or permit from the Freshwater Wetlands Program.

19.1.2 If the Department determines that there is a reasonable doubt as to the location of a freshwater wetlands boundary or applicability of the DEM Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act to a proposed new construction or new installation of an OWTS, the Department may require that the applicant obtain a separate determination or permit from the Department pursuant to said Wetlands regulations.

19.1.3 The Director may require that erosion and sedimentation controls be designed, shown on plans, installed, operated and maintained to protect any wetland or watercourse from potential adverse effects of the construction project associated with an approved OWTS application.

19.2 Applications Involving the Rhode Island Coastal Resources Management Council

19.2.1 The Rhode Island Coastal Resources Management Council has authority over construction proposed in certain coastal regions of the state. The coastal region includes: All coastal features and all land within two hundred (200) feet of tidal waters, salt water ponds, salt water marshes, salt water wetlands or other land subject to Coastal Resources Management Council jurisdiction. Review of impacts to “freshwater wetlands in the vicinity of the coast” are under the sole jurisdiction of the Coastal Resources Management Council in accordance with the “Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast”.

19.2.2 The Director reserves the right to request the applicant to obtain a Preliminary Determination from the Rhode Island Coastal Resources Management Council. Applicants with an OWTS that has a design flow greater than two thousand (2000) gallons per day for any single system or design flow greater than two thousand (2000) gallons per day for any combination of systems owned or controlled by a common owner must receive a Preliminary Determination from the Coastal Resources Management Council before submitting an application for an OWTS to the DEM. After receiving a permit for an OWTS from the Director, the applicant should consult with the Coastal Resources Management Council before undertaking any construction on the property. It is the applicant’s responsibility to obtain a Coastal Resources Management Council permit if necessary.

RULE 20. SUBDIVISIONS

20.1 Administrative

20.1.1 No person shall begin construction in any subdivision requiring a Subdivision Site Suitability Certification in accordance with this Rule until the Director has approved such certification.

20.1.2 Any subdivision of five (5) lots or less that does not have frontage on an existing road and all subdivisions of six (6) lots or more shall apply for a Subdivision Site Suitability Certification in accordance with Rule 20.2.

20.1.3 Subdivisions of five (5) lots or less that have frontage on an existing road have the option to apply for a Subdivision Site Suitability Certification pursuant to Rule 20.2 or submit OWTS applications for individual lots in accordance with Rule 17. If applications for individual lots are submitted, the submittal shall be in accordance with the following:

(A) The applications must be submitted together;

(B) Each application shall clearly state that the lot is part of a subdivision of five (5) lots or less with existing road frontage; and

(C) Each lot must meet all requirements of these Rules in order for an OWTS permit to be issued by the Department for any of the lots.

20.1.4 Subdivision Soil Evaluation- A soil evaluation shall be conducted for each lot in accordance with Rule 15. Soil evaluations for subdivisions are exempt from the requirement in Rule 15.9.1 that the soil test holes be within twenty-five (25) feet of the proposed leachfield, unless the Director determines that soil conditions justify that the soil test holes must be placed within twenty-five (25) feet of the proposed leachfield. Soil evaluations must be accepted by the Director prior to submission of an application for Subdivision Site Suitability Certification.

20.1.5 An approved Subdivision Site Suitability Certification shall not operate as an approval for the construction of any OWTS as required by Rule 17.

20.1.6 Land within the original property boundaries that is designated for future development will not be part of the review for Subdivision Site Suitability Certification. However, it must be shown that one unit can be built on the land designated for future development.

20.1.7 OWTSs installed without state approval, OWTSs installed prior to April 9, 1968 and cesspools on existing lots in a proposed subdivision shall be upgraded to the current standards, to the extent possible, in accordance with these Rules as part of a Subdivision Site Suitability Certification within one (1) year of the recording of the subdivision.

20.1.8 The applicant for a Subdivision Site Suitability Certification must demonstrate that the OWTS for the proposed use on each proposed lot in a subdivision meets all the requirements of these Rules in order for a Subdivision Site Suitability Certification to be issued by the Department.

20.1.9 Nothing in this Rule 20 shall prevent the Director from requesting any or all of the procedures established in these Rules for a single lot if the Director determines it is necessary for the protection of the public health and environment.

20.1.10 Easement Filing- Where subdivision lots will require filling beyond lot lines, an easement for that human transported material must be submitted with the application for the individual lots.

20.2 Subdivision Site Suitability Certification- Application for Subdivision Site Suitability Certification shall be prepared by a licensed Class II or Class III Designer, as appropriate, on forms approved by the Director and shall include the information in Rule 20.2.1 – 20.2.5 and any other information the Director may require. The application for Subdivision Site Suitability Certification will be reviewed for all information necessary to determine the suitability of a parcel of land to be divided as shown on the application.

20.2.1 Location Map- A location map or sketch showing existing highways, streets and/or other identifiable landmarks or distances thereto, shall be furnished to facilitate an inspection of the site. This may be incorporated on the topographic map.

20.2.2 Soil Survey- A copy of the page or pages of the latest Soil Survey published by the Natural Resource Conservation Service of the U.S. Department of Agriculture illustrating the location of the subdivision.

20.2.3 Topographic Map

(A) The topographic map shall show ground elevations on the tract as follows:

(i) For land that slopes less than approximately two (2) percent, show spot elevations at all breaks in grade, along all drainage channels or swales, and at selected points not more than one hundred (100) feet apart in all directions; and

(ii) For land that slopes more than approximately two (2) percent show broken line contours with an interval of not more than two (2) feet.

(B) The datum on which the elevations or contours are based shall be reported including a permanent reference bench mark. Where cut or fill of more than one (1) foot can be anticipated and estimated, it should be indicated by solid line contours showing approximate finished grade. Plan and profile showing existing and proposed finished grades of proposed roads must be provided.

(C) The topographic map shall show the following for the entire area of the subdivision:

(i) Proposed house locations;

(ii) Existing structures, public and private water supplies and OWTSs;

(iii) Rights of way or easements;

(iv) Watercourses, drainageways, and drainage basins;

(v) Rock outcrops and wooded areas;

(vi) Stone walls;

(vii) Location of proposed water supplies and OWTSs on lots within the subdivision conforming with requirements of Rule 22; and

(viii) Location of soil test holes used for the soil evaluation.

(ix) Location of any critical resource area as defined in Rule 38 within the property.

20.2.4 For lands immediately adjacent to the subdivision, the items below shall be shown, designated or reported. Distances below shall be determined from the subdivision property boundary.

(A) Watercourses within two hundred (200) feet;

(B) Private drinking water wells (existing and those proposed on an approved OWTS permit) within two hundred (200) feet;

(C) Public wells (existing and proposed) approved by the Rhode Island Department of Health within five hundred (500) feet;

(D) Location of any existing OWTS or drain within one hundred (100) feet of the property; and

20.2.5 Water Quality Assessment- Where in the opinion of the Director, a substantial question exists regarding the cumulative impact of the operation of OWTSs within the subdivision on surface water or groundwater quality, the Director may require an assessment of such potential cumulative impacts, including appropriate studies, to be submitted by the applicant. This assessment may include, but not be limited to, a determination of whether the operation of the OWTSs will result in a loss of a use or violation of a surface water or groundwater quality standard assigned to that body of groundwater or surface water in question as designated by the Department.

20.2.6 Certification- The Subdivision Site Suitability Certification shall be accompanied by a certification, on a form approved by the Director, that the work was conducted in a manner consistent with these Rules and that it is an accurate portrayal of site conditions. If more than one individual licensed under these Rules participated in the development of the subdivision site suitability report, the report must specify who prepared which part and include a certification from each licensee.

20.3 Expiration of Subdivision Site Suitability Certification- Subdivision Site Suitability Certification shall expire five (5) years from the date of issuance, unless the subdivision has been platted or recorded as evidenced by the submission of a copy of the recorded subdivision plat map. After the five-year period, certification may be obtained only by reapplying under the Rules in effect at the time of re-application. Once a subdivision has been platted or recorded, no further certification shall be required and all lots may proceed with the application process for their OWTS in accordance with these Rules.

20.3.1 In the event that there is any change in the configuration of any lot or road depicted in an approved Subdivision Site Suitability Certification, the applicant shall submit revised subdivision layout plans to the Department for its review. If the changes to the subdivision are found to be substantial, the Director may order the applicant to apply for a new Subdivision Site Suitability Certification based on the new plans.

20.3.2 Whenever the configuration of any lot or road in a subdivision depicted in an approved Subdivision Site Suitability Certification is altered so as to affect twenty-five percent (25%) or more of the original lots, a new Application for Subdivision Site Suitability Certification shall be submitted.

RULE 21. WASTEWATER FLOW

21.1 Determination of Wastewater Flow

21.1.1 An OWTS must be designed to dispose of the estimated maximum daily flow from the building(s) it serves. The maximum daily flow is estimated by multiplying flow per unit from Table 21.1 by the maximum design capacity of the building. For facilities with more than one use listed in Table 21.1 (e.g., a retail store with a restaurant), the maximum daily flow for the facility shall be the total of the flows from the separate uses using Table 21.1. The employee contribution to the design flow shall be included for non-residential uses other than restaurants by estimating the maximum number of employees who may be present during a single day of operation multiplied by a design flow of 15 gallons per person per day.

21.1.2 For establishments not listed in Table 21.1, the maximum daily flow shall be determined by either of the following:

(A) Two (2) times the average daily meter reading taken from a minimum of two (2) comparable establishments for one month during the period of the year that represents the greatest water use for the establishment; or

(B) If six (6) months of daily meter readings are available for a minimum of 2 comparable establishments that includes the period of the year that represents the greatest water use for the establishment, the OWTS shall be designed using the highest daily flow without the use of a peaking factor.

Table 21.1 Wastewater Design Flows

TYPE OF USE	UNIT	GALLONS PER DAY
RESIDENTIAL		
[Minimum design flow for residential use shall be three hundred forty-five (345) gallons per day (three (3) bedrooms), unless otherwise permitted in accordance with Rule 21.2.5.]		
Single Family Residence	per bedroom (2 persons per bedroom)	115
Multiple Family Residence	per bedroom (2 persons per bedroom)	115
INSTITUTIONAL		
Assisted Living Facility	per bedroom (2 persons per bedroom)	115
Church	per seat	1
Church hall (fellowship hall)	per seat	5
Hospital	per bed	150
Library	per visitor	5
Nursing home/rest home	per bed	125
Group home	per bed	200
Correctional, rehabilitation facility	per bed	100
Gymnasium	per seat	3
Gymnasium	per participant	15
Highway Rest Stop	per person	5
Public park with toilets	per person	5
add for showers	per person	10
CAMPS AND CAMPGROUNDS		
Day camp	per person	15
add for mess hall	per person/meal	3
Camp - overnight	per person	25
add for mess hall	per person/meal	3
Campground with		
washroom and toilets	per site	50
Recreational Vehicle Park		
with water and sewer hookups	per site	100
Add for central dining facilities	per seat	35
Recreational Vehicle Park		
without water and sewer hookups	per site	50
Add for central dining facilities	per seat	35
Add for central washroom and toilet facilities	per site	50
SCHOOLS		
School	per person	10
add for cafeteria	per person	5
add for gymnasium and showers	per person	10
Boarding school, college	per person	50
Day care center	per person	10

RESTAURANTS

[Minimum design flow for restaurants shall be 500 gallons per day.]

Restaurant	per seat	40
Restaurant – with single-service articles		
with public restrooms	per seat	25
without public restrooms	per seat	20
add for drive-up window		500
Lounge, bar (no food service at that seat)	per seat	10
Banquet hall	per seat	5

COMMERCIAL

[Minimum design flow for commercial use shall be 100 gallons per day]

Auto service station	per pump	25
	per repair bay	100
Barber shop/Beauty Salon	per chair	50
add for sink	per hair care sink	200
Bed & Breakfast	per bedroom	110
Bowling alley	per alley	100
Country club		
dining room	per seat	40
snack bar/lounge	per seat	20
lockers and showers	per locker	20
Doctors office	per doctor	250
Dog/Pet grooming	per station	500
Dentist office	per chair	200
Drive-in theater	per vehicle stall	5
Factory/industrial plant	per person	15
add for cafeteria	per person	5
Food store < 5,000 square feet (See Note 1)	per store	350
add for deli flow	per store	100
add for bakery flow	per store	100
add for meat dept. flow	per store	150
add for fish market flow	per store	150
add for public restrooms	per store	200
Food store > 5,000 square feet (See Note 1)	per store	700
add	per square foot	
	>5,000 sq ft	0.05
add for deli flow	per store	200
add for bakery flow	per store	200
add for meat dept. flow	per store	300
add for fish market flow	per store	150
add for public restrooms	per store	400
Funeral home	per parlor	500
Hotel, motel	per unit	100
With efficiency units	per unit	150
Health club	per participant	15
Kennel	per kennel	10

Marina (shore-side facilities)	per slip	10
add for showers	per slip	10
Mobile home park/manufactured		
home park	per site	230
Office building	per employee	15
Retail store	per employee	15
Rooming house/boarding house	per bedroom	80
Self-Service Laundry (See Note 2)	per machine	500
Shopping center/strip mall/multi-use retail		
Calculate on the largest of either:		
a) the total flow for the uses within as determined from this table, or		
b) per square foot	per square foot	0.1
Skating rink	per seat	3
Swimming pool	per person	15
Tennis court - outdoor	per court	100
Tennis court - indoor	per court	400
Theater, Auditorium	per seat	3
Veterinary office	per veterinarian	200

NOTES:

- (1) The design flow for a stand alone deli, bakery, meat store or fish market will be three hundred fifty (350) gallons per day if the facility is less than five thousand (5,000) square feet or seven hundred (700) gallons per day if the facility is five thousand (5,000) square feet or more.
- (2) Self-Service laundry OWTS designs must include pretreatment to remove lint from the wastewater.

21.2 Determining the Number of Bedrooms in a Single Family Residential Dwelling- For purposes of aiding the planning, designing, building, renovation, remodeling or expansion of residential dwellings, the following guidelines shall be used in determining the number of bedrooms. These guidelines are presented in acknowledgement that, in many cases, houses contain rooms meeting the strict definition of bedroom as defined in these Rules, but which are not intended to be nor will be used as bedrooms.

21.2.1 No residence served by an OWTS shall be allowed to have more bedrooms than is permitted under the Department issued permit for the OWTS serving the dwelling. A dwelling exceeding the number of bedrooms provided for in the permit shall be in violation of these Rules.

21.2.2 In determining the number of bedrooms contained in any residence, it shall be presumed that all residences contain a living room, a kitchen, a bathroom and at least one bedroom.

21.2.3 For OWTSs installed without state approval, OWTSs installed prior to April 9, 1968 and cesspools, the determination on number of bedrooms shall be based on the consideration of municipal records, floor plans and the guidelines herein. In the case of a one (1) bedroom residence, the determination shall be based on municipal records.

21.2.4 When a determination of the number of bedrooms shall be based on total number of rooms, Table 21.2 shall be used. Foyers, closets, bathrooms and rooms without windows are not counted as rooms in Table 21.2. Functionally combined kitchens/dining rooms and living/dining rooms greater than three hundred (300) square feet shall be counted as two (2) rooms. Table 21.2 may be used by applicants for any OWTS application to the Department.

Table 21.2 Determination of Number of Bedrooms

Total Number of Rooms	Assumed Number of Bedrooms
5 or less	2
6-7	3
8-10	4
11-12	5
13 or more	6

21.2.5 The Director may permit the filing of a deed restriction by which an applicant may self-restrict the use of a residence to one less bedroom than may be determined in accordance with Table 21.2. In no case shall the deed restriction be for less than two bedrooms. The Director may consider the gross square footage of a residence as a factor against granting a bedroom restriction by deed.

21.3 Separate OWTSs- Where residential uses need to install separate OWTSs, the following proportions of the total flow shall be used unless there is definite data available as to the exact distribution of flow: blackwater forty percent (40%) and graywater sixty percent (60%). If a separate system is used for laundry wastes, it shall be designed on twenty percent (20%) of the total flow.

RULE 22. MINIMUM SETBACK DISTANCES

22.1 The horizontal distances between the parts of an OWTS and the items listed in Table 22.1 - Table 22.5 shall not be less than those shown.

Table 22.1 Minimum Setback Distances – General

	Building Sewer, Grease Tank, Distribution Box, Pump Tank, Septic Tank, Septic Tank Effluent Pipe (ft)	Leachfield (ft)
Well Serving Non-potable Uses	25	50
Water Supply Line	10 (Note 1)	25
Property Line	10 (Not applicable to building sewer and septic tank effluent pipe)	10
Foundation	5 (Not applicable to building sewer)	25 (Note 2)
Subsurface drains, foundation drains , or storm drains (see also Tables 22.2 and 22.3):		
-- Upgradient of the OWTS:	25 (Note 3)	25 (Note 4)
-- Downgradient and side gradient of the OWTS:	25 (Note 3)	50 (Note 5)
Edge of any land at a level lower than the invert of the distribution line	10	10
Swimming Pools:		
In-ground:	10	25
Above ground:	10	10

Notes:

The reductions in setback distances allowed below in Notes (1) through (5) will not be granted if the setback distances in Table 22.1 can be met.

(1) The distance between the building sewer or septic tank effluent pipe and a water supply line may be reduced and the lines may cross provided that either the building sewer or septic tank effluent pipe or water supply line is sleeved whenever the lines are within ten (10) feet of each other. The sleeve shall be seamless and it shall have a watertight seal that is fastened to the pipes with a stainless steel retractable clamp. Whenever possible, the building sewer and septic tank effluent pipe should be laid below water supply lines at crossings. Pressurized building sewers or pressurized septic tank effluent pipes may cross water supply lines provided that either the building sewer or septic tank effluent pipe or water supply line is sleeved whenever the lines are within ten (10) feet of each other. The sleeve shall be seamless and it shall have a watertight seal that is fastened to the pipes with a stainless steel retractable clamp. Pressurized building sewers or pressurized septic tank effluent pipes shall be laid below water supply lines at crossings.

(2) Distance may be reduced to fifteen (15) feet with no foundation drain. Full foundation details must be shown on the plan. Distance may be reduced to eight (8) feet where a foundation slab elevation or the basement floor elevation is higher than the invert of the distribution lines in the leachfield.

(3) The distance between the building sewer or septic tank effluent pipe and a drain may be reduced and the building sewer or effluent pipe may cross the drain provided that the building sewer or septic tank effluent pipe is sleeved whenever they are within twenty-five (25) feet of the drain. The sleeve shall be seamless, and it shall have a watertight seal that is fastened to the pipes with a stainless steel retractable clamp.

(4) If the slope of the original land surface over the area of the leachfield and fifty (50) feet in all directions from the edge of the leachfield is less than three (3) percent, the minimum setback distance between the leachfield and the drain must be fifty (50) feet in all directions. If the applicant conducts a groundwater flow study that conclusively demonstrates the drain is upgradient of the leachfield, the Director may allow a twenty-five (25) foot separation distance on the upgradient side.

(5) If a drain is watertight and bedded in sand or bank run gravel, or laid at an elevation above the seasonal high groundwater table, this setback distance may be reduced to twenty-five (25) feet. Applications shall include a detail drawing of the drain pipe joints and bedding material.

Table 22.2 Minimum Setback Distances from Drinking Water Supply Watershed Features (distances in feet from all OWTS components). See also Figure 2.

Feature	OWTS Design Flow < 5000 gpd	OWTS Design Flow ≥5000 gpd (Note 1)
Impoundment with Intake for Drinking Water Supply and Adjacent Wetlands (Note 2)	200	400
Subsurface Drains and Foundation Drains that Discharge Directly to the Impoundment	200	400
Subsurface Drains and Foundation Drains that Discharge to a Drainage Swale that Subsequently Discharges to the Impoundment:		
Paved Swale	200	400
Unpaved Swale <200 feet long	200	400
Unpaved Swale ≥200 feet long	100	200
Tributaries, Tributary Wetlands, and Storm Drains that Discharge Directly to the Impoundment	100	200
Subsurface Drains, Foundation Drains, and Storm Drains that Discharge to Tributaries and Tributary Wetlands	100	200
Any other Watercourse in the Drinking Water Supply Watershed (Not Connected to the Impoundment)	50	100
Areas Subject to Storm Flowage	50	100

Notes:

(1) As defined in Rule 35.1.1.

(1) Distances measured from the yearly high water mark.

(2) If it is shown to the Department's satisfaction by clear and convincing evidence that the feature of concern in this table is upgradient (for both groundwater and surface water flow) of the OWTS, the minimum setback distance will be determined from Table 22.1 and Table 22.4, as applicable.

Table 22.3 Minimum Setback Distances from Features in the Salt Pond and Narrow River Critical Resource Area (distances in feet from all OWTS components). See also Figure 3.

Feature	OWTS Design Flow < 5000 gpd	OWTS Design Flow ≥5000 gpd (Note 1)
Salt Pond/Narrow River Coastal Shoreline Features (Note 2)	200	400
Subsurface Drains and Foundation Drains that Discharge Directly to the Salt Pond/Narrow River	200	400
Subsurface Drains and Foundation Drains that Discharge to an open Drainage Swale that Subsequently Discharges to the Salt Pond/Narrow River:		
Paved Swale	200	400
Unpaved Swale <200 feet long	200	400
Unpaved Swale ≥200 feet long	150	300
Tributaries, Tributary Wetlands and Storm Drains that Discharge Directly to the Salt Pond/Narrow River	150	300
Subsurface Drains, Foundation Drains, and Storm Drains that Discharge to Tributaries and Tributary Wetlands	150	300
Any Other Watercourse in Salt Pond/Narrow River Critical Resource Area	50	100
Areas Subject to Storm Flowage	50	100

Notes:

- (1) As defined in Rule 35.1.1.
- (2) The minimum setback distance from the ocean or Narragansett Bay is either fifty (50) feet or twenty-five (25) feet plus the CRMC calculated shoreline change setback pursuant to CRMP Section 140, whichever is greater. This minimum setback distance is doubled for OWTSs with design flow greater than five thousand (5000) gallons per day.
- (3) Applications for an OWTS permit that are approved by DEM are subject to the requirements of CRMC.

(4) If it is shown to the Department's satisfaction by clear and convincing evidence that the feature of concern in this table is upgradient (for both groundwater and surface water flow) of the OWTS, the minimum setback distance will be determined from Table 22.1 and Table 22.4, as applicable.

Table 22.4 Minimum Setback Distances from Features Not in Critical Resource Areas

Feature	Proposed Rules OWTS < 5000 gpd	Proposed Rules OWTS ≥ 5000 gpd (Note 1)
	Distances in feet from: Tank and Building Sewer/Leachfield	
Coastal Shoreline Feature (Note 2)	25/50	50/100
Flowing Water (Rivers and Streams) and Open Bodies of Water (Lakes and Ponds)	25/75	50/150
Other Watercourses Not Mentioned Above and Areas Subject to Storm Flowage	25/50	50/100

Notes:

(1) As defined in Rule 35.1.1.

(2) The minimum setback distance from the ocean or Narragansett Bay is either fifty (50) feet or twenty-five (25) feet plus the CRMC calculated shoreline change setback pursuant to the CRMP Section 140, whichever is greater. This setback distance is doubled for OWTSs with design flow greater than five thousand (5000) gallons per day.

Table 22.5 Minimum Setback Distances from Drinking Water Wells

OWTS Design Flow (gpd)	Distance in Feet from Leachfield/Tank/Building Sewer(Note 1)	Distance in Feet From All OWTS Components (Note 1)	
	Private Drinking Water Well (Note 2)	Public Well – Drilled (rock), Driven, or Dug	Public Well- Gravel Packed, Gravel Developed
<1000	100/75/50 (Note 3,4)	200	400
1000-<2000	150/75/50	200	400
2000 - <5000	200/75/50	200	400
5000- <10000	300/75/50	300	400
≥10000	400/75/50	400	400

Notes:

- (1) Large Systems- These distances are minimum distances for large systems as defined in Rule 35.1. Greater distances may be required based on the Impact Analysis in Rule 35.2.
- (2) Distance from the building sewer may be reduced when the building sewer is constructed of Schedule 40 PVC or equivalent.
- (3) The minimum setback distances may be reduced to 80/60/40 feet for residential OWTSs on lots ten-thousand (10,000) square feet and larger under the following conditions:
 - (A) The design flow is less than five hundred (500) gallons per day;
 - (B) The OWTS utilizes a Department approved Category 1 nitrogen reducing technology;
 - (C) The OWTS discharges to a pressurized shallow narrow drainfield designed in accordance with DEM guidelines; and
 - (D) The OWTS separation distance to groundwater is three (3) feet or greater.
- (4) The minimum setback distances shall be increased to 150/100/75 for OWTSs with a design flow of less than one thousand (1000) gallons per day if the OWTS is designed for Category 1 soils per Rule 32. For such OWTSs utilizing a bottomless sand filter or pressurized shallow narrow drainfield constructed in accordance with DEM guidelines, the minimum setback distances may be 100/75/50.

RULE 23. SUBSURFACE DRAINS

23.1 Prior to seeking a permit for an OWTS that includes a subsurface drain, the applicant shall have all other relevant state or local approvals or permits for construction of the subdrain and discharge of the drainage effluent. Such approvals may include, but are not limited to, DEM Wetlands Program, the Rhode Island Coastal Resources Management Council Preliminary Determination, the municipality or the Rhode Island Department of Transportation.

23.2 Construction- A subsurface drain constructed to lower the groundwater table shall consist of not less than six (6) inches of washed stone three-quarter (¾) inch to two (2) inches in diameter, over which is laid a perforated-pipe at least four (4) inches in diameter. The stone shall extend above the pipe to within two (2) feet of the ground surface. A layer of filter fabric meeting the requirements of Rule 32.11 shall be placed above, below and along the sides of the stone for the entire length of the drain. Changes in direction shall not exceed ninety (90) degrees. Where a change in direction is greater than forty-five (45) degrees, a manhole is required, unless the change in direction is achieved through the use of a thirty-six (36) inch radius sweep.

23.3 Monitoring- The effectiveness of subsurface drains used to lower the groundwater table must be demonstrated through one complete wet season, January 1 through April 15, before consideration can be

given to an application for an OWTS permit. The Department may allow lesser periods of monitoring if site conditions and wet season conditions warrant.

23.3.1 Groundwater table test holes shall be located within the area of the proposed leachfield with one on the upgradient side and one on the downgradient side. The test holes shall not be located within twenty-five (25) feet of the upgradient subsurface drain or within fifty (50) feet of the downgradient subsurface drain.

23.3.2 Groundwater table initial readings shall be submitted on forms approved by the Director by January 30 in order to effectively allow the Department and the designer to monitor the effects of the subsurface drain through the wet season.

23.4 Hydraulic Gradient- If the subsurface drain causes the natural hydraulic gradient to be reversed, such drain shall be treated as a downgradient drain for the purpose of establishing appropriate minimum setbacks in accordance with Rule 22. Where only an upgradient drain is installed, the applicant must demonstrate that the hydraulic gradient will not be reversed or treat the upgradient drain as a downgradient drain for the purpose of establishing appropriate minimum setbacks in accordance with Rule 22.

RULE 24. BUILDING SEWERS

24.1 Size- The building sewer shall be designed with a capacity, when running full, of not less than twice the peak rate of flow of the connected fixtures. In no case shall the building sewer be less than three (3) inches in diameter.

24.2 Material- The building sewer shall be constructed of PVC pipe SDR 35 minimum or equivalent. When any portion of the building sewer will be subject to vehicular traffic, it shall be constructed of Schedule 40 PVC or equivalent.

24.3 Joints- All pipe joints for the building sewer shall be made watertight.

24.4 Base- The building sewer shall be laid on a compacted, firm base.

24.5 Horizontal Alignment

24.1.1 The building sewer should be laid in a straight line wherever possible. Changes in direction shall not exceed ninety (90) degrees.

24.1.2 Where a change in direction is greater than forty five (45) degrees, a manhole is required, unless the change in direction is achieved through the use of a thirty six (36) inch radius sweep.

24.6 Vertical Alignment

24.6.1 The slope of the building sewer from the dwelling to the septic tank shall be not less than one percent (1%) and not greater than five percent (5%).

24.6.2 A manhole is required at changes of grade requiring a drop box in order to maintain the maximum five percent (5%) slope.

24.7 Manholes and Cleanouts- A manhole with a removable cover of concrete, cast iron, or other durable material shall be provided at the junction of two or more building sewer lines and at all sharp changes in

direction greater than forty-five (45) degrees, unless the alignment complies with Rule 24.6. A cleanout shall be provided at intervals not greater than seventy five (75) feet.

24.8 Ventilation- The building sewer shall be vented through the stack or main vent of the building it serves. No trap shall be installed in the building sewer.

RULE 25. GREASE TANKS

(See Figure 4)

25.1 Required Use- Grease tanks shall be installed in accordance with the following:

25.1.1 OWTS Applications for New Building Construction for restaurants and other facilities that prepare food shall have kitchen wastes separately plumbed to an external grease tank;

25.1.2 OWTS Applications for Alterations to a Structure and OWTS Applications for Repair for restaurants and other facilities that prepare food with a total design flow equal to or exceeding two thousand (2000) gallons per day shall have kitchen wastes separately plumbed to an external grease tank; and

25.1.3 OWTS Applications for Alterations to a Structure and OWTS Applications for Repair for restaurants and other facilities that prepare food with a total design flow less than two thousand (2000) gallons per day shall have kitchen wastes separately plumbed to an external grease tank or have an internal grease removal unit installed.

25.2 Capacity- Grease tanks shall have a minimum capacity of one thousand (1,000) gallons, and shall have sufficient capacity to provide at least a twenty-four (24) hour detention period for fifty percent (50%) of the design flow for the OWTS.

25.3 Construction- Grease tanks shall be watertight, meet the construction and material standards required for septic tanks in Rule 26.2, and be shaped as required for septic tanks in Rule 26.3.

25.4 Inlet and Outlet- The inlet and outlet shall be as required for septic tanks in Rule 26.5. Grease tanks shall be provided with inlet tees and outlet tees. Baffles may be provided as necessary in conjunction with tees to maximize the separation of grease from the wastewater.

25.4.1 Tees shall be minimum SDR 35 PVC solvent welded and properly supported by a hanger, strap or other device.

25.4.2 The inlet tee shall extend to the mid-depth of the tank. The outlet tee shall extend to twelve (12) inches from the bottom of the tank.

25.4.3 The tops of the tees shall extend a minimum of six (6) inches above the flow line, and shall be left open to provide ventilation. There shall be an air space of at least three (3) inches between the tops of the tees and the top interior of the grease tank.

25.5 Access Openings- Grease tank access openings shall be as required for septic tanks in Rule 26.7. In addition, the lid shall specify that it is for a grease tank.

25.6 Location- Grease tanks shall be installed on a separate building sewer serving that part of the plumbing system into which the grease shall be discharged. The discharge from the grease tank shall flow to a properly designed septic tank.

25.7 Installation- Grease tank installation shall be as required for septic tank installation in Rule 26.9.

25.8 Grease Tanks in Series- Grease tanks may be placed in series provided that the combined volume meets the requirements of Rule 25.2 and that each grease tank meets all other requirements of Rule 25. In no case shall more than two (2) grease tanks be placed in series.

25.9 Performance Testing- Grease tanks shall be certified watertight in accordance with Rule 26.11.

25.10 Maintenance- Grease tanks shall be cleaned by a licensed septage hauler when twenty-five percent (25%) of the liquid volume is filled with grease.

25.11 Existing Grease Tanks- Grease tanks in place as of the effective date of this Rule that have access openings to finished grade shall be in compliance with Rule 26.7.2 within five (5) years of the effective date of this Rule.

RULE 26. SEPTIC TANKS

(See Figure 5)

26.1 Septic Tank Capacity

26.1.1 Residential Dwellings- The required minimum liquid capacity of a septic tank, below the flow line, shall be based on the number of bedrooms in the dwelling. For three (3) bedrooms or less the minimum capacity shall be one thousand (1000) gallons. For each additional bedroom, add two hundred fifty (250) gallons. A garbage grinder or a one hundred (100) gallon or greater tub will each require the septic tank capacity be increased by two hundred fifty (250) gallons.

26.1.2 Non-Residential Buildings- The required minimum liquid capacity of the septic tank shall be one thousand (1000) gallons or two (2) times the design flow as determined from Table 21.1, whichever is greater.

26.2 Construction and Materials- Septic tanks shall be watertight. They shall be constructed of sound and durable materials not subject to excessive corrosion, decay or frost damage or to cracking or buckling due to settlement or soil pressures. Septic tanks shall be constructed of precast reinforced concrete, fiberglass, polyethylene or other material approved by the Director. In addition to the construction and material standards in Rules 26.2.1-26.2.3, all septic tanks shall meet the physical design standards in the remainder of Rule 26.

26.2.1 Precast reinforced concrete septic tanks shall conform to the American Society for Testing and Materials "Standard Specification for Precast Concrete Septic Tanks C-1227-02" and any updates thereto. Any weep holes in the precast reinforced concrete septic tank shall be placed on the side of the tank bottom to allow for safe inspection and assurance that the weep hole has been plugged.

26.2.2 Fiberglass septic tanks and polyethylene septic tanks shall conform to the International Association of Plumbing and Mechanical Officials "Material and Property Standard for Prefabricated Septic Tanks IAPMO PS 1-2004e1" and any updates thereto.

26.2.3 Each septic tank shall be clearly and permanently marked at the inlet end of the tank with:

- (A) Date of manufacture;
- (B) Name or trademark of the manufacturer;
- (C) Septic tank capacity; and
- (D) Indication of external loads for which the septic tank is designed to resist.

26.3 Shape- There shall be no less than twenty-five (25) square feet of surface liquid area. The distance between the inlet wall of the tank and the outlet wall shall be no less than six (6) feet. The depth of the tank below the flow line shall be not less than four (4) feet or more than eight (8) feet. There shall be at least nine (9) inches of air space between the surface of the liquid and the interior roof of the septic tank.

26.4 Compartments- All septic tanks shall have two (2) compartments with adequate connection at mid-depth, and all tanks shall meet the following requirements:

26.4.1 The first compartment shall have a liquid volume of approximately two-thirds (2/3) of the required liquid volume for the entire tank.

26.4.2 The interior compartment wall shall not extend to the interior roof without providing for venting equivalent to the cross sectional area of at least a four (4) inch diameter pipe.

26.5 Inlet and Outlet

26.5.1 One (1) inlet and one (1) outlet shall be provided through the appropriate end or side wall of each tank. Where more than one (1) inlet is required for multiple building sewers, the tank shall be manufactured with the appropriate number of inlets.

26.5.2 Inlet and Outlet Elevations- The invert elevation of the outlet shall be at least three (3) inches below the invert elevation of the inlet, and above the seasonal high groundwater table, unless special construction approved by the Director is provided.

26.5.3 The inlet and outlet pipes shall be connected to the tank with a watertight sealed flexible joint. The pipe gasket shall be an integral part of all tanks and the pipe gasket shall be fastened to the pipe with a stainless steel retractable clamp. A friction fit connection is only allowed if the tank is performance tested in accordance with Rule 26.11.

26.6 Inlet and Outlet Tees- Septic tanks shall be provided with an inlet sanitary tee and outlet tees or other non-corroding equivalent device approved by the Director. The inlet and outlet tees shall be minimum SDR 35 PVC solvent welded. The tops of the tees shall extend a minimum of six (6) inches above the flow line, and shall be left open to provide ventilation. There shall be an air space of at least three (3) inches between the tops of the tees and the top interior of the tank.

26.6.1 The inlet sanitary tee shall extend downward at least one (1) foot below the flow line.

26.6.2 The outlet tee shall extend downward one-third of the depth below the flow line. All outlet tees or other approved outlet devices shall be equipped with an effluent screen approved by the Department pursuant to Rule 37.

26.6.3 Specifications for inlet tees and outlet tees are for normal, low-flow conditions. High-flow conditions, created when liquid is pumped from another tank, may require other dimensions and considerations.

26.7 Access Openings- A minimum twenty (20) inch inside diameter access opening shall be located over both the inlet tee and outlet tee. All septic tank openings shall meet the following requirements:

26.7.1 The access opening over the outlet tee shall be brought to finished grade. Other access openings shall either be brought to finished grade or within twelve (12) inches of the finished grade. Where a riser is required, it shall be watertight;

26.7.2 Lids on the top of the septic tank (Figure 6) should remain in place where practical. Lids for the openings at finished grade shall prevent unauthorized entry by meeting either of the following:

(A) Lid shall weigh a minimum of fifty-nine (59) pounds and fit tightly onto the riser as shown in Figure 6; or

(B) Lid shall be tamper resistant and mechanically fastened;

26.7.3 The septic tank manufacturers shall provide and the licensed OWTS installers shall attach a label of noncorrosive material in a prominent location at each access opening to warn that "Entrance Into the Tank Could Be Fatal"; and

26.7.4 Surface water shall be diverted away from the septic tank openings.

26.8 Accessibility- Septic tanks shall be so located on the lot as to be accessible for servicing and cleaning.

26.9 Installation- All septic tanks shall be installed in accordance with the manufacturer's minimum requirements. In addition, all septic tanks must meet the installation requirements specified in the remainder of these Rules.

26.9.1 Foundation- The septic tank shall be installed on a level, stable base that will not settle.

26.9.2 Backfill- Backfill shall be placed around the septic tank in such a manner as to avoid damage to it. All backfill placed around the septic tank shall be free of large stones, stumps, waste, construction material and rubbish.

26.9.3 Floatation- Where any portion of a septic tank is installed below the seasonal high groundwater table, the tank's susceptibility to floatation shall be determined, and provisions shall be made to prevent floatation where necessary as determined by the floatation calculations.

26.9.4 Septic Tanks in Coastal Velocity Zones- All fiberglass and polyethylene septic tanks larger than one thousand (1000) gallons installed in a Federal Emergency Management Agency designated V-Zone shall be anchored to prevent floatation.

26.10 Septic Tanks in Series- Septic tanks placed in series are allowed provided they meet the following requirements:

26.10.1 Each tank shall be of single compartment design and the volume of the first tank shall be at least two-thirds (2/3) the required tank size;

26.10.2 The outlet tee on the first tank shall extend down to the mid-depth of the liquid volume; and

26.10.3 An effluent screen that meets the requirements of Rule 26.6.2 shall be provided on the outlet tee of the second tank.

26.11 Performance Testing- All septic tanks and their risers must be certified watertight by the manufacturer or by on-site testing. On-site testing for septic tank leakage shall be conducted for tanks assembled at the installation site. The Director may require onsite testing on a case-by-case basis. The testing shall be conducted using either:

26.11.1 Vacuum Test- Seal the empty tank and risers and apply a vacuum to two (2) inches (50 mm) of mercury. The tank is approved if ninety percent (90%) of the vacuum is held for two (2) minutes; or

26.11.2 Water-Pressure Test- Seal the tank and risers, fill with water to the top of the risers, and let stand for twenty-four (24) hours. Refill the tank. The tank is approved if the water level is held for one (1) hour.

26.12 Pumping to Septic Tanks- Whenever more than twenty-five percent (25%) of the daily design flow is pumped into a septic tank, the tank capacity shall be increased by fifty percent (50%) beyond the minimum capacities specified in Rule 26.1.

26.13 Depth of Cover- The minimum cover over the invert of the outlet shall be one and one-half (1½) feet. If the depth of cover exceeds three and one-half (3½) feet, the OWTS application shall include documentation of the tank's ability to structurally withstand the loading, and the tank's design shall allow for proper maintenance and access.

26.14 Existing Septic Tanks- Septic tanks in place as of the effective date of this Rule shall be in compliance with the provisions of Rule 26.7.2 within five (5) years of the effective date of this Rule.

RULE 27. SEPTIC TANK EFFLUENT PIPE

27.1 Size- In no case shall the septic tank effluent pipe be less than four (4) inches in diameter.

27.2 Material- The septic tank effluent pipe shall be constructed of PVC pipe SDR 35 minimum or equivalent. When any portion of the septic tank effluent pipe will be subject to vehicular traffic, it shall be constructed of Schedule 40 PVC or equivalent.

27.3 Joints- All pipe joints for the septic tank effluent pipe shall be made watertight.

27.4 Slope or Grade- The septic tank effluent pipe shall have a minimum slope of one percent (1%).

27.5 Base- The septic tank effluent pipe shall be laid on a compacted, firm base.

27.6 Alignment- The septic tank effluent pipe should be laid in a straight line wherever possible. Changes in direction shall not exceed ninety (90) degrees. Where a change in direction is greater than forty five (45) degrees, a manhole is required, unless the change in direction is achieved through the use of a thirty six (36) inch radius sweep.

27.7 Manholes and Cleanouts- A manhole with a removable cover of concrete, cast iron, or other durable material shall be provided at the junction of two or more septic tank effluent pipes and at all sharp changes

in direction greater than forty-five (45) degrees, unless the alignment complies with Rule 27.6. A cleanout shall be provided at intervals not greater than seventy-five (75) feet.

RULE 28. HOLDING TANKS

28.1 Use

28.1.1 Holding tanks for wastewater are prohibited for Applications for New Building Construction and Applications for Alteration to a Structure.

28.1.2 A holding tank may be allowed only to repair or replace a failed OWTS.

28.1.3 Holding tanks will not be allowed if a public sewer system is available for connection. When a sewer system becomes available, any person owning a holding tank shall connect to the sewer system within thirty (30) days and the holding tank shall be abandoned in accordance with Rule 52.

28.1.4 Holding tanks are allowed at marine pumpout facilities provided that direct connection to an existing sewer system or OWTS is not possible and such tanks are constructed, installed and operated in accordance with appropriate Department Guidelines and Regulations.

28.2 Construction- Each holding tank shall:

28.2.1 Have a minimum capacity of five hundred percent (500%) of the daily design flow or portion thereof that the holding tank will serve;

28.2.2 Be watertight and meet the construction and material standards required for septic tanks in Rule 26.2;

28.2.3 Be equipped with an audio-visual alarm set to activate when the tank reaches sixty percent (60%) of its capacity;

28.2.4 Have a minimum twenty (20) inch inside diameter opening that meets the requirements for septic tank access openings in Rules 26.7.1, 26.7.2(B), 26.7.3 and 26.7.4; and

28.2.5 Be vented such that the vent is at an elevation higher than the elevation of the highest fixture served.

28.3 Installation- Holding tank installation shall be as required for septic tanks in Rule 26.9.

28.4 Depth of Cover- The minimum cover over the invert of the inlet shall be one and one-half (1½) feet.

28.5 Pumping- Prior to approval of the installation of a holding tank the applicant shall provide to the Department a copy of a contract with a licensed permitted septage transporter to regularly pump the tank.

28.6 Performance Testing- All holding tanks shall be tested on site for leakage in the manner specified for septic tanks in Rule 26.11.1 or 26.11.2.

28.7 Existing Holding Tanks- Holding tanks in place as of the effective date of this Rule that have access openings to finished grade shall be in compliance with Rule 26.7.2(B) within five (5) years of the effective date of this Rule.

RULE 29. PUMP TANKS

29.1 An OWTSS that requires a pump shall have a separate pump tank to house the pump, unless the pump is placed in the second compartment of the septic tank within a screened vault approved by the Director. Pump tanks shall be located following a septic tank unless otherwise approved by the Director.

29.2 Capacity- Pump tanks shall have an emergency storage capacity above the working level equal to the daily design flow of the system. Emergency capacity is not required if there is less than two (2) inches difference in elevation between the invert of the outlet of the septic tank and the invert of the inlet of the pump tank. All pump tanks shall be equipped with sensors and alarms to protect against high water due to failure of the pump or pump controls. The volume below the working level shall include an allowance for the volume of all drainage which may flow back to the tank when pumping has ceased. The volume of the pump tank between operating levels shall be adequate to assure the entire leachfield is dosed each cycle in accordance with the required number of cycles per day.

29.3 Construction- Each pump tank shall:

29.3.1 Be watertight and meet the construction and material standards for septic tanks in Rule 26.2; and

29.3.2 Each pump tank or compartment thereof shall be provided with a minimum twenty (20) inch inside diameter access opening located so as to facilitate repair or adjustment of the pump. The access opening shall meet the requirements for septic tank access openings in Rule 26.7.1--26.7.4.

29.4 Inlet and Outlet- The invert elevation of the inlet and the outlet pipe to the pump tank shall be located above the maximum water elevation in the pump tank, and above the seasonal high groundwater table, unless special construction, approved by the Director is provided.

29.5 Ventilation- Pump tanks shall be constructed in a manner that will permit venting through the building sewer or other suitable outlet.

29.6 Installation- Pump tank installation shall be as required for septic tanks in Rule 26.9.

29.7 Performance Testing- Pump tanks shall be certified watertight in accordance with Rule 26.11.

29.8 Existing Pump Tanks- Pump tanks in place as of the effective date of this Rule that have access openings to finished grade shall be in compliance with Rule 26.7.2 within five (5) years of the effective date of this Rule.

RULE 30. PUMPS

30.1 Required Use- Pumps are required for OWTSS that meet any of the following conditions:

30.1.1 The OWTS is designed for intermittent discharge;

30.1.2 The OWTS is designed for pressure dosing;

30.1.3 Pump is required for an approved Alternative or Experimental Technology;

30.1.4 The maximum length of a dispersal trench in the leachfield is between seventy-six (76) feet and one hundred (100) feet; or

30.1.5 The total length of the distribution lines in the leachfield exceeds five hundred (500) feet.

30.2 Dual Alternating Pumps

30.2.1 When a pump is required, dual alternating pumps are required for the following (otherwise a single pump is sufficient):

(A) The total length of the distribution lines in the system exceeds one thousand (1000) feet;

(B) The OWTS serves a use other than single family residential, the design flow is less than two thousand (2000) gallons per day, and there is no storage capacity for one day's design flow; and

(C) The OWTS serves a use other than single family residential and the design flow is greater than two thousand (2000) gallons per day.

30.2.2 Dual alternating pumps shall operate in the following sequence: pumps off; primary (lead) pump on; backup (lag) pump on and alarm on; pumps must alternate.

30.2.3 When dual alternating pumps are discharging to separate leachfields, the pump discharge lines shall be inter-connected and provisions made to permit dosage of both leachfields with one pump when the other is being serviced.

30.3 Size- The pump must be sized to accommodate the proposed use. All system head curves and associated calculations shall be submitted with the design. Centrifugal pumps must be capable of passing three-quarter (3/4) inch diameter solids.

30.4 Piping- The licensed designer shall specify pump discharge pipe sizing and provide backup calculations to support specification. The pump discharge pipe shall be PVC Class 200 minimum.

30.5 Controls and Power Supply- Pump controls shall be moisture proof if located above the liquid level. Watertight controls shall be used when the contents are submerged. All controls and junction boxes on the power supply shall meet appropriate electrical codes. Standby power shall be provided at all uses other than single family residential, unless otherwise approved by the Director.

30.6 Alarms- All pumps shall be equipped with a high water level, visible and audible alarm powered by a circuit separate from the pump power.

30.7 Installation- Pumps shall be installed in strict conformance with the manufacturer's specifications. Provisions should be made to easily remove the pumps for servicing.

RULE 31. DISTRIBUTION BOXES

31.1 A distribution box shall be installed immediately preceding the leachfield unless otherwise approved by the Director.

31.2 Construction- The distribution box shall be constructed of concrete or other durable material. It shall be watertight, including the riser connections where applicable, and it shall have a top load carrying capacity of three hundred (300) pounds per square foot and minimal sidewall deflection. Minimum bottom area shall be three (3) square feet.

31.3 Inlet- The distribution box shall be provided with an inlet tee or a suitable baffle. The invert elevation of the inlet pipe shall be not less than two (2) inches above the invert elevation of the outlet pipe.

31.4 Outlets

31.4.1 Outlet Elevations- The invert elevation of all the outlet pipes shall be a minimum of four (4) inches above the floor of the distribution box. All outlet inverts shall be at the same elevation.

31.4.2 Number of Outlets- If there is no pump tank, there shall be a separate outlet for each distribution line. When a pump tank is installed, there should be either a separate outlet for each distribution line, or a separate outlet of at least six (6) inches in diameter for every two (2) distribution lines. In all cases following a pump tank, the outlet shall be of sufficient size to accept the wastewater flow at the rate wastewater is delivered to the distribution box.

31.5 Distribution Pipes Into the Distribution Box

31.5.1 The distribution pipes shall extend into the distribution box one (1) inch.

31.5.2 Jointing of the distribution piping with a distribution box shall be made with non-shrinking gasket materials which shall maintain a watertight seal.

31.5.3 All inverts shall be set level after the leachfield is installed. Leveling devices may be installed on the distribution pipes.

31.6 Cover- The distribution box shall be provided with a readily removable cover of durable material that fits on the distribution box in the manner shown in Figure 6a for lids on septic tank risers. When a tipping distribution box is used, the distribution boxes shall have a minimum ten (10) inch diameter access opening brought to finished grade. When manholes to grade are not provided, it is recommended that a marker over the cover be provided to grade. OWTSs with a design flow over two thousand (2,000) gallons per day shall have a minimum eighteen (18) inch manhole over each distribution box with extra heavy duty metal frames and covers to finished grade.

31.7 Foundation- The distribution box shall be installed on a level stable base that will not settle.

RULE 32. LEACHFIELDS

32.1 Applicability- This rule applies to leachfields with dispersal trenches (Rule 33), leachfields with concrete chambers in a trench configuration (Rule 34), and to alternative and experimental leachfield systems approved pursuant to Rule 37 except for specifically approved design elements that are not consistent with this Rule 32.

32.2 Minimum Leaching Area- The minimum leachfield area necessary for dispersal trench and concrete chamber leachfields shall be determined by dividing the maximum daily wastewater flow (design flow) for the facility, as determined from Rule 21, by the loading rate established in Rule 32.2.1 for applications without a soil evaluation or by the loading rate established in Rule 32.2.2 for applications with a soil

evaluation. Applications without soil evaluations are those applications that have valid field data that pre-dates the soil evaluation requirements of these Rules.

32.2.1 The maximum leachfield loading rate for applications without a soil evaluation shall be determined from Table 32.2.1 below:

Table 32.2.1: Loading Rates Determined by Percolation Rate

Percolation Rate (minutes per inch)	Loading Rate (gals/sq ft/day)
Notes (1) and (2)	
<5	.93
10	.70
15	.61
20	.52
25	.48
30	.46
40	.40

Notes:

- (1) Rates not listed may be interpolated from this table to reflect actual readings.
- (2) Soil with a percolation rate of over forty (40) minutes per inch is unsuitable for disposal of wastewater by any means of subsurface leaching.
- (3) The fastest percolation rate allowed for applications for OWTSs for New Building Construction pursuant to Rule 17.5 shall be ten (10) minutes per inch.

32.2.2 The maximum leachfield loading rate for applications with a soil evaluation, shall be determined from Table 32.2.2. Use the lowest loading rate obtained in the manner described below:

- (A) If the bottom of the stone is above the original grade, use the soil horizon with the lowest loading rate within five (5) feet of the original ground surface, excluding any A horizons;
- (B) If the bottom of the stone is below the original grade, use the soil horizon with the lowest loading rate within five (5) feet below the elevation of the distribution pipe invert, including the soil horizons receiving side wall effluent;
- (C) If no natural soil will remain within the five (5) feet referenced in Rule 32.2.2 (A) and (B) above because of gravel fill, use the loading rate of the first naturally occurring soil horizon below that depth.

Table 32.2.2. Loading Rates Determined by Soil Category

Soil Category	Loading Rate (gals/sq ft/day)
1	.70
1m	.61
2	.61
3	.70
4	.61
4m	.70
5	.52
6	.61
6m	.70
7	.52
7m	.61
8	.46
8m	.48
9	.40
9m	.43
10	Not Allowed (Impervious)

Note: “m” means soil has gravelly or channery coarse fragment modifiers.

32.3 Effective Leaching Area- The effective leaching area of OWTSs shall be determined in accordance with Rule 33 for dispersal trench OWTSs and Rule 34 for concrete chamber OWTSs.

32.4 Depth to Groundwater From Original Ground Surface- The leachfield shall be located in an area where the seasonal high groundwater table is a minimum of two (2) feet below the original ground surface. All test holes within twenty five (25) feet of the leachfield shall meet the minimum depth to groundwater from original ground surface. On lots twenty thousand (20,000) square feet or larger, the leachfield may be located in an area where the seasonal high groundwater table is less than twenty-four (24) inches but greater than or equal to eighteen (18) inches from the original ground surface if the OWTS utilizes a bottomless sand filter in accordance with DEM guidelines and the applicant has no variance requests pursuant to Rule 47.

32.5 Depth to Restrictive Layer or Bedrock From Original Ground Surface- The leachfield shall be located in an area where a restrictive layer or bedrock is a minimum of four (4) feet below the original ground surface. The minimum depth to a restrictive layer or bedrock shall be met within twenty-five (25) feet of all sides of the leachfield.

32.6 Leachfield Design Point- Where the seasonal high groundwater table is greater than or equal to four (4) feet below the original ground surface, the leachfield shall be designed using the original ground surface elevation at the center of the leachfield. Where the seasonal high groundwater table is less than four (4) feet below the original ground surface, the leachfield shall be designed using the highest original ground surface elevation within the leachfield.

32.7 OWTS Separation Distance to Groundwater- The bottom of the stone underlying the leachfield shall be at least three (3) feet above the seasonal high groundwater table.

32.8 OWTS Separation Distance to a Restrictive Layer or Bedrock- The bottom of the stone underlying the leachfield shall be at least five (5) feet above a restrictive layer or bedrock. This five (5) foot vertical separation shall be maintained to a distance of twenty-five (25) feet from the side wall of the leachfield. In the upgradient direction, the five (5) foot vertical separation requirement may be waived as long as a restrictive layer or bedrock is no higher than the bottom of the stone within twenty-five (25) feet of the leachfield (Figure 1). Excavating into a restrictive layer or bedrock is not permitted unless otherwise approved by the Director.

32.9 Excavation- All trees, brush and stumps within the area of the leachfield and within ten (10) feet of the leachfield shall be removed. Care must be taken to assure that the soil at the bottom and sides of the excavation for the leachfield is not compacted or smeared. The bottom of the excavation shall be level and the bottom and sides of the excavation shall be scarified. In no case shall exposed boulders in the walls or bottom of the excavation be left in place. Voids created by the removal of boulders shall be filled with gravel meeting the requirements in Rule 32.12. Exposed roots within the excavation shall be cut back to the walls of the excavation. No part of the excavation for the leachfield shall be into groundwater. All storm deposited sand in the backdune environment and human transported material existing in the proposed leachfield and five (5) feet around and below shall be removed prior to OWTS installation unless the material is deemed to be acceptable to the Director.

32.10 Stone- The stone used in the leachfield shall consist of double washed stone ranging from not less than three quarter ($\frac{3}{4}$) inch to not more than two (2) inches in size and free of fines, soils, stone dust or debris. The stone shall be covered with a layer of synthetic filter fabric that meets the requirements of Rule 32.11.

32.11 Filter Fabric- A layer of non-woven synthetic filter fabric shall be placed over all stone used in the OWTS construction before backfilling. The filter fabric shall have adequate tensile strength to prevent ripping during installation and backfilling, adequate air permeability to allow free passage of gases, and adequate particle retention to prevent downward migration of soil particles.

32.12 Gravel

32.12.1 The gravel base material and, where applicable, the gravel between the trenches shall consist of clean sand and gravel free of organic matter and foreign substances. The gravel shall not contain any material larger than three (3) inches and up to ten percent (10%) may be sized between three-quarters ($\frac{3}{4}$) and three (3) inches. Gravel shall meet the following criteria:

Table 32.12.1

Sieve Size	Percent Passing
3/4"	100%
#4	55% - 100%
#10	40% - 100%
#40	10% - 50%
#100	0% - 20%
#200	0% - 5%

32.12.2 The gravel shall be placed in shallow lifts and properly compacted. The surface of the gravel upon which the stone will be laid shall be level and scarified.

32.13 Depth of Cover- The minimum cover over the invert of the distribution lines shall be one and one-half (1½) feet and the maximum cover shall be two and one-half (2½) feet. Minimum cover elevations shall be maintained over the full area of the leachfield, including area excavated pursuant to Rule 33.5.1.

32.14 Backfill- All backfill shall be free of boulders and stones greater than six (6) inches in diameter, frozen clumps of earth, rubbish, masonry, stumps or waste construction materials. Backfill shall be placed carefully to avoid displacement and damage to piping and chambers. Heavy machinery shall not be permitted to pass over the leachfield.

32.15 Fill Easements- Where fill is required and where it is necessary to fill beyond the boundary of the subject property to meet the requirements of these Rules, no approval will be granted unless the adjoining property owner(s) has given a permanent legal release (easement, etc.) filed in the land evidence records of the municipality granting such right to the owner of the applicant property. A copy of such right of access and use shall be attached to the application.

32.16 Adjacent Side Slope- A minimum ten (10) foot horizontal separation distance shall be provided between the outer edge of the stone in the outer dispersal trench and any ground surface elevation less than the elevation of the invert of the distribution line. The adjacent side slope shall not be steeper than 3:1 (horizontal:vertical) for a twenty-five (25) foot minimum distance from the edge of the stone in the dispersal trench or until the toe of the slope returns to the elevation of the original grade. The toe of the 3:1 slope shall be a minimum of five (5) feet from any property line.

32.17 Structural Retaining Walls- A minimum of twenty-five (25) feet shall be maintained from the outer edge of the stone in the outer dispersal trench to any structural retaining wall. If the structural retaining wall is above the seasonal high groundwater table a lesser setback distance may be allowed. A greater setback distance may be required for OWTSs with a design flow of one thousand (1000) gallons per day or more. The Department may require additional information, including but not limited to an analysis of the hydrogeological conditions of the site. Structural retaining walls shall be a minimum of two (2) feet from the property line unless the adjacent property owner grants the applicant written permission or a construction easement to provide access to install the wall. The wall design shall ensure adequate control of surface water runoff. The Director may require that the structural retaining wall be designed by a Professional Engineer registered in Rhode Island.

32.18 Surface Water Drainage- OWTSs shall be designed to prevent the flow of surface water from the surrounding area onto the leachfield. The OWTS design shall provide for diversion of surface water runoff so as not to cause or increase the severity of drainage problems to adjacent properties.

32.19 Leachfield Protection

32.19.1 Curbing- OWTSs serving other than individual dwellings shall be adequately curbed or fenced so as to exclude vehicular traffic, unless the OWTS is a concrete chamber OWTS constructed in accordance with Rule 34.9. Parking areas adjacent to a leachfield shall be graded or curbed to divert runoff from the leaching area.

32.19.2 The boundary of the leachfield shall be staked and flagged to protect the leachfield from vehicle traffic and excessive weight loads before and during construction of the OWTS and the structure. Flagging shall remain in place until all construction activities at the site are complete.

32.20 Finish Grade Stabilization- Immediately after completion of final grading, the area of disturbance due to installation of the OWTS shall be stabilized by mulching and seeding, or sodding, to establish a permanent vegetative cover to prevent erosion.

32.21 Replacement Area- If sufficient suitable area exists on the property for a replacement dispersal field area meeting the horizontal setback requirements in Rule 22, it shall be shown on the plan. If a suitable area does not exist, it shall not be shown.

RULE 33. DISPERSAL TRENCHES

33.1 Effective Leaching Area- The effective leaching area shall be determined by the amount of stone meeting the requirements of Rule 32.10 that is placed below the distribution line in the trench. The effective leaching area of dispersal trenches containing one-half (½) feet of stone below the pipe invert shall be the total bottom area. Credit will be allowed for added sidewall absorption area gained by increasing the depth of stone in the trenches. Such credit shall be determined in accordance with Table 33.1 which gives the square footage allowed per lineal foot of trench as the depth of stone increases. The maximum depth of stone allowed is one and one-half (1½) feet. The bottom of the dispersal trench shall have a maximum width of three (3) feet. The maximum depth of stone below the pipe invert shall be one-half (½) feet when any of the following occur:

33.1.1 The seasonal high groundwater table is within two (2) to four (4) feet of the original ground surface; or

33.1.2 A restrictive layer is within four (4) to six (6) feet of original ground surface;

Table 33.1. Effective Leaching Area

Depth of Stone Below Invert (Feet)	Area Allowed per Linear Foot of Trench (Sq. ft/ft)		
	24" Wide Trench	30" Wide Trench	36" Wide Trench
0.5	2.0	2.5	3.0
1.0	2.7	3.2	3.7
1.5	3.2	3.7	4.2

33.2 Distribution Lines

33.2.1 That portion of the distribution line from the distribution box to the beginning of the dispersal trench shall be a minimum of two (2) feet in length, SDR 35 PVC, imperforated and laid with watertight joints.

33.2.2 The invert of the distribution lines in the trench shall be two (2) inches lower than the invert of the outlet of the distribution box. The distribution lines in the trench shall be level. The first foot of the distribution line in the trench shall be imperforated SDR 35 PVC. Beyond the first foot, the distribution lines in the trench must consist of SDR 35 perforated PVC pipe with a minimum diameter of four (4) inches, or an equivalent pipe approved by the Director. The perforations shall be evenly spaced in two (2) rows, one on each side of center, located at thirty (30) degrees off vertical center in the lower half of the pipe. The perforations shall be no smaller than three-eighths (3/8) inch and no larger than five-eighths (5/8) inch in diameter. The ends of all distribution lines shall be interconnected.

33.2.3 The maximum length of a dispersal trench shall be as follows:

- (A) Without dosing – fifty (50) feet;
- (B) With a tipping distribution box – seventy-five (75) feet; or
- (C) With a pump – one hundred (100) feet.

33.3 Stone- The stone surrounding the distribution lines shall meet the requirements of Rule 32.10. The stone shall cover the full width of the trench, extend to the proper design depth, and extend at least two (2) inches above the top of the distribution lines. The stone shall be covered with a layer of synthetic filter fabric that meets the requirements of Rule 32.11.

33.4 Leachfield Construction Where the Invert of the Distribution Lines is Below Original Grade (See Figure 7)

33.4.1 The soil between the dispersal trenches shall remain undisturbed.

33.4.2 The Director may approve designs where the soil within the entire area of the leachfield is removed if the applicant shows that trench excavation is impractical, for example due to the presence of excessive boulders or stumps. If any B horizon soil remains, only tracked vehicles shall be allowed within this area to avoid compacting the soil. If the soil within the entire area of the leachfield is removed, the soil shall be replaced with properly compacted gravel meeting the requirements of Rule 32.12 to an elevation that will be two (2) inches above the top of the distribution lines. The trenches shall be excavated out of the compacted gravel.

33.4.3 A six (6) inch layer of gravel meeting the requirements of Rule 32.12 shall be placed below the stone in the dispersal trench. Where the bottom of the stone lies on or within a soil horizon that meets the description of Soil Category 1 from Rule 15.11 and such horizon is at least six (6) inches thick below the stone, the six (6) inch gravel layer is not necessary. However, if this Soil Category 1 horizon is described as extremely cobbly, the six (6) inch gravel layer shall be required.

33.4.4 The minimum distance between walls of adjacent dispersal trenches shall be five (5) feet, however, greater distances are recommended.

33.5 Leachfield Construction Where the Invert of the Distribution Lines is Above Original Grade
(see Figure 8)

33.5.1 The leachfield and five (5) feet beyond the leachfield shall be stripped of all topsoil (A horizons). In order to avoid compaction of the B soil horizon, only tracked vehicles shall be allowed within this area.

33.5.2 Properly compacted gravel that meets the requirements of Rule 32.12 shall be placed throughout the excavation to an elevation that will be two (2) inches above the top of the distribution lines. Dispersal trenches shall be excavated out of the compacted gravel. There shall be a minimum six (6) inch gravel base layer meeting the requirements of Rule 32.12 below the stone.

33.5.3 The maximum depth of stone below the distribution line invert shall be one-half (½) feet; and

33.5.4 The minimum distance between walls of adjacent dispersal trenches shall be ten (10) feet.

33.6 Leachfield Construction on Sloping Sites- Where the dispersal trenches are to be constructed such that the invert of the distribution lines in the trenches will not all be at the same elevation, the invert of the distribution lines shall be below the original grade, the distribution lines in the trenches shall be laid level, and the leachfield shall be constructed in accordance with the following (see Figure 9):

33.6.1 The distribution box shall provide equal dosing to each dispersal trench;

33.6.2 A tipping distribution box or pump shall be used;

33.6.3 Leachfield trenches shall be parallel to the contours of the existing grade where possible;

33.6.4 The ends of the distribution lines shall be connected by a relief line that is imperforated, SDR 35 PVC laid with watertight joints that is of the same diameter as the perforated pipe that it connects;

33.6.5 The minimum distance between walls of adjacent dispersal trenches shall be ten (10) feet;

33.6.6 Gravel shall be placed below the stone in accordance with Rule 33.4.2;

33.6.7 Each dispersal trench must meet the adjacent side slope requirements of Rule 32.16;

33.6.8 The soil between the dispersal trenches shall remain undisturbed. If the presence of boulders or other obstacles make trench excavation impractical, the OWTS shall be constructed in accordance with Rule 33.5; and

33.6.9 The Director may require that OWTSs with a design flow exceeding six hundred ninety (690) gallons per day submit additional information regarding wastewater loading and groundwater flow to ensure OWTS effectiveness on sloping sites.

33.7 Location Under Traffic Areas- The leachfield for a dispersal trench system shall not be paved or subject to vehicular traffic, including parking.

33.8 Summary of Dispersal Trench Construction Details:

Maximum length per line without dosing	50 feet
Maximum length per line with tipping distribution box	75 feet
Maximum length per line with pump	100 feet
Minimum diameter of distribution lines	4 inches
Maximum width of dispersal trench bottom	3 feet
Minimum distance between walls of adjacent trenches	5 feet/10 feet*
Minimum cover over invert of distribution lines	1.5 feet
Maximum cover over invert of distribution lines	2.5 feet

* 10 feet for those OWTSs on sloping sites and for those OWTSs where the invert of the distribution lines is above original grade.

RULE 34. CONCRETE CHAMBERS

(See Figure 10)

34.1 An OWTS using precast concrete chambers may be constructed in lieu of a dispersal trench OWTS. Concrete chambers must be preceded by a septic tank and must be installed in a trench configuration. Deep concrete chambers meeting the requirements of Rule 34.4 will not be permitted except for OWTS Applications for Repair when no other type of leachfield can be utilized.

34.2 Shallow Concrete Chambers

34.2.1 Dimensions- Shallow concrete chambers are four (4) feet by eight (8) feet by eighteen (18) inches deep with an open bottom and perforated side walls.

34.2.2 Site limitations- Shallow concrete chambers shall not be permitted where any of the following occur:

- (A) The chamber invert would be more than one (1) foot above the original grade;
- (B) The chamber inverts would be set at different elevations; or
- (C) The seasonal high groundwater table is less than four (4) feet from the original ground surface.

34.3 Shallow Concrete Chamber Effective Leaching Area- Effective leaching area for shallow concrete chambers shall be calculated based on Table 34.3. Required minimum leaching area shall be calculated in accordance with Rule 32.2.

Table 34.3: Shallow Concrete Chamber Effective Leaching Area

	Shallow Concrete Chambers	
	12" stone below	24" stone below (Note 1)
Each end unit (sq. ft.)	78	102
Each Interior Unit (sq. ft.)	64	80

Note 1: Shallow concrete chambers installed with twenty-four (24) inches of stone below the chamber may be used for OWTS Applications for Repair only.

34.4 Deep Concrete Chambers- Deep concrete chambers are approximately equal in width and depth with an open bottom and perforated side walls.

34.5 Deep Concrete Chamber Effective Leaching Area- Effective leaching area for deep concrete chambers shall be calculated based on Table 34.5. Required minimum leaching area shall be calculated in accordance with Rule 32.2.

Table 34.5: Deep Concrete Chamber Effective Leaching Area

	Deep Concrete Chambers (Note 1)
	12" stone on sides, 12" stone below
Each end unit (sq. ft.)	98
Each Interior Unit (sq. ft.)	58

Note 1: Deep concrete chambers may only be used under limited circumstances pursuant to Rule 17.7.3.

34.6 Concrete Chamber Construction

34.6.1 Concrete chambers shall be constructed of precast concrete. The bottom of the chambers shall be open and the sides and end (end units) shall be perforated.

34.6.2 Access- The top of the chamber trench shall have an access opening into a chamber at intervals not greater than fifty (50) feet that consists of a removable cover of concrete, iron or other durable material. For OWTSs designed to dispose of up to two thousand (2,000) gallons per day and OWTSs that are not located under a paved area, the top of the access opening shall accommodate a watertight riser and shall be brought to within one (1) foot of the finished grade and properly marked. For OWTSs designed to dispose of greater than two thousand (2,000) gallons per day, commercial OWTSs, and all OWTSs located under paved areas, the access openings shall meet the following requirements:

- (A) Access openings shall have a watertight riser and shall be brought to finished grade;

(B) Lids for the openings at finished grade shall prevent unauthorized entry by meeting either of the following:

(i) Lids shall weigh a minimum of fifty-nine (59) pounds and fit tightly into the riser as shown in Figure 6; or

(ii) Lids shall be tamper resistant and mechanically fastened.

(C) Surface water shall be diverted away from the access openings; and

(D) Concrete chambers in place as of the effective date of this amendment that have access openings to finished grade shall be in compliance with the provisions of 34.6.2(B) within five (5) years of the effective date of this amendment.

34.7 Excavation and Construction of a Concrete Chamber Leachfield

34.7.1 The overall width of the trench must not exceed six (6) feet.

34.7.2 Spacing- The minimum distance between walls of adjacent trenches in a concrete chamber leachfield shall be at least six (6) feet.

34.7.3 The soil between the dispersal trenches shall remain undisturbed. The Director may approve designs where the soil within the entire area of the leachfield is removed if the applicant shows that trench excavation is impractical, for example due to the presence of excessive boulders or stumps. When the soil within the entire area of the leachfield is removed, the soil shall be replaced with properly compacted gravel meeting the requirements of Rule 32.12 to a depth that will be to the top of the chamber. The trench shall be excavated out of the compacted gravel.

34.7.4 A six (6) inch layer of gravel meeting the requirements of Rule 32.12 shall be placed below the stone in the trench. Where the bottom of the stone lies on or within a soil horizon that meets the description of Soil Category 1 from Rule 15.11 and such horizon is at least six (6) inches thick below the stone, the six (6) inch gravel base layer is not necessary. However, if this Soil Category 1 horizon is described as extremely cobbly, the six (6) inch gravel base layer shall be required.

34.7.5 Stone- Stone meeting the requirements of Rule 32.10 shall be placed beneath the chamber in accordance with Rule 34.3 or Rule 34.5. The space between the excavation and the chamber wall shall be twelve (12) inches and shall be backfilled with stone to the top of the chamber. The stone and the top of the chambers shall be covered with filter fabric that meets the requirements of Rule 32.11.

34.8 Effluent Distribution

34.8.1 The maximum length of a chamber trench shall be as follows:

(A) Without dosing— fifty (50) feet;

(B) With a tipping distribution box – seventy-five (75) feet; or

(C) With a pump— one hundred (100) feet.

34.8.2 Effluent shall be applied to the chamber trenches at least every twenty-five (25) feet.

34.8.3 For multiple trench concrete chamber leachfields, the ends of the chamber trenches shall be interconnected with imperforated SDR 35 PVC pipe laid with watertight joints. If the pipe will be subject to vehicular traffic, it shall be Schedule 40 PVC.

34.9 Location Under Traffic Areas- The area subject to vehicular traffic, including parking areas, shall be limited to twenty-five percent (25%) of the leachfield area. Where any portion of the leachfield is installed under an area subject to vehicular traffic, the structure must be capable of withstanding HS-20 wheel loads. All access manholes in areas subject to vehicular traffic shall be brought to grade with covers and frames capable of withstanding HS-20 wheel loads and meeting the requirements of 34.6.2 (A)-(D). Such OWTSs must be vented with screened vents located in a protected area.

RULE 35. LARGE OWTS REQUIREMENTS

35.1 Applicability- Large OWTSs defined below shall comply with all other applicable provisions of these Rules in addition to the requirements in this Rule 35. A large OWTS shall be any OWTS designed, installed or operated that meets any of the following:

35.1.1 Any single OWTS designed to treat five thousand (5,000) gallons or more per day;

35.1.2 Multiple OWTSs for any project on one or more parcels of land, excluding residential subdivisions, where the total design flow for the project is five thousand (5,000) gallons or more per day; or

35.1.3 Multiple OWTSs serving more than one (1) unit in a residential subdivision provided that the total design flow of these OWTSs, each serving more than one unit, is five thousand (5000) gallons or more per day.

35.2 Impact Analysis- In addition to the required soil evaluation, applicants for an OWTS that meet the requirement of large OWTSs and where the groundwater is classified GAA or GA in accordance with the DEM "Rules and Regulations for Groundwater Quality" shall be required to demonstrate that the proposed disposal site is capable of accepting and transmitting effluent at the proposed application rate without adverse impact to groundwater or surface water. Such analysis shall include, but not necessarily be limited to, modeling of nitrate concentrations in groundwater downgradient of the OWTS at any compliance point defined as the property boundary, drinking water well, or other sensitive receptor as determined by the Director. This compliance point may extend downgradient beyond the applicant's property line if the adjacent property is designated as a groundwater discharge zone in accordance with the DEM "Rules and Regulations for Groundwater Quality." The nitrate concentration modeling shall be done in accordance with the following:

35.2.1 For a single OWTS designed to treat five thousand (5,000) gallons or more per day (Rule 35.1.1), the applicant shall conduct a nitrate impact analysis that models a contaminant plume emanating from the OWTS;

35.2.2 For large OWTS defined pursuant to Rules 35.1.2 and 35.1.3 where one or more of the OWTSs is designed to treat one thousand (1,000) gallons or more per day but less than five thousand (5,000) gallons per day, the nitrate impact analysis may use the entire project site for nitrate dilution modeling unless the Director requires a nitrate impact analysis that models a contaminant plume emanating from any of the OWTSs; and

35.2.3 For large OWTS defined pursuant to Rules 35.1.2 and 35.1.3 where all of the OWTSs are designed to treat less than one thousand (1,000) gallons per day, the nitrate impact analysis may utilize the entire project site for nitrate dilution modeling.

35.3 Preliminary Report- Prior to or concurrent with preparation of detailed plans and specifications for a large OWTS, a preliminary report, describing the suitability of the site, and nature and scope of the project shall be submitted in addition to the data requirements of Rule 18. The preliminary report shall include:

35.3.1 Soil evaluation, where required by Rule 17;

35.3.2 Description of the OWTS with preliminary plans and specifications;

35.3.3 Characteristics of the wastewater;

35.3.4 Groundwater mounding calculations for any of the component leachfields that are sized for a design flow of five thousand (5000) gallons per day or greater;

35.3.5 Impact analysis required in Rule 35.2;

35.3.6 Construction materials; and

35.3.7 Schedule for phased development.

35.4 Final Report- Complete plans and specifications shall be submitted following approval of preliminary plans to include:

35.4.1 Detailed plans and specifications;

35.4.2 Plan of Construction; and

35.4.3 Plan for operation and maintenance of the OWTS including qualifications of those responsible for maintenance and long-term agreements for maintenance. Such plan shall specify frequency of monitoring and performance inspections and shall include routine maintenance logs needed for proper operation of the OWTS.

35.5 Groundwater Monitoring- Groundwater monitoring for nitrate and other possible contaminants, at a frequency to be determined by the Director, may be a required condition of the permit approval. Pursuant to the DEM "Rules and Regulations for Groundwater Quality", the Department may require that actions be taken by the applicant when concentrations of nitrate in the groundwater at the point of compliance exceed the preventive action limit of five (5) mg/l.

RULE 36. ALTERNATIVE TOILETS

36.1 Alternative toilets include composting toilets that comply with the requirements of the National Sanitation Foundation Standard 41 "Non-Liquid Saturated Treatment Systems" and incinerator toilets. Alternative toilets shall be installed, operated and maintained in accordance with the manufacturer's specifications; have a positive ventilation system; and must convert toilet contents to an inert, stable, or otherwise harmless condition.

36.2 Separate OWTS- When an alternative toilet is utilized, a separate OWTS shall be provided for the treatment of any graywater and designed on sixty percent (60%) of the normal daily design flow as determined by Rule 21. If wastewater from any conventional toilets is directed to this leachfield, the leachfield must be designed for one hundred percent (100%) of the daily design flow.

36.3 Residuals- Residuals or compost produced by alternative toilets may be buried on site. Residuals shall not be applied to food crops.

RULE 37. ALTERNATIVE OR EXPERIMENTAL TECHNOLOGY

37.1 No person shall submit an OWTS design application incorporating an alternative or experimental component or technology for wastewater treatment unless such technology has been placed on the Department's approved Alternative or Experimental Technology List.

37.2 Administrative- The Department shall:

37.2.1 Maintain a list of all the approved Alternative or Experimental technologies and all approved guidance documents;

37.2.2 Charge fees to cover the cost of administering the Alternative or Experimental approval procedure, and reviewing, monitoring and tracking the performance of alternative or experimental technologies; and

37.2.3 Have the authority to remove any approved Alternative or Experimental technology from the Department's approved list whenever the applicant fails to submit reports or monitoring data; fails to perform required maintenance; or fails to fulfill any other required tasks stated within these Rules, the approval letter or the approved guidance document.

37.3 Application Procedure- Application shall be on forms approved by the Director, and shall include the proper fee, all required submittals, performance data and a draft guidance document that details all design, installation, operation and maintenance, and other requirements.

37.4 Alternative Technology Evaluation Criteria- The Director may approve an alternative OWTS or technology if it meets the following criteria:

37.4.1 Class One:

(A) The applicant provides at least four (4) consecutive years of performance data per installation for no fewer than ten (10) installations with data collected no less frequently than quarterly that demonstrates that department standards are met; and

(B) The applicant demonstrates that the technology has been approved and utilized successfully for at least four (4) consecutive years in Rhode Island with no fewer than ten (10) installations or at least four (4) consecutive years in at least three other jurisdictions with no fewer than ten (10) installations in each jurisdiction.

37.4.2 Class Two:

(A) The applicant provides at least two (2) consecutive years of performance data per installation for no fewer than ten (10) installations with data collected no less frequently than quarterly, that documents that Department standards are met;

(B) The applicant demonstrates a theory or applied research; and

(C) The applicant demonstrates that the technology has been approved and utilized successfully for at least two (2) consecutive years in Rhode Island or at least two (2) consecutive years in another jurisdiction with no fewer than ten (10) installations in each jurisdiction.

37.4.3 Only those alternative technologies that have been approved and are on the approved Alternative or Experimental Technology List shall be permitted by the Director.

37.5 Alternative OWTS Component Evaluation Criteria- The Director may approve an Alternative OWTS Component if it meets the following criteria:

37.5.1 Class One:

(A) The applicant documents that applicable manufacturer's and material standards are met;

(B) The applicant provides at least two (2) consecutive years of performance data for no fewer than ten (10) installations that demonstrates Department standards are met, if applicable; and

(C) The applicant demonstrates that the component has been approved and utilized successfully for at least two (2) consecutive years in Rhode Island or at least two (2) years in at least three (3) other jurisdictions for no fewer than ten (10) installations in each jurisdiction.

37.5.2 Class Two:

(A) The applicant documents that applicable manufacturer's and material standards are met;

(B) The applicant provides one year of performance data for no fewer than ten (10) installations that demonstrates Department standards are met, if applicable;

(C) The applicant demonstrates a theory or applied research; and

(D) The applicant demonstrates that the component has been approved and utilized successfully for a minimum of one (1) year in Rhode Island or in at least one (1) other jurisdiction with no fewer than ten (10) installations.

37.5.3 Only those Alternative OWTS components that have been approved and are on the approved Alternative or Experimental Technology List shall be permitted by the Director.

37.6 Experimental Technology Evaluation Criteria

37.6.1 Experimental Technology applicants shall propose at least three (3) sites and no more than ten (10) sites where the technology will be applied. The Director reserves the right to waive this requirement for multi-family or commercial OWTSs.

37.6.2 The Director may approve an Experimental Technology if it meets the following criteria:

(A) The applicant shall demonstrate that the Experimental Technology will work in practice and in theory;

(B) Each location shall provide a suitable area for the installation of an OWTS permitted under these Rules, or an OWTS on the Department's approved Alternative Technology Class One;

(C) The applicant proposing the Experimental Technology, the property owner and subsequent purchasers shall submit a signed statement to the Director agreeing to abandon the Experimental Technology and install an OWTS permitted under these Rules, or a Department approved Alternative OWTS Class One if the Experimental Technology fails to perform as designed; and

(D) The applicant submits documentation securing a bond or other form of financial security acceptable to the Director, to replace the entire OWTS in the event it fails to perform as designed.

37.7 Review and Approval

37.7.1 The Director shall review the application and respond as follows:

- (A) Approve or deny the application as submitted;
- (B) Recommend resubmission of the application with modifications as proposed by the Director;
- (C) Recommend resubmission and reclassification under Rules 37.4 –37.6; or
- (D) Recommend both resubmission of the application with modifications and reclassification.

37.7.2 Technical Review- The Department shall establish an Onsite Wastewater Treatment System Technical Review Committee (OWTS TRC) consisting of individuals with technical or scientific knowledge applicable to OWTS whose purpose is to provide technical advice to the Director. The Department shall select members for the OWTS Technical Review Committee from one or more of the following organizations: Department of Environmental Management; CRMC or other state agencies; University/college academic communities; OWTS design and installation firms; Environmental organizations; Public utilities; Builders; Local municipalities; and Other parties. At the request of the Director, the OWTS Technical Review Committee may review the application and submit recommendations on the proposed Alternative Technology, Alternative OWTS Component or Experimental Technology. Recommendations from the OWTS Technical Review Committee shall be submitted to the Director within ninety (90) days from the application date.

37.7.3 The Director may establish special conditions as necessary to ensure adequate protection of the public health and the environment in its approval of alternative or experimental technologies. Such conditions may include without limitations: special qualification requirements for designers and installers; specification of site characteristics; or monitoring, testing and reporting requirements.

37.7.4 If the Alternative or Experimental Technology is approved by the Director, the applicant shall submit a finalized guidance document to the Director detailing all design, installation, operation and maintenance requirements. Once the guidance document has been approved, the Alternative or Experimental Technology shall be placed on the Department's list. The Department shall maintain the approved Alternative or Experimental Technology List and maintain all appropriate guidance documents for the following:

- (A) Alternative or Experimental Technologies that are approved by the Director; and
- (B) Alternative OWTS Components that are approved by the Director.

37.8 Approved Alternative or Experimental Technologies

38.7.1 The Director may require any of the following:

- (A) Monitoring or sampling of any OWTS or OWTS component;
- (B) Submittal of evaluation reports when an OWTS or OWTS component's performance is evaluated; or
- (C) An annual report of all OWTS or component installations, failures and corrective action taken.

37.8.2 Persons desiring to modify an approved Alternative or Experimental Technology currently on the approved Alternative and Experimental Technology List shall make the request in writing and submit the following to the Department:

- (A) Documentation demonstrating the applicant's compliance with the terms or conditions of the original approval of the Alternative or Experimental Technology; and
- (B) Required fees, in accordance with Rule 50 for Alternative or Experimental Technology.

37.8.3 In order to remain on the Department's approved Alternative and Experimental Technology List, the applicant shall submit:

- (A) Application for renewal ninety (90) days before expiration of the certification;
- (B) Renewal fee in accordance with Rule 50; and
- (C) Documentation that the applicant is in compliance with the requirements of these Rules and in compliance with the expiring certification.

37.9 OWTS Applications Utilizing Alternative and Experimental Technology- Once an Alternative or Experimental Technology application is approved, individual applications to design, construct, alter, or install a Department approved Alternative or Experimental Technology may be submitted to the OWTS Section of the Office of Water Resources.

37.9.1 All applicants obtaining an OWTS permit for a Department approved Alternative or Experimental Technology requiring special operation and maintenance procedures shall:

- (A) File a copy of the initially executed contract for the OWTS's operation and maintenance, (including all required maintenance procedures and monitoring schedules) with the land evidence records of the municipality in which the OWTS is located; and
- (B) Submit to the Department a certified copy of the recorded permit setting forth the date of the recordation and the book and page where the permit is located in the records of the municipal land evidence office.

37.9.2 The Department shall not issue a conformance until the documents in Rule 37.9.1 are recorded with the municipality and a certified copy of the recorded permit is submitted to the Department.

RULE 38. CRITICAL RESOURCE AREAS -- GENERAL

38.1 Areas have been identified as critical resource areas which are deemed to be particularly sensitive to the detrimental effects of nutrients, pathogenic organisms, organic chemicals and other substances that may be present in effluent from OWTs. These areas are in need of special protection from such effects due to the unique and irreplaceable value of the resource as a public water supply, fisheries habitat or public recreation area.

38.2 Standards for siting and design of OWTs in these Rules 38, 39, and 40 are established to enhance the treatment capability of OWTs and thereby reduce the potential for adverse effects to critical resources. In areas designated as critical resources, the standards of Rules 38, 39, and 40 shall supersede minimum standards wherever applicable.

38.3 Designation- Areas designated as critical resource areas are defined below in Rule 38.3.1 – 38.3.3. If the applicant disputes a delineation in Rule 38.3.1 – 38.3.3, the applicant may attempt to demonstrate to the Director by a preponderance of clear and scientifically valid evidence that the delineation in question is incorrect. If the applicant claims that the groundwater flow from the OWT does not recharge the critical resource area, the applicant may submit a groundwater flow study that demonstrates to the Director by a preponderance of clear and scientifically valid evidence that groundwater does not recharge the critical resource.

38.3.1 Salt Pond Critical Resource Area: The watersheds, or portion thereof, to the salt ponds of Charlestown, Narragansett, South Kingstown, and Westerly as determined by the Rhode Island Coastal Resources Management Council's Salt Ponds Region Special Area Management Plan (see Figure 11), unless a determination of the groundwater recharge area to the salt ponds has been adopted by the Department and the Coastal Resources Management Council. The salt ponds critical resource area includes the watersheds, or portion thereof, to the following: Maschaug Pond, Winnapaug Pond, Quonochontaug Pond, Ninigret Pond, Green Hill Pond, Trustom Pond, Cards Pond, Potter Pond, and Pt. Judith Pond.

38.3.2 Narrow River Critical Resource Area: The Narrow River watershed, or portion thereof, as determined by the Rhode Island Coastal Resources Management Council's Narrow River Special Area Management Plan (see Figure 12), unless a determination of the groundwater recharge area to the Narrow River has been adopted by the Department and the Coastal Resources Management Council.

38.3.3 Drinking Water Supply Watersheds: Watersheds of public water system drinking water supply reservoirs, unless a determination of the groundwater recharge area to the reservoir has been adopted by the Department. The public water systems include the following and any other public water system with a drinking water supply reservoir approved by the Rhode Island Department of Health (see Figures 13-16): Bristol County Water Authority, Cumberland (town of), Eleanor Slater Hospital/Zambarano Unit, Jamestown (town of), New Shoreham (town of), Newport (city of), Pawtucket Water Supply Board, Providence Water Supply Board, Stone Bridge Fire District, Woonsocket (city of), and Yawgoog Scout Reservation.

38.4 OWTS Location- The applicant shall be required to certify the location of a disposal area with respect to any critical resource area. If the Department determines that an OWT may be wholly or partially located within a critical resource area, the applicant shall be required to provide evidence of the location with respect to the critical resource.

38.5 OWTS Applications for Alteration to a Structure in Critical Resource Areas- An OWTS Application for Alteration to a Structure which will result in an increase in the flow or change in the type of wastewater within a Critical Resource Area may be approved only when the OWTS satisfies all design and siting requirements of the Rules in effect at the time of permit application.

RULE 39. REQUIREMENTS IN THE SALT POND AND NARROW RIVER CRITICAL RESOURCE AREAS

39.1 For OWTSs located in the Salt Pond and Narrow River critical resource areas as defined in Rule 38.3.1 and Rule 38.3.2, respectively, the standards established in Rule 38 and in this Rule 39 shall supersede minimum standards established elsewhere in these Rules.

39.2 Nitrogen Reducing Technology- Nitrogen reducing technology shall be required for all OWTS Applications for New Building Construction, all OWTS Applications for Alteration to a Structure, and OWTS Applications for Repair that include leachfield expansion or replacement in the Salt Pond and Narrow River critical resource areas. Applicants must still meet all CRMC established density and other requirements where applicable.

39.3 Location- The horizontal distances between the parts of any OWTS and the feature requiring a setback shall not be less than those shown in Table 22.1 and 22.3.

39.4 Site Suitability- OWTS shall not be located where the seasonal high groundwater table is within five (5) feet of the original ground surface, or where a restrictive layer or bedrock is within seven (7) feet of the original ground surface, except in areas where the seasonal high groundwater table is within two (2) to five (5) feet of the original ground surface, or where a restrictive layer or bedrock is within four (4) to seven (7) feet of the original ground surface and either of the following occur:

39.4.1 Application is for an Alternative or Experimental OWTS approved pursuant to Rule 37 for use under these conditions; or

39.4.2 Application is for a dispersal trench OWTS that meets all of the following conditions:

(A) The maximum depth of stone below the distribution pipe invert is one-half (0.5) feet;

(B) The minimum distance between walls of adjacent dispersal trenches is ten (10) feet; and

(C) Twenty-five (25) feet shall be maintained from the leachfield to any area where the groundwater table is less than two (2) feet to the original ground surface, or where bedrock is less than four (4) feet to the original ground surface or any floodplain (excluding flooding caused by coastal storm surges).

39.5 OWTS Vertical Separation Distance to Groundwater- The bottom of the stone underlying the leachfield shall be at least four (4) feet above the seasonal high groundwater table when either soil category 1, 2, 3, 4, or 6 are encountered in determining the maximum leachfield loading rate in accordance with Rule 33.2.2.

RULE 40. REQUIREMENTS IN DRINKING WATER SUPPLY WATERSHEDS

40.1 For OWTSs located in drinking water supply watersheds as defined in Rule 38.3.3, the standards established in Rule 38 and this Rule 40 shall supercede minimum standards established elsewhere in these Rules.

40.2 Subsurface Drains- Subsurface drains to lower the seasonal high groundwater table are not permitted.

40.3 OWTS Separation Distance to Groundwater- The bottom of the stone underlying the leachfield shall be at least 4 feet above the seasonal high groundwater table when either soil category 1, 2, 3, 4, or 6 are encountered in determining the maximum leachfield loading rate in accordance with Rule 32.2.2.

40.4 Location- The horizontal distances between the parts of any OWTS and the feature requiring a setback shall not be less than those shown in Table 22.2.

RULE 41. NITROGEN LOADING IN AREAS OF ON-SITE DRINKING WATER WELLS

41.1 Applicability- For all OWTS applications for New Building Construction and for Alterations to a Structure, the design flow for an OWTS shall not exceed three hundred forty five (345) gallons per day per twenty thousand (20,000) square feet where the property utilizing the OWTS is served by an on-site drinking water well (public or private), except as provided for below in Rule 41.2 and Rule 41.3. The Director may require this standard to be met for OWTS Applications for Repair in areas where the groundwater is shown to exceed the Preventive Action Limit for nitrate of five (5) mg/l, pursuant to the DEM “Rules and Regulations for Groundwater Quality.” The three hundred forty five (345) gallons per day per twenty thousand (20,000) square feet loading limitation is equivalent to approximately one-sixth (1/6) acre per bedroom. This Rule applies to all OWTS except those subject to the requirements of Rule 35. Applicants must still meet all CRMC established density and other requirements where applicable. Compliance with Rule 41 does not relieve applicants of the nitrogen reducing technology requirements in Rule 39.

41.2 Design Flow Calculation- The three hundred forty five (345) gallons per day per twenty thousand (20,000) square feet design limit may be exceeded for OWTSs utilizing nitrogen reducing technology. The allowed design flow with a nitrogen reducing technology is derived using Equation 41.2 or read from Table 41.2. For the purposes of Rule 41, there are no limits on the design flow of OWTSs with nitrogen reducing technology that are approved by the Director as meeting the nitrogen standard of ten (10) mg/l.

Equation 41.2 Nitrogen Loading

$$\frac{1}{1 - \left(\frac{\% \text{ Nitrogen Removal}}{100} \right)} \times 345 \text{ gpd}$$

Table 41.2 Nitrogen Loading

Nitrogen Removal (Percentage)	Maximum Design Flow per 20,000 sq. ft. (gpd)
33	515
50	690
66	1015
75	1380

41.3 Exceedance of Design Flow Calculation- The three hundred forty five (345) gallons per day per twenty thousand (20,000) square feet design limit or other design limit utilizing nitrogen reducing technologies pursuant to Rule 41.2 may be exceeded by the establishment of nitrogen credit land meeting the requirements of Rule 41.4 under the following circumstances:

41.3.1 For subdivisions- The design limit must be met over the entire area of the subdivision. This can be met by designating portions of the subdivision as nitrogen credit land.

41.3.2 For individual lots- The design limit can be calculated by establishing adjacent properties as nitrogen credit land with the consent of the property owner.

41.4 Nitrogen Credit Land- Nitrogen credit land cannot be designated on land that is already being used to meet the nitrogen loading requirements for an OWTS approved by the Director. Nitrogen credit land must be restricted by a deed restriction, conservation easement, or other appropriate legal instrument recorded in the municipal land evidence records such that:

41.4.1 Addition of nitrogen from wastewater discharge, nitrogenous fertilizer (synthetic or natural), and raising and grazing livestock is prohibited; and

41.4.2 Impervious surfaces, which reduce recharge, including paved streets, paved parking areas, and structures are prohibited.

RULE 42. PERMIT EXPIRATION

42.1 Expiration of Permits for OWTS Applications for New Building Construction and OWTS Applications for Alteration to a Structure- All permits for OWTSs for New Building Construction and OWTSs for Alteration to a Structure approved in accordance with Rule 17 shall expire five (5) years from the date of the issuance of the permit.

42.2 Expiration of Permit After Start of Construction- Notwithstanding Rule 42.1, where a permit for an OWTS for New Building Construction has been issued, and construction of the building foundation or OWTS has begun, the applicant shall have one (1) year from the start of construction, within which to complete both the foundation and OWTS. If the building foundation and OWTS are not completed within one (1) year of the commencement of construction, the permit, including any variances or decisions issued through the variance process or by the Director, shall expire. The Director may waive this expiration requirement for good cause.

42.3 Expiration of Permits For OWTS Repairs- All permits for repairs to OWTSs issued in accordance with Rule 17.6 shall expire as follows:

42.3.1 Where a permit for OWTS repair is issued following the property owner's receipt of a Notice of Violation issued by the Department, all repair work must be completed within the time periods set forth in the Notice of Violation; and

42.3.2 In all other cases, permits for OWTS repair shall expire as specified in the permit itself. In no case shall any permit for a repair to an OWTS be valid for more than one year from the date of issuance of the permit.

42.4 Expiration of Unconformed Installed Systems- OWTSs that have been installed but not conformed, as of the effective date of these Rules, because the building sewer has not been connected through the building foundation to the interior plumbing shall be reviewed on a case-by-case basis in accordance with the Rules in effect at the time of the system's installation.

RULE 43. OWTS INSTALLATION

43.1 License Required- Installation, construction, alteration, or repair of any OWTS shall be performed by an installer licensed in accordance with Rule 13, or a master plumber licensed under Chapter 5-20 of the General Laws of Rhode Island, as amended. This requirement does not apply to an applicant installing, constructing, altering, or repairing an OWTS to serve a building the applicant occupies or will occupy as the applicant's intended permanent domicile, provided that the applicant has obtained written permission for that work and has obtained the Director's approval of the plans and specifications for that work prior to the start of any construction.

43.2 Responsibilities of a Licensed Installer- A licensed installer shall adhere to the following:

43.2.1 Perform all work in compliance with approved plans and specifications only;

43.2.2 Report to the licensed designer discrepancies on an approved plan which the installer may note during construction;

43.2.3 Utilize only quality grade construction materials approved by the Director;

43.2.4 Utilize only the best construction techniques to provide for the best possible installations;

43.2.5 Work only under valid plans approved by the Director, and to commence work only after completely reviewing the entire approval including the application, the layout plans, all typical specification sheets, and other attachments;

43.2.6 Adhere to each and every term of approval as stipulated by the Director in his or her approval of the particular plan; and

43.2.7 Stop construction and notify the licensed designer if unanticipated conditions are encountered that indicate the OWTS cannot be installed in accordance with the approved application, plan and specifications, or any terms and conditions contained therein.

43.3 Responsibilities of a Licensed Designer- The licensed designer shall be responsible for witnessing and inspecting the installation of the OWTS that the designer has designed. In no case shall the individual witnessing and inspecting the installation of the OWTS be the licensed installer who installs the OWTS, except for the repair of an OWTS. Any individual assisting a licensed designer in witnessing and inspecting the installation of an OWTS must be an employee of the same business entity as the licensed designer, and

such individual must work under the licensed designer's direct supervision in respect to witnessing and inspecting the installation of the OWTS. The licensed designer shall be available to directly witness and inspect the system installation to resolve any instances of non-compliance, design conflicts resulting from changed conditions or other circumstances, or as may be requested by the Department. The licensed designer shall inform the owner, in writing, of any special conditions, operating requirements, or periodic maintenance needs associated with the installed OWTS.

43.4 Areas Served by Private Drinking Water Wells- Prior to installation of an OWTS in areas served by private drinking water wells, the designer shall verify that conditions on site and adjacent to the site are the same as at the time of design approval, or have not changed in a manner that would affect the original design. If conditions have changed in a manner that would affect the original design, the designer shall notify the Department prior to installation of the OWTS.

43.5 Notification to Department- The designer shall notify the Department during normal business hours at least twenty-four (24) hours prior to the installation of any OWTS. The Department, at its discretion, may inspect any aspect of the installation.

43.6 Inspection- The designer shall, at minimum, inspect and make measurements, where appropriate, of the following components and steps in the installation of the OWTS:

43.6.1 The exposed bottom of the excavation for the leachfield;

43.6.2 The size and condition of all structures such as the septic tank, distribution box, flow diffusers, etc.;

43.6.3 The elevation of all pipe inverts;

43.6.4 All sand media and aggregate is in accordance with specifications and is placed in accordance with the design plan;

43.6.5 Completed installation prior to covering;

43.6.6 The type of backfill and that the backfill is properly placed and compacted;

43.6.7 Final soil cover; and

43.6.8 All horizontal setbacks, including from the building and any wells on-site or on abutting lots.

43.7 Unforeseen Conditions- If conditions are encountered during construction which indicate that the OWTS cannot be installed or is not installed in accordance with the permit, or any terms and conditions contained therein, the designer shall notify the Director as soon as possible, but no later than twenty-four (24) hours after discovery. The Department shall maintain written guidance on specifications for construction tolerances as well as conditions under which as-built plans and redesigned plans are required. The designer shall stop construction if conditions are such that a redesign is required. Notification is not required if all design elements are within the tolerances established by the Department through written guidance. In response to the designer's notification, the Director shall either:

43.7.1 Authorize the designer to proceed with the work on-site and to provide appropriate documentation to the Department as may be required by the Director;

43.7.2 Require the designer to submit as-built plans within ten (10) business days after the OWTS is installed to record changes that are in compliance with the standards in these Rules, but which need to be documented; or

43.7.3 Require the designer to submit redesigned plans and specifications to the Director for approval showing changes from the original approved application, plan and specifications.

43.8 Installation Verification- The designer shall collect the information in Rules 43.8.1 - 43.8.4 that can be used to verify that the installation of the OWTS was performed as specified. The designer shall keep this information on file for a minimum of ten (10) years from the date of the Certificate of Construction in Rule 44. At the Department's request, the designer shall make this information available for review.

43.8.1 Daily inspection report (weather conditions, individuals on-site, work accomplished, and other information customarily included in inspection reports);

43.8.2 A minimum of two photographs of the OWTS being installed, which must include the bottom bed and the completed system prior to covering;

43.8.3 List of all materials used, their source, and the dates delivered to the site; and

43.8.4 Product specification sheets, if different from those specified in the approved design.

43.9 Replacement Designer- An applicant may apply to the Director for approval to have a licensed designer, other than the one that designed the OWTS, be responsible for witnessing and inspecting the installation under the conditions specified in Rules 43.9.1 and 43.9.2. The Director may grant the approval provided the replacement designer has a license issued in accordance with Rules 9 and 10 that authorizes the designer to design the type of OWTS in question, and the replacement licensed designer signs an affidavit assuming full responsibility for installation of the OWTS in accordance with the DEM issued permit.

43.9.1 An applicant may apply to the Director for a replacement designer in either of the following circumstances:

(A) The designer of the OWTS is incapable of witnessing and inspecting the OWTS;

(B) The designer of the OWTS is unavailable or absent after a period of thirty (30) days as confirmed by the Department; or

(C) The applicant contracted with a business entity for design services and the designer who prepared the OWTS design is no longer employed by that business entity.

43.9.2 An applicant may choose to select a replacement licensed designer for reasons other than those in Rule 43.9.1, in which case the applicant must submit a redesign prepared by the replacement designer. Any variance previously approved by the Department shall remain valid, provided that the Department agrees that the circumstances and facts regarding the variance are the same as the facts under which the original variance was granted or that the variance in the redesign represents less of a deviation from the Rules than the original variance.

43.10 Certificate of Construction- The designer that is responsible for the OWTS installation shall complete a Certificate of Construction in accordance with Rule 44. The Certificate of Construction shall not be construed to release the installer from liability.

43.11 Once the designer has certified that the OWTS has been properly installed and is operational, the designer shall provide information and recommendations to the applicant in writing on specific OWTS operation and maintenance practices, including those needed to reduce the risk of premature failure and avoid pollution of the waters of the state.

43.12 The designer is not responsible for any negligent act or omission of a user of an OWTS, including but not limited to, failure to properly use and maintain the OWTS, which causes damage to the OWTS.

RULE 44. CERTIFICATE OF CONSTRUCTION

44.1 Certificate of Construction Required- The designer that is responsible for the OWTS installation in accordance with Rule 43 shall complete a Certificate of Construction that certifies that the OWTS was installed in conformance with the approved application, plans, specifications, applicable statutes and regulations and that the designer is responsible for having witnessed and inspected the installation. The Certificate of Construction shall be on forms approved by the Director. The Certificate of Construction shall include, but not be limited to, the following:

44.1.1 Name and license number of the designer;

44.1.2 Name and license number of the installer; and

44.1.3 Distances from two building foundation corners to the septic tank manhole, to the distribution box, and to the leachfield corners.

44.2 Submittal to Department- The Certificate of Construction shall be submitted to the Director within five (5) business days after the OWTS, building foundation, drinking water well, and other appurtenances, as may be specified in written Department guidance, have been constructed in accordance with the design plan. If an operations and maintenance agreement is required pursuant to the terms of the permit and a copy of the operations and maintenance agreement is available, the agreement shall be submitted to the Department with the Certificate of Construction. The designer who performs the witnessing of an OWTS installation may not withhold issuance of the Certificate of Construction provided the requirements of this Rule 44 are met. The designer shall provide a copy of the Certificate of Construction to the property owner.

RULE 45. CERTIFICATE OF CONFORMANCE

45.1 The applicant for an OWTS permit shall obtain a Certificate of Conformance from the Department prior to use of any OWTS. The Certificate of Conformance means that the OWTS that has been installed appears to substantially conform with the design requirements and other requirements as indicated on the application and associated plans and specifications.

45.2 Any applicant who constructs a new building or building improvement which requires a new or altered OWTS and a Certificate of Occupancy prior to use shall obtain a Certificate of Conformance prior to such occupancy.

45.3 A municipality may only grant a Certificate of Occupancy pursuant to Rhode Island General Law Section 23-27.2-13 and Chapter 23-27.3, where the person applying for such Certificate of Occupancy presents to the municipality the written Certificate of Conformance of the Director as required in Rule 45.1.

45.4 The OWTS permit remains valid once the Certificate of Conformance has been issued.

RULE 46. PERMIT SUSPENSIONS AND REVOCATIONS

46.1 Applicability- The Director may suspend or revoke any permit granted under these Rules in the event that subsequent examination reveals that the application is incomplete, incorrect or not in compliance with these Rules, or any conditions at the site are such that the approved design is no longer in accordance with these Rules.

46.2 Notice- The applicant shall be given written notice by certified mail, return receipt requested, of such action to suspend or revoke a permit by the Director. Such notice shall be in conformance with the Administrative Procedures Act, R.I. General Laws Sections 42-35-9(b) and 42-35-14, as amended.

46.3 Request for Hearing- An applicant may request a hearing on the suspension or revocation with the Department of Environmental Management, Administrative Adjudication Division. Such request must be in writing and shall be filed with the Department's Administrative Adjudication Division within thirty (30) calendar days of receipt of the notice of permit suspension or revocation.

46.4 Cessation of Work- Upon issuance of a suspension or revocation of any permit from the OWTS Program, no construction activity may be performed or continue to be performed on the property until such time as the suspension or revocation is rescinded or released by the Director. Where the applicant requests a hearing in accordance with Rule 47.3, the suspension or revocation shall be stayed. However, any and all work performed on the property shall be at the applicant's own risk.

46.5 Investigations- The Director shall conduct an investigation of any signed, written complaint received from any person regarding an application for an OWTS. The complaint shall specify the nature of the problems and include all appropriate information to allow the Director to evaluate the complaint.

RULE 47. VARIANCE REQUESTS

47.1 Applicability- Applications for the approval of plans and specifications for an OWTS may include a request for a variance from the provisions of the Rules Establishing Minimum Standards Relating to Location, Design, Construction, and Maintenance of Onsite Wastewater Treatment Systems. Requests for variance will not be required for OWTS Applications for Alteration to a Structure where there will be no increase in wastewater flow or OWTS Applications for Repair.

47.2 Requests for variances shall be attested to by a licensed Class II or Class III designer.

47.3 Contents of Variance Request- Requests for variances shall be on forms approved by the Director. It is the applicant's responsibility to demonstrate by a preponderance of clear and scientifically valid evidence by means of a comprehensive analysis having a probative value that the requested variance(s) will not be contrary to the public health, the public interest or the environment. Applicants must comply with local ordinances, however, such compliance can not be used to justify or support a variance request under these Rules.

47.3.1 The comprehensive analysis shall provide adequate scientific and technical evidence on how the proposed design will mitigate potential adverse impacts on the following:

- (A) Public health;
- (B) Any surface water drinking water supply or tributary thereto and any public or private drinking water well and any associated transmission lines that may be affected; including the cumulative impacts of the system to the surrounding area.;
- (C) Any body of water including, but not limited to, impacts on groundwater or surface water quality and to the ability of the water body to support or maintain plant and wildlife as well as other designated water uses;
- (D) Public use and enjoyment of any recreational resource; and
- (E) Surrounding persons or property as a potential cause of any public or private nuisance.

47.3.2 The comprehensive analysis shall include, but not be limited to:

- (A) An analysis of any limiting conditions of the site;
- (B) An analysis of the amount and characteristics of the wastewater discharged; and
- (C) An analysis of the ability of the site to accept, transmit and treat wastewater.

47.3.3 The variance request(s) shall be accompanied by a list identifying the names and addresses of the local building official and all property owners within two hundred (200) feet of any component of the proposed OWTS for which a variance(s) has been requested.

47.3.4 Nothing herein shall prevent the Director from requesting additional information deemed necessary.

47.4 Compensatory Mitigation- Other elements of the applicant's system design (in which no variance is requested) may result in greater protection of the public health and the environment than is required by meeting the minimum standards of these Rules. In such case, the applicant may include how these elements of the system provide compensatory mitigation for the variance(s) requested as part of the comprehensive analysis required in Rule 47.3.2. Compensatory mitigation may be in the form of, but is not limited to: alternative or experimental technologies approved pursuant to Rule 37 provided such systems are not required by other Rules herein, greater setback distances than required in Rule 22, greater separation distances to groundwater than required in Rule 32.4, reductions in design flow, reductions in pollutant loading on neighboring properties, decreasing the loading rate per square foot of leachfield, and decreasing the linear loading rate.

47.5 Cumulative Impact Assessment- Any application for an OWTS proposed to be installed on a lot less than ten thousand (10,000) square feet in area which requires more than one variance and which will be located within one hundred (100) feet of any public or private drinking water well will not be approved unless a Cumulative Impact Assessment of the variances is conducted by the applicant and submitted to the Department along with the variance request. The Cumulative Impact Assessment shall include, but not be limited to: a description of all abutting properties identifying the location of all OWTSs, surface waters, wetlands, and private or public drinking water wells, a concise description of all variances granted in the permitting of these abutting OWTSs, and any additional information which the Director may deem appropriate.

47.6 Notification Requirements

47.6.1 Once the applicant's plans and specifications have been determined to be complete by the Department, the applicant shall notify the local municipal building official and all property owners within two hundred (200) feet of any component of the proposed OWTS of the pending application for an OWTS with variance(s). If a variance is requested from the minimum setback requirement to a public water supply well, public water line or a surface water reservoir including tributaries and tributary wetlands or subsurface drains directly discharging thereto, then the applicant shall also notify the applicable public water system entity or agency.

47.6.2 Exemptions from Notification Requirements

(A) OWTS applications for Alteration to a Structure that include a request for a variance from the provisions of these Rules are exempt from the notification requirements in Rule 47.6.1.

(B) The Director may waive the notification requirements in Rule 47.6.1 if the variance request is limited to a variance from a provision of these Rules specifying horizontal setbacks from a feature on the applicant's property only.

(C) The Director may waive the notification requirements in Rule 47.6.1 if, in the opinion of the Director, the variance request will be denied based on the information submitted, or lack thereof, or based on the standards in Rule 48.2.2.

47.6.3 Each notice shall include:

(A) A copy of the Variance Request Form(s) submitted to the OWTS Program;

(B) A cover letter conforming to a form to be provided by the Director, which shall include at least the following information:

(i) The application number;

(ii) A statement of the purpose of the notification;

(iii) A certificate of service; and

(iv) A statement advising the recipient that the recipient may, within twenty (20) days of the date specified in the certificate of service, provide the Director with written comments or information bearing upon the subject application; and

(C) Reduced-scale site plans identical to those submitted to the DEM OWTS Program.

47.6.4 All notices shall be forwarded by certified mail, return receipt requested. The applicant shall clearly mark each return receipt with the application number and the words "Variance Request."

47.6.5 When all certified receipts have been returned to the applicant, copies of each cover letter, accompanied by the appropriate certified receipt, shall be filed with the OWTS Program along with a letter requesting that the application be submitted to the variance review process for final review and determination.

47.6.6 If a correctly addressed, certified notice is returned to the applicant, the applicant may submit the returned envelope and certified receipt, unopened, along with the other return receipts as proof of the applicant's good faith attempt to serve the notice.

47.7 Redesign Applications- For redesign applications submitted to the Department, any variance request previously approved by the Department shall remain valid, provided that the Department determines that either:

47.7.1 The circumstances and facts regarding the variance are the same as the facts under which the original variance was granted; or

47.7.2 The variance in the redesign represents no greater deviation from the Rules than the original variance.

RULE 48. VARIANCE REVIEW PROCESS

48.1 Preliminary Review and Recommendation- All variance requests shall be reviewed by the Department for the purpose of determining whether such variance(s) would be contrary to the public health, the public interest or the environment. In reviewing the applicant's variance requests, the Department may consult with other experts, whether employed by the Department or not. As part of the review of any variance request(s), the Department shall consider:

48.1.1 All evidence submitted by the applicant, the local municipal building official and the notified property owners bearing upon the subject application;

48.1.2 The number and extent of the limiting conditions at the site and surrounding area; and

48.1.3 Whether the site characteristics are less than optimum for wastewater treatment and dispersal.

48.2 Variance Review Standards

48.2.1 Approval- A variance request from the minimum standards set forth in these Rules shall be approved if it is determined that such a variance(s) will not be contrary to the public health, the public interest, or environmental quality.

48.2.2 Denial- A variance request from the minimum standards set forth in these Rules shall be denied when:

(A) The applicant has failed to provide clear, accurate, and substantive information to enable the Department to determine that the requested variance will not be contrary to the public health, the public interest, or environmental quality;

(B) The evidence fails to demonstrate that the same degree of environmental protection provided under these Rules can be achieved without strict application of the provision for which the variance has been requested;

(C) The evidence demonstrates that the OWTS will not function as proposed in the application;

(D) The evidence indicates that the approval of the OWTS would otherwise be contrary to the public health, the public interest, or environmental quality; or

(E) The variance request is for one of the following:

(i) The variance request is for an action that is prohibited in Rule 8, excluding the prohibition regarding holding tanks in Rule 8.15;

(ii) The variance request is from the requirements of Rule 14.1 on a site located in the Salt Pond or Narrow River Critical Resource Areas;

(iii) The variance request resulted from the applicant subdividing the property after December 31, 1995 unless the applicant demonstrates that the reason for the variance requested is not the result of action by the applicant, or prior owners of the property;

(iv) The variance request is from the requirement that soil and seasonal high groundwater table data must have been determined within the past five (5) years;

(v) There is a public sanitary sewer reasonably accessible to the structure to be served by the OWTS;

(vi) The variance request is for new lots under ten thousand (10,000) square feet platted or otherwise created after June 18, 1992 unless the applicant demonstrates that the reason for the variance requested is not the result of action by the applicant, or prior owners of the property;

(vii) The variance request is for less than the eighty (80) foot minimum setback distance from a private drinking water well in Table 22.5, Note 3;

(viii) The variance request is from the two hundred (200) foot public well setback requirement for a drilled rock, driven, or dug well in Table 22.5 or from the four hundred (400) foot public well setback from a gravel packed or gravel developed well in Table 22.5. Such a variance request may be approved if either of the following occurs:

(1) If the public well is not on the same property that is subject to the OWTS Application, the applicant provides documentation that the well owner has an approved variance from the Rhode Island Department of Health for an inner protective zone that does not include the location of the proposed OWTS; or

(2) If the public well is on the same property that is subject to the OWTS Application, the applicant provides documentation that the Rhode Island Department of Health has approved of the requested activity;

(ix) The variance request is for a depth to groundwater from original ground surface of less than twelve (12) inches;

(x) The variance request is from the denitrification requirements in the Salt Pond and Narrow River Critical Resource Areas in Rules 39.2; or

(xi) The variance request is from the requirements in Rule 41 (Nitrogen Loading in Areas of On-Site Drinking Water Wells).

48.2.3 Terms and Conditions- The variance decision may contain such terms and conditions as the Director deems necessary to protect the public interest, the public health, or the environment.

48.3 Recommended Determination- Upon completion of their review, the OWTS Program Staff shall prepare a written recommendation of approval or denial of the variance request. The review shall identify the factors considered in the review process, specify the bases for their recommendation, and identify any suggested conditions for approval.

48.4 Final Determination- Upon review of the recommendation submitted in accordance with Rule 48.3, the Director shall render a final written decision approving or denying the requested variance(s). In arriving at a final decision, the Director may:

48.4.1 Adopt the recommendation, with or without additional written comments or conditions;

48.4.2 Reject the recommendation; in which case the Director shall render a written decision specifying the bases for the rejection; or

48.4.3 Remand the matter back to the OWTS Program Staff for further review and consideration of certain specified factors.

RULE 49. APPEALS

49.1 Right to Appeal- Any person whose permit application is denied may appeal to the Director for review of the decision on which the denial is based by filing an appeal with the Administrative Adjudication Division.

49.2 Filing of Appeal- All appeals shall be in writing and shall be filed with the Department's Administrative Adjudication Division within thirty (30) calendar days of receipt of the denial of the subject application.

49.3 Contents of Appeal- Every appeal shall contain:

49.3.1 A detailed basis upon which the appeal is taken;

49.3.2 A plat plan of the area of the subject application;

49.3.3 A list of the names and addresses of:

(A) The applicant;

(B) The municipality in which the property is located;

(C) The owner of any surface water supply as identified by Rule 38.3, if applicable; and

(D) The owners of record of real property within two hundred (200) feet of any component of the applicant's proposed OWTS; and

49.3.4 A certified check, bank draft or money order in the amount of one thousand five hundred (\$1,500) dollars in accordance with Rule 50.4.

49.4 Notice of Administrative Hearing- Upon the filing of an appeal with the Administrative Adjudication Division, and once the hearing schedule allows, the Administrative Adjudication Division shall notify the following, by first class mail, of the date, time and place of the adjudicatory hearing, in conformance with

R.I. General Laws Section 42-35-9, as amended: the applicant; the municipality in which the property is located; the owner of any surface water supply as identified by Rule 38.3, if applicable; and the owners of record of real property within two hundred (200) feet of any component of the applicant's proposed OWTS.

49.5 Conduct of Hearing- The notice and conduct of the hearing by the Department of Environmental Management, Administrative Adjudication Division, shall comply in all respects with the provisions of the Administrative Procedures Act, R.I. General Laws Chapter 42-35, and the Rules of Practice and Procedure for the Administrative Adjudication Division for Environmental Matters.

49.6 Burden of Proof- At the adjudicatory hearing, the applicant shall have the burden of proof to demonstrate through clear and convincing evidence that:

49.6.1 A literal enforcement of the Rules will result in unnecessary hardship;

49.6.2 That the OWTS will function as proposed in the application; and

49.6.3 That the issuance of a permit will not be contrary to the public interest, public health and the environment. In order to demonstrate that the proposed OWTS will not be contrary to the public interest, public health and the environment, the applicant must introduce clear and convincing evidence to the satisfaction of the Director that:

(A) The waste from the proposed OWTS will not be a danger to public health;

(B) The OWTS to be installed will be located, operated and maintained so as to prevent the contamination of any drinking water supply or tributary thereto;

(C) The waste from the proposed OWTS will not pollute any body of water or wetland;

(D) The waste from the proposed OWTS will not interfere with the public use and enjoyment of any recreational resource; and

(E) The waste from the proposed OWTS will not create a public or private nuisance.

49.7 The Director may approve a permit or grant a variance from a provision of these Rules, except for the prohibitions in Rule 8, where it is determined by the Director that:

49.7.1 A literal enforcement of such provisions will result in unnecessary hardship to the applicant;

49.7.2 That the OWTS will function as proposed in the application; and

49.7.3 That the permit or variance sought will not be contrary to the public interest, public health and the environment.

49.8 The decision of the Director may contain such terms and conditions as deemed necessary to protect the public interest, public health and the environment.

RULE 50. FEES

50.1 Administrative

50.1.1 All applicants, except for state and local governmental entities, shall be liable for the payment of fees to the Department as set forth below.

50.1.2 Payment of Fees- All fees shall be due at the time the initial form or request is submitted to DEM requesting that it undertake one of the activities specified in Rule 50.2 below. The Department will not undertake any such activity until payment has been received.

50.1.3 Commercial OWTSs- For the purpose of assessing fees, all duplex and multi-family residential OWTSs shall be considered commercial OWTSs.

50.1.4 Field testing pursuant to Rules 15 or Rule 16 must be completed on the scheduled day of witnessing. Conditions encountered or lack of preparedness by the designer that require additional witnessing by the Department will require an additional fee.

50.2 Fee Schedule

Table 50.2 Fee Schedule

DESCRIPTION	FEE
Soil Evaluations	\$150.00 per OWTS
Wet Season Determinations	\$100.00 per OWTS
Bedrock Test Holes	\$100.00 per OWTS
Test Holes in Storm Deposited Sand or Human Transported Material	\$100.00 per OWTS
Reinspection	\$100.00
Application for OWTS Suitability Determination	\$100.00
OWTS Application for New Building Construction and OWTS Application for Alteration to a Structure. The fees for applications utilizing a pretreatment technology, excluding leachfield systems and components, approved as an Alternative or Experimental Technology pursuant to Rule 37 or a technology not included in these rules specifically engineered for the application, shall be two (2) times the following fees:	
Single Family Residences:	
Single Family Residence	\$150.00
Commercial OWTSs:	
Less than 2,000 gpd	\$200.00
2, 000 gpd to 4, 999 gpd	\$500.00
5, 000 gpd to 9, 999 gpd	\$1,000.00
10,000 gpd or More	\$2,000.00
Subdivision Review	
1 to 9 Lots	\$100.00 per lot
10 Lots or More	\$1,000.00 plus \$50.00 per lot for each lot over 10

DESCRIPTION	FEE
OWTS Application for Repair. The fees for applications utilizing a pretreatment technology, excluding leachfield systems and components, approved as an Alternative or Experimental Technology pursuant to Rule 37 or a technology not included in these rules specifically engineered for the application, shall be two (2) times the following fees:	
Single Family Residence	\$100.00
Commercial OWTSs:	
Less than 2,000 gpd	\$150.00
2,000 gpd to 4,999 gpd	\$300.00
5,000 gpd to 9,999 gpd	\$600.00
10,000 gpd or More	\$1,000.00
Transfer	\$50.00
Any Variance Request for OWTSs: Residential and Commercial (Variance Request Fee is in addition to the application fee)	\$300.00
If the application has been previously reviewed by the Department and found deficient and the re-submission does not address these deficiencies, then the Department will assess a fee for the second re-submission equal to fifty percent (50%) of the original fee. In no case shall this resubmission fee exceed \$300.00.	
Alternative or Experimental Technology:	
Alternative OWTS or Technology:	
Class One	\$1,000.00
Upgrade from Class Two to Class One	\$500.00
Class Two	\$1,000.00
Alternative OWTS Component:	
Class One	\$200.00
Class Two	\$300.00
Experimental OWTS or Technology	\$2,000.00
Renewal of Alternative or Experimental Technology Application:	
Alternative OWTS or Technology Class Two	\$500.00
Alternative OWTS Component Class Two	\$150.00
Experimental OWTS or Technology	\$1,000.00
Installer's Licenses:	
Examination and New License Application (3 years, the Department may pro-rate fee if the license is issued for less than 3 years)	\$155.00
License Renewal (3 years, the Department may pro-rate fee if the renewal is for less than 3 years)	\$90.00
Class I, II, III, and IV Licenses:	
Examination and New License Application (3 years, the Department may pro-rate fee if the license is issued for less than 3 years)	\$200.00
License Renewal (3 years, the Department may pro-rate fee if the renewal is for less than 3 years)	\$150.00
Late Fee	\$100.00 x Number of years expired

50.3 Modification Fees- If a person modifies the initial submittal, renewal or other request made to the Department for any reason, this person shall be liable for payment of an additional fee specified below in Table 50.3. The cost per modification shall never exceed the fees for a new submission set forth in Rule 50.2 above. These additional fees shall be collected prior to the Department's review of the modification(s) under consideration. No final approval or denial shall be issued by the Director until such time as these additional fees have been received.

Table 50.3 Modification Fees

DESCRIPTION	FEE
Designers Affidavit Continuing Validity - per lot	\$50.00
Designers Affidavit – Subdivisions	\$100.00
Revision to Subdivision (1 to 9 lots) per lot	\$50.00
Revision to Subdivision (10 or more lots)	\$500.00
As Builts - Requested or Submitted	\$50.00
Redesign - Single Family	\$100.00
Redesign - Commercial - less than 2,000 gpd	\$150.00
Redesign - Commercial - more than 2,000 gpd	\$400.00

50.4 Costs of Appeal- Any person who requests an appeal pursuant to Rule 50 shall also be liable for fees to cover costs incurred in the holding of the hearing. The fee shall be sufficient to defray the costs incurred by the Administrative Adjudication Division for, but not limited to: all investigations; the appearance of a stenographer and the original transcript; renting a room, when necessary; and the costs associated with the appearance of the hearing officer. The applicant must pay the Director the sum of one thousand five hundred dollars (\$1,500.00) as a deposit against the actual costs of a hearing before a hearing will be scheduled.

50.5 Deposit of Fees Collected- All monies collected pursuant to Rule 50.2 and 50.3, above, shall be paid into the "Water and Air Protection Program" account, established pursuant to R.I. General Laws § 42-17.1-2(z), as amended. All monies collected pursuant to Rule 50.4 shall be paid into a restricted account established within the Administrative Adjudication Division.

RULE 51. OPERATION AND MAINTENANCE

51.1 Operation- It is the property owner’s responsibility to ensure that the OWTS achieves the performance requirements applicable to the approved OWTS.

51.2 Maintenance- All OWTSs shall be maintained in good repair by the owner. The Director may order the owner to maintain or repair an OWTS within a reasonable time if the Director finds them to be in need of the same. In order to maintain long-term viability of the OWTS, it is the owner's responsibility to:

51.2.1 Ensure that the OWTS is used only for wastewater in amounts that do not exceed the design flow;

51.2.2 Properly maintain the OWTS, including but not limited to, inspection of the OWTS or pumping of the septic tank as needed;

51.2.3 Protect the OWTS from physical disturbance; and

51.2.4 Ensure that all access opening covers are secured and maintained.

51.3 The provisions of Rule 51.1 and Rule 51.2 for operation and maintenance apply to any OWTS that has been issued a Certificate of Conformance pursuant to Rule 45.

51.4 Future Modifications- Once a Certificate of Conformance has been issued pursuant to Rule 45, nothing in these Rules shall prevent the property owner from retaining another qualified licensed designer, including another licensed designer from the same business entity that originally designed the OWTS, that the property owner chooses to conduct work on the OWTS.

RULE 52. REMOVAL AND ABANDONMENT

52.1 Removal- Any OWTS components that are excavated and removed off-site must be properly disposed of at a licensed solid waste landfill.

52.2 Abandonment On Site- Septic tanks, grease tanks, pump tanks, holding tanks, concrete chambers and cesspools that are no longer in use shall be properly abandoned. The structure shall be emptied of all wastes and then either removed, filled with clean sand or crushed and the area backfilled with clean soil.

RULE 53. GUIDANCE DOCUMENTS

53.1 Issuance- The Department is authorized to issue guidance documents that support the intent and purpose of these Rules. Such guidance documents shall not serve to alter the intent of the Rules herein. The documents may serve as guidance on interpreting the evolving science and technologies that are used to support the Rules or to explain in further detail the administrative procedures for complying with these Rules.

53.2 Review- Department prepared guidance documents shall be subject to review and comment through either formal public notice, the Technical Review Committee (Rule 37.7.2), or through other Department convened stakeholder groups. Once a guidance document is issued by the Department, it shall be subject to, at minimum, an annual review, at which time all comments received within the past year shall be considered.

RULE 54. SUPERSEDED RULES

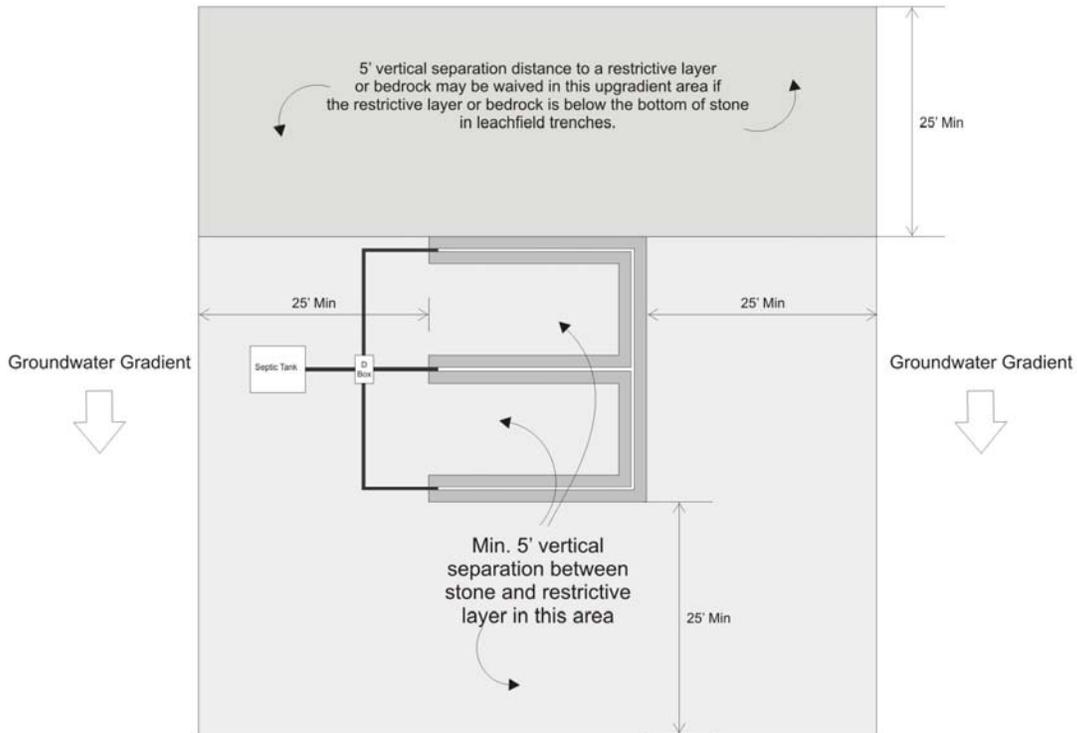
54.1 On the effective date of these Rules, all previous Rules regarding the establishment of minimum standards for the location, design, construction and maintenance of onsite wastewater treatment systems shall be superseded.

54.2 On the effective date of these Rules, Rule 5.4 and 17.1.1 of the “Rules and Regulations for Groundwater Quality”, which require a groundwater quality certification for OWTSs designed to treat five thousand (5,000) gallons or more per day, shall be revoked and superseded by the Rules herein.

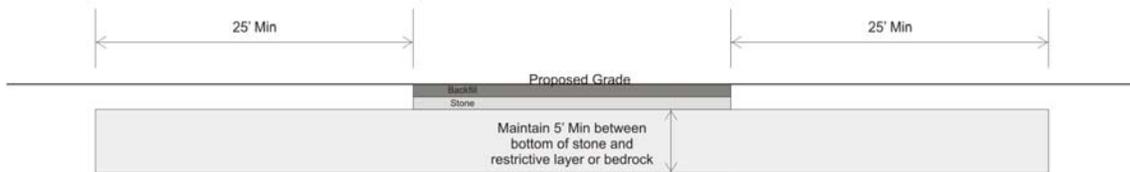
Figure 1: Leachfield Over Restrictive Layer or Bedrock

Not to Scale

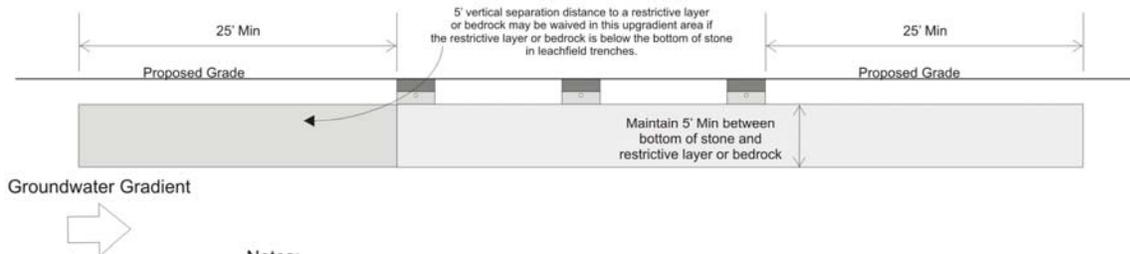
Plan View



Cross Section Perpendicular to Groundwater Flow



Cross Section Parallel to Groundwater Flow



Notes:

- The minimum depth from the original ground surface to a restrictive layer or bedrock is 4' and must be met within 25' of all sides of the leachfield (Rule 32.5).
- Excavating into a restrictive layer or bedrock is not permitted unless otherwise approved by the Director (See Rule 32.8).

Figure 2
Minimum Setback Distances in Drinking
Water Supply Watersheds

Note: The setback distances in Figure 2 are for OWTS with design flow less than 5000 gpd. For OWTS with design flow greater than 5000 gpd, the setback distances are doubled. See Table 22.2.

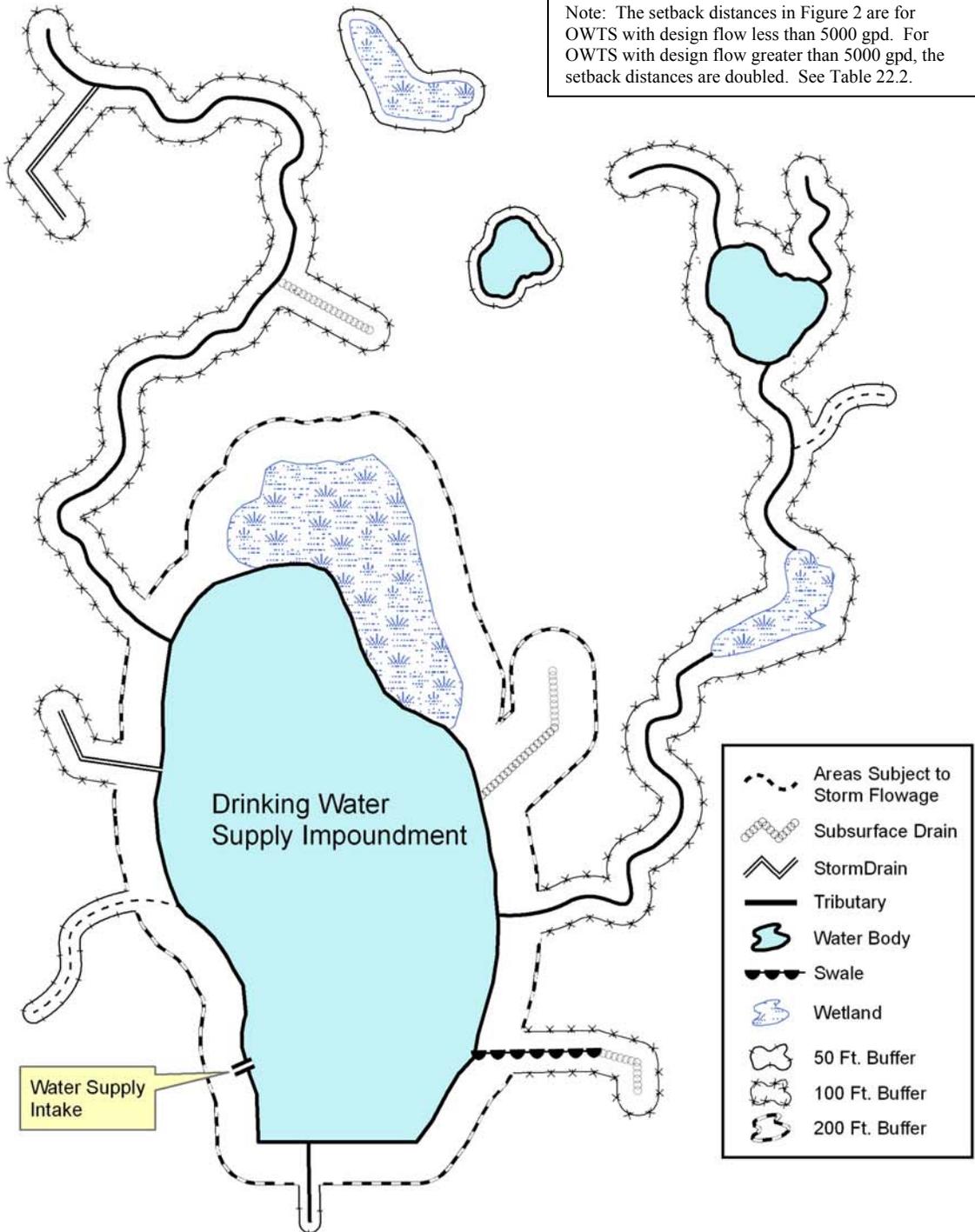


Figure 3
**Minimum Setback Distances in the Salt
 Pond and Narrow River Critical
 Resource Areas**

Note: The setback distances in Figure 3 are for
 OWTS with design flow less than 5000 gpd. For
 OWTS with design flow greater than 5000 gpd, the
 setback distances are doubled. See Table 22.3.

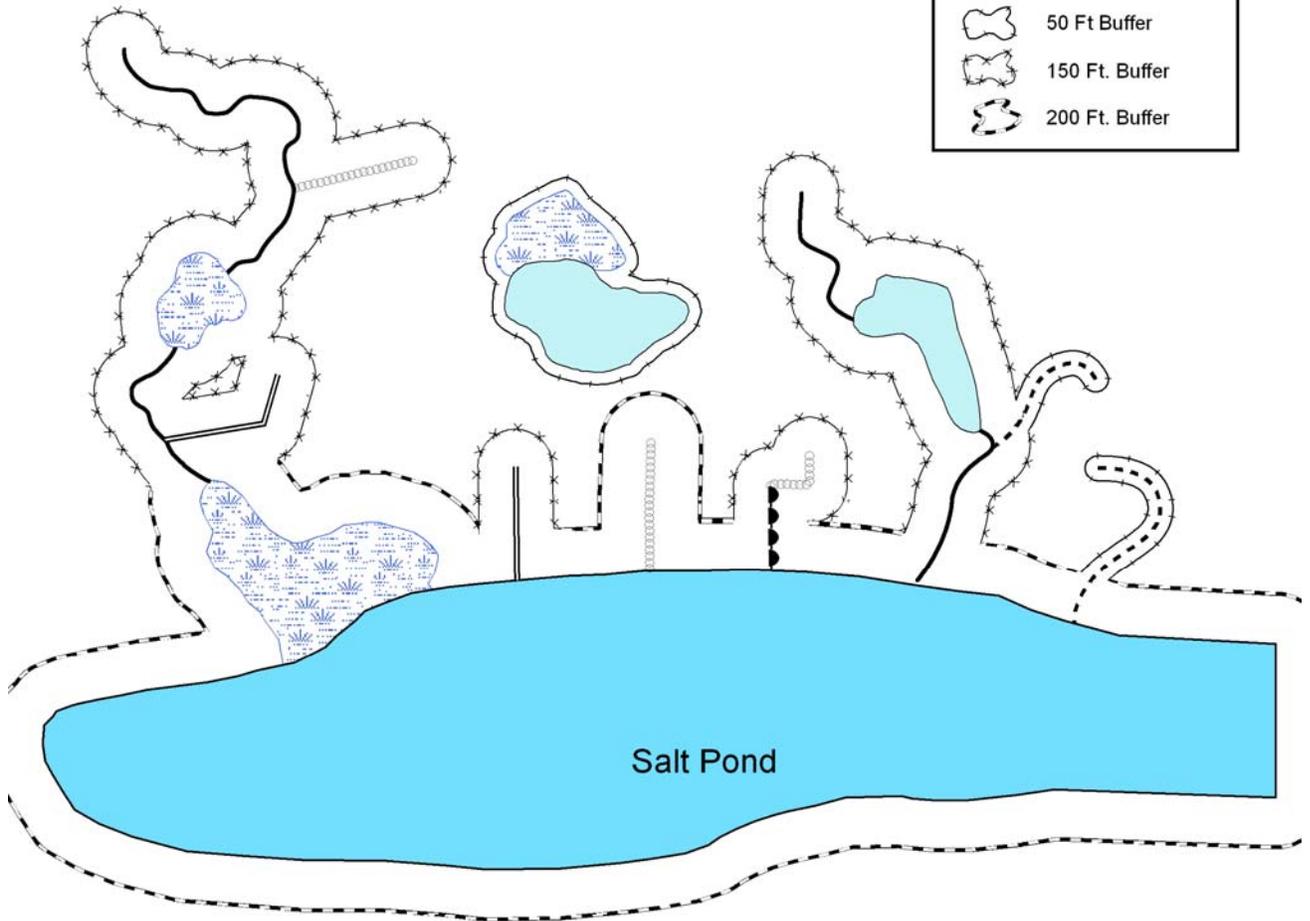
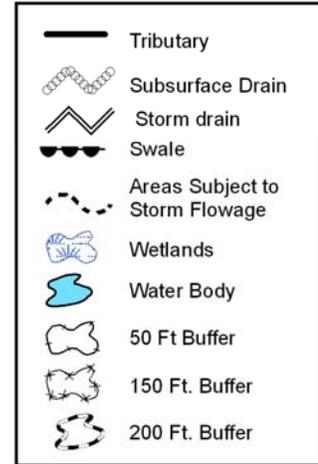


Figure 4: Grease Tanks
 Not To Scale, Consult Rule 25 For Details

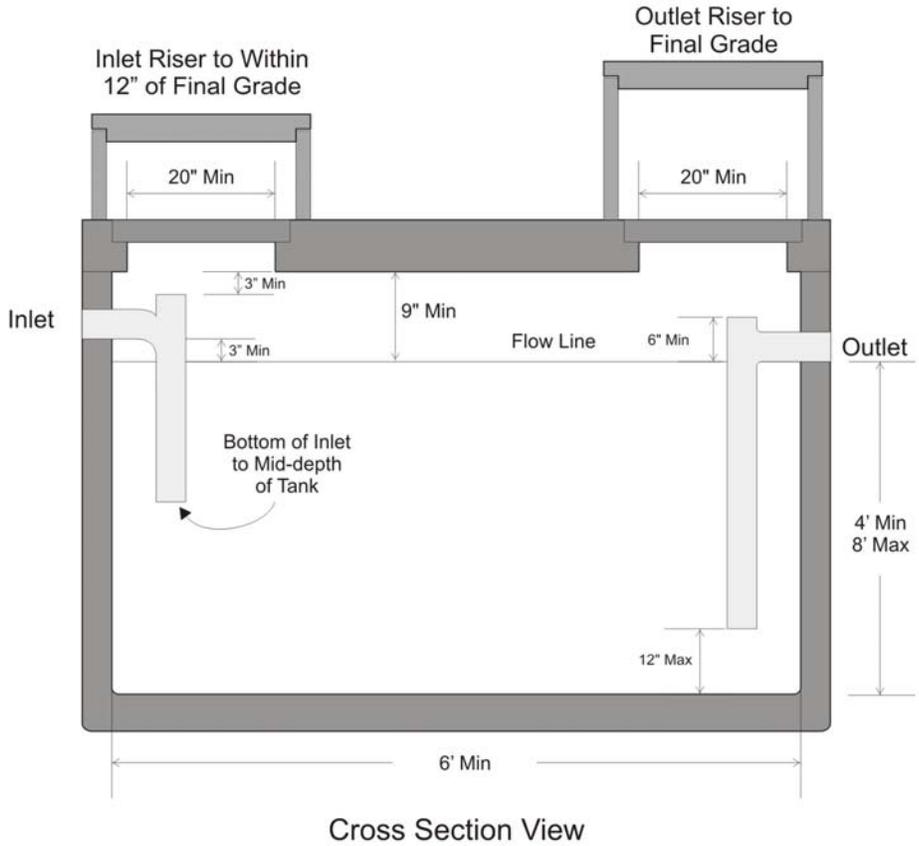
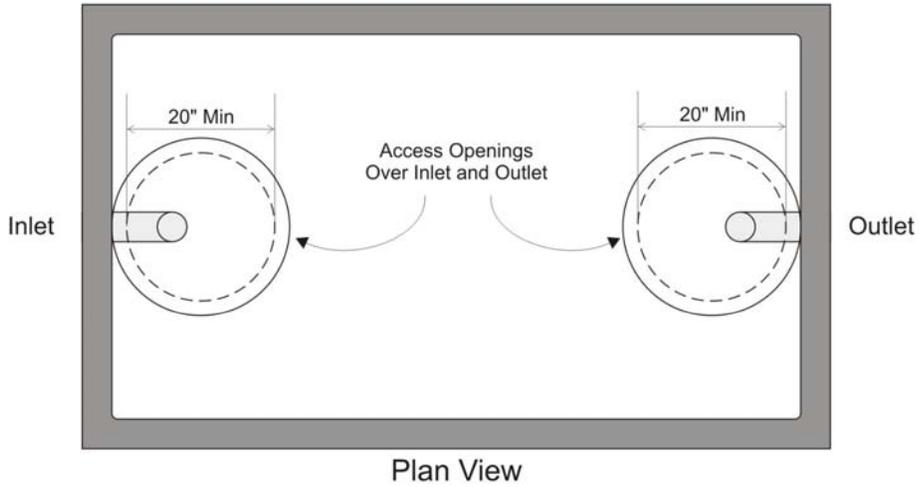


Figure 5: Septic Tanks
 Not To Scale, Consult Rule 26 For Details

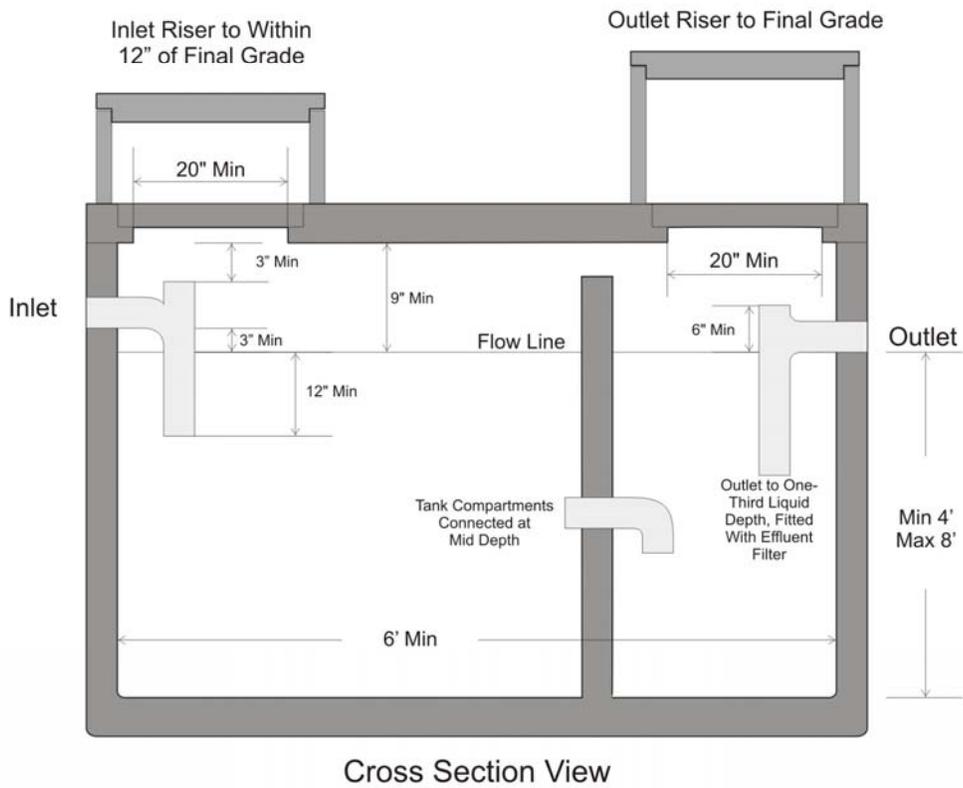
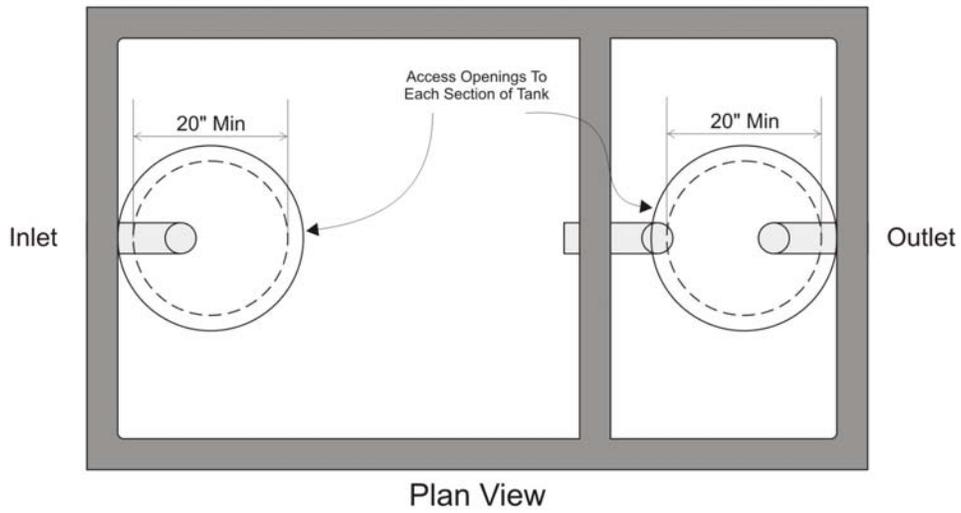


Figure 6: Septic Tank Riser Detail Not To Scale, Consult Rule 26.7.2 For Details

Note: Risers over outlet tees must be brought to finished grade, outlets over other access openings must be brought to within 12 inches of finished grade.

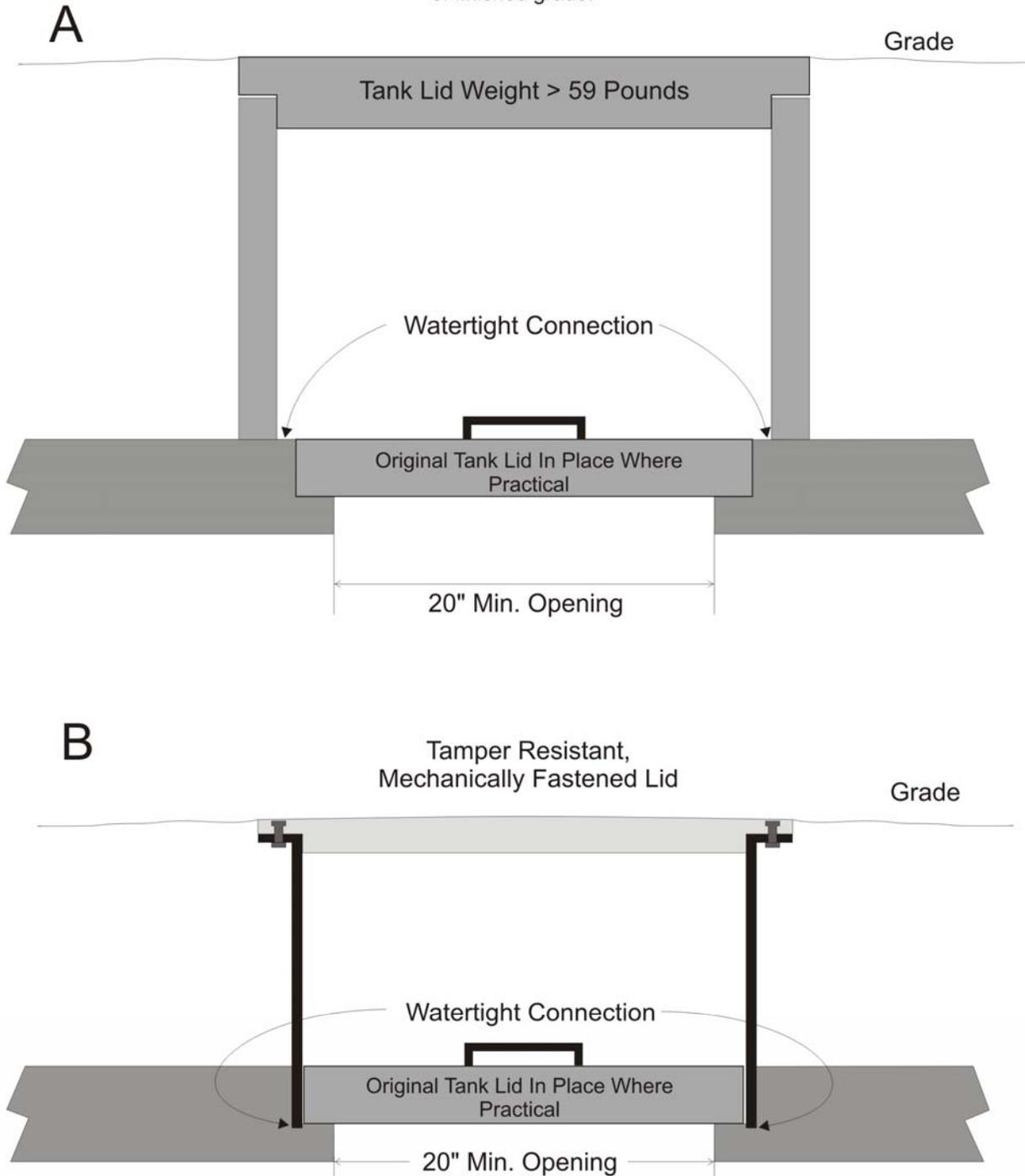
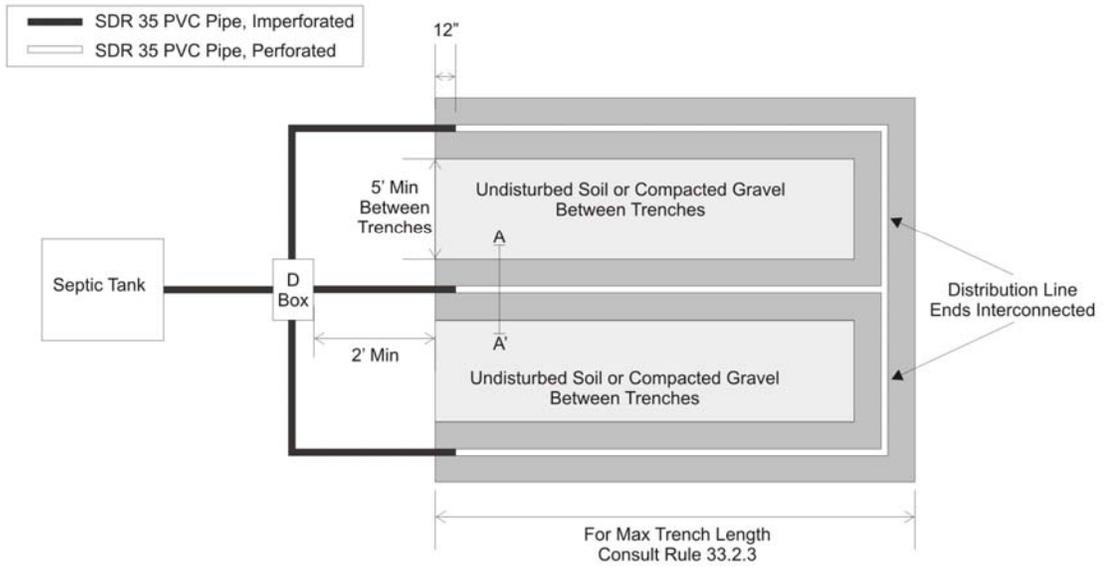


Figure 7: Leachfield Construction, Invert of Distribution Lines Below Original Grade
 Not to Scale, Consult Rule 33.4 for Details



System Plan View

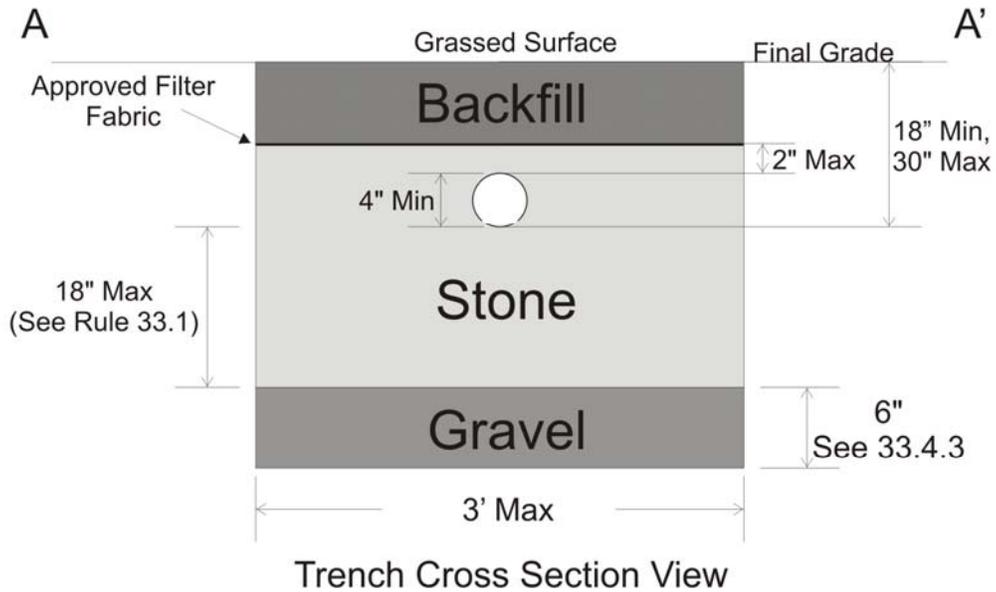


Figure 8: Leachfield Construction, Invert of Distribution Lines Above Original Grade

Not to Scale, Consult Rule 33.5 for Details

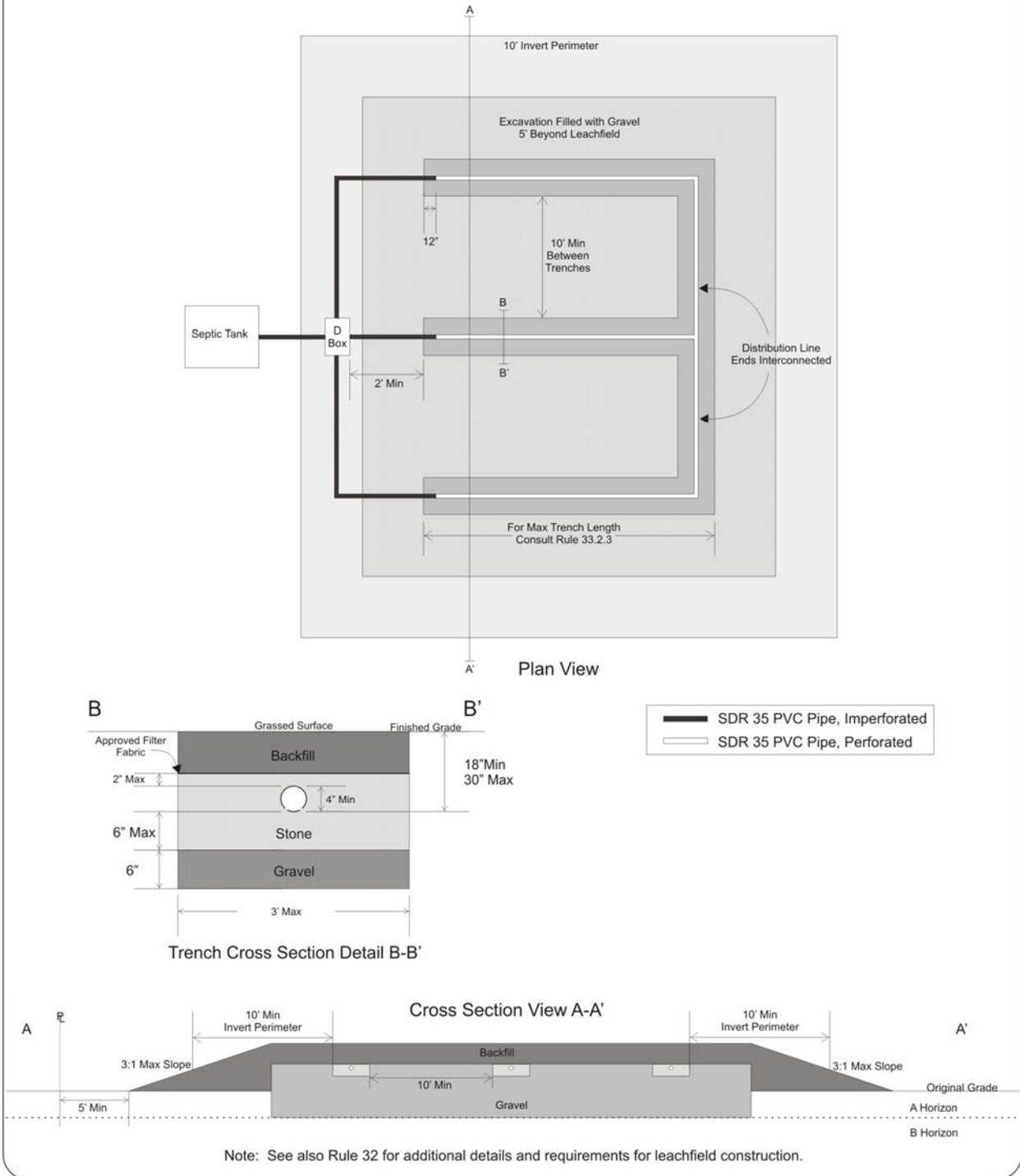
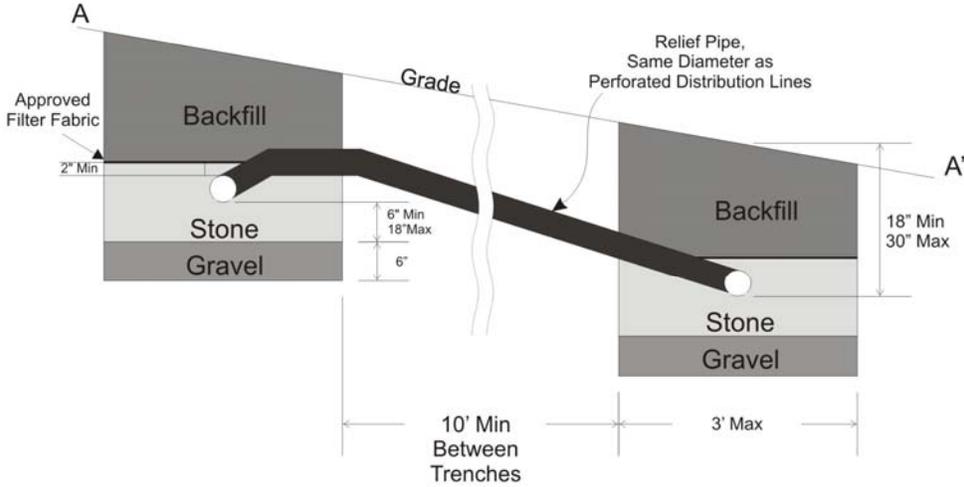


Figure 9: Leachfield Construction on Sloping Sites

Not to Scale, Consult Rule 33.6 for Details

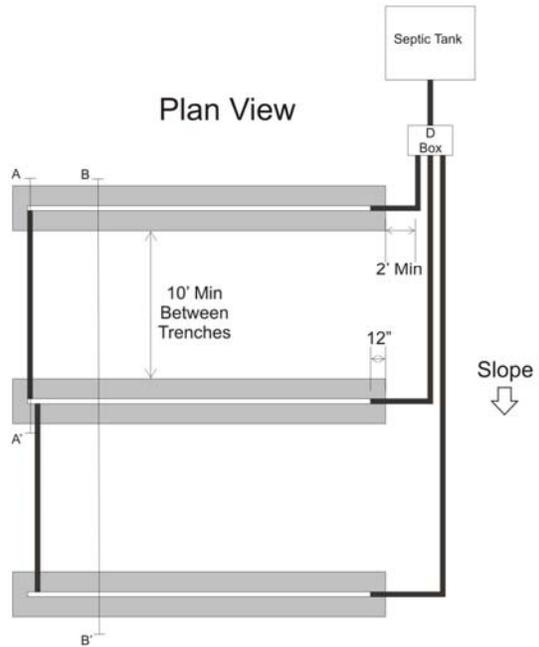
Relief Pipe and Trench Cross Section Detail



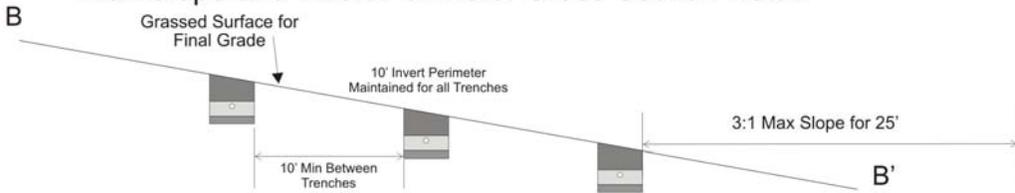
Note: Leachfields constructed on sloping sites must maintain 10' invert perimeters for all trenches and 3:1 max slope per Rule 32.16.

- SDR 35 PVC Pipe, Imperforated
- SDR 35 PVC Pipe, Perforated

Plan View

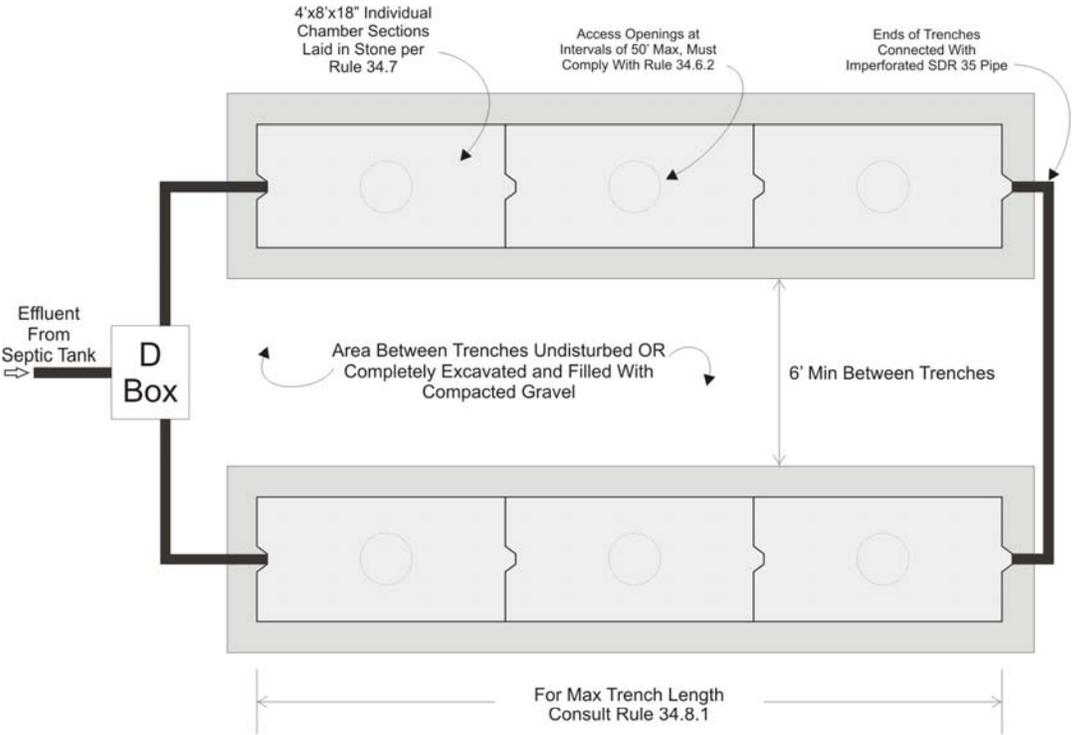


Max Slope and Invert Perimeter Cross Section Detail

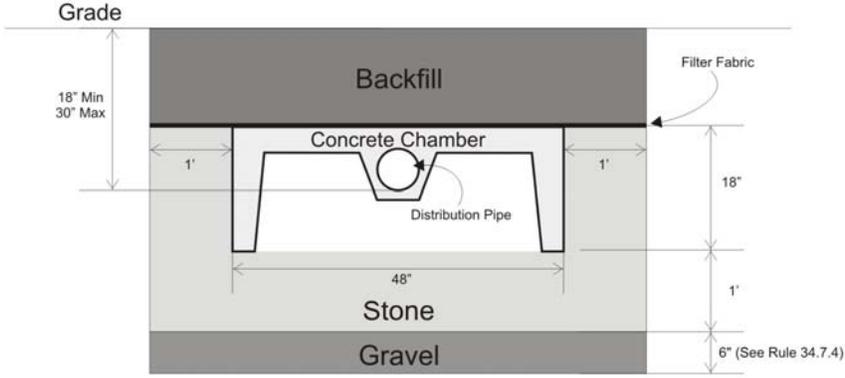


Note: See also Rule 32 for additional details and requirements for leachfield construction.

Figure 10: Shallow Concrete Chambers
 Not to Scale, Consult Rule 34 for Details



Sample Leachfield, Plan View



Typical Trench Cross Section View

Figure 11. South Shore Salt Ponds Critical Resource Area

For a detailed look at a location, go to the DEM website, go to “Maps,” go to “Environmental Resource Maps” and build a map of your choice.

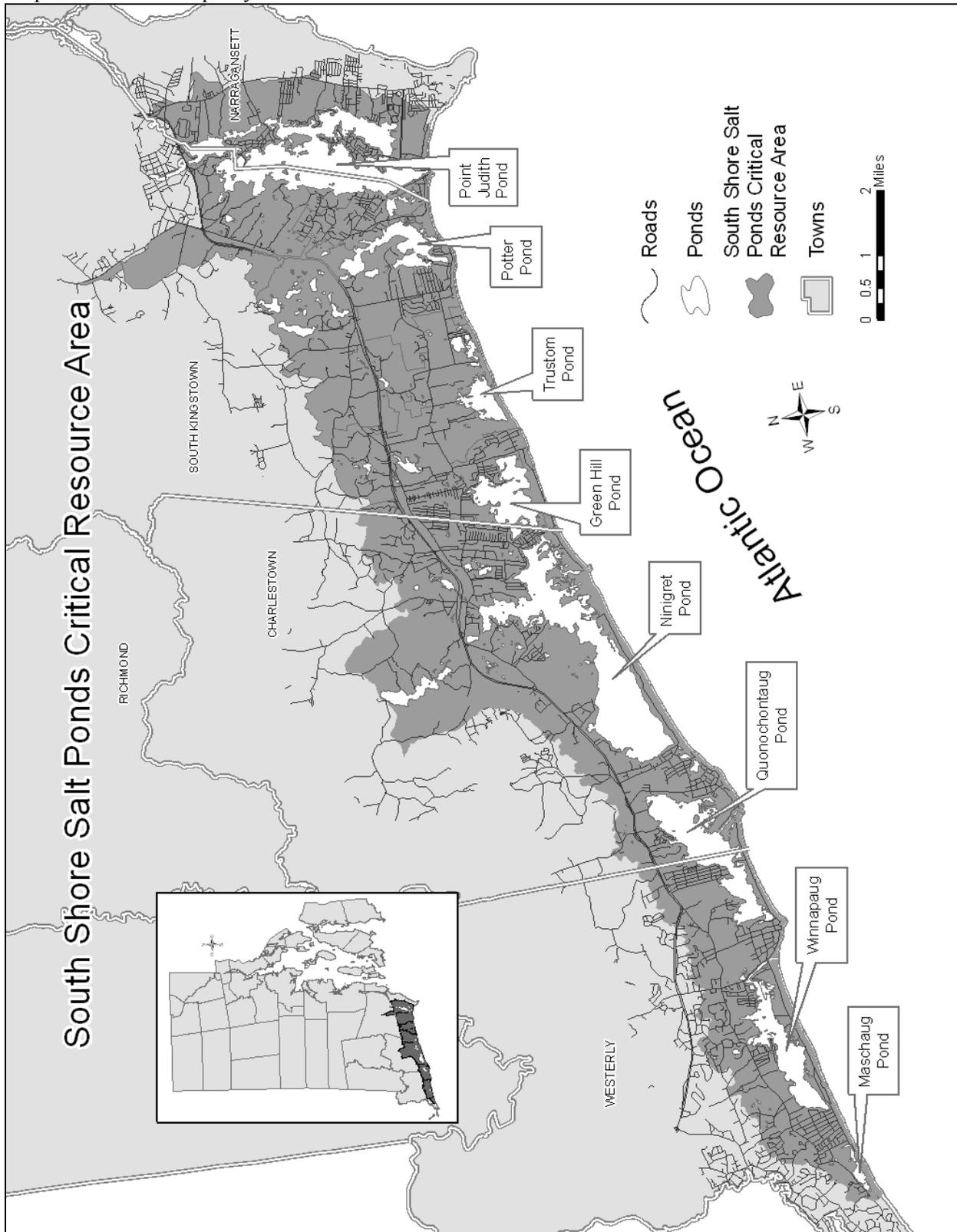


Figure 12. Narrow River Critical Resource Area

For a detailed look at a location, go to the DEM website, go to “Maps,” go to “Environmental Resource Maps” and build a map of your choice.

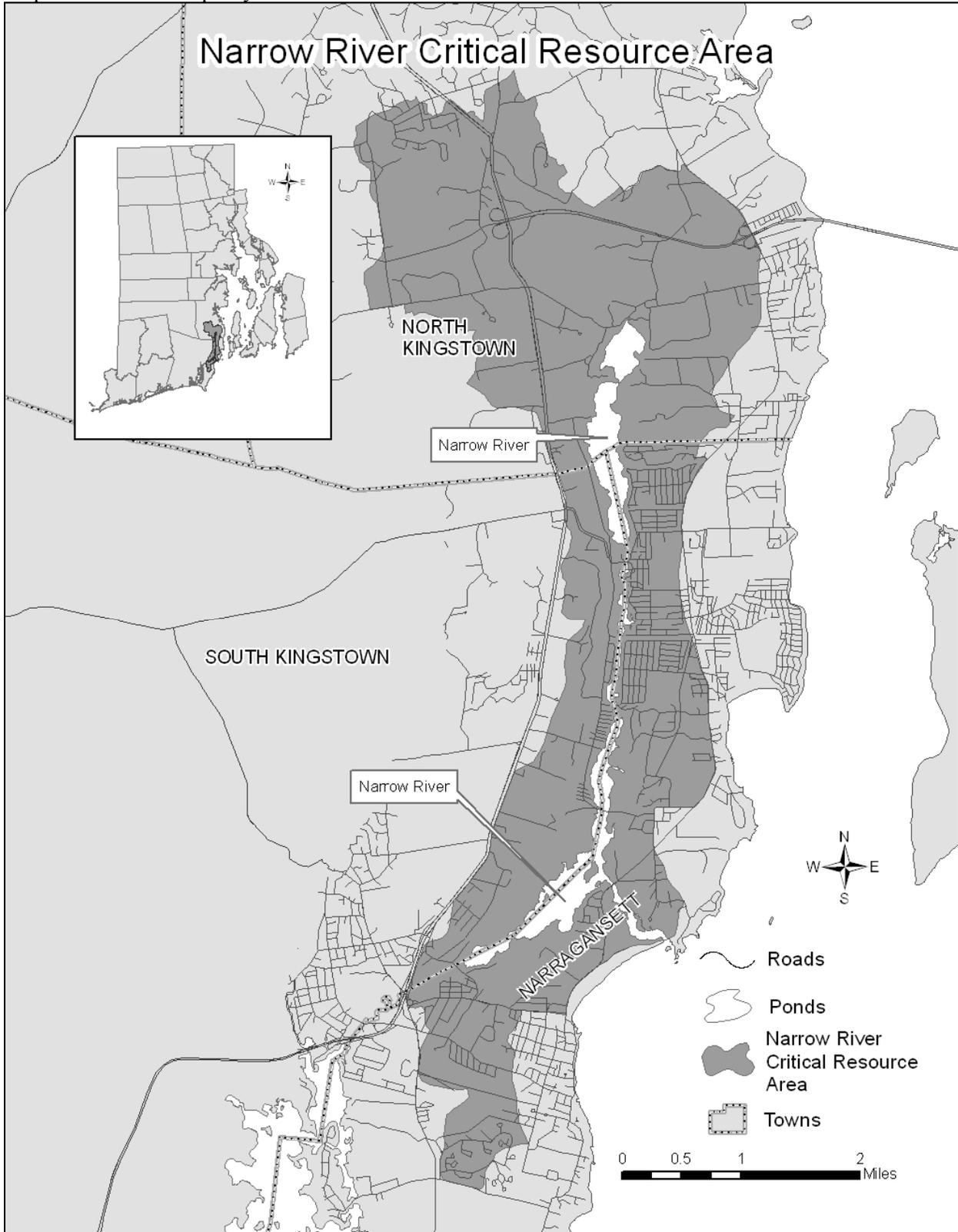


Figure 13. For a detailed look at a location, go to the DEM website, go to “Maps,” go to “Environmental Resource Maps” and build a map of your choice.

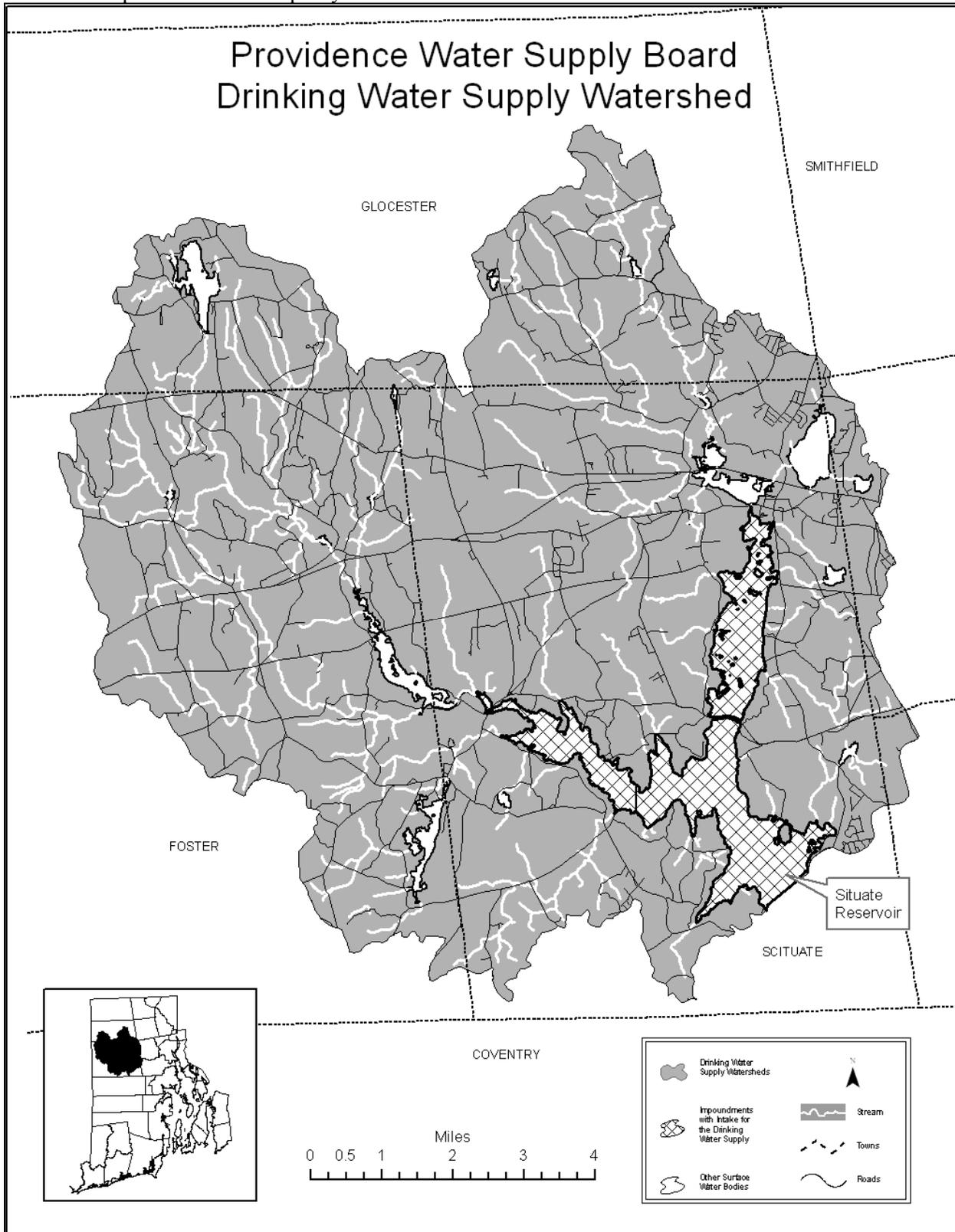


Figure 14. For a detailed look at a location, go to the DEM website, go to “Maps,” go to “Environmental Resource Maps” and build a map of your choice.

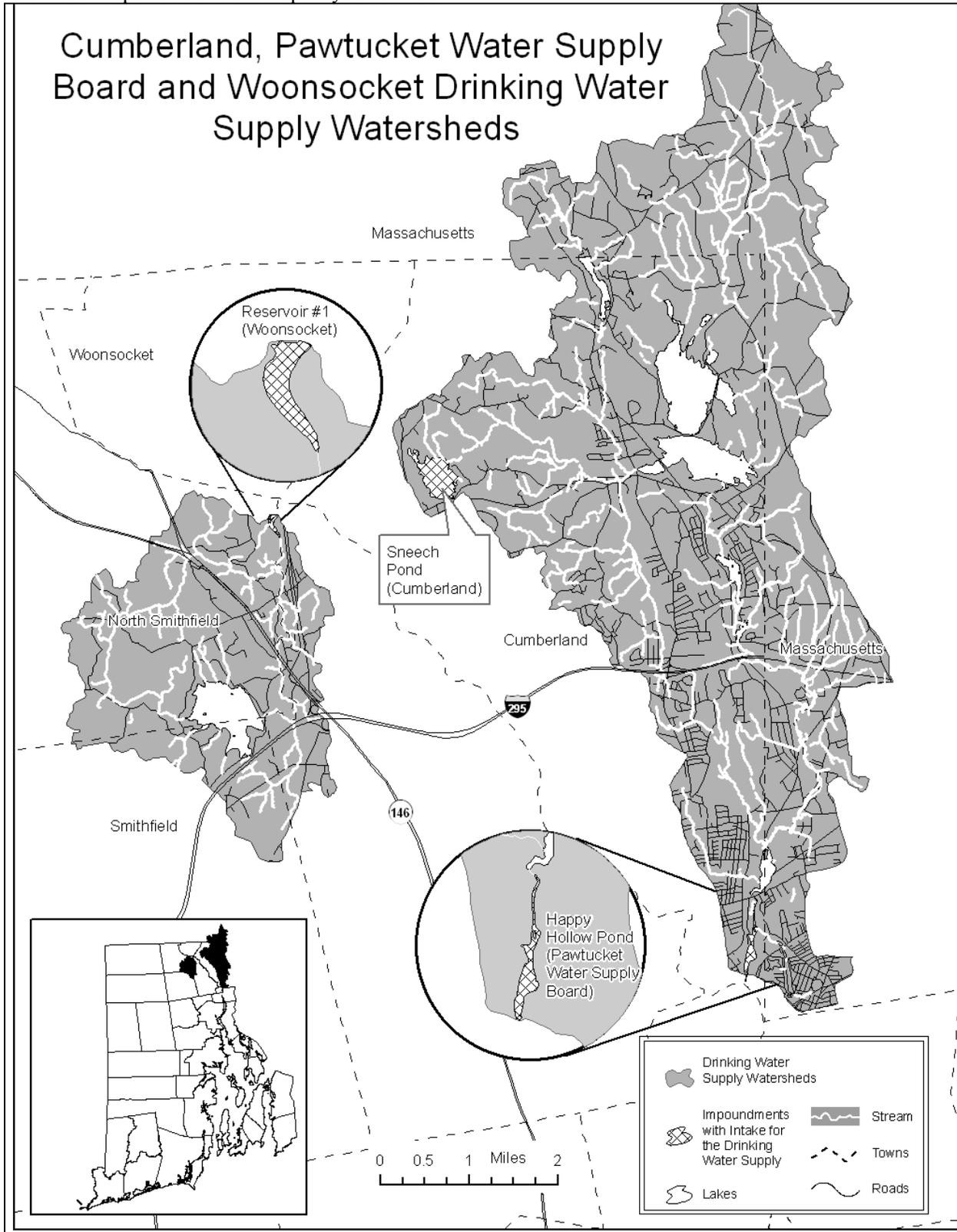


Figure 15. For a detailed look at a location, go to the DEM website, go to “Maps,” go to “Environmental Resource Maps” and build a map of your choice.

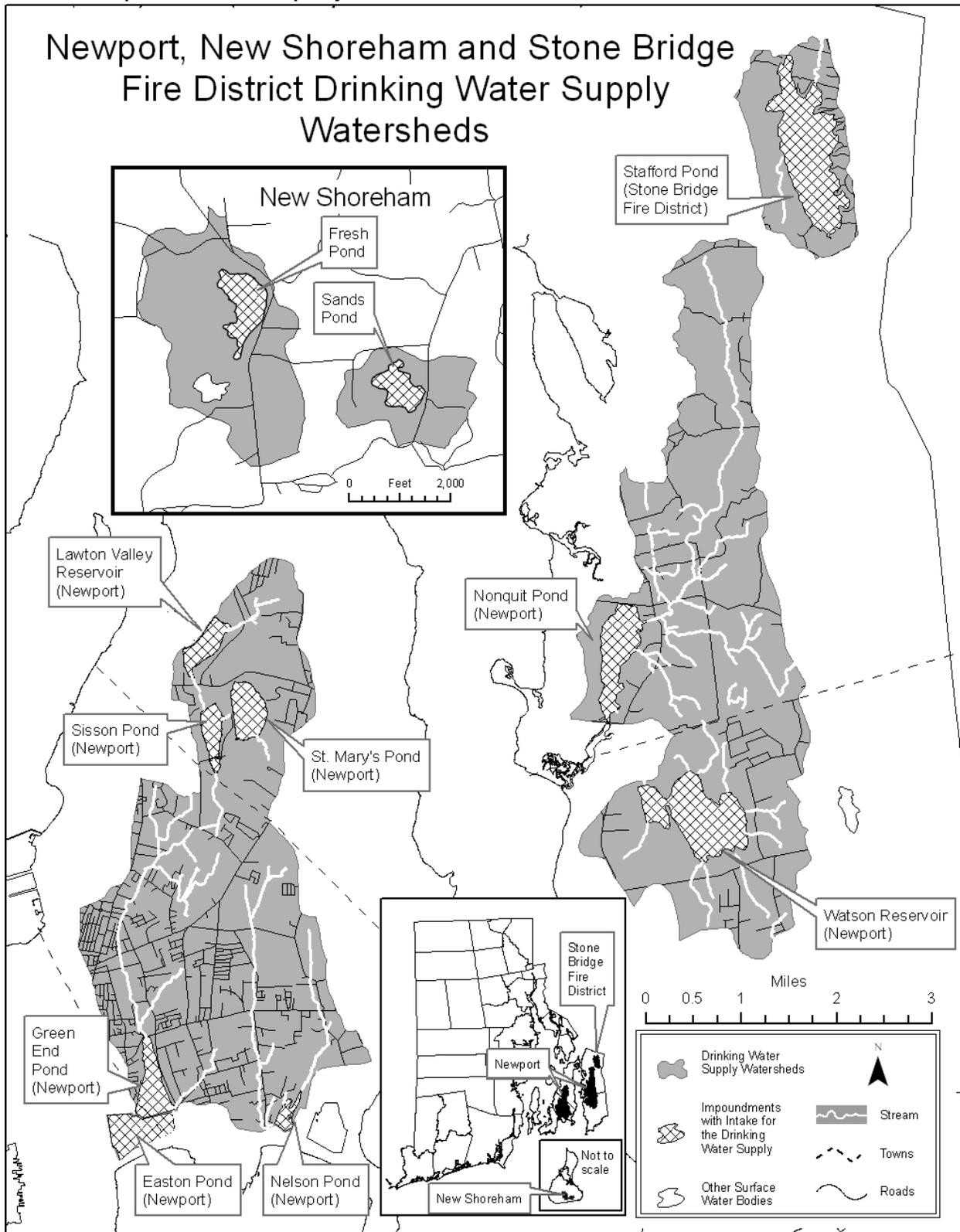
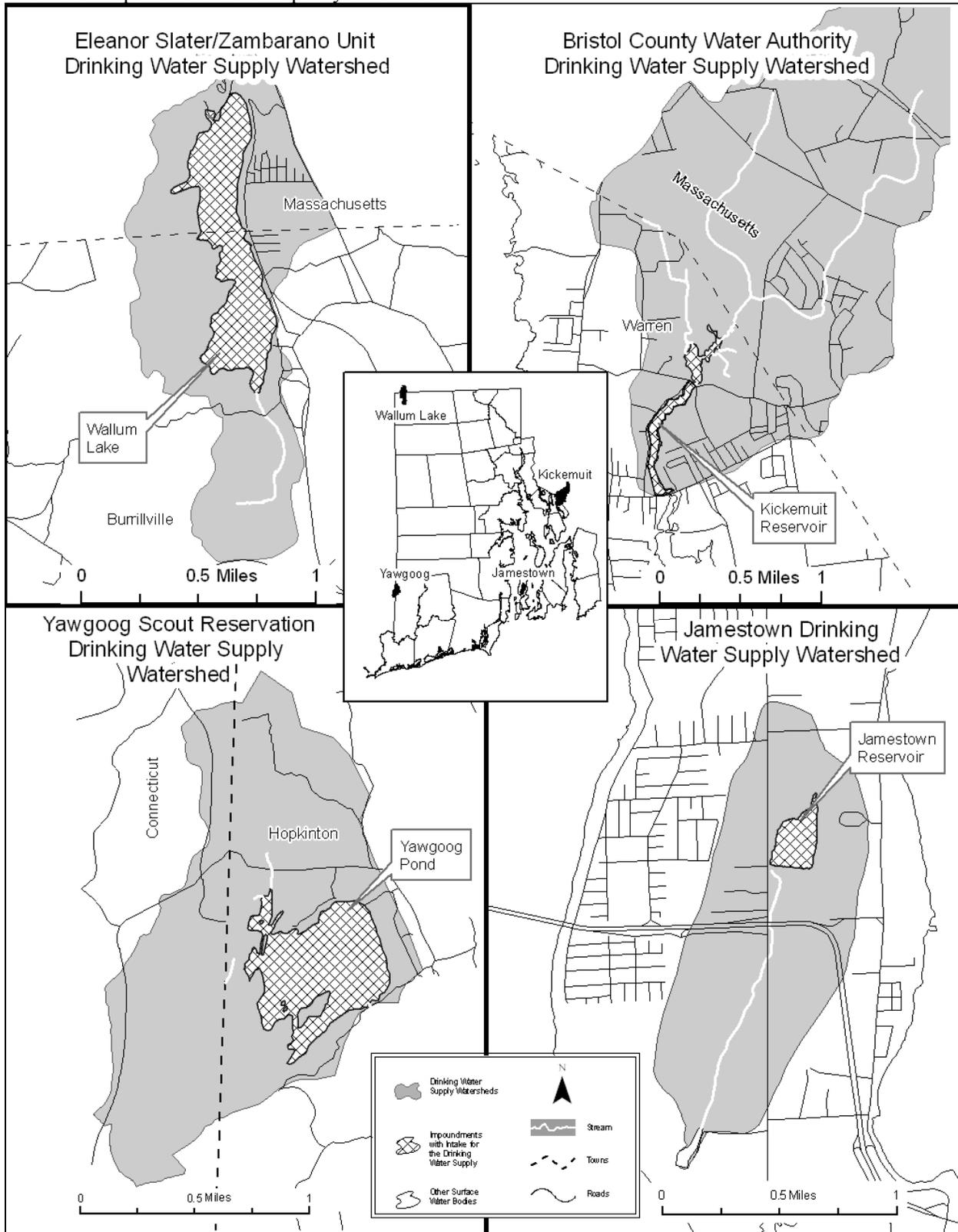


Figure 16. For a detailed look at a location, go to the DEM website, go to “Maps,” go to “Environmental Resource Maps” and build a map of your choice.



RULE 55. EFFECTIVE DATE

The foregoing “Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems,” after due notice, are hereby adopted and filed with the Secretary of State this _____ day of _____, 2007 to become effective January 1, 2008, in accordance with the provisions of Chapters 5-56.1, 23-19.5, 42-35, 42-17.1, 42-17.6 of the General Laws of Rhode Island of 1956, as amended. New or revised standards for grease tank construction in Rule 25, septic tank construction in Rule 26, holding tank construction in Rule 28, and pump tank construction in Rule 29 shall become effective January 1, 2009.

W. Michael Sullivan, Ph.D.
Director, Department of Environmental Management

Notice Given On: August 17, 2007

Public Hearing Held: September 21, 2007

Filing Date:

Effective Date: January 1, 2008

Rhode Island Department of Environmental Management

To: Interested Parties

Date: July 2009

Subject: **Alternative or Experimental Onsite Wastewater Treatment System (OWTS) Technologies**

Attached herewith is the official “List” of Approved Alternative / Experimental (A/E) Technologies for onsite wastewater treatment. These technologies have been approved pursuant to RIDEM OWTS Rules. The technologies have been reviewed and accepted by a nine member Technical Review Committee composed of representatives of local government, the University of Rhode Island, CRMC, environmental organizations, and the private sector.

Immediately following this cover is a brief summary of the A/E technology application process and a fact sheet entitled "Guidance to OWTS Designers" that provides additional information and specifies responsibility for designers who are contemplating the use of an approved A/E technology.

Should you have any question or need further information, please contact Deb Knauss of the OWTS Program Office at deb.knauss@dem.ri.gov or 401-222-4700 x 7612.

Rhode Island Department of Environmental Management

April 2009

ALTERNATIVE/EXPERIMENTAL ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS) TECHNOLOGY PROGRAM

Onsite Wastewater Treatment System Rules, provide the basis for approval of Alternative/Experimental (A/E) Technologies in Rhode Island. A/E systems are designed as alternatives to conventional OWTS or parts of a conventional system. A conventional system is a traditional OWTS with a septic tank, pump chamber with pump or siphon (if needed), distribution box and a standard leachfield with gravity distribution. An Alternative/Experimental System or Technology is an OWTS that does not meet the location, design or construction requirements of a conventional system, but has been demonstrated through field testing, calculations and other engineering evaluations to provide the same degree (or better) of environmental and public health protection.

There are three different categories of A/E technologies: alternative systems, system components, and experimental systems.

Alternative Systems - This category has two classes of certification: Class I and Class II.

- A **Class I** certification is issued to technologies that have been shown to have at least four (4) consecutive years of performance data per installation for no fewer than ten (10) installations, collected no less frequently than quarterly, which clearly demonstrate that all applicable standards have been met. A Class I system must also have been approved for at least four (4) consecutive years in Rhode Island with no fewer than ten installations or at least four (4) consecutive years in at least three (3) other jurisdictions, with no fewer than ten (10) installations in each jurisdiction. Class I certifications do not require renewal.
- A **Class II** certification is issued to technologies that have at least two (2) consecutive years of performance data per installation for no fewer than ten installations, with data collected no less frequently than quarterly that demonstrates that Department standards have been met, have demonstrated a theory or applied research, and the applicant demonstrates that the technology has been approved and utilized successfully for at least two (2) consecutive years in Rhode Island or at least two (2) consecutive years in another jurisdiction with no fewer than ten (10) installations in each jurisdiction. Class II certifications require bi-annual renewal.

System Components - This category also has two classes of certification: Class I and Class II.

- A **Class I** system component certification is issued for a component when the applicant documents that applicable manufacturer's and material standards are met; the applicant provides at least two (2) consecutive years of performance data for no fewer than ten (10) installations that demonstrates Department standards are met, if applicable; and the applicant demonstrates that the component has been approved and utilized successfully for at least two (2) consecutive years in Rhode Island or at least two (2) years in at least three (3) other jurisdictions for no fewer than ten (10) installations in each jurisdiction.
- A **Class II** system component certification is issued for a component when the applicant documents that applicable manufacturer's and material standards are met; the applicant provides at least one (1) year of performance data for no fewer than ten (10) installations that demonstrates Department standards are met, if applicable; the applicant demonstrates that the component has been approved and utilized successfully for at least one (1) year in Rhode Island or at least one (1) other jurisdictions for no fewer than ten (10) installations in each jurisdiction.

Experimental Systems - This category is designed to allow innovative systems, that have been demonstrated to work in practice or theory, to be installed on a limited basis as they are further tested and studied.

Experimental use is approved when:

1. The applicant demonstrates that the technology will work in practice and in theory;
2. Provides for three (3) to ten (10) proposed installations, a suitable area at each location for the installation of an OWTS permitted under the OWTS Rules, or a Class One A/E OWTS Technology;
3. The applicant proposing the Experimental Technology, the property owner(s) and subsequent purchaser(s) submit a signed statement to the Director agreeing to abandon the Experimental Technology and install an OWTS permitted under these Rules, or a Department approved Class One A/E OWTS Technology if the Experimental OWTS fails to perform as designed; and
4. The applicant submits documentation securing a bond or other form of financial security acceptable to the Director, to replace the entire OWTS in the event it fails to perform as designed.

Review and Approval Process

For a technology or component to be approved for use in the state of Rhode Island, the Vendor of that technology must submit an application package to the Department's A/E Technology Program for review. The application package is reviewed by Department staff for completeness. Completed applications are forwarded to the Department's OWTS Technical Review Committee (TRC). The TRC is made up of members from the Department, Coastal Resource Management Council, local Universities, OWTS design and installation firms, local municipalities, and environmental organizations. The TRC reviews all A/E applications and makes recommendations to the Department based on their findings. The Department then issues the final approval or denial.

An approval is documented in the form of a Certification signed by the Chief of Groundwater and Wetlands Protection in the Office of Water Resources. The Certification lists any design, maintenance or installation requirements or restrictions placed on the technology and it also indicates the general requirements and any sampling and reporting requirements associated with the technology.

After a technology is approval is certified by the Department, the Vendor must submit a Design and Installation Manual for review. When the technology's Design and Installation Manual is approved the technology is then placed on the Department's List of Approved Innovative/Alternative Technologies. Once an A/E technology is on the list then individual applications to design, construct, alter, or install these technologies may be submitted to the Department. Please note that an A/E technology is not approved for use under the program until placed on the list. Individual OWTS applications submitted to the Department proposing a technology not yet listed as of the date of receipt of the application must be submitted through the variance process.

GUIDANCE TO OWTS DESIGNERS

Rhode Island Alternative/Experimental OWTS Technology Program

The purpose of this section is to provide guidance on the design, installation and use of the approved technologies under the Rhode Island A/E OWTS Technology Program. By following this guidance, designers will help promote the acceptance and beneficial use of A/E technologies in Rhode Island and expedite the approval process for individual applications.

A/E technologies generally offer improved performance over conventional technologies by using one or a combination of innovative designs, patented products, alternative materials, filtration processes, recirculation systems, pumps, or other electromechanical devices. The primary application for these technologies is at existing home sites on substandard lots having failing or otherwise inadequate OWTSs, and at other sensitive or difficult sites. A/E technologies often require special design and maintenance considerations, and some may involve significant additional design, installation or operational cost.

Certification

The certification letter issued by the Department for each A/E technology is the primary source of information concerning the terms and requirements guiding the use of the technology under the A/E program. The certification includes the design requirements, design exceptions, special operation and maintenance requirements, and obligations of the vendor. Copies of the certifications are available from the vendor.

Important: Please note that the certification represents only that the Department has accepted the technology for listing on the List of Approved A/E Technologies in accordance with its Rules. It is not an endorsement of the technology, nor is it a recognition of any claim other than that which is specifically stated in the certification letter.

Authority to Design

Please note that technology certifications specify the license classes which are authorized to submit to the Department design applications incorporating any of these approved A/E OWTS technologies. These classes are listed with the technology summaries provided herein as “Authority to Design”.

Designer Responsibility to Inform Purchasers and Users

Conventional OWTS systems are relatively well understood by the general public. Most people know about basic septic system components, their limited operation and maintenance requirements, and have a rough idea of costs. A/E technologies, on the other hand, vary considerably from these familiar standards. As a practical matter, the Department will not be able to inform the public adequately about the many different A/E technologies. Accordingly, this responsibility will fall upon the vendors of the technologies and, more particularly, upon designers who elect to use or recommend these technologies to their clients.

Begin by making sure you obtain from the vendor the complete details of the technology, including its design and installation details, operational and maintenance requirements, applicability to the siting or design problem you are attempting to address, and all costs. Next, give your client a complete copy of the certification for the technology issued to the vendor and ask your client to read it. The certification contains many special provisions of which users or purchasers should be apprised. The certification requires that the vendor provide any purchaser of the system with a copy of the Department’s approval prior to the sale of the system. Take time to familiarize the client with all relevant details of the technology. These details may include: appearance or aesthetic aspects, such as above ground tanks, vents or other components; manhole covers; motors; pumps; electrical panel boxes; energy requirements; periodic maintenance needs; costs including design, installation, operating and maintenance costs; noise; and odors, if any. The expected service life of the equipment and

overall system should also be addressed. Finally, the advantages and disadvantages of each technology being considered should be fully explained.

Design

Manuals: Each A/E technology is required to have a Design and Installation Manual. The manuals are produced by the manufacturer or vendor and should be obtained directly from them. The contact name, address and telephone number of the vendor is given on the A/E technology list. The manuals are intended to supply all of the required information to enable design and installation of the A/E system. The manuals also include a copy of the Department's certification letter. Vendors must ensure proper training to help acquaint you with their technologies and answer questions. Some vendors offer specific design and installation services. Some offer services as part of the cost of supplying the product; others may offer additional services on a fee for service basis.

Leachfield Size Reduction: Certain A/E technologies have been approved with an allowance for a reduction in leachfield size. However, for new building construction, the designer proposing a reduced leachfield area must demonstrate that sufficient land area is available to permit installation of a full size leachfield; this should be shown on the plan as an extension of the proposed leachfield area. The additional area must be clearly labeled as the "reserve area", so that it is clear that no construction will take place in this area. The full size leachfield shall meet all OWTS regulatory requirements. In welled areas, a separate "alternate area" shall also be shown as required by the rules and be equal to 100% leachfield sizing. Please note that in most cases the leachfield size reduction may only be applied to conventional leachfield types contained in the rules. The size reduction ordinarily does not apply to the Eljen In-Drain system because this system is considered an A/E technology. Sizing for Eljens should comply with the requirement in the certification.

Electrical: Electrical components and wiring must comply with applicable state and local codes. Power interrupt alarms, where required, generally must be placed on the exterior of the building. The Department will allow interior placement at commercial buildings where access to the interior is readily available during normal business hours.

Operational Requirements: All mechanical treatment systems require electrical power. One or more controllers are normally supplied. Hours of operation are sometimes adjustable and must be reviewed as part of the design process. Operational controls must be set so as to optimize treatment and ensure compliance with the operational efficiencies stipulated by the terms of the certification.

Eljen In-Drains: The A/E certification for this technology supercedes the conditional approval issued by the Department on July 18, 1995 for use on repair applications. Please read the certification carefully and note any and all changes or additions. You should take special note that the septic tank on Eljen systems must be equipped with an outlet effluent filter. Also, the Eljen leachfield system may be used with a single trench line. Normally, two trench lines are required for the minimum trench design according to state Rules.

Effluent Filters: Several effluent filters have been approved for use. Please note that a manhole to grade is required over the outlet port above the effluent filter to facilitate maintenance of the filter.

Variances

Designs incorporating A/E technologies must comply with all other applicable OWTS standards. Where these standards cannot be met, a variance application must be filed in order that the Department properly assess the impacts of the variance request on the operation of the system and on the environment. The fee for the specially engineered system will not be assessed if the only engineered feature is the approved A/E technology.

Nitrogen-Reducing Treatment Systems

Technologies currently recognized as capable of significantly reducing nitrogen levels in residential wastewater are RUCK, Bio-Microbics FAST, Advantex AX, Amphidrome, Nitrex and the RSF as provided in the Guidance for the Design and use of Sand Filters in Critical Resource Areas. The Department may impose additional monitoring requirements for any nitrogen-reducing system design that is not covered under an A/E approval.

Non-Endorsement

The Department of Environmental Management certification under the A/E program does not represent an endorsement by the agency of any system or technology. A representation by any person, vendor or designer that the Department endorses any A/E technology is strictly prohibited.

List of Approved Alternative/Experimental OWTS

July 28, 2009

LEACHFIELD SYSTEMS

Technology Name: [Bottomless Sand Filter](#)

Vendor Information: Generic

Certification: Guidelines for the Design and Installation of BSFs - November 2001

Technology Type: Alternative Leachfield

Authority to Design: CI-II & III Licensed Designers

Description: An equal or superior leachfield for pretreated effluent which is applied under pressure to a 2' bed of specified sand media. The effluent is pumped to and distributed by SCH 40 PVC or equivalent surrounded by a minimum of 6" of peastone. Wastewater trickles down in unsaturated thin-film flow through sand media in a time dosed mode. After treatment the effluent is disposed directly under the sand filter. The technology is targeted for single family sized systems where soil and site conditions exist that make the use of conventional or shallow narrow drain fields impractical or not economical.

Technology Name: [Cultec Contactor Chambers Models 75, 100, 125 & Field Drain Panels \(C-1, C-2, C-3 & C-4\)](#)

Vendor Information: Cultec, Inc.
878 Federal Road
Brookfield, CT 06804
(800) 4-CULTEC

Certification: Component Technology - Class I Component

Technology Type: Alternative Leachfield Component

Authority to Design: CI-I, II & III Licensed Designers

Description: The System consists of high-density polyethylene arch-shaped chambers that have holes along the sidewall of the lower portion of the units. Three models of Contactor Chambers (models 175, 100 and 125) and four Field Drain Panel configurations (C-1, C-2, C-3, C-4) have been approved. The system is installed with 1 ft. of stone beneath the chambers and additional stone filling the sidewall space between the trench wall and the chamber. Trench width and depth varies with the model of the system, see the RIDEM issued Cultec Certification for more details. These chambers shall be sized based on DEM's approval and designed in accordance with DEM Rules for shallow concrete chambers (flow diffusers) Rule 34.2.

Technology Name: [Eljen In-Drain, Type B](#)

Vendor Information: Eljen Corporation
James Donlin
15 Westwood Road
Storrs, CT 06268
(800) 444-1359

Certification: Alternative System or Technology - Class I

Technology Type: Alternative Leachfield

Authority to Design: CI-I, II & III Licensed Designers

Description: The Eljen In-Drain is designed to replace the gravel/stone media of a conventional trench leachfield. In-Drains are constructed of a cusped plastic core that is completely enveloped by a geotextile fabric that is folded accordion style over and under the plastic core. Each In-Drain unit is 3 feet wide, 4 feet long, and 7 inches high, and is designed to be installed in a trench with a minimum of 6 inches of concrete sand bedding beneath and along the sidewalls of the units. Eljen In-Drains have been assigned the following sizing criteria: one linear foot of In-Drain is equivalent to 7 square feet of required leachfield area.

Technology Name: [Infiltrator Chambers](#)

Double-Wide Standard Infiltrator Chambers
Double-Wide High Capacity Infiltrator Chambers

Vendor Information: Infiltrator Systems
Judd Efinger
4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
(800) 221-4436

Certification: Component Technology - Class I

Technology Type: Alternative Leachfield Component

Authority to Design: CI-I, II & III Licensed Designers

Description: The Infiltrator Chambers are arch-shaped high density polyethylene chambers with a nominal width of 2.83 ft. and a length of 6.25 ft. with a ¼ inch high horizontal slots along the sidewall on the lower half of the units. The Standard Chamber is 12 inches high and the High Capacity Chamber is 16 inches high. The system is installed in a 6 ft. wide trench with 1 ft. of stone beneath the chambers and additional stone filling the sidewall space between the trench wall and the chamber. These chambers shall be sized based on DEM's approval and designed in accordance with DEM Rules for shallow concrete chambers (flow diffusers) Rule 34.2.

Technology Name: [Infiltrators \(Stoneless Trench Configuration\)](#)
Equalizer 24 Chambers, Standard Sidewinder Chambers
Equalizer 36 Chambers, High Capacity Infiltrator Chambers
Standard infiltrator Chambers, High Capacity Sidewinder Chambers
Quick 4 Standard Chamber

Vendor Information Infiltrator Systems
6 Business Park Road
P.O. Box 6768
Old Saybrook, CT 06475
(800) 221-4436

Certification Component Technology – Class I

Technology Type Alternative leachfield component

Authority to Design: CI-I, II & III Licensed Designers

Description : The component is an arch shaped Polyolefin injection molded chamber with louvered side slots installed in a trench configuration. It is sized on a 1.72 multiplier of the open bottom area with a maximum of 4.0 SF/LF for any unit. No stone is used in this Installation and trenches are required to be interconnected.

Technology Name: [Pressurized Shallow-Narrow Drainfield](#)

Vendor Information: Generic

Certification: Guidance for the Design and Use of Sand filters in Critical Resource Areas April 10, 2000, (“Sand Filter Guidance Document” or “SFGD”) as amended.

Technology Type: Alternative Leachfield

Authority to Design: CI-II & III Licensed Designers

Description: Pre-treated effluent of at least 30/30 TSS/BOD is applied under pressure through distribution laterals of 1 to 1 ¼ inch Schedule 40, pressure rated PVC pipe, installed 8-12 inches below existing and finish grades. The distribution pipe is covered with a dome-like structure made of 12 inch diameter PVC pipe (or approved equivalent) cut lengthwise; this dome and the pressure-distribution pipe are supported by one (1) inch diameter Schedule 40 PVC support pipes, which also act as a spreader device for the dome, and provide a greater bearing surface for the dome. Schedule 40 PVC or equivalent sweep elbows (turnups) at the distal end of each drainfield lateral facilitate maintenance and inspection.

SYSTEM COMPONENTS

A. EFFLUENT FILTERS

Technology Name: [GAG SIM/TECH Filter](#)

Vendor Information: Gary Koteskey, President
SIM/TECH Filter
06598 Horton Bay North Rd
Boyne City, MI 49712
616-582-7327

Certification: Component Technology - Class I

Technology Type: Pump effluent filter for use with pressure distribution system

Authority to Design: CI-I, II & III Licensed Designers

Description: The SIM/TECH filter is 3 inches in diameter, 18 inches in length, made of schedule 40PVC (or ABS) and stainless steel containing 1/16 inch holes with a total open area of 69.52 sq. in. (41%). It is placed on the discharge side of a pump and lessens clogging of small diameter holes of pressure distribution piping.

Technology Name: [OSI Effluent Screens, Screened Pump Vaults and Biotube Pump Vaults](#)

Filters: F, FE, FT, and FTI Series

Screened Vaults: OSI200, SV1500

Biotube Pump Vaults: [PVU Series \(replaces SVT Series\)](#)

[PVU57-1819, PVU57-2419, PVU68-1819, PVU68-2425](#)

Vendor Information: Orenco Systems, Inc. (OSI)
Eric Ball, VP Product Development
Terry Bounds, Executive VP
814 Airway Avenue
Sutherlin, OR 97479-9012
(514) 459-4449
www.orenco.com

Regional Contacts:
Richard Pezza
Wastewater Technologies, Inc
80 Kilvert Street
Warwick, RI 02886
401-737-7810

Robert Johnson
Atlantic solutions
2417 East Main Rd.
Portsmouth, RI 02871
401-293-0176

Certifications: Component Technology - Class I

Technology Type: Effluent Screen and Pump Vault Filter

Authority to Design: CI-I, II & III Licensed Designers

Description: OSI effluent screens are constructed of reinforced cylinders of 1/8-in. mesh polyethylene with a fiberglass base; they are used in effluent dosing tanks to minimize the solids leaving the tank. OSI screened pump vaults are designed for use with conventional low-head style effluent and sewage pumps; they are installed at the outlet end of a single or double compartment septic tank. The screened vault minimizes entry of solids to the pump. OSI Biotube pump vaults are installed at the outlet end of a single or double compartment septic tank or separate dosing tanks in effluent pumping systems. Pump vaults house a Biotube effluent filter that minimizes solids carryover to following components in the system. Pump vaults are 12 in. in diameter, and accommodate one pump (simplex) or two pumps (duplex).

Technology Name: [Polylok PL-122 Effluent Filter](#)

Vendor Information: Polylok, Inc.
173 Church Street
Yalesville, CT 06492
(800) 234-3119

Certification: Component Technology - Class I

Technology Type: Effluent Filter

Authority to Design: CI-I, II & III Licensed Designers

Description: The Polylok PL-122 is a wastewater effluent filter designed for installation at the outlet of a septic tank to minimize solids from passing to the drain field. The PL-122 contains 122 linear feet of 1/16th-inch slots and is equipped with a Buoyant shut off ball that stops the flow of unfiltered effluent when the filter is removed for maintenance. This filter is modular, allowing the user to increase the filtration area by snapping two or more filters together.

Technology Name: [Zabel A-1800, A-100, A-300 Residential and Commercial Wastewater Filters](#)

Vendor Information: Zabel Environmental Technology
10409 Watterson Trail
Jefferson, KY 40299
(800) 221-5742

Certification: Component Technology - Class I

Technology Type: Effluent Filter

Authority to Design: CI-I, II & III Licensed Designers

Description: The Zabel filters are PVC wastewater effluent filters designed to be installed at the outlet of a septic tank to prevent solids from passing to the drain field.

Technology Name: [Zoeller Effluent Filters](#)

Vendor Information: Zoeller Pump Co.
3469 Cane Run Road
Louisville, KY 40211
(800) 928 7867

Certification: Component Technology Class I

Authority to Design: CI-I, II & III Licensed Designers

Description: The technologies includes a mode series of pumps in screened Vaults designed for installation at the outlet of a septic tank to prevent solids passing to the leachfield. There is also approval for a commercial septic tank effluent filter to prevent solids carryover.

B. DISTRIBUTION COMPONENTS

Technology Name: [Polylok PL- Dipper Box](#)

Vendor Information: Polylok, Inc.
173 Church Street
Yalesville, CT 06492
(800) 234-3119

Certification: Component Technology - Class II

Technology Type: Distribution Box

Authority to Design: CI-I, II & III Licensed Designers

Description: The Polylok Dipper Box is a leachfield dosing mechanism designed on the pivot and balance principal. The Dipper Box is comprised of a specially designed concrete distribution box with dipper tray assembly. The dipper storage tray gradually collects effluent from the septic tank. When it has retained 1.5 gallons of effluent it automatically discharges effluent equally to each leachfield trench.

Technology Name: [Zoeller Tru-Flow D-Box](#)

Vendor Information: Zoeller Pump Co.
P.O. Box 16347
Louisville, KY 40256-0347

Certification: Component technology – Class II

Technology Type: Distribution Box

Authority to Design: CI-I, II & III Licensed Designers

Description: The unit is comprised of a diverter basin and a diverter assembly to evenly split flow to five outlet lines by adjusting a bubble level and adjustment screw in the event of uneven settling.

ALTERNATIVE SYSTEMS

A. ADVANCED TREATMENT SYSTEMS

Technology Name: AdvanTex AX20, AX100 (Mode 1 Configuration)

Vendor Information:

Orenco Systems Inc. (OSI)
Eric Ball, VP Product Development
Terry Bounds, Executive VP
814 Airway Avenue
Sutherlin, OR 97479-9012
(514) 459-4449
www.orencos.com

Regional Contacts:

Richard Pezza
80 Kilvert Street
Wastewater Technologies, Inc.
Warwick, RI 02886
(401) 737-7810

Robert Johnson
Atlantic Solutions
2417 East Main Road
Portsmouth, RI 02871
(401) 293-0176

Certification: Alternative System or Technology - Class I

Technology Type: Advanced Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: A prepackaged packed bed filter that significantly reduces BOD and TSS inside a waterproof container installed after a two compartment tank prior to discharge to a leachfield which may be reduced in size by 50%. When configured in Mode 3, this system is acknowledged as an approved nitrogen reducing system.

Technology Name: Bioclere

Vendor Information:

AWT Environmental, Inc.
John Lafreniere or Craig Lindell
241 DuChaime Blvd.
New Bedford, MA 02745
(508) 998-7577

Certification: Alternative System or Technology - Class II

Technology Type: Aerobic Wastewater Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: The Bioclere system is essentially a modified trickling filter positioned over a clarifier. Effluent from the septic tank enters Bioclere and is pumped up to the top of the insulated unit where it is evenly distributed over the surface of the filter media. Biochemical oxidation takes place as the water trickles through the filter and over the biological film that grows on the surface of these randomly packed pieces of PVC plastic. Oxygen is supplied to the system through a small axial fan located in the top of the housing. The system is capable of significantly reducing biological oxygen demand (BOD₅) and total suspended solids (TSS) in the effluent. Based on these reductions, the Department has allowed for a 35% reduction in leachfield size.

Technology Name: [Biocycle 525](#)

Vendor Information: Biocycle, Inc.
61 Pilsudski Street
P.O. Box 29496
Providence, RI 02909
(401) 944-4000

Certification: Alternative System or Technology - Class II

Technology Type: Aerobic Wastewater Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: The Biocycle system is an aerobic wastewater treatment system which is designed based on activated sludge and extended aeration principles. It utilizes a three-stage treatment process which includes an anaerobic and aerobic treatment, followed by clarification. The system also incorporates an automatic sludge return via venturi from the clarifier to the primary chamber. The system is capable of significantly reducing biological oxygen demand (BOD₅) and total suspended solids (TSS) in the effluent. Based on these reductions, the Department has allowed for a 40% reduction in leachfield size.

Technology Name: [FAST \(Single Home and Modular\)](#)

Vendor Information: Bio-Microbics, Inc.
Robert Rebori
8271 Melrose Drive
Lenexa, KS 66412
(913) 492-0707

Regional Contact:
Jim Dunlap, J&R Engineering
534 New State Highway
Raynham, MA 02767
(508) 823-9566

Certification: Alternative System or Technology - Class I

Technology Type: Aerobic Wastewater Treatment System – TSS & BOD Reduction

Authority to Design: CI-II & III Licensed Designers

Description: The FAST (Fixed Activated Sludge Treatment) system is an aerobic wastewater treatment system that utilizes an aerobic fixed film process that is a combination of the conventional trickling filter and activated sludge processes. The FAST system is designed to be installed within a two-compartment tank where the first compartment provides a primary settling zone for incoming sewage and the second houses the actual FAST system. The system contains submerged media that provide surfaces for microbial growth. Aeration and circulation are provided by a blower that pumps air into a draft tube that extends down the center of the tank. The system is capable of significantly reducing biological oxygen demand (BOD₅), total suspended solids (TSS), and total nitrogen in the effluent. Based on these reductions, the Department has allowed for a 45% reduction in leachfield size.

Technology Name: [Cromaglass SBR](#)

Vendor Information: Cromaglass Corporation
2902 N. Reach Road
P.O. Box 3215
Williamsport, PA. 17701

Certification: Alternative system or Technology-Class II

Technology Type: Sequencing batch reactor

Authority to Design: CI-II & III Licensed Designers

Description: The sequencing batch reactor (SBR) process is a sequential suspended growth (activated sludge) process in which all the major steps occur in the same tank in a continuous flow. The three-compartment tank provides for solids retention, aeration and sludge storage, and clarification and sludge return. Pumps are used for aeration, mixing, sludge return, and discharge to a leachfield. Based on the reduction of BOD and TSS a 45% reduction is allowed in leachfield size.

Technology Name: [Norweco Singulair](#)

Vendor Information: Seigmund Environmental Services, Inc.
Laszlo and Hollister Siegmund
49 Pavilion Avenue
Providence, RI 02905
(401) 785-0130

Certification: Alternative System or Technology - Class II

Technology Type: Aerobic Wastewater Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: The Singulair Wastewater Treatment System utilizes primary treatment (settling), mechanical aeration, clarification and flow equalization to achieve treatment. The effluent passes from a primary settling chamber to an aeration (with oxygen) chamber through a transfer port. An aspirator at the bottom of a shaft disperses air radially into the aeration chamber as fine bubbles, providing oxygen for the biomass and vertical mixing of the chamber contents. The effluent in the aeration chamber then passes through to the clarification chamber for final settling of solids. All clarified wastewater passes through an effluent filter as it exits the system and is then gravity fed to the leachfield. The system is capable of significantly reducing biological oxygen demand (BOD₅) and total suspended solids (TSS) in the effluent. Based on these reductions, the Department has allowed for a 35% reduction in leachfield size.

Technology Name: [SeptiTech M series](#)

Vendor Information: SeptiTech Inc.
220 Lewiston Road
Gray, Maine 04039
(207) 657-5252

Certification: Alternative System or Technology Class II

Technology Type: Recirculating Biological Trickling Filter

Authority to Design: CI-II & III Licensed Designers

Description: The mixed liquor process repeatedly passes the effluent over water repellant Styrofoam beads which entrains the Microbes in the wastewater as it flows through the media. It is designed to be installed after a Septic tank a second tank houses the system. The Department has allowed a 40% reduction in conventional leachfield size.

Technology Name: [Single Pass Sand Filter](#)

Vendor Information: Generic

Certification: Guidelines for the Design and Use of Sand Filters – April 2000

Technology Type: Advanced Treatment System

Authority to Design: CI-III Licensed Designers

Description: Wastewater, having received primary treatment in a septic tank or equivalent unit, is pressure dosed to a bed of specified sand media. Wastewater applications to the filter surface are controlled by both a programmable timer and float switch. Wastewater is dispersed over the sand filter surface in a PVC pipe distribution network surrounded in pea stone. Wastewater trickles down in unsaturated thin film-flow through the sand media, where biological treatment occurs. The treated wastewater (sand filter effluent) is collected in an underdrain at the bottom of the filter and discharged by pressure to a shallow - narrow drainfield, where additional treatment occurs. The system is capable of significantly reducing biological oxygen demand (BOD₅), and total suspended solids (TSS). Ammonia and pathogens reductions may also be achieved. The technology is targeted for use in critical resource areas and is intended to be used with shallow pressurized drainfields.

Technology Name: [Puraflo® Peat Biofilter](#)

Vendor Information: Greg O'Donnell
Bord na Mona Environmental Products US, Inc.
P.O. Box 77457
Greensboro, NC 27417
800-PURAFLO

Certification: Alternative System or Technology - Class II

Technology Type: Advanced Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: The Puraflo is a modular pre-engineered biofiltration system that utilizes natural peat fiber as a biofilm media. Among the processes occurring are filtration, absorption, adsorption, ion exchange, and microbial assimilation. Primarily used in single pass mode. The system is capable of significantly reducing biological oxygen demand (BOD₅), and total suspended solids (TSS). Ammonia and pathogens reductions may also be achieved. The technology is targeted for use in critical resource areas and may be used with shallow pressurized drainfields.

B. NITROGEN REMOVAL SYSTEMS

Technology Name: [AdvanTex AX20, AX100 \(Mode 3 Configuration\)](#)

Vendor Information:

Orenco Systems Inc. (OSI)
Eric Ball, VP Product Development
Terry Bounds, Executive VP
Sam Carter, Regulatory Relations Coordinator

814 Airway Avenue
Sutherlin, OR 97479-9012
(514) 459-4449
www.orenco.com

Regional Contacts:

Richard Pezza
80 Kilvert Street
Wastewater Technologies, Inc.
Warwick, RI 02886
(401) 737-7810

Robert Johnson
Atlantic Solutions
2417 East Main Road
Portsmouth, RI 02871
(401) 293-0176

Certification: Alternative System or Technology - Class II

Technology Type: Advanced Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: A prepackaged packed bed filter that significantly reduces nitrogen, BOD and TSS inside a waterproof container installed after a two-compartment tank prior to discharge to a leachfield which may be reduced in size by 50%.

Technology Name: [Amphidrome®](#)

Vendor Information: F. R. Mahoney & Associates, Inc. **Contact:**
273 Weymouth Street Keith Dobey
Rockland, MA 02370 Tel: (781) 982-9300, Ext. 37
Fax: (781) 982-1056

Certification: Alternative System or Technology – Class II

Technology Type: Nitrogen Reducing Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: The Amphidrome® system uses a submerged attached growth bioreactor process operating in a batch mode.

The Amphidrome® system utilizes two tanks and one submerged attached growth bioreactor, called the Amphidrome® reactor. The first tank, the anoxic/equalization tank, is where the raw wastewater enters the system. The tank has an equalization section, a settling zone, and a sludge storage section. It serves as a primary clarifier before the Amphidrome® reactor.

This Amphidrome® reactor consists of the following four items: underdrain, support gravel, filter media, and backwash trough. The underdrain, constructed of stainless steel, is located at the bottom of the reactor. It provides support for the media and even distribution of air and water into the reactor. The underdrain has a manifold and laterals to distribute the air evenly over the entire filter bottom. The design allows for both the air and water to be delivered simultaneously--or separately--via individual pathways to the bottom of the reactor. As the air flows up through the media, the bubbles are sheared by the sand, producing finer bubbles as they rise through the filter. On top of the underdrain is 18” (five layers) of four different sizes of gravel. Above the gravel is a deep bed of coarse, round silica sand media. The media functions as filter, significantly reducing suspended solids and provides the surface area for which an attached growth biomass can be maintained. The Department allows a 50% reduction in conventional and approved AE “component technology” leachfield size with this System.

Technology Name: [FAST \(Single Home and Modular\)](#)

Vendor Information: Bio-Microbics, Inc. **Regional Contact:**
Robert Rebori Jim Dunlap, J&R Engineering
8271 Melrose Drive 534 New State Highway
Lenexa, KS 66412 Raynham, MA 02767
(913) 492-0707 (508) 823-9566

Certification: Alternative System or Technology - Class II

Technology Type: Nitrogen-reducing and Aerobic Wastewater Treatment System

Authority to Design: CI-II & III Licensed Designers

Description: The FAST (Fixed Activated Sludge Treatment) system is an aerobic wastewater treatment system that utilizes an aerobic fixed film process that is a combination of the conventional trickling filter and activated sludge processes. The FAST system is designed to be installed within a two-compartment tank where the first compartment provides a primary settling zone for incoming sewage and the second houses the actual FAST system. The system contains submerged media that provide surfaces for microbial growth. Aeration and circulation are provided by a blower that pumps air into a draft tube that extends down the center of the tank. The system is capable of significantly reducing biological oxygen demand (BOD₅), total suspended solids (TSS), and total nitrogen in the effluent. Based on these reductions, the Department has allowed for a 45% reduction in leachfield size.

Technology Name: [Nitrex™](#)

Vendor Information:

Lombardo Associates, Inc.
49 Edge Hill Road
Newton, MA 02467

Contact:

Pio Lombardo, PE
Tel: (617) 964-2924
Fax: (617) 332-5477
E-mail:
pio@LombardoAssociates.com

Certification:

Alternative System or Technology – Class II

Technology Type:

Nitrogen Reducing Treatment System \leq TN 10 mg/L

Authority to Design:

CI-II & III Licensed Designers

Description:

The Nitrex™ Filter performs a treatment step as part of a multi-component onsite wastewater treatment system. The Nitrex™ Filter is preceded by a nitrifying advanced pretreatment system designed to convert organic nitrogen and/or ammonium to nitrate, prior to the Nitrex™ Filter performing the denitrification step. Any advanced treatment system used in conjunction with a Nitrex™ Filter must also be a Department approved A/E Technology and must be approved by the Vendor for use with the Nitrex™ Filter. The term “Nitrex™ Filter” shall mean the media-filled tank and associated components and controls produced by the Vendor to cause denitrification. The term Nitrex™ Filter System shall mean the Nitrex™ Filter and the advanced pretreatment system.

The Nitrex™ Filter provides a carbon source in the form of wood media for heterotrophic bacteria operating in an anaerobic environment to reduce the nitrate to nitrogen gas. Nitrified effluent is piped into the bottom of the Nitrex™ Filter and moves vertically through the media under a slight pressure head caused by gravity or pressure; the denitrified effluent is then discharged to a drainfield.

The pretreatment system used in advance of the Nitrex™ Filter must be designed, installed, operated and maintained in accordance with the terms of the certification issued by the Department for use of that system.

The Department allows reduction of leachfield area for conventional and approved AE “component technology” leachfields, as assigned to the pre-treatment system specified for use with the Nitrex™ filter.

Technology Name: [Recirculating Sand Filter](#)

Vendor Information: Generic

Certification: Guidelines for the Design and Use of Sand Filters – April 2000

Technology Type: Nitrogen Reducing Treatment System

Authority to Design: CI-III Licensed Designers

Description: Wastewater, having received primary treatment in a septic tank or equivalent unit, flows by gravity to a recirculation (mixing) tank. In doses controlled by both a programmable timer and float switch, the mixed fresh wastewater and partially treated filter effluent is applied to a bed of coarse sand (fine gravel) media. This mixed wastewater is dispersed over the filter surface in a PVC distribution network surrounded in pea stone. Wastewater trickles down through the sand media, where biological treatment occurs. The treated effluent is collected in an underdrain at the bottom of the filter and discharged back to the recirculation tank. There most of it mixes with incoming wastewater, a small amount gets discharged to the drainfield, and the cycle begins again. Typically, a buoyant-ball check valve is used to control discharge and recirculation. Treated wastewater is discharged to a drainfield for additional treatment. The system is capable of significantly reducing biological oxygen demand (BOD₅), total suspended solids (TSS), and total nitrogen in the effluent. The technology is targeted for use in critical resource areas and is intended to be used with shallow pressurized drainfields.

Technology Name: [RUCK](#)

Vendor Information: Mr. Joseph Frisella
Frisella Engineering
23 Arnold Street
Wakefield, RI 02879-3796
(401) 783-5949

Certification: Alternative System or Technology - Class II

Technology Type: Nitrogen-Reducing Treatment System

Authority to Design: CI-III Licensed Designers

Description: The System is designed as a nitrogen-reducing OWTS. A household's blackwater (toilet & kitchen sink wastewater) is plumbed separately from the greywater (all other wastewater, i.e. shower, laundry & bathroom sink). The blackwater enters a blackwater septic tank followed by a buried, aerobic sand filter. The greywater is plumbed to a greywater septic tank. The nitrified blackwater from the sand filter either is pumped or flows into the greywater septic tank for the denitrification process which occurs under anaerobic conditions with the greywater serving as a carbon source. This system is a single pass-through system. The system is capable of significantly reducing biological oxygen demand (BOD₅) total suspended solids (TSS) and total nitrogen (TN) in the effluent. Based on these reductions, the Department has allowed for a 30% reduction in leachfield size.

C. LEACHFIELD RENOVATION

Technology Name: [White Knight™ Microbial Inoculator/Generator Models WK-40 and WK-78](#)

Vendor Information: Robert Silva, President
Knight Treatment Systems, Inc.
281 County Route 51A
Oswego, NY 13126
Tel: 800-560-2454
Fax: 315-343-6114
www.knighttreatmentsystems.com

Certification: Alternative System or Technology – Class II

Technology Type: Microbial Inoculator/Generator Leachfield Renovation

Authority to Design: CI-I, II & III Licensed Designers

Description: The White Knight™ Microbial Inoculator/Generator (White Knight™) is contained within a HDPE cylinder, designed to be installed into a septic tank, continuously inoculating the tank with non-pathogenic IOS-500™ bacterial cultures. An air pump provides fine bubble aeration and circulation within the System bringing the bacteria into contact with fixed film substrate and the suspended organic compounds in the septic tank. The IOS-500™ bacteria released by the System digest organic wastes in the septic tank and in the leachfield.

White Knight™ is approved for renovation of Onsite Wastewater Treatment Systems (OWTS) that are organically clogged resulting in hydraulic failure, as follows.

1. a) In the Salt Pond and Narrow River Critical Resource Areas White Knight™ may be used only if the leachfield was properly sized in accordance with the Regulations in effect at the time the permit was approved, as evidenced by the approved permit. If the leachfield did not meet the requirements of the Regulations in effect at the time the permit was approved, or if there is no permit available for the subject system, the site is not eligible for use of White Knight™.
1. b) In all other areas of the State an approved permit, or system analysis performed by a Class II or III OWTS designer documenting that the system is suitable for use, is required.
2. Statewide, in addition to the two sets of requirements cited above, candidate site eligibility is determined based on system size, type and condition. The site evaluation must confirm that the system failure is due to organic clogging in the leachfield.

White Knight™ may also be installed in a properly functioning OWTS as well as a new OWTS, by application for new construction.

Appendix F

TOWN OF COVENTRY, RHODE ISLAND

RESULTS OF INTERVIEW OF SEPTAGE HAULERS JULY 2009

As part of the data collection for the Coventry Wastewater Facilities Plan, several septage haulers servicing the Town of Coventry were interviewed. The information summarized below represents information supplied by the following persons:

Mr. Rick Nunes of Rick Nunes Construction
Mr. Paul Gosselin of P & J Cesspool Company
Mr. Ray Plante of Ray Plante & Sons
Mr. Paul Diffey of Diffey & Miller Inc.
Jane from answering service at Michael Perri & Sons

Other haulers were contacted but either could not supply information or did not have enough work in Coventry to be of value to this study. The majority of septage pumped by these haulers is from residential septic systems. Several of these haulers stated that their business was 80 percent or greater residential customers. The following questions were asked of each hauler and their responses are summarized below each question.

Q1. How many years have you been providing service to Coventry?

All companies surveyed stated that they had been providing service to Coventry for at least 20 years. The average was approximately 40 years.

Q2. What portion of your total work in Coventry is residential?

All companies surveyed stated that the majority of their work in Coventry is residential. One company stated that 100 percent of their work in Coventry is residential, and the lowest is 75 percent of work in Coventry being residential.

Q3. What is the average charge to a homeowner in Coventry for pumping a typical single-family residential septic tank?

The average typical charge for pumping a single-family residential septic tank is about \$200, with a range from \$190 to \$215.

Q4. Where do you typically discharge the septage from Coventry?

All companies stated they discharged their septage from Coventry in Cranston, RI, while Warwick, RI and Lincoln, RI were each mentioned once in addition to Cranston, RI.

Q5. How much of the pumping in Coventry is for maintenance purposes, and how much is done for operation problems (odors, back-ups...etc).

Most companies stated that the percentage of pumping in Coventry for maintenance purposes has drastically increased in the past 10 years. Most companies stated that around 75 percent of the pumping they do in Coventry is for maintenance purposes. One company stated that they perform 50 percent of pumping for maintenance and 50 percent for operational problems; this is the lowest value. The average percent of the pumping in Coventry for maintenance purposes is 70 percent.

Q6. Do you also install/replace septic systems? If so, what is the typical cost to replace a single family residential system?

Most companies asked stated that they do replace septic systems, and expressed that the cost of replacement can vary drastically depending on the circumstances. The range of replacement cost is from about \$8,000 to \$20,000.

Below is a table showing the specific answers from each company interviewed.

RESULTS OF INTERVIEWS WITH SEPTAGE HAULERS IN COVENTRY, RI

COMPANY	ANSWERS						
	Q1	Q2	Q3	Q4	Q5	Q6	
						Min	Max
Rick Nunes Construction	30	75%	-	Cranston / Warwick	75%	\$10,000	-
Ray Plante & Sons	20	90%	\$205	Cranston / Lincoln	50%	\$8,000	\$12,000
P&J Cesspool Company	42	100%	\$190	Cranston	65%	N/A	N/A
Diffey & Miller Inc	90	80%	\$200	Cranston	80%	N/A	N/A
Michael Perri & Sons Inc	25	majority	\$215	Cranston	80%	\$10,000	\$20,000
AVERAGE	41	86%	\$203	Cranston	70%	\$9,333	\$16,000

Compiled by: Emily Mercurio

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Appendix G Sewer Installation Schedule and Costs

Costs in this table are based on ENR=8578.28 (June 2009)

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
A (1)	New London Tpk	15	int.	4500		Existing	53	WW	12.78	III
A (1)	Arnold Road	8		350		Existing	2	WW	0.53	III
A (1)	Arnold Road	8		1650	\$ 200.00	\$ 330,000.00	7	I	2.50	III
A (1)	Crompton Road	8		550	\$ 200.00	\$ 110,000.00	4	WW	0.83	III
A (1)	Gay Street	8		550	\$ 200.00	\$ 110,000.00	4	WW	0.83	III
A (1)	Grandview Street	8		600	\$ 200.00	\$ 120,000.00	7	I	0.91	III
A (1)	Lions Drive	8		200	\$ 200.00	\$ 40,000.00	3	WW	0.30	III
A (1)	Longfellow Drive	8		800	\$ 200.00	\$ 160,000.00	13	WW	1.21	III
A (1)	Longfellow Drive	8		550	\$ 200.00	\$ 110,000.00	10	WW	0.83	III
A (1)	Martin Street	8		700	\$ 200.00	\$ 140,000.00	17	WW	1.06	III
A (1)	Rejane Street	8		500	\$ 200.00	\$ 100,000.00	9	WW	0.76	III
A (1)	Valrene Street	8		600	\$ 200.00	\$ 120,000.00	12	WW	0.91	III
A (1)	Wendy Drive	8		800	\$ 200.00	\$ 160,000.00	14	WW	1.21	III
A (1)	Whittier Drive	8		400	\$ 200.00	\$ 80,000.00	7	WW	0.61	III
A (1)	Area Total			12,750		\$ 1,580,000.00	107		25.28	
	Cost per unit					\$ 14,766.36				
A (2)	Lemis Street		P.S.			\$ 320,000.00		A1		III
A (2)	Lemis Street	4	FM	1300	\$ 80.00	\$ 104,000.00		A1		III
A (2)	Angus Street	8		400	\$ 200.00	\$ 80,000.00	8	A1		III
A (2)	Angus Street	8		1000	\$ 200.00	\$ 200,000.00	22	A1	0.61	III
A (2)	Lemis Street	8		1150	\$ 200.00	\$ 230,000.00	24	A1	1.74	III
A (2)	Old North Road	8		400	\$ 200.00	\$ 80,000.00	7	A1	0.61	III
A (2)	Old North Road	8		250	\$ 200.00	\$ 50,000.00	2	A1	0.38	III
A (2)	Old North Road	8		1200	\$ 200.00	\$ 240,000.00	17	A1	1.82	III
A (2)	Rejane Street	8		600	\$ 200.00	\$ 120,000.00	6	A1	0.91	III
A (2)	Rosebud Street	8		100	\$ 200.00	\$ 20,000.00	1	A1	0.15	III
A (2)	Tiffany Road	8		1000	\$ 200.00	\$ 200,000.00	12	A1	1.52	III
A (2)	Trafford Park Drive	8		100	\$ 200.00	\$ 20,000.00	4	A1	0.15	III
A (2)	Trafford Park Drive	8		700	\$ 200.00	\$ 140,000.00	13	A1	1.06	III
A (2)	Trafford Park Drive	8		100	\$ 200.00	\$ 20,000.00	1	A1	0.15	III
A (2)	X-C Angus Street	8		300	\$ 200.00	\$ 60,000.00	2	A1	0.45	III
A (2)	X-C Old North Street	8		350	\$ 200.00	\$ 70,000.00	2	A1	0.53	III
A (2)	X-C Trafford Park Drive	8		250	\$ 200.00	\$ 50,000.00	2	A1	0.38	III
A (2)	Area Total			9,200		\$ 2,004,000.00	123		11.97	
	Cost per unit					\$ 16,292.68				
B (1)	Bonney Street	8		400	\$ 200.00	\$ 80,000.00	10	WW	0.61	III
B (1)	Cypress Road	8		600	\$ 200.00	\$ 120,000.00	8	WW	0.91	III
B (1)	Dawley Street	8		450	\$ 200.00	\$ 90,000.00	12	WW	0.68	III
B (1)	Deerfield Road	8		250	\$ 200.00	\$ 50,000.00	4	WW	0.38	III
B (1)	Dodd Street	8		300	\$ 200.00	\$ 60,000.00	4	WW	0.45	III
B (1)	Gilles Street	8		350	\$ 200.00	\$ 70,000.00	10	WW	0.53	III
B (1)	Kennedy Drive	8		650	\$ 200.00	\$ 130,000.00	10	WW	0.98	III
B (1)	Lantern Lane	8		600	\$ 200.00	\$ 120,000.00	11	WW	0.91	III
B (1)	Old North Road	8		300	\$ 200.00	\$ 60,000.00	5	WW	0.45	III
B (1)	Old North Road	8		1200	\$ 200.00	\$ 240,000.00	17	WW	1.82	III
B (1)	Old North Road	8		300		Existing	5	WW	0.45	III
B (1)	Suzanne Street	8		350	\$ 200.00	\$ 70,000.00	4	WW	0.53	III
B (1)	Tiogue Avenue	8		1200	\$ 200.00	\$ 240,000.00	18	WW	1.82	III
B (1)	Tiogue Avenue	8		1300		Existing	24	WW	1.97	III
B (1)	X-C Bonney Street	8		250	\$ 200.00	\$ 50,000.00	2	WW	0.38	III
B (1)	X-C C.H.A.	8		350		Existing	1	WW	0.53	III
B (1)	X-C Lantern Lane	8		350	\$ 200.00	\$ 70,000.00	2	WW	0.53	III
B (1)	Area Total			9,200		\$ 1,450,000.00	117		13.94	
	Cost per unit					\$ 12,393.16				
B (2)	Englewood Road		P.S.			\$ 80,000.00				III
B (2)	Englewood Road	3	FM	500	\$ 80.00	\$ 40,000.00				III
B (2)	Kennedy Drive	3	FM	250	\$ 80.00	\$ 20,000.00				III
B (2)	Deerfield Road	8		500	\$ 200.00	\$ 100,000.00	8	A2	0.76	III
B (2)	Englewood Road	8		500		Existing	9	A2	0.76	III
B (2)	Kennedy Drive	8		100	\$ 200.00	\$ 20,000.00	2	A2	0.15	III
B (2)	Area Total			1,850		\$ 260,000.00	10		1.67	
	Cost per unit					\$ 26,000.00				
C	Berkshire Road	8		200	\$ 200.00	\$ 40,000.00	2	TINT	0.30	II
C	Darton Road	8		375	\$ 200.00	\$ 75,000.00	7	TINT	0.57	II
C	East Shore Drive	8		1800	\$ 200.00	\$ 360,000.00	44	TINT	2.73	II
C	East Shore Drive	8		250	\$ 200.00	\$ 50,000.00	3	TINT	0.38	II
C	Elton Street	8		500	\$ 200.00	\$ 100,000.00	15	TINT	0.76	II

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
C	Mead Street	8		150	\$ 200.00	\$ 30,000.00	3	TINT	0.23	II
C	Mead Street	8		50	\$ 200.00	\$ 10,000.00	2	TINT	0.08	II
C	Middle Road	8		100	\$ 200.00	\$ 20,000.00	1	TINT	0.15	II
C	Mohawk Street	8		925	\$ 200.00	\$ 185,000.00	22	TINT	1.40	II
C	Mohawk Street	8		1000	\$ 200.00	\$ 200,000.00	25	TINT	1.52	II
C	Rawlinson Drive	8		450	\$ 200.00	\$ 90,000.00	10	D	0.68	II
C	Rawlinson Drive	8		1100	\$ 200.00	\$ 220,000.00	22	TINT	1.67	II
C	Seneca Street	8		700	\$ 200.00	\$ 140,000.00	16	TINT	1.06	II
C	X-C East Shore Drive	8		300	\$ 200.00	\$ 60,000.00	1	TINT	0.45	II
C	Area Total			7,900		\$ 1,580,000.00	173		11.97	
	Cost per unit					\$ 9,132.95				
D	X-C James Street	12	Int.	200	\$ 300.00	\$ 60,000.00	1	E	0.45	II
D	X-C Pembroke Lane	12	Int.	900	\$ 300.00	\$ 270,000.00	4	E	2.05	II
D	Baylor Drive	8		100	\$ 200.00	\$ 20,000.00	1	E	0.15	II
D	Baylor Drive	8		500	\$ 200.00	\$ 100,000.00	7	E	0.76	II
D	Colby Drive	8		300	\$ 200.00	\$ 60,000.00	6	E	0.45	II
D	Columbia Avenue	8		2400	\$ 200.00	\$ 480,000.00	56	E	3.64	II
D	Pembroke Lane	8		1450	\$ 200.00	\$ 290,000.00	27	E	2.20	II
D	Pembroke Lane	8		2100	\$ 200.00	\$ 420,000.00	39	E	3.18	II
D	Pettine Street	8		1100	\$ 200.00	\$ 220,000.00	23	E	1.67	II
D	Princeton Avenue	8		1300	\$ 200.00	\$ 260,000.00	28	E	1.97	II
D	Princeton Street	8		600	\$ 200.00	\$ 120,000.00	15	E	0.91	II
D	Tiogue Avenue	8		600	\$ 200.00	\$ 120,000.00	14	E	0.91	II
D	Tiogue Avenue	8		1250	\$ 200.00	\$ 250,000.00	17	TINT	1.89	II
D	Yale Drive	8		1200	\$ 200.00	\$ 240,000.00	26	E	1.82	II
D	Area Total			14,000		\$ 2,910,000.00	264		22.05	
	Cost per unit					\$ 11,022.73				
E (1)	Laurel Avenue	12	Int.	1500	\$ 300.00	\$ 450,000.00	19	WINT	3.41	II
E (1)	Bernard Drive	8		450	\$ 200.00	\$ 90,000.00	7	TINT	0.68	II
E (1)	Centre Street	8		600	\$ 200.00	\$ 120,000.00	9	WINT	0.91	II
E (1)	Dexter Street	8		450	\$ 200.00	\$ 90,000.00	11	TINT	0.68	II
E (1)	Greene Street	8		400	\$ 200.00	\$ 80,000.00	7	WINT	0.61	II
E (1)	Matteson Street	8		500	\$ 200.00	\$ 100,000.00	10	WINT	0.76	II
E (1)	Pilgrim Avenue	8		600	\$ 200.00	\$ 120,000.00	13	TINT	0.91	II
E (1)	Pilgrim Avenue	8		2700	\$ 200.00	\$ 540,000.00	34	WINT	4.09	II
E (1)	Pilgrim Avenue	8		550	\$ 200.00	\$ 110,000.00	11	TINT	0.83	II
E (1)	Princeton Avenue	8		600	\$ 200.00	\$ 120,000.00	9	WINT	0.91	II
E (1)	Reddington Street	8		700	\$ 200.00	\$ 140,000.00	12	WINT	1.06	II
E (1)	Taft Street	8		550	\$ 200.00	\$ 110,000.00	9	WINT	0.83	II
E (1)	Vanderbilt Terrace	8		950	\$ 200.00	\$ 190,000.00	19	WINT	1.44	II
E (1)	Wesleyan Avenue	8		1200	\$ 200.00	\$ 240,000.00	25	WINT	1.82	II
E (1)	X-C Dexter Street	8		550	\$ 200.00	\$ 110,000.00	0	TINT	0.83	II
E (1)	Area Total			12,300		\$ 2,610,000.00	195		19.77	
	Cost per unit					\$ 13,384.62				
E (2)	George Street		P.S.			\$ 400,000.00				II
E (2)	George Street	12	Int.	400	\$ 300.00	\$ 120,000.00	5	E1	0.91	II
E (2)	Sheltra Avenue	12	Int.	1350	\$ 300.00	\$ 405,000.00	24	E1	3.07	II
E (2)	Laurel Avenue	6	FM	250	\$ 80.00	\$ 20,000.00				II
E (2)	X-C Laurel Avenue	6	FM	500	\$ 80.00	\$ 40,000.00				II
E (2)	Amherst Avenue	8		400	\$ 200.00	\$ 80,000.00	7	E1	0.61	II
E (2)	Centre Street	8		350	\$ 200.00	\$ 70,000.00	5	E1	0.53	II
E (2)	Cornell Court	8		250	\$ 200.00	\$ 50,000.00	3	E1	0.38	II
E (2)	Laurel Avenue	8		1000	\$ 200.00	\$ 200,000.00	18	E1	1.52	II
E (2)	Princeton Avenue	8		650	\$ 200.00	\$ 130,000.00	11	E1	0.98	II
E (2)	Princeton Avenue	8		275	\$ 200.00	\$ 55,000.00	4	E1	0.42	II
E (2)	Sheltra Avenue	8		300	\$ 200.00	\$ 60,000.00	2	E1	0.45	II
E (2)	Taft Street	8		675	\$ 200.00	\$ 135,000.00	12	E1	1.02	II
E (2)	Turcotte Street	8		200	\$ 200.00	\$ 40,000.00	4	E1	0.30	II
E (2)	Wesleyan Avenue	8		700	\$ 200.00	\$ 140,000.00	13	E1	1.06	II
E (2)	X-C Laurel Avenue	8		500	\$ 200.00	\$ 100,000.00	3	E1	0.76	II
E (2)	Area Total			7,800		\$ 2,045,000.00	111		12.01	
	Cost per unit					\$ 18,423.42				
F	Sandy Bottom Road		P.S.			Existing				
F	Sandy Bottom Road	24	Int.	1400		Existing	10	WINT	6.36	I
F	Tiogue Avenue	24	Int.	550		Existing	6	WINT	2.50	I
F	Tiogue Avenue	24	Int.	1650		Existing	23	WINT	7.50	I
F	Tiogue Avenue	18	Int.	300		Existing	5	WINT	1.02	I
F	Tiogue Avenue	18	Int.	1200		Existing	13	WINT	4.09	I
F	Tiogue Avenue	18	Int.	3000		Existing	40	WINT	10.23	I
F	Tiogue Avenue	18	Int.	2000	\$ 400.00	\$ 800,000.00	17	WINT	6.82	I
F	Tiogue Avenue	12	Int.	1600		Existing	12	WINT	3.64	I
F	Tiogue Avenue	12	Int.	1100	\$ 300.00	\$ 330,000.00	13	WINT	2.50	I
F	Sandy Bottom Road	15	FM	1600		Existing				
F	Main Street	15	FM	1100		Existing				

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
F	Area Total			15,500		\$ 1,130,000.00	30		44.66	
	Cost per unit					\$ 37,666.67				
G	Arnold Road	12	Int.	600	\$ 300.00	\$ 180,000.00	13	TINT	1.36	I
G	Idaho Street	12	Int.	950	\$ 300.00	\$ 285,000.00	13	TINT	2.16	I
G	Lakeside Drive	12	Int.	650	\$ 300.00	\$ 195,000.00	8	TINT	1.48	I
G	Alaska Street	8		500	\$ 200.00	\$ 100,000.00	9	TINT	0.76	I
G	Arizona Street	8		700	\$ 200.00	\$ 140,000.00	14	TINT	1.06	I
G	Arnold Road	8		800	\$ 200.00	\$ 160,000.00	21	TINT	1.21	I
G	Colorado Street	8		350	\$ 200.00	\$ 70,000.00	10	TINT	0.53	I
G	Edith Street	8		200	\$ 200.00	\$ 40,000.00	2	TINT	0.30	I
G	Glen Avenue	8		150	\$ 200.00	\$ 30,000.00	1	TINT	0.23	I
G	Hazel Street	8		350	\$ 200.00	\$ 70,000.00	5	TINT	0.53	I
G	Henry Avenue	8		200	\$ 200.00	\$ 40,000.00	4	TINT	0.30	I
G	Hilltop Avenue	8		250	\$ 200.00	\$ 50,000.00	3	TINT	0.38	I
G	Lakeside Drive	8		650	\$ 200.00	\$ 130,000.00	12	TINT	0.98	I
G	Larchmont Drive	8		500	\$ 200.00	\$ 100,000.00	9	TINT	0.76	I
G	Larchmont Drive	8		675	\$ 200.00	\$ 135,000.00	12	TINT	1.02	I
G	Loretta Avenue	8		200	\$ 200.00	\$ 40,000.00	4	TINT	0.30	I
G	Montana Avenue	8		950	\$ 200.00	\$ 190,000.00	12	TINT	1.44	I
G	Oak Road	8		200	\$ 200.00	\$ 40,000.00	1	TINT	0.30	I
G	Overview Drive	8		700	\$ 200.00	\$ 140,000.00	12	TINT	1.06	I
G	Pine Avenue	8		900	\$ 200.00	\$ 180,000.00	19	TINT	1.36	I
G	Ridge Avenue	8		250	\$ 200.00	\$ 50,000.00	6	TINT	0.38	I
G	Sand Street	8		250	\$ 200.00	\$ 50,000.00	4	TINT	0.38	I
G	Twin Lakes Avenue	8		1100	\$ 200.00	\$ 220,000.00	21	TINT	1.67	I
G	Unnamed Way	8		150	\$ 200.00	\$ 30,000.00	4	TINT	0.23	I
G	X-C Larchmont Drive	8		250	\$ 200.00	\$ 50,000.00	2	TINT	0.38	I
G	Area Total			12,475		\$ 2,715,000.00	221		20.57	
	Cost per unit					\$ 12,285.07				
H (1)	Arnold Road	12	Int.	2475	\$ 300.00	\$ 742,500.00	33	NLTRPK	5.63	II
H (1)	Acorn Street	8		975	\$ 200.00	\$ 195,000.00	13	NLTRPK	1.48	II
H (1)	Arnold Road	8		125	\$ 200.00	\$ 25,000.00	4	NLTRPK	0.19	II
H (1)	Beech Street	8		525	\$ 200.00	\$ 105,000.00	7	NLTRPK	0.80	II
H (1)	Beechwood Street	8		250	\$ 200.00	\$ 50,000.00	4	NLTRPK	0.38	II
H (1)	Cape way	8		225	\$ 200.00	\$ 45,000.00	4	NLTRPK	0.34	II
H (1)	Colonial Road	8		150	\$ 200.00	\$ 30,000.00	2	NLTRPK	0.23	II
H (1)	Colonial Road	8		600	\$ 200.00	\$ 120,000.00	12	NLTRPK	0.91	II
H (1)	Cove Road	8		700	\$ 200.00	\$ 140,000.00	10	NLTRPK	1.06	II
H (1)	Grant Drive	8		600	\$ 200.00	\$ 120,000.00	10	NLTRPK	0.91	II
H (1)	Holmes Road	8		200	\$ 200.00	\$ 40,000.00	3	NLTRPK	0.30	II
H (1)	Jade Road	8		850	\$ 200.00	\$ 170,000.00	17	NLTRPK	1.29	II
H (1)	Johnson Bv	8		1075	\$ 200.00	\$ 215,000.00	16	NLTRPK	1.63	II
H (1)	Lydia Road	8		50	\$ 200.00	\$ 10,000.00	2	NLTRPK	0.08	II
H (1)	Lydia Road	8		2000	\$ 200.00	\$ 400,000.00	37	NLTRPK	3.03	II
H (1)	Myra Road	8		50	\$ 200.00	\$ 10,000.00	1	NLTRPK	0.08	II
H (1)	Myra Road	8		775	\$ 200.00	\$ 155,000.00	15	NLTRPK	1.17	II
H (1)	Osceola Avenue	8		150	\$ 200.00	\$ 30,000.00	3	NLTRPK	0.23	II
H (1)	Osceola Avenue	8		250	\$ 200.00	\$ 50,000.00	5	NLTRPK	0.38	II
H (1)	Osceola Avenue	8		300	\$ 200.00	\$ 60,000.00	6	NLTRPK	0.45	II
H (1)	Powhatan Avenue	8		150	\$ 200.00	\$ 30,000.00	1	NLTRPK	0.23	II
H (1)	Quiet Avenue	8		225	\$ 200.00	\$ 45,000.00	2	NLTRPK	0.34	II
H (1)	Sunset Avenue	8		275	\$ 200.00	\$ 55,000.00	5	NLTRPK	0.42	II
H (1)	Sunset Avenue	8		225	\$ 200.00	\$ 45,000.00	3	NLTRPK	0.34	II
H (1)	Sunset Avenue	8		100	\$ 200.00	\$ 20,000.00	1	NLTRPK	0.15	II
H (1)	Sunset Avenue	8		175	\$ 200.00	\$ 35,000.00	2	NLTRPK	0.27	II
H (1)	Tulip Road	8		450	\$ 200.00	\$ 90,000.00	6	NLTRPK	0.68	II
H (1)	Vera Road	8		750	\$ 200.00	\$ 150,000.00	14	NLTRPK	1.14	II
H (1)	Area Total			14,675		\$ 3,182,500.00	238		24.11	
	Cost per unit					\$ 13,371.85				
H (2)	Briar Point Avenue		P.S.		\$ 80.00	\$ 160,000.00		G		II
H (2)	Briar Point Avenue	4	FM	650	\$ 80.00	\$ 52,000.00		G		II
H (2)	West Shore Drive	4	FM	100	\$ 80.00	\$ 8,000.00		G		II
H (2)	Beach Street	8		350	\$ 200.00	\$ 70,000.00	5	G	0.53	II
H (2)	Beach Street	8		300	\$ 200.00	\$ 60,000.00	5	G	0.45	II
H (2)	Briar Point Avenue	8		400	\$ 200.00	\$ 80,000.00	4	G	0.61	II
H (2)	Cook Street	8		300	\$ 200.00	\$ 60,000.00	2	G	0.45	II
H (2)	Divie Road	8		550	\$ 200.00	\$ 110,000.00	12	G	0.83	II
H (2)	Florida Avenue	8		450	\$ 200.00	\$ 90,000.00	7	G	0.68	II
H (2)	Forest Street	8		250	\$ 200.00	\$ 50,000.00	1	G	0.38	II
H (2)	Vale Street	8		200	\$ 200.00	\$ 40,000.00	2	G	0.30	II
H (2)	West Shore Drive	8		800	\$ 200.00	\$ 160,000.00	15	G	1.21	II
H (2)	West Shore Drive	8		1125	\$ 200.00	\$ 225,000.00	23	G	1.70	II
H (2)	Area Total			5,475		\$ 1,165,000.00	76		7.16	
	Cost per unit					\$ 15,328.95				

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
H (3)	Arnold Road	8		650	\$ 200.00	\$ 130,000.00	11	I	0.98	II
H (3)	Grant Drive	8		700	\$ 200.00	\$ 140,000.00	13	I	1.06	II
H (3)	Holmes Road	8		925	\$ 200.00	\$ 185,000.00	15	I	1.40	II
H (3)	Reno Court	8		200	\$ 200.00	\$ 40,000.00	4	I	0.30	II
H (3)	Area Total		2,475	2475		\$ 495,000.00	43		3.75	
	Cost per unit					\$ 11,511.63				
I	Harrington Road		P.S.			\$ 160,000.00				II
I	Arnold Road	4	FM	825	\$ 80.00	\$ 66,000.00				II
I	Harrington Road	4	FM	700	\$ 80.00	\$ 56,000.00				II
I	Arnold Road	8		1550	\$ 200.00	\$ 310,000.00	22	H1	2.35	II
I	Balsam Road	8		450	\$ 200.00	\$ 90,000.00	5	H1	0.68	II
I	Crestwood Road	8		100	\$ 200.00	\$ 20,000.00	1	H1	0.15	II
I	Crestwood Road	8		150	\$ 200.00	\$ 30,000.00	3	H1	0.23	II
I	Harrington Road	8		900	\$ 200.00	\$ 180,000.00	16	H1	1.36	II
I	Harrington Road	8		700	\$ 200.00	\$ 140,000.00	11	H1	1.06	II
I	Larch Road	8		650	\$ 200.00	\$ 130,000.00	15	H1	0.98	II
I	Larch Road	8		100	\$ 200.00	\$ 20,000.00	1	H1	0.15	II
I	Larch Road	8		300	\$ 200.00	\$ 60,000.00	3	H1	0.45	II
I	North Glen Drive	8		650	\$ 200.00	\$ 130,000.00	13	H1	0.98	II
I	South Glen Drive	8		800	\$ 200.00	\$ 160,000.00	18	H1	1.21	II
I	View Road	8		300	\$ 200.00	\$ 60,000.00	4	H1	0.45	II
I	X-C Larch Drive	8		450	\$ 200.00	\$ 90,000.00	2	H1	0.68	II
I	Area Total			8,625		\$ 1,702,000.00	114		10.76	
	Cost per unit					\$ 14,929.82				
J (1)	Hopkins Hill Road	18	Int.	1825		Existing	34	TINT	6.22	II
J (1)	Hopkins Hill Road	12	Int.	1050		Existing	19	TINT	2.39	II
J (1)	Hopkins Hill Road	10	Int.	700		Existing	13	TINT	1.33	II
J (1)	Ada Court	8		200	\$ 200.00	\$ 40,000.00	5	TINT	0.30	II
J (1)	Anglewood Road	8		750	\$ 200.00	\$ 150,000.00	10	TINT	1.14	II
J (1)	Audrey Court	8		200	\$ 200.00	\$ 40,000.00	5	TINT	0.30	II
J (1)	Carolyn Street	8		600	\$ 200.00	\$ 120,000.00	9	TINT	0.91	II
J (1)	Charlotte Street	8		450	\$ 200.00	\$ 90,000.00	8	TINT	0.68	II
J (1)	Coventry Drive	8		1225	\$ 200.00	\$ 245,000.00	23	TINT	1.86	II
J (1)	Coventry Drive	8		650	\$ 200.00	\$ 130,000.00	12	TINT	0.98	II
J (1)	Edna Street	8		150	\$ 200.00	\$ 30,000.00	4	TINT	0.23	II
J (1)	Haywood Road	8		225	\$ 200.00	\$ 45,000.00	2	TINT	0.34	II
J (1)	Hopkins Hill Road	8		775		Existing	11	TINT	1.17	II
J (1)	Johnson Bv	8		500		Existing	10	TINT	0.76	II
J (1)	King Street	8		200	\$ 200.00	\$ 40,000.00	5	TINT	0.30	II
J (1)	Lawnwood Road	8		600	\$ 200.00	\$ 120,000.00	9	TINT	0.91	II
J (1)	Lionel Avenue	8		1000	\$ 200.00	\$ 200,000.00	20	TINT	1.52	II
J (1)	Marjorie Street	8		475	\$ 200.00	\$ 95,000.00	8	TINT	0.72	II
J (1)	Morris Street	8		450	\$ 200.00	\$ 90,000.00	7	TINT	0.68	II
J (1)	Nancy Street	8		300	\$ 200.00	\$ 60,000.00	4	TINT	0.45	II
J (1)	Nancy Street	8		275	\$ 200.00	\$ 55,000.00	4	TINT	0.42	II
J (1)	Rosemary Street	8		300	\$ 200.00	\$ 60,000.00	4	TINT	0.45	II
J (1)	Rosemary Street	8		300	\$ 200.00	\$ 60,000.00	3	TINT	0.45	II
J (1)	Rosemary Street	8		400	\$ 200.00	\$ 80,000.00	6	TINT	0.61	II
J (1)	York Drive	8		600	\$ 200.00	\$ 120,000.00	11	TINT	0.91	II
J (1)	York Drive	8		425	\$ 200.00	\$ 85,000.00	8	TINT	0.64	II
J (1)	Area Total			14,625		\$ 1,955,000.00	167		26.68	
	Cost per unit					\$ 11,706.59				
J (2)	Johnson Bv		P.S.			\$ 160,000.00				II
J (2)	Johnson Bv	4	FM	750	\$ 80.00	\$ 60,000.00				II
J (2)	Marjorie Street	4	FM	150	\$ 80.00	\$ 12,000.00				II
J (2)	Carlson Street	8		300	\$ 200.00	\$ 60,000.00	4	J1	0.45	II
J (2)	Johnson Bv	8		450	\$ 200.00	\$ 90,000.00	7	J1	0.68	II
J (2)	Johnson Bv	8		1000	\$ 200.00	\$ 200,000.00	9	J1	1.52	II
J (2)	Ledo Road	8		450	\$ 200.00	\$ 90,000.00	8	J1	0.68	II
J (2)	West lake Drive	8		425	\$ 200.00	\$ 85,000.00	5	J1	0.64	II
J (2)	X-C West Lake Dr	8		225	\$ 200.00	\$ 45,000.00	1	J1	0.34	II
J (2)	York Drive	8		1100	\$ 200.00	\$ 220,000.00	21	J1	1.67	II
J (2)	York Drive	8		100	\$ 200.00	\$ 20,000.00	2	J1	0.15	II
J (2)	Area Total			4,950		\$ 1,042,000.00	57		6.14	
	Cost per unit					\$ 18,280.70				
K (1)	Clifton Avenue	8		725	\$ 200.00	\$ 145,000.00	11	J1	1.10	II
K (1)	Deborah Avenue	8		450	\$ 200.00	\$ 90,000.00	7	J1	0.68	II
K (1)	Helen Avenue	8		700	\$ 200.00	\$ 140,000.00	14	J1	1.06	II
K (1)	Helen Avenue	8		1950	\$ 200.00	\$ 390,000.00	44	J1	2.95	II
K (1)	Laurie Avenue	8		500	\$ 200.00	\$ 100,000.00	10	J1	0.76	II
K (1)	Linwood Drive	8		750	\$ 200.00	\$ 150,000.00	15	J1	1.14	II
K (1)	Linwood Drive	8		300	\$ 200.00	\$ 60,000.00	6	J1	0.45	II
K (1)	Lorraine Avenue	8		1100	\$ 200.00	\$ 220,000.00	26	J1	1.67	II
K (1)	Marion Avenue	8		200	\$ 200.00	\$ 40,000.00	3	J1	0.30	II

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
K (1)	Maude Avenue	8		1050	\$ 200.00	\$ 210,000.00	24	J1	1.59	II
K (1)	Noella Avenue	8		1300	\$ 200.00	\$ 260,000.00	21	J1	1.97	II
K (1)	Regis Street	8		150	\$ 200.00	\$ 30,000.00	3	J1	0.23	II
K (1)	Area Total			9,175		\$ 1,835,000.00	184		13.90	
	Cost per unit					\$ 9,972.83				
K (2)	Adams Drive	8		1300	\$ 200.00	\$ 260,000.00	16	J1	1.97	II
K (2)	Clark Mill Street	8		1800	\$ 200.00	\$ 360,000.00	18	J1	2.73	II
K (2)	Fawn's Court	8		500	\$ 200.00	\$ 100,000.00	4	J1	0.76	II
K (2)	Garfield Drive	8		700	\$ 200.00	\$ 140,000.00	10	J1	1.06	II
K (2)	Hancock Drive	8		1000	\$ 200.00	\$ 200,000.00	15	TINT	1.52	II
K (2)	Hoover Drive	8		450	\$ 200.00	\$ 90,000.00	6	J1	0.68	II
K (2)	Jefferson Drive	8		1800	\$ 200.00	\$ 360,000.00	20	TINT	2.73	II
K (2)	Monroe Drive	8		1100	\$ 200.00	\$ 220,000.00	27	J1	1.67	II
K (2)	Area Total			8,650		\$ 1,730,000.00	116		13.11	
	Cost per unit					\$ 14,913.79				
L (1)	Clear View Drive	8		500	\$ 200.00	\$ 100,000.00	8	TINT	0.76	I
L (1)	Forestdale Drive	8		350	\$ 200.00	\$ 70,000.00	5	TINT	0.53	I
L (1)	Pinehurst Road	8		350	\$ 200.00	\$ 70,000.00	4	TINT	0.53	I
L (1)	Wendell Avenue	8		650	\$ 200.00	\$ 130,000.00	7	TINT	0.98	I
L (1)	Whitman Street	8		450	\$ 200.00	\$ 90,000.00	9	TINT	0.68	I
L (1)	Area Total			2,300		\$ 460,000.00	33		3.48	
	Cost per unit					\$ 13,939.39				
L (2)	Bank Street	8		500	\$ 200.00	\$ 100,000.00	5	TINT	0.76	II
L (2)	Barber Street	8		850	\$ 200.00	\$ 170,000.00	8	TINT	1.29	II
L (2)	Beaton Street	8		300	\$ 200.00	\$ 60,000.00	6	TINT	0.45	II
L (2)	Bieler's Lane	8		200	\$ 200.00	\$ 40,000.00	0	TINT	0.30	II
L (2)	Brentwood Drive	8		400	\$ 200.00	\$ 80,000.00	8	TINT	0.61	II
L (2)	Cady Street	8		250	\$ 200.00	\$ 50,000.00	3	TINT	0.38	II
L (2)	Carr Street	8		200	\$ 200.00	\$ 40,000.00	2	TINT	0.30	II
L (2)	Dell Street	8		325	\$ 200.00	\$ 65,000.00	8	TINT	0.49	II
L (2)	Ferncroft Avenue	8		500	\$ 200.00	\$ 100,000.00	9	TINT	0.76	II
L (2)	Ferncroft Avenue	8		375	\$ 200.00	\$ 75,000.00	5	TINT	0.57	II
L (2)	Harding Street	8		200	\$ 200.00	\$ 40,000.00	4	TINT	0.30	II
L (2)	Homestead Street	8		50	\$ 200.00	\$ 10,000.00	1	TINT	0.08	II
L (2)	Hopkins Hill Road	8		550	\$ 200.00	\$ 110,000.00	8	TINT	0.83	II
L (2)	Ian Street	8		200	\$ 200.00	\$ 40,000.00	3	TINT	0.30	II
L (2)	Kilburn Avenue	8		250	\$ 200.00	\$ 50,000.00	2	TINT	0.38	II
L (2)	Kilton Avenue	8		200	\$ 200.00	\$ 40,000.00	6	TINT	0.30	II
L (2)	Lambert Street	8		350	\$ 200.00	\$ 70,000.00	4	TINT	0.53	II
L (2)	Lowell Street	8		750	\$ 200.00	\$ 150,000.00	14	TINT	1.14	II
L (2)	Manor Drive	8		800	\$ 200.00	\$ 160,000.00	15	TINT	1.21	II
L (2)	Parker Street	8		150	\$ 200.00	\$ 30,000.00	1	TINT	0.23	II
L (2)	Parker Street	8		600	\$ 200.00	\$ 120,000.00	9	TINT	0.91	II
L (2)	Potter Street	8		425	\$ 200.00	\$ 85,000.00	7	TINT	0.64	II
L (2)	Prince Street	8		325	\$ 200.00	\$ 65,000.00	4	TINT	0.49	II
L (2)	Princess Street	8		300	\$ 200.00	\$ 60,000.00	4	TINT	0.45	II
L (2)	Prospect Avenue	8		1100	\$ 200.00	\$ 220,000.00	9	TINT	1.67	II
L (2)	Rathbun Street	8		850	\$ 200.00	\$ 170,000.00	14	TINT	1.29	II
L (2)	Robbins Drive	8		825	\$ 200.00	\$ 165,000.00	15	TINT	1.25	II
L (2)	South Main Street	8		775	\$ 200.00	\$ 155,000.00	15	TINT	1.17	II
L (2)	South Main Street	8		200	\$ 200.00	\$ 40,000.00	2	TINT	0.30	II
L (2)	South Main Street	8		1950	\$ 200.00	\$ 390,000.00	40	TINT	2.95	II
L (2)	South Main Street	8		875	\$ 200.00	\$ 175,000.00	16	TINT	1.33	II
L (2)	South Main Street	8		525	\$ 200.00	\$ 105,000.00	5	TINT	0.80	II
L (2)	Stone Street	8		850	\$ 200.00	\$ 170,000.00	17	TINT	1.29	II
L (2)	Sunapee Court	8		1000	\$ 200.00	\$ 200,000.00	15	TINT	1.52	II
L (2)	Wildwood Street	8		225	\$ 200.00	\$ 45,000.00	3	TINT	0.34	II
L (2)	Williams Street	8		500	\$ 200.00	\$ 100,000.00	9	TINT	0.76	II
L (2)	Woburn Street	8		300	\$ 200.00	\$ 60,000.00	5	TINT	0.45	II
L (2)	Wood Street	8		2000	Existing		28	TINT	3.03	II
L (2)	Woodland Avenue	8		400	\$ 200.00	\$ 80,000.00	9	TINT	0.61	II
L (2)	Woodland Avenue	8		300	\$ 200.00	\$ 60,000.00	5	TINT	0.45	II
L (2)	X-C Ferncrest Avenue	8		1375	\$ 200.00	\$ 275,000.00	0	TINT	2.08	II
L (2)	Area Total	8		23,100		\$ 4,220,000.00	315		35.00	
	Cost per unit					\$ 13,396.83				
M	Butternut Drive	8		700	\$ 200.00	\$ 140,000.00	8	TINT	1.06	III
M	Reservoir Road	8		1700	\$ 200.00	\$ 340,000.00	23	TINT	2.58	III
M	X-C High School	8		700	\$ 200.00	\$ 140,000.00	1	TINT	1.06	III
M	Area Total			3,100		\$ 620,000.00	32		4.70	
	Cost per unit					\$ 19,375.00				
N (1)	Blue Spruce Drive	8		750	Removed		10	TINT	1.14	III

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
N (1)	Crocus Court	8		100		Removed	2	TINT	0.15	III
N (1)	Lynn Drive	8		1050		Removed	19	TINT	1.59	III
N (1)	Lynn Drive	8		200		Removed	3	TINT	0.30	III
N (1)	Noosesneck Hill Road	8		400	\$ 200.00	\$ 80,000.00	3	TINT	0.61	III
N (1)	Pamela Court	8		100		Removed	2	TINT	0.15	III
N (1)	Sugar Maple Drive	8		550		Removed	6	TINT	0.83	III
N (1)	Sugar Maple Drive	8		775		Removed	11	TINT	1.17	III
N (1)	West View Drive	8		650		Removed	7	TINT	0.98	III
N (1)	Winterberry Drive	8		450		Removed	6	TINT	0.68	III
N (1)	Wisteria Drive	8		850		Removed	12	TINT	1.29	III
N (1)	X-C Lynn Drive	8		200		Removed	0	TINT	0.30	III
N (1)	X-C Sugar Maple Drive	8		975		Removed	4	TINT	1.48	III
N (1)	Area Total			7,050		\$ 80,000.00	3		10.68	
	Cost per unit					\$ 26,666.67				
N (2)	Nooneneck Hill Road		P.S.			Removed		TINT		III
N (2)	Nooneneck Hill Road	6	FM	3200		Removed		TINT		III
N (2)	Apple Blossom Lane	8		300		Removed	5	TINT	0.45	III
N (2)	Apple Blossom Lane	8		950		Removed	13	TINT	1.44	III
N (2)	Blueberry Lane	8		350		Removed	2	TINT	0.53	III
N (2)	Blueberry Lane	8		700		Removed	9	TINT	1.06	III
N (2)	Cherry Blossom Lane	8		950		Removed	14	TINT	1.44	III
N (2)	Circlewood Drive	8		2400		Removed	31	TINT	3.64	III
N (2)	Circlewood Drive	8		600		Removed	7	TINT	0.91	III
N (2)	Huckleberry Road	8		350		Removed	2	TINT	0.53	III
N (2)	Jack Pine Road	8		1100		Removed	11	TINT	1.67	III
N (2)	Kingswood Drive	8		650		Removed	9	TINT	0.98	III
N (2)	Linden Lane	8		350		Removed	2	TINT	0.53	III
N (2)	Magnolia Lane	8		2075		Removed	30	TINT	3.14	III
N (2)	Peach Tree Lane	8		1150		Removed	15	TINT	1.74	III
N (2)	Peninsula Court	8		500		Removed	7	TINT	0.76	III
N (2)	Plum Tree Lane	8		600		Removed	9	TINT	0.91	III
N (2)	Red Maple Road	8		800		Removed	10	TINT	1.21	III
N (2)	Rustic Way	8		400		Removed	2	TINT	0.61	III
N (2)	Sugar Maple Drive	8		550		Removed	8	TINT	0.83	III
N (2)	West View Drive	8		1100		Removed	17	TINT	1.67	III
N (2)	Winterberry Drive	8		450		Removed	5	TINT	0.68	III
N (2)	Wisteria Drive	8		1325		Removed	17	TINT	2.01	III
N (2)	Wisteria Drive	8		200		Removed	3	TINT	0.30	III
N (2)	Wisteria Drive	8		1450		Removed	22	TINT	2.20	III
N (2)	Wisteria Drive	8		350		Removed	3	TINT	0.53	III
N (2)	Wisteria Drive	8		500		Removed	8	TINT	0.76	III
N (2)	Wolfe Court	8		250		Removed	3	TINT	0.38	III
N (2)	Wood Cove Drive	8		2450		Removed	38	TINT	3.71	III
N (2)	Wood Cove Drive	8		650		Removed	8	TINT	0.98	III
N (2)	Wood Cove Drive	8		725		Removed	8	TINT	1.10	III
N (2)	Wood Cove Drive	8		700		Removed	11	TINT	1.06	III
N (2)	Area Total			28,125		\$ -	0		37.77	
	Cost per unit					\$ -				
WW	Pulaski Street	24	Int.	2800		Existing		WW	12.73	I
O (1)	Pulaski Street	24	Int.	1100		Existing	10	WW	5.00	I
U	Washington Street	24	Int.	5600		Existing	116	WW	25.45	I
O (1)	Whitford Street	24	Int.	600		Existing	8	WW	2.73	I
O (1)	X-C R.R. Bed	24	Int.	1375		Existing	7	WW	6.25	I
WINT	Area Total			11,475		\$ -	0		52.16	
	Cost per unit					#DIV/0!				
O (2)	North Street	8		350	\$ 200.00	\$ 70,000.00	7	WINT	0.53	I
O (2)	Pulaski Street	8		50	\$ 200.00	\$ 10,000.00	2	WINT	0.08	I
O (2)	Pulaski Street	8		700	\$ 200.00	\$ 140,000.00	9	WINT	1.06	I
O (2)	South Strete	8		650	\$ 200.00	\$ 130,000.00	8	WINT	0.98	I
O (2)	Area Total			1750		\$ 350,000.00	26		2.65	
	Cost per unit					\$ 13,461.54				
O (3)	Fenland Drive		P.S.			Removed		WW		III
O (3)	Fenland Drive	4	FM	400		Removed		WW		III
O (3)	Roundway Drive	4	FM	250		Removed		WW		III
O (3)	Roundway Drive	4	FM	600		Removed		WW		III
O (3)	Sheffield Avenue	4	FM	500		Removed		WW		III
O (3)	Creighton Place	8		600		Removed	11	WW	0.91	III
O (3)	Eileen Drive	8		325		Removed	6	WW	0.49	III
O (3)	Fenland Drive	8		400		Removed	6	WW	0.61	III
O (3)	Harvest Drive	8		400		Removed	6	WW	0.61	III
O (3)	Kathy Avenue	8		375		Removed	7	WW	0.57	III
O (3)	Kennington Avenue	8		350		Removed	6	WW	0.53	III
O (3)	Kimberly Avenue	8		300		Removed	5	WW	0.45	III
O (3)	Roundway Drive	8		200		Removed	4	WW	0.30	III

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
O (3)	Roundway Drive	8		225		Removed	3	WW	0.34	III
O (3)	Sheffield Avenue	8		225		Removed	4	WW	0.34	III
O (3)	Sheffield Avenue	8		125		Removed	3	WW	0.19	III
O (3)	Sidney Street	8		125		Removed	2	WW	0.19	III
O (3)	Sophia's Way	8		200		Removed	4	WW	0.30	III
O (3)	Wilshire Way	8		975		Removed	16	WW	1.48	III
O (3)	Windsor Park Drive	8		750		Removed	15	WW	1.14	III
O (3)	Windsor Park Drive	8		250		Removed	3	WW	0.38	III
O (3)	Windsor Park Drive	8		2000		Removed	42	WW	3.03	III
O (3)	X-C Windsor Park Drive	8		950		Removed	0	WW	1.44	III
O (3)	Area Total			10,525		\$ -	0		13.30	
	Cost per unit					#DIV/0!				
P	Fairview Avenue	12	Int.	1300		Existing	17	WINT	2.95	I
P	Read Avenue	12	Int.	1900	\$ 300.00	\$ 570,000.00	42	WINT	4.32	I
P	Washington Street	12	Int.	500	\$ 300.00	\$ 150,000.00	10	WINT	1.14	I
P	Whitford Street	12	Int.	200	\$ 300.00	\$ 60,000.00	1	WINT	0.45	I
P	Alice Street	8		200	\$ 200.00	\$ 40,000.00	2	WINT	0.30	I
P	Ann Court	8		200	\$ 200.00	\$ 40,000.00	4	WINT	0.30	I
P	Bates Avenue	8		700	\$ 200.00	\$ 140,000.00	14	WINT	1.06	I
P	Bates Avenue	8		1300	\$ 200.00	\$ 260,000.00	25	WINT	1.97	I
P	Cecile Avenue	8		1150	\$ 200.00	\$ 230,000.00	19	WINT	1.74	I
P	Chopin Street	8		350	\$ 200.00	\$ 70,000.00	7	WINT	0.53	I
P	Dion Avenue	8		850	\$ 200.00	\$ 170,000.00	14	WINT	1.29	I
P	Doolittle Street	8		200	\$ 200.00	\$ 40,000.00	4	WINT	0.30	I
P	Edward Street	8		200	\$ 200.00	\$ 40,000.00	5	WINT	0.30	I
P	Edward Street	8		1200	\$ 200.00	\$ 240,000.00	20	WINT	1.82	I
P	Ernest Street	8		200	\$ 200.00	\$ 40,000.00	4	WW	0.30	I
P	Fairview Avenue	8		850		Existing	12	WINT	1.29	I
P	Gerald Avenue	8		500	\$ 200.00	\$ 100,000.00	9	WINT	0.76	I
P	Hazard Street	8		1500	\$ 200.00	\$ 300,000.00	28	WINT	2.27	I
P	Hope Court	8		200	\$ 200.00	\$ 40,000.00	3	WINT	0.30	I
P	Justa Avenue	8		300	\$ 200.00	\$ 60,000.00	5	WINT	0.45	I
P	Knight Street	8		400	\$ 200.00	\$ 80,000.00	7	WINT	0.61	I
P	MacArthur Bv	8		1550	\$ 200.00	\$ 310,000.00	24	WINT	2.35	I
P	Normand Street	8		100	\$ 200.00	\$ 20,000.00	1	WW	0.15	I
P	Rathbun Street	8		200	\$ 200.00	\$ 40,000.00	1	WINT	0.30	I
P	Rathbun Street	8		100	\$ 200.00	\$ 20,000.00	5	WW	0.15	I
P	Raymond	8		300	\$ 200.00	\$ 60,000.00	7	WINT	0.45	I
P	Sharp Street	8		300	\$ 200.00	\$ 60,000.00	3	WINT	0.45	I
P	Washington Street	8		1000	\$ 200.00	\$ 200,000.00	11	WINT	1.52	I
P	Area Total			17,750		\$ 3,380,000.00	275		29.85	
	Cost per unit					\$ 12,290.91				
Q	Bennett Street		P.S.			\$ 320,000.00				II
Q	Bennett Street	6	FM	525	\$ 80.00	\$ 42,000.00				II
Q	Read Avenue	6	FM	275	\$ 80.00	\$ 22,000.00				II
Q	Alex Street	8		425	\$ 200.00	\$ 85,000.00	5	P	0.64	II
Q	Aline Avenue	8		200		Existing	2	P	0.30	II
Q	Anderson Avenue	8		325	\$ 200.00	\$ 65,000.00	8	P	0.49	II
Q	Anderson Avenue	8		200	\$ 200.00	\$ 40,000.00	4	P	0.30	II
Q	Beaulieu Avenue	8		500	\$ 200.00	\$ 100,000.00	6	P	0.76	II
Q	Bennett Street	8		325		Existing	5	P	0.49	II
Q	Bennett Street	8		600	\$ 200.00	\$ 120,000.00	8	P	0.91	II
Q	Callahan Way	8		625	\$ 200.00	\$ 125,000.00	4	P	0.95	II
Q	Cardinal Avenue	8		550	\$ 200.00	\$ 110,000.00	4	P	0.83	II
Q	Doolittle Street	8		800	\$ 200.00	\$ 160,000.00	14	P	1.21	II
Q	Doolittle Street	8		125	\$ 200.00	\$ 25,000.00	1	P	0.19	II
Q	Doolittle Street	8		75	\$ 200.00	\$ 15,000.00	1	P	0.11	II
Q	Doris Avenue	8		350	\$ 200.00	\$ 70,000.00	5	P	0.53	II
Q	Eisenhower Street	8		275	\$ 200.00	\$ 55,000.00	1	P	0.42	II
Q	Eisenhower Street	8		400	\$ 200.00	\$ 80,000.00	3	P	0.61	II
Q	Eisenhower Street	8		250	\$ 200.00	\$ 50,000.00	1	P	0.38	II
Q	Fairview Avenue	8		1900	\$ 200.00	\$ 380,000.00	13	P	2.88	II
Q	Fairview Avenue	8		950	\$ 200.00	\$ 190,000.00	12	P	1.44	II
Q	Gadoury Street	8		500	\$ 200.00	\$ 100,000.00	3	P	0.76	II
Q	Gadoury Street	8		575	\$ 200.00	\$ 115,000.00	8	P	0.87	II
Q	Gough Avenue	8		625	\$ 200.00	\$ 125,000.00	10	P	0.95	II
Q	Greenwood Avenue	8		1075	\$ 200.00	\$ 215,000.00	12	P	1.63	II
Q	Hope View Street	8		400	\$ 200.00	\$ 80,000.00	7	P	0.61	II
Q	MacArthur Bv	8		1300	\$ 200.00	\$ 260,000.00	19	P	1.97	II
Q	MacArthur Bv	8		650	\$ 200.00	\$ 130,000.00	10	P	0.98	II
Q	Marshall Circle	8		1000	\$ 200.00	\$ 200,000.00	17	P	1.52	II
Q	Marshall Circle	8		350	\$ 200.00	\$ 70,000.00	5	P	0.53	II
Q	Michael Court	8		200	\$ 200.00	\$ 40,000.00	3	P	0.30	II
Q	Morin Avenue	8		500	\$ 200.00	\$ 100,000.00	7	P	0.76	II
Q	Patton Street	8		1075	\$ 200.00	\$ 215,000.00	16	P	1.63	II
Q	Philip Street	8		1275	\$ 200.00	\$ 255,000.00	21	P	1.93	II
Q	Rainville Avenue	8		450	\$ 200.00	\$ 90,000.00	3	P	0.68	II
Q	Ray Street	8		550	\$ 200.00	\$ 110,000.00	9	P	0.83	II

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
Q	Raymond Street	8		150	\$ 200.00	\$ 30,000.00	3	P	0.23	II
Q	Read Avenue	8		550	\$ 200.00	\$ 110,000.00	11	P	0.83	II
Q	Read Avenue	8		150		Existing	3	P	0.23	II
Q	Read Avenue	8		2750	\$ 200.00	\$ 550,000.00	48	P	4.17	II
Q	Rosella Street	8		400	\$ 200.00	\$ 80,000.00	6	P	0.61	II
Q	Shippee Avenue	8		100	\$ 200.00	\$ 20,000.00	2	P	0.15	II
Q	Shippee Avenue	8		100	\$ 200.00	\$ 20,000.00	2	P	0.15	II
Q	Unnamed Way	8		150	\$ 200.00	\$ 30,000.00	2	P	0.23	II
Q	Unnamed Way	8		125	\$ 200.00	\$ 25,000.00	3	P	0.19	II
Q	Yates Avenue	8		925		Existing	15	P	1.40	II
Q	Youngs Avenue	8		650	\$ 200.00	\$ 130,000.00	10	P	0.98	II
Q	Area Total			26,250		\$ 5,154,000.00	327		38.56	
	Cost per unit					\$ 15,761.47				
R	Bee Street	8		450	\$ 200.00	\$ 90,000.00	8	S	0.68	II
R	Brown Street	8		650	\$ 200.00	\$ 130,000.00	2	S	0.98	II
R	Card Street	8		750	\$ 200.00	\$ 150,000.00	10	S	1.14	II
R	Dennis Street	8		75	\$ 200.00	\$ 15,000.00	1	S	0.11	II
R	Fairview Avenue	8		1475	\$ 200.00	\$ 295,000.00	20	S	2.23	II
R	Fones Street	8		325	\$ 200.00	\$ 65,000.00	4	S	0.49	II
R	Harris Avenue	8		600		Existing	12	WW	0.91	II
R	Hillside Avenue	8		625	\$ 200.00	\$ 125,000.00	11	S	0.95	II
R	Hillside Avenue	8		500	\$ 200.00	\$ 100,000.00	10	WW	0.76	II
R	Hoxie Court	8		150	\$ 200.00	\$ 30,000.00	4	WW	0.23	II
R	Park Avenue	8		675	\$ 200.00	\$ 135,000.00	14	WW	1.02	II
R	Spencer Avenue	8		200	\$ 200.00	\$ 40,000.00	4	S	0.30	II
R	Tobnin Street	8		200	\$ 200.00	\$ 40,000.00	4	S	0.30	II
R	Woodside Avenue	8		350		Existing	2	S	0.53	II
R	X-C Card Street	8		125	\$ 200.00	\$ 25,000.00	0	S	0.19	II
R	Yeaton Street	8		550	\$ 200.00	\$ 110,000.00	8	S	0.83	II
R	Area Total			7,700		\$ 1,350,000.00	100		11.67	
	Cost per unit					\$ 13,500.00				
S	Ames Street	12	Int.	500	\$ 300.00	\$ 150,000.00	7	T	1.14	II
S	Hill Street	12	Int.	850	\$ 300.00	\$ 255,000.00	11	T	1.93	II
S	Howard Avenue	12	Int.	250	\$ 300.00	\$ 75,000.00	1	T	0.57	II
S	Lincoln Avenue	12	Int.	650	\$ 300.00	\$ 195,000.00	7	T	1.48	II
S	Ames Street	8		550	\$ 200.00	\$ 110,000.00	10	T	0.83	II
S	Brown Street	8		450	\$ 200.00	\$ 90,000.00	4	T	0.68	II
S	Lincoln Avenue	8		300		Existing	7	T	0.45	II
S	Lucile Street	8		250	\$ 200.00	\$ 50,000.00	3	T	0.38	II
S	Mumford Street	8		350	\$ 200.00	\$ 70,000.00	8	T	0.53	II
S	Mumford Street	8		150	\$ 200.00	\$ 30,000.00	1	T	0.23	II
S	Mumford Street	8		250	\$ 200.00	\$ 50,000.00	2	T	0.38	II
S	Mumford Street	8		650	\$ 200.00	\$ 130,000.00	8	T	0.98	II
S	Notre Dame Street	8		550	\$ 200.00	\$ 110,000.00	10	T	0.83	II
S	Tyler Street	8		250	\$ 200.00	\$ 50,000.00	2	T	0.38	II
S	Area Total			6,000		\$ 1,365,000.00	74		10.80	
	Cost per unit					\$ 18,445.95				
T	Main Street	18	Int.	675		Existing	8	WW	2.30	III
T	Main Street	15	Int.	200		Existing	4	WW	0.57	III
T	Main Street	12	Int.	1,800	\$ 300.00	\$ 540,000.00	14	WW	4.09	III
T	Broad Street	8		675		Existing	8	WW	1.02	III
T	Elm Street	8		450	\$ 200.00	\$ 90,000.00	6	WW	0.68	III
T	Garden Street	8		250	\$ 200.00	\$ 50,000.00	3	WW	0.38	III
T	Harris Street	8		1,600	\$ 200.00	\$ 320,000.00	23	WW	2.42	III
T	Highland Avenue	8		750	\$ 200.00	\$ 150,000.00	15	WW	1.14	III
T	Highland Avenue	8		450	\$ 200.00	\$ 90,000.00	9	WW	0.68	III
T	Lamphear Street	8		425		Existing	4	WW	0.64	III
T	Mill Street	8		400	\$ 200.00	\$ 80,000.00	6	WW	0.61	III
T	Potter Court	8		100	\$ 200.00	\$ 20,000.00	1	WW	0.15	III
T	Potter Court	8		550	\$ 200.00	\$ 110,000.00	3	WW	0.83	III
T	Summit Avenue	8		150		Existing	1	WW	0.23	III
T	Area Total			8,475		\$ 1,450,000.00	80		15.75	
	Cost per unit					\$ 18,125.00				
U (2)	Main Street	12	Int.	3050		Existing	58	TINT	6.93	II
U (2)	Sandy Bottom Road	12	Int.	1475		Existing	11	TINT	3.35	II
U (2)	Main Street	8		400		Existing	7	TINT	0.61	II
U (2)	Newell Court	8		350		Existing	4	TINT	0.53	II
U (2)	Whipple Court	8		400		Existing	4	TINT	0.61	II
U (2)	Area Total			5,675		\$ -	0		12.03	
	Cost per unit					\$ -				
V	Black Rock Road	12	Int.	3000	\$ 300.00	\$ 900,000.00	49	P	6.82	II
V	Anthony Street	8		800		Existing	16	WINT	1.21	II

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
V	Benoit Street	8		1750	\$ 200.00	\$ 350,000.00	27	WINT	2.65	II
V	Boston Street	8		900	\$ 200.00	\$ 180,000.00	8	P	1.36	II
V	Boston Street	8		1050	\$ 200.00	\$ 210,000.00	15	WINT	1.59	II
V	Boston Street	8		2050		Existing	31		3.11	II
V	Congdon Street	8		650	\$ 200.00	\$ 130,000.00	8	P	0.98	II
V	Hilldan Street	8		300	\$ 200.00	\$ 60,000.00	4	P	0.45	II
V	Irene Lane	8		300	\$ 200.00	\$ 60,000.00	3	WINT	0.45	II
V	Meeting Street	8		1000	\$ 200.00	\$ 200,000.00	17	WINT	1.52	II
V	Murray Street	8		300	\$ 200.00	\$ 60,000.00	1	WINT	0.45	II
V	Nancy Court	8		450	\$ 200.00	\$ 90,000.00	9	P	0.68	II
V	Puritan Avenue	8		850	\$ 200.00	\$ 170,000.00	9	WINT	1.29	II
V	Union Street	8		100		Existing	2	WINT	0.15	II
V	Area Total			13,500		\$ 2,410,000.00	150		22.73	
	Cost per unit					\$ 16,066.67				
W (1)	Batley Avenue	8		900	\$ 200.00	\$ 180,000.00	7	WINT	1.36	II
W (1)	Cindy Lane	8		300	\$ 200.00	\$ 60,000.00	5	WINT	0.45	II
W (1)	Contentment Drive	8		800		Existing	4	WINT	1.21	II
W (1)	Foster Drive	8		250	\$ 200.00	\$ 50,000.00	3	WINT	0.38	II
W (1)	Francis Street	8		525	\$ 200.00	\$ 105,000.00	11	WINT	0.80	II
W (1)	Holden Street	8		825	\$ 200.00	\$ 165,000.00	9	WINT	1.25	II
W (1)	Knotty Oak Road	8		2950	\$ 200.00	\$ 590,000.00	53	WINT	4.47	II
W (1)	Long Pond Road	8		4000	\$ 200.00	\$ 800,000.00	8	WINT	6.06	II
W (1)	Maple Street	8		350	\$ 200.00	\$ 70,000.00	4	WINT	0.53	II
W (1)	Maple Street	8		1150	\$ 200.00	\$ 230,000.00	19	WINT	1.74	II
W (1)	Meadow Lane	8		200	\$ 200.00	\$ 40,000.00	4	WINT	0.30	II
W (1)	Meredith Drive	8		1300	\$ 200.00	\$ 260,000.00	23	WINT	1.97	II
W (1)	Oak Street	8		275	\$ 200.00	\$ 55,000.00	2	WINT	0.42	II
W (1)	Park Street	8		275	\$ 200.00	\$ 55,000.00	1	WINT	0.42	II
W (1)	Pearl Street	8		250	\$ 200.00	\$ 50,000.00	2	WINT	0.38	II
W (1)	Station Street	8		725	\$ 200.00	\$ 145,000.00	14	WINT	1.10	II
W (1)	Station Street	8		175	\$ 200.00	\$ 35,000.00	2	WINT	0.27	II
W (1)	Tero Drive	8		450	\$ 200.00	\$ 90,000.00	9	WINT	0.68	II
W (1)	Valley Crest Road	8		1225	\$ 200.00	\$ 245,000.00	24	WINT	1.86	II
W (1)	Area Total			16,925		\$ 3,225,000.00	200		25.64	
	Cost per unit					\$ 16,125.00				
W (2)	Dawn Lane		P.S.			\$ 80,000.00		W1		II
W (2)	Dawn Lane	3	FM	450	\$ 80.00	\$ 36,000.00		W1		II
W (2)	Dawn Lane	8		250	\$ 200.00	\$ 50,000.00	6	W1	0.38	II
W (2)	Long Pond Road	8		350	\$ 200.00	\$ 70,000.00	6	W1	0.53	II
W (2)	Area total			1,050		\$ 236,000.00	12		0.91	
	Cost per unit					\$ 19,666.67				
X (1)	Blackrock Road	8		575	\$ 200.00	\$ 115,000.00	6	V	0.87	III
X (1)	Breezy Lake Drive	8		150	\$ 200.00	\$ 30,000.00	4	V	0.23	III
X (1)	Breezy Lake Drive	8		900	\$ 200.00	\$ 180,000.00	16	V	1.36	III
X (1)	Breezy Lake Drive	8		550	\$ 200.00	\$ 110,000.00	9	V	0.83	III
X (1)	Brookfield Road	8		450		Removed	8	V	0.68	III
X (1)	Centennial Street	8		1475		Removed	23	V	2.23	III
X (1)	Country View Drive	8		275		Removed	2	V	0.42	III
X (1)	David Drive	8		650	\$ 200.00	\$ 130,000.00	6	V	0.98	III
X (1)	Geravis Street	8		100	\$ 200.00	\$ 20,000.00	1	V	0.15	III
X (1)	Geravis Street	8		2600	\$ 200.00	\$ 520,000.00	38	V	3.94	III
X (1)	Knotty Oak Road	8		1575	\$ 200.00	\$ 315,000.00	23	V	2.39	III
X (1)	Knotty Oak Road	8		1500	\$ 200.00	\$ 300,000.00	27	W1	2.27	III
X (1)	Lacasa Drive	8		225		Removed	2	V	0.34	III
X (1)	Laforge Drive	8		1000		Removed	16	V	1.52	III
X (1)	Pond View Drive	8		450	\$ 200.00	\$ 90,000.00	8	V	0.68	III
X (1)	Pond View Drive	8		700	\$ 200.00	\$ 140,000.00	12	V	1.06	III
X (1)	Regent Street	8		400	\$ 200.00	\$ 80,000.00	4	W1	0.61	III
X (1)	Sheri Drive	8		450		Removed	5	V	0.68	III
X (1)	Sheri Drive	8		400		Removed	7	V	0.61	III
X (1)	Viola Street	8		1175		Removed	20	V	1.78	III
X (1)	Area Total			15,600		\$ 2,030,000.00	154		23.64	
	Cost per unit					\$ 13,181.82				
X (2)	White Rock Drive		P.S.			\$ 80,000.00		X1		III
X (2)	White Rock Drive	3	FM	750	\$ 80.00	\$ 60,000.00		X1		III
X (2)	Walnut Hill Road	8		400	\$ 200.00	\$ 80,000.00	4	X1	0.61	III
X (2)	White Rock Drive	8		450	\$ 200.00	\$ 90,000.00	7	X1	0.68	III
X (2)	White Rock Drive	8		650	\$ 200.00	\$ 130,000.00	10	X1	0.98	III
X (2)	Area Total			2,250		\$ 440,000.00	21		2.27	
	Cost per unit					\$ 20,952.38				
Y	Blackrock Road	8		1000		Removed	8	V	1.52	III
Y	Blackrock Road	8		3200		Removed	38	Z	4.85	III

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
Y	Country View Drive	8		600		Removed	7	Z	0.91	III
Y	Hawthorne Road	8		750		Removed	9	Z	1.14	III
Y	Hickory Road	8		1450		Removed	22	Z	2.20	III
Y	Hornbeam Road	8		1200		Removed	16	Z	1.82	III
Y	Manning Court	8		850		Removed	11	Z	1.29	III
Y	Sandlewood Court	8		750		Removed	5	Z	1.14	III
Y	Area Total			9,800		\$ -	0		14.85	
	Cost per unit					#DIV/0!				
Z (1)	Cedar Street	8		1150	\$ 200.00	\$ 230,000.00	18	S	1.74	II
Z (1)	Chestnut Street	8		200	\$ 200.00	\$ 40,000.00	4	S	0.30	II
Z (1)	Chestnut Street	8		200	\$ 200.00	\$ 40,000.00	2	S	0.30	II
Z (1)	Eleanor Drive	8		75	\$ 200.00	\$ 15,000.00	2	S	0.11	II
Z (1)	Eleanor Drive	8		225	\$ 200.00	\$ 45,000.00	4	S	0.34	II
Z (1)	Howard Avenue	8		1625	\$ 200.00	\$ 325,000.00	18	S	2.46	II
Z (1)	Paulette Drive	8		200	\$ 200.00	\$ 40,000.00	4	S	0.30	II
Z (1)	Rebecca Street	8		600	\$ 200.00	\$ 120,000.00	10	S	0.91	II
Z (1)	Area Total			4,275		\$ 855,000.00	62		6.48	
	Cost per unit					\$ 13,790.32				
Z (2)	RR Bed		P.S.			Removed				II
Z (2)	Howard Avenue	6	FM	350		Removed		Z1		II
Z (2)	X-C Howard Avenue	6	FM	450		Removed		Z1		II
Z (2)	Colvin Street	8		500		Removed	4	Z1	0.76	II
Z (2)	Hill Street	8		4800		Removed	66	Z1	7.27	II
Z (2)	Hill Street	8		675		Removed	9	Z1	1.02	II
Z (2)	Howard Street	8		250		Removed	3	Z1	0.38	II
Z (2)	Howard Street	8		675		Removed	12	Z1	1.02	II
Z (2)	Howard Street	8		400		Removed	6	Z1	0.61	II
Z (2)	Leveille Street	8		225		Removed	3	Z1	0.34	II
Z (2)	Morgan Court	8		100		Removed	5	Z1	0.15	II
Z (2)	Oak Street	8		200		Removed	5	Z1	0.30	II
Z (2)	Paulette Drive	8		350		Removed	7	Z1	0.53	II
Z (2)	Pierce Street	8		350		Removed	5	Z1	0.53	II
Z (2)	Pine Street	8		450		Removed	5	Z1	0.68	II
Z (2)	Rebecca Street	8		400		Removed	5	Z1	0.61	II
Z (2)	X-C Hill Street	8		825		Removed	2	Z1	1.25	II
Z (2)	X-C Howard Avenue	8		450		Removed	4	Z1	0.68	II
Z (2)	X-C RR Bed	8		400		Removed	1	Z1	0.61	II
Z (2)	Area Total			11,850		\$ -	0		16.74	
	Cost per unit					#DIV/0!				
Z (3)	Canyon Drive		P.S.			\$ 120,000.00				II
Z (3)	Canyon Drive	3	FM	400	\$ 80.00	\$ 32,000.00		Z1		II
Z (3)	Eleanor Drive	3	FM	550	\$ 80.00	\$ 44,000.00		Z1		II
Z (3)	Elmonte Drive	3	FM	250	\$ 80.00	\$ 20,000.00		Z1		II
Z (3)	Canyon Drive	8		400	\$ 200.00	\$ 80,000.00	8	Z1	0.61	II
Z (3)	Eleanor Drive	8		425	\$ 200.00	\$ 85,000.00	8	Z1	0.64	II
Z (3)	Elmonte Drive	8		275	\$ 200.00	\$ 55,000.00	3	Z1	0.42	II
Z (3)	Elmonte Drive	8		350	\$ 200.00	\$ 70,000.00	6	Z1	0.53	II
Z (3)	Area Total			2,650		\$ 506,000.00	25		2.20	
	Cost per unit					\$ 20,240.00				
AA (1)	Birchwood Lane	8		525		Removed	11	Z2	0.80	III
AA (1)	Black Walnut Drive	8		1225		Removed	20	Z2	1.86	III
AA (1)	Black Walnut Drive	8		1250		Removed	17	Z2	1.89	III
AA (1)	Briarwood Court	8		250		Removed	4	Z2	0.38	III
AA (1)	Clarke Road	8		300		Removed	5	Z2	0.45	III
AA (1)	Clarke Road	8		1175		Removed	15	Z2	1.78	III
AA (1)	Crabapple Court	8		250		Removed	4	Z2	0.38	III
AA (1)	Elmwood Court	8		150		Removed	2	Z2	0.23	III
AA (1)	Forsythia Court	8		250		Removed	5	Z2	0.38	III
AA (1)	Holly Court	8		150		Removed	2	Z2	0.23	III
AA (1)	Honeysuckle Court	8		350		Removed	6	Z2	0.53	III
AA (1)	Labrae Way	8		400		Removed	5	Z2	0.61	III
AA (1)	Mulberry Court	8		250		Removed	4	Z2	0.38	III
AA (1)	Pine Oak Court	8		250		Removed	4	Z2	0.38	III
AA (1)	Poplar Court	8		250		Removed	4	Z2	0.38	III
AA (1)	Red Oak Drive	8		1100		Removed	17	Z2	1.67	III
AA (1)	Red Oak Drive	8		750		Removed	13	Z2	1.14	III
AA (1)	White Pine Road	8		1175		Removed	14	Z2	1.78	III
AA (1)	X-C Clarke Road	8		750		Removed	2	Z2	1.14	III
AA (1)	Area Total			10,800		\$ -	0		16.36	
	Cost per unit					\$ -				
AA (2)	Clarke Road		P.S.			Removed		AA1		III
AA (2)	Clarke Road	6	FM	1000		Removed		AA1	1.14	III

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
AA (2)	Barberry Court	8		250	Removed		4	AA1	0.38	III
AA (2)	Clarke Road	8		850	Removed		12	AA1	1.29	III
AA (2)	Clarke Road	8		700	Removed		9	AA1	1.06	III
AA (2)	Glenview Court	8		325	Removed		4	AA1	0.49	III
AA (2)	Juniper Court	8		150	Removed		2	AA1	0.23	III
AA (2)	Red Oak Drive	8		850	Removed		15	AA1	1.29	III
AA (2)	Rosewood Court	8		300	Removed		5	AA1	0.45	III
AA (2)	Wintergreen Court	8		250	Removed		4	AA1	0.38	III
AA (2)	Area Total			4,675	\$ -		0		6.70	
	Cost per unit				\$ -					
AB (1)	Chase Road	8		400	Removed		5	AA2	0.61	III
AB (1)	Clarke Road	8		200	Removed		0	AA2	0.30	III
AB (1)	Knotty Oak Lane	8		200	Removed		2	AA2	0.30	III
AB (1)	Knotty Oak Lane	8		300	Removed		4	AA2	0.45	III
AB (1)	Knotty Oak Road	8		400	Removed		4	AA2	0.61	III
AB (1)	Knotty Oak Road	8		3900	Removed		38	AA2	5.91	III
AB (1)	Knotty Oak Road	8		1450	Removed		21	X	2.20	III
AB (1)	Marie Drive	8		850	Removed		11	X	1.29	III
AB (1)	Oak Way	8		850	Removed		11	X	1.29	III
AB (1)	Old Hope Road	8		700	Removed		6	X	1.06	III
AB (1)	Area Total			9,250	\$ -		0		14.02	
	Cost per unit				\$ -					
AB (2)	Knotty Oak Shores	3	P.S.		Removed			AA2		III
AB (2)	Knotty Oak Shores	8	FM	800	Removed			AA2		III
AB (2)	Knotty Oak Road	8		500	Removed		9	AA2	0.76	III
AB (2)	Knotty Oak Road	8		650	Removed		7	AA2	0.98	III
AB (2)	Knotty Oak Shores	8		300	Removed		6	AA2	0.45	III
AB (2)	Knotty Oak Shores	8		1800	Removed		38	AA2	2.73	III
AB (2)	Knotty Oak Shores	8		350	Removed		7	AA2	0.53	III
AB (2)	Pine Acres Bv	8		600	Removed		8	AA2	0.91	III
AB (2)	X-C Knotty Oak Road	8		650	Removed		5	AA2	0.98	III
AB (2)	Area Total			5,650	\$ -		0		7.35	
	Cost per unit				\$ -					
AC	Chardwood Drive	8		600	Removed		10	X	0.91	N/A
AC	Driftwood Drive	8		200	Removed		2	X	0.30	N/A
AC	Driftwood Drive	8		950	Removed		13	X	1.44	N/A
AC	Glenwood Drive	8		200	Removed		4	X	0.30	N/A
AC	Glenwood Drive	8		700	Removed		10	X	1.06	N/A
AC	Highwood Drive	8		2600	Removed		37	X	3.94	N/A
AC	Highwood Drive	8		650	Removed		8	X	0.98	N/A
AC	Maplewood Drive	8		1125	Removed		10	X	1.70	N/A
AC	right-of-way	8		250	Removed		2	X	0.38	N/A
AC	Station Street	8		600	Removed		9	X	0.91	N/A
AC	Station Street	8		750	Removed		12	X	1.14	N/A
AC	Station Street	8		4600	Removed		45	X	6.97	N/A
AC	X-C Station Street	8		625	Removed		0	X	0.95	N/A
AC	Area Total			13,850	\$ -		0		20.98	
	Cost per unit				\$ -					
AD	Abbott's Crossing Road	8		1700	Removed		27	AE	2.58	III
AD	Alvero Road	8		1500	Removed		18	AE	2.27	III
AD	Cynthia Drive	8		1550	Removed		29	AE	2.35	III
AD	Cynthia Drive	8		450	Removed		7	AE	0.68	III
AD	Francis Court	8		150	Removed		3	AE	0.23	III
AD	Gail Court	8		650	Removed		10	AE	0.98	III
AD	Hopkins Court	8		300	Removed		8	AE	0.45	III
AD	Linda Court	8		200	Removed		4	AE	0.30	III
AD	Lloyd Drive	8		1400	Removed		21	AE	2.12	III
AD	Old Colvintown Road	8		1600	Removed		20	AE	2.42	III
AD	Old Main Street	8		150	Removed		1	AE	0.23	III
AD	Patty Street	8		250	Removed		3	AE	0.38	III
AD	Area Total			9,900	\$ -		0		15.00	
	Cost per unit				\$ -					
AE	Flat River Road	12	Int.	1500	\$ 300.00	\$ 450,000.00	13	U2	3.41	III
AE	Collier Way	8		350	\$ 200.00	\$ 70,000.00	5	U2	0.53	III
AE	First Street	8		250	\$ 200.00	\$ 50,000.00	4	U2	0.38	III
AE	Flat River Road	8		3800	\$ 200.00	\$ 760,000.00	29	U2	5.76	III
AE	Flat River Road	8		250	\$ 200.00	\$ 50,000.00	3	U2	0.38	III
AE	Flat River Road	8		1050	Removed		18	U2	1.59	III
AE	Leader Street	8		450	\$ 200.00	\$ 90,000.00	4	U2	0.68	III
AE	Second Street	8		150	\$ 200.00	\$ 30,000.00	3	U2	0.23	III
AE	X-C Flat River Road	8		600	\$ 200.00	\$ 120,000.00	3	U2	0.91	III
AE	X-C RR Bed	8		1775	\$ 200.00	\$ 355,000.00	9	U2	2.69	III

Area	Street Name	Pipe Size (inch)	Type	Sewer Length (feet)	Unit Cost (\$ per l.f.)	Total Cost	Lots Served	Flow to Area	I/I Pipeline (inch-mile)	Phase
AE	Area Total			10,175		\$ 1,975,000.00	73		16.55	
	Cost per unit					\$ 27,054.79				
AF	Boulder Drive	8		1000		Removed	14	AD	1.52	III
AF	Chandler Drive	8		550		Removed	7	AE	0.83	III
AF	Chandler Drive	8		1800		Removed	25	AD	2.73	III
AF	Colvintown Road	8		1450		Removed	19	AD	2.20	III
AF	Daniel Drive	8		1100		Removed	15	AE	1.67	III
AF	Daniel Drive	8		325		Removed	4	AE	0.49	III
AF	Diane Drive	8		700		Removed	13	AE	1.06	III
AF	Glacier Way	8		100		Removed	2	AD	0.15	III
AF	Leuba Road	8		3500		Removed	36	AE	5.30	III
AF	Metro Drive	8		1700		Removed	26	AE	2.58	III
AF	Stoney Hill Cr	8		1025		Removed	12	AD	1.55	III
AF	Thompson Cr	8		550		Removed	9	AE	0.83	III
AF	X-C Diane Drive	8		700		Removed	2	AE	1.06	III
AF	X-C Metro Drive	8		425		Removed	2	AE	0.64	III
AF	Area Total			14,925		\$ -	0		22.61	
	Cost per unit					\$ -				
AG	Colvintown Road	8		3400		Removed	50	AF	5.15	N/A
AG	Deer Run Drive	8		450		Removed	8	AF	0.68	N/A
AG	Deer Run Drive	8		450		Removed	6	AF	0.68	N/A
AG	Donna's Way	8		400		Removed	7	AF	0.61	N/A
AG	Ivy Drive	8		500		Removed	5	AF	0.76	N/A
AG	Sweetwater Drive	8		1600		Removed	19	AF	2.42	N/A
AG	Teakwood Drive East	8		200		Removed	3	AF	0.30	N/A
AG	Teakwood Drive East	8		550		Removed	8	AF	0.83	N/A
AG	Teakwood Drive West	8		550		Removed	10	AF	0.83	N/A
AG	Watercross Court	8		600		Removed	11	AF	0.91	N/A
AG	Watercross Court	8		1350		Removed	20	AF	2.05	N/A
AG	X-C Teakwood Drive West	8		900		Removed	2	AF	1.36	N/A
AG	Area Total			10,950		\$ -	0		16.59	
	Cost per unit					\$ -				
AH	Cedar Street	8		650	\$ 200.00	\$ 130,000.00	24	ISDS	0.98	N/A
AH	Oak Street	8		300	\$ 200.00	\$ 60,000.00	4	ISDS	0.45	N/A
AH	Pine Street	8		750	\$ 200.00	\$ 150,000.00	12	ISDS	1.14	N/A
AH	Pond Street	8		325	\$ 200.00	\$ 65,000.00	8	ISDS	0.49	N/A
AH	Shady Valley Road	8		825	\$ 200.00	\$ 165,000.00	12	ISDS	1.25	N/A
AH	Shady Valley Road	8		1750	\$ 200.00	\$ 350,000.00	25	ISDS	2.65	N/A
AH	Unnamed Way	8		250	\$ 200.00	\$ 50,000.00	3	ISDS	0.38	N/A
AH	Unnamed Way	8		200	\$ 200.00	\$ 40,000.00	4	ISDS	0.30	N/A
AH	X-C Shady Valley Road	8		300	\$ 200.00	\$ 60,000.00	0	ISDS	0.45	N/A
AH	Area Total			5,350		\$ 1,070,000.00	92		8.11	
	Cost per unit					\$ 11,630.43				
TOTALS	Area Total					\$ 62,566,500.00	4,400			
	Cost per unit					\$ 14,219.66				
	Phase I	Interceptor				\$ 2,570,000.00				
		Lateral				\$ 5,465,000.00				
		PS & FM				\$ -				
	Phase II	Interceptor				\$ 3,622,500.00				
		Lateral				\$ 36,040,000.00				
		PS & FM				\$ 1,910,000.00				
	Phase III	Interceptor				\$ 990,000.00				
		Lateral				\$ 10,195,000.00				
		PS & FM				\$ 704,000.00				

Paul K. Sprague
Interim Town Manager



TOWN OF COVENTRY
1670 Flat River Road, Coventry, RI 02816
Tel. (401) 822-9186 Fax (401) 822-9139

June 11, 2009

Mr. John J. Manning, P.E.
Water Resources Division
R.I. Department of Environmental Management
235 Promenade Street
Providence, RI 02908-5767

Re: Project Priority List Request for Projects State Fiscal Year 2010

Dear Mr. Manning:

The Town of Coventry is pleased to submit for consideration the enclosed documentation for the Fiscal Year 2010 Project Priority List (PPL). In addition to the anticipated sewer design and construction projects we have included funding requests to conduct a Facility Plan Update and partake in the new Community Sewer Tie-in Program.

Should you have questions regarding this matter please give me a call at 401-822-9189.

Very truly yours,

TOWN OF COVENTRY

Paul K. Sprague
Interim Town Manager

Attachments/Enclosures: FY 2010 PPL Project Summary (1 pg)
FY 2010 PPL Requested Project Information Sheet (10 pgs)

cc: Warren West, Town Finance Director
Barry Yaceshyn, Weston & Sampson

planning, permitting,
design, construction,
operation, maintenance,
design/build, & equipment

Weston&Sampson.

**Town of Coventry, Rhode Island
WSE Project No. 2070575.J**

June 16, 2009

Mr. Paul K. Sprague, Interim Town Manager
Town of Coventry
1670 Flat River Road
Coventry, Rhode Island 02816

Re: SRF Project Priority List Request, Fiscal Year 2010

Dear Mr. Sprague:

Pursuant to our recent discussions in our meeting on June 3, 2009, Weston & Sampson Engineers, Inc. has prepared and enclosed for your review documentation for the Clean Water Finance Agency (CWFA) Fiscal Year 2010 Project Priority List (PPL). Upon your acceptance and notification we will submit the enclosed documents to CWFA, each of the Town of Coventry Projects will be rated and ranked (by CWFA) with all other eligible projects submitted by municipalities/agencies in the State. The rank and placement of a project on the final FY 2010 PPL will determine the amount of assistance granted through the State Revolving Fund (SRF) Program. Any water pollution abatement project the Town is intending to construct must be on the PPL to be eligible for SRF financing.

The following is a summary of the projects that the Town has requested we submit to CWFA and placed on the PPL for SRF financial assistance:

- Main Street Area Sewer Project (Contract 5) additional request: This will cover areas of Contract 5 that were added onto the amount requested from SRF on previous years PPLs. This includes approximately 550 l.f. of 8-inch sewer extension on Johnson Boulevard, full width paving of Fairview Avenue and unexpected conditions during the construction of the project. The estimated cost associated with the amount of SRF funding needed to complete this project is \$700,000.
- Lakeside I Sewer Project (Contract 6): This project involves the design and installation of 5,500 l.f. of 8-inch and 12-inch sewer pipe in the eastern area of Tiogue Avenue. The parcels that will be served by this project are bordered by Tiogue Avenue by the north, Lakeside Drive to the south, Arnold Road to the west, and the Tiogue Dam to the east. This area is adjacent to the northwest shore of Tiogue Lake. The estimated cost associated with the amount of SRF funding needed to complete this project is \$2,000,000.
- Tiogue Avenue West Sewer Project (Contract 7): This project involves the design and installation of 2,100 l.f. of 18-inch sewer pipe in the western portion of Tiogue Avenue from 1100 Tiogue Ave. (McDonalds) to the intersection of Reservoir Road. The estimated cost associated with the amount of SRF funding needed to complete this project is \$1,200,000.

- Quidnick Village Sewer Project (Contract 8): This project involves the design and installation of 16,100 l.f. of 8-inch and 12-inch sewer pipe in the Quidnick Village area, located along the northern branch of the Pawtuxet River on the West Warwick town line. The parcels that will be served by this project are bordered by Cecile Avenue by the north, Washington Street to the south, Hazard Street to the west, and the West Warwick town line to the east (with the remaining portion of Fairview Avenue, north to Gadoury Avenue). The estimated cost associated with the amount of SRF funding needed to complete this project is \$4,800,000.
- Wendell Avenue Sewer Project (Contract 9): This project involves the design and installation of 2,200 l.f. of 8-inch sewer pipe in the Wendell Avenue neighborhood north of Tiogue Lake and south of the Pawtuxet River. The parcels that will be served by this project are bordered by the Pawtuxet River to the north and east, Tiogue Avenue to the south and Whitman Street to the west. The estimated cost associated with the amount of SRF funding needed to complete this project is \$700,000.
- Tiogue School & East Shore Drive Sewer Project (Contract 10): This project involves the design and installation of 7,800 l.f. of 8-inch sewer pipe and 3,200 l.f. of 12-inch sewer pipe in the Tiogue School area including East Shore Drive and adjacent streets, bordering the eastern shore of Tiogue Lake. The parcels that will be served by this project are bordered by Tiogue Avenue by the north and east, Rawlinson Avenue to the south and Tiogue Lake to the west. The estimated cost associated with the amount of SRF funding needed to complete this project is \$4,100,000.
- Lakeside II Sewer Project (Contract 11): This project involves the design and installation of 7,000 l.f. of 8-inch sewer pipe in the Lakeside neighborhood west of Arnold Road bordering the northwest shore of Tiogue Lake. The parcels that will be served by this project are bordered by Hazel Street to the north, Twin Lakes Avenue to the south, Ridge Avenue to the west and Arnold Road to the east. The estimated cost associated with the amount of SRF funding needed to complete this project is \$2,100,000.
- Fast Track Sewer Interceptor (Contracts 1 & 2) Refinance: This is for costs associated with Contract 1, 2, and other upgrades necessary to accept the additional flow projections of Amgen. The Town has been trying to refinance these costs from a TAN into an SRF loan.
- Facilities Plan Update: This project involves the update of the Towns Facilities Plan for the next five years. The current facilities plan expired in 2008 and before additional SRF financing is granted for future projects the update will need to be completed. The estimated cost associated with the amount of SRF funding needed to complete this project is \$50,000.
- Community Sewer Tie-In Program: This is a program (funded through the SRF program) to assist property owners in paying expenses associated with the connecting of their parcels to the Town sewer system. The estimated cost associated with the amount of SRF funding needed to complete this project is \$500,000.

Mr. Paul K. Sprague
June 16, 2009
Page 3

- Huron Pond Sewer Project: This project involves the design and installation of 9,400 l.f. of 8-inch sewer pipe in the area south of Huron Pond. The parcels that will be served by this project are bordered by Huron Pond to the north, Hopkins Hill Road to the east and Helen Avenue to the south and west. The estimated cost associated with the amount of SRF funding needed to complete this project is \$2,600,000.
- Hopkins Hill East Sewer Project: This project involves the design and installation of 7,100 l.f. of 8-inch sewer pipe west of Hopkins Hill Road. The parcels that will be served by this project are bordered by Tiogue Avenue by the north, Angelwood Road to the south, Hopkins Hill Road to the west, and York Drive to the east. This area sits between Tiogue Lake and Huron Pond. The estimated cost associated with the amount of SRF funding needed to complete this project is \$2,000,000.

Please review the attached documents. Should you wish to make any changes please contact me. Upon notification from you we will forward the documents onto RIDEM as requested.

If you have any questions, please feel free to call Barry Yaceshyn (Ext. 2426) or me at (800) 726-7766 (ext 2426).

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.



Barry A. Yaceshyn, P.E.
Project Manager

CC: Warren West, Town Finance Director

Enclosures: Summary Sheet (1pg)
Project Determination Data Sheet (12 pgs)

O:\Coventry R\SRF-Project Priority List Forms\2010 DEM Forms\cover_LTR_Town_061809fnl.doc

**FY 2010 PROJECT PRIORITY LIST
PROJECT SUMMARY SHEET**

Community: Town of Coventry, RI

Contract Person: Paul Sprague

Title: Interim Town Manager

Street Address: 1670 Flat River Road

City/State/Zip: Coventry, RI 02816

Telephone No.: 401-822-9189

PROJECT NAME	PROJECTED CONSTRUCTION START DATE	ESTIMATED COST
Main Street Area Sewer Project - Contract 5 (additional request)	Currently On-Going	\$700,000
Lakeside I Sewer Project - Contract 6	October 2009	\$2,000,000
Tiogue Avenue West (Nooseneck Hill Rd) - Contract 7	May 2010	\$1,200,000
Quidnick Village - Contract 8	October 2010	\$4,800,000
Wendell Avenue Sewer Project - Contract 9	May 2011	\$700,000
Tiogue School & East Shore Drive - Contract 10	October 2011	\$4,100,000
Lakeside Area II - Contract 11	May 2012	\$2,100,000
Fast Track Sewer Interceptor (Contracts 1 & 2) Refinance	Projects Complete	\$6,485,601
Facilities Plan Update	May 2009	\$50,000
Community Sewer Tie-In Program	Currently On-Going	\$500,000
Huron Pond Sewer Project	May 2010	\$2,600,000
Hopkins Hill Road East Sewer Project	May 2010	\$2,000,000

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Main Street Area Sewer Project – Contract 5 (additional request)

Total Cost: \$700,000 Anticipated Start Date: Currently On-Going

Project Description: This project involved the design and installation of 5,450 l.f. of 8-inch, 4,750 l.f. of 12-inch, and 1,000 l.f. of 18-inch sewers on Boston Street, Main Street, Sandy Bottom Road, Contentment Drive, Carley Drive and a portion of the eastern area of Tiogue Avenue. Additional costs include paving of Fairview Avenue, approximately 550 l.f. of 8-inch sewer extension on Johnson Boulevard and unexpected conditions during the construction of the project.

Proposed or Predicted Water Quality Benefit: This section of the Coventry sewer system will provide proper disposal of wastewater in areas known to have direct discharges to the south Branch of the Pawtuxet River, and areas with on-site disposal systems in poor soils with high groundwater that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____

PROJECT RATING CRITERIA SUMMARY

POINTS

I.	Existing Conditions Criteria	_____
II.	Proposed Facilities Criteria	_____
III.	Water Quality Improvement Criteria	_____
IV.	Intergovernmental Needs Criteria	_____
V.	Readiness to Proceed Criteria	_____
	Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague
 Street Address: 1670 Flat River Road Title: Interim Town Manager
 City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189
 Project Name/Number: Lakeside 1 Sewer Project - Contract 6
 Total Cost: \$2,000,000 Anticipated Start Date: October 2009

Project Description: This project involves the design and installation of 5,500 l.f. of 8-inch and 12-inch sewer pipe in the eastern area of Tiogue Avenue. The parcels that will be served by this project are bordered by Tiogue Avenue by the north, Lakeside Drive to the south, Arnold Road to the west, and the Tiogue Dam to the east. This area is adjacent to the northwest shore of Tiogue Lake.

Proposed or Predicted Water Quality Benefit: This section of the Coventry sewer system will provide proper disposal of wastewater in areas with direct discharges to Tiogue Lake, and to on-site disposal systems in poor soils with high groundwater (in the area of Tiogue Lake) that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____/_____/_____/_____/_____/_____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Tiogou Avenue West (Nooseneck Hill Road) - Contract 7

Total Cost: \$1,200,000 Anticipated Start Date: May 2010

Project Description: This project involves the design and installation of 2,100 l.f. of 18-inch sewer pipe in the western portion of Tiogou Avenue from 1100 Tiogou Ave. (McDonalds) to the intersection of Reservoir Road.

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater for properties (mostly larger commercial users) along Tiogou Avenue that are located in areas with on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____/_____/_____/_____/_____/_____

PROJECT RATING CRITERIA SUMMARY

POINTS

I.	Existing Conditions Criteria	_____
II.	Proposed Facilities Criteria	_____
III.	Water Quality Improvement Criteria	_____
IV.	Intergovernmental Needs Criteria	_____
V.	Readiness to Proceed Criteria	_____
	Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Quidnick Village - Contract 8

Total Cost: \$4,800,000 Anticipated Start Date: October 2010

Project Description: This project involves the design and installation of 16,100 l.f. of 8-inch and 12-inch sewer pipe in the Quidnick Village area, located along the northern branch of the Pawtuxet River on the West Warwick town line. The parcels that will be served by this project are bordered by Cecile Avenue by the north, Washington Street to the south, Hazard Street to the west, and the West Warwick town line to the east (with the remaining portion of Fairview Avenue, north to Gadoury Avenue).

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater in areas with single and multi-family homes using older ISDS systems along the Pawtuxet River. The area has on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY

POINTS

I.	Existing Conditions Criteria	_____
II.	Proposed Facilities Criteria	_____
III.	Water Quality Improvement Criteria	_____
IV.	Intergovernmental Needs Criteria	_____
V.	Readiness to Proceed Criteria	_____
	Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Wendell Avenue Sewer Project – Contract 9

Total Cost: \$700,000 Anticipated Start Date: May 2011

Project Description: This project involves the design and installation of 2,200 l.f. of 8-inch sewer pipe in the Wendell Avenue neighborhood north of Tiogue Lake and south of the Pawtuxet River. The parcels that will be served by this project are bordered by the Pawtuxet River to the north and east, Tiogue Avenue to the south and Whitman Street to the west.

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater in areas with single and multi-family homes using older ISDS systems along the Pawtuxet River and in close proximity to Tiogue Lake. The area has on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____/_____/_____/_____/_____/_____

PROJECT RATING CRITERIA SUMMARY		POINTS
I.	Existing Conditions Criteria	_____
II.	Proposed Facilities Criteria	_____
III.	Water Quality Improvement Criteria	_____
IV.	Intergovernmental Needs Criteria	_____
V.	Readiness to Proceed Criteria	_____
	Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Tiogoue School & East Shore Drive - Contract 10

Total Cost: \$4,100,000 Anticipated Start Date: October 2011

Project Description: This project involves the design and installation of 7,800 l.f. of 8-inch sewer pipe and 3,200 l.f. of 12-inch sewer pipe in the Tiogoue School area including East Shore Drive and adjacent streets, bordering the eastern shore of Tiogoue Lake. The parcels that will be served by this project are bordered by Tiogoue Avenue by the north and east, Rawlinson Avenue to the south and Tiogoue Lake to the west.

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater in areas with on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications and are located in close proximity to Tiogoue Lake.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY

POINTS

I.	Existing Conditions Criteria	_____
II.	Proposed Facilities Criteria	_____
III.	Water Quality Improvement Criteria	_____
IV.	Intergovernmental Needs Criteria	_____
V.	Readiness to Proceed Criteria	_____
	Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Lakeside Area II Sewer Project – Contract 11

Total Cost: \$2,100,000 Anticipated Start Date: May 2012

Project Description: This project involves the design and installation of 7,000 l.f. of 8-inch sewer pipe in the Lakeside neighborhood west of Arnold Road bordering the northwest shore of Tiogue Lake. The parcels that will be served by this project are bordered by Hazel Street to the north, Twin Lakes Avenue to the south, Ridge Avenue to the west and Arnold Road to the east.

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater in areas with on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications and are located in close proximity to Tiogue Lake.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

**Priority Determination System
Requested Project Information Sheet**

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Fast Track Sewer Interceptor (Contract 1&2) Refinance

Total Cost: \$6,485,601.00 Anticipated Start Date: Project Completed

Project Description: This project involved the design and installation of 4,931 ft of 12-force main pipe and 9,917 ft. of 30-inch and 24-inch gravity sewer along Tiogue Ave from Lionel Avenue to Sandy Bottom Road, continuing along Sandy Bottom Road to Washington Street, east on Washington Street to Quidnick Street and continuing east along the old railroad alignment to Whitford Street. This project also involved the installation of a wastewater pumping station, located on Sandy Bottom Road that lifts the wastewater to a discharge manhole on Washington Street at Knotty Oak Road. The project installed 135 building sewer service connections to businesses and homes along the project route.

Proposed or Predicted Water Quality Benefit: This project provided the main interceptor and pump station that will serve Coventry's future sewer extension projects into areas that have failing or problematic septic systems. This project also provided sewer service to many homes that abut local water resource areas in a very congested area adjacent to the South Branch of the Pawtuxet River.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Facilities Plan Update

Total Cost: \$50,000 Anticipated Start Date: May 2009

Project Description: Update of the Towns Facilities Plan for the next five years. The current facilities plan expired in 2008.

Proposed or Predicted Water Quality Benefit: Planning for wastewater control from priority areas located throughout the Town, including locations with failing ISDS systems and poor soil conditions in close proximity to surface waters.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

Priority Determination System
Requested Project Information Sheet

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Community Sewer Tie in Program

Total Cost: \$500,000 Anticipated Start Date: Currently ongoing

Project Description: Program to financially assist property owners in connecting their parcels to the Town sewer system.

Proposed or Predicted Water Quality Benefit: This program will financially assist property owners to connect to the Town sewers and will aid in providing proper disposal of wastewater in areas with on-site disposal systems.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

**Priority Determination System
Requested Project Information Sheet**

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Huron Pond Area Sewer Project

Total Cost: \$2,600,000 Anticipated Start Date: May 2010

Project Description: This project involves the design and installation of 9,400 l.f. of 8-inch sewer pipe in the area south of Huron Pond. The parcels that will be served by this project are bordered by Huron Pond to the north, Hopkins Hill Road to the east and Helen Avenue to the south and west.

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater in areas using older ISDS systems adjacent to Huron Pond and in the proximity of Tiogue Lake. The area has on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FY 2010**

**Priority Determination System
Requested Project Information Sheet**

Applicant: Town of Coventry Contact Person: Paul Sprague

Street Address: 1670 Flat River Road Title: Interim Town Manager

City & Zip Code: Coventry, RI 02816 Phone: 401-822-9189

Project Name/Number: Hopkins Hill East Sewer Project

Total Cost: \$2,000,000 Anticipated Start Date: May 2010

Project Description: This project involves the design and installation of 7,100 l.f. of 8-inch sewer pipe west of Hopkins Hill Road. The parcels that will be served by this project are bordered by Tiogue Avenue by the north, Angelwood Road to the south, Hopkins Hill Road to the west, and York Drive to the east. This area sits between Tiogue Lake and Huron Pond.

Proposed or Predicted Water Quality Benefit: This portion of the Coventry sewer system will provide proper disposal of wastewater in areas using older ISDS systems in the proximity of Tiogue Lake and Huron Pond. The area has on-site disposal systems in poor soils and high groundwater that require frequent pumping, repair, and modifications.

DEM USE ONLY

Rating Date: _____ Project Category _____

OWR Comments: _____

Reviewers' Initials: _____ / _____ / _____ / _____ / _____ / _____

PROJECT RATING CRITERIA SUMMARY	POINTS
I. Existing Conditions Criteria	_____
II. Proposed Facilities Criteria	_____
III. Water Quality Improvement Criteria	_____
IV. Intergovernmental Needs Criteria	_____
V. Readiness to Proceed Criteria	_____
Grand Total	_____

III. CAPITALIZATION GRANT AGREEMENT

A. DRAFT FY2009 American Recovery and Reinvestment Act Supplemental Intended Use Plan

(Final copy to be forwarded to EPA upon completion of Public Hearing)

STATE OF RHODE ISLAND

DRAFT FY2009 AMERICAN RECOVERY AND REINVESTMENT ACT SUPPLEMENTAL INTENDED USE PLAN

in support of the

FEDERAL FISCAL YEAR 2009 CAPITALIZATION GRANT UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

*To be made available by the Federal Clean Water Act for the
Clean Water State Revolving Fund*

Introduction

The Rhode Island Clean Water Finance Agency ("Agency"), hereby submits to the Environmental Protection Agency ("EPA"), the American Recovery and Reinvestment Act (ARRA) Intended Use Plan (IUP) for all Clean Water Act ("CWA"), Title VI funds available to the Clean Water State Revolving Fund (CWSRF) under the Federal Fiscal Year (FFY) 2009 American Recovery and Reinvestment allotment of \$26,314,600. It is considered a supplemental to the previously approved IUP for the 2009 that was provided to EPA.

Listing of State Revolving Fund Projects

With this award of the total FFY2009 federal allotment of \$26,314,600, it is our plan to continue assisting wastewater abatement, nonpoint source and estuary projects which will proceed quickly to construction, creating jobs and furthering the water quality objectives of the Clean Water Act. The Agency's goal is to enter into binding commitments for projects which will proceed to construction or award of construction contracts by February 17, 2010. It is also our goal to continue the proper administration of the Clean Water State Revolving Fund Program (the "Program"). To determine which projects are to be funded by the Program, the State FY2009 Project Priority List (PPL), prepared by the Rhode Island Department of Environmental Management ("DEM"), Office of Water Resources, was reviewed and projects needing CWSRF funds in FY2009 are identified in priority order and/or readiness to proceed.

The Agency recognizes that the goal of the ARRA is to expeditiously fund eligible projects that simultaneously will create jobs, promote economic recovery and generate long-term benefits from infrastructure investment. In this grant, the Agency is being called upon to accomplish goals that may not previously have been priorities in its base SRF program.

Within the State of Rhode Island the "first-use" requirement has been met. All National Municipal Policy (NMP) projects have completed construction, most receiving Title II Construction Grants funds.

Revision to the Intended Use Plan

Throughout the course of the year, the need may arise to amend this IUP. In such an event, the Program will only propose projects that have been selected from the approved PPL. The projects on this list will have been previously identified and approved through the public participation process as per 40 C.F.R. Section 35.3150 (c).

In the event that projects identified for funding in the IUP are unable to proceed, funding assistance for these projects will be deferred and other projects from the PPL will be selected for funding based on procedures in the priority determination system, readiness to proceed, and availability of funds.

Short and Long Term Goals

As required by the CWA, the RI CWSRF Program has identified the following goals for the CWSRF. The goals described below are grouped according to short-term and long-term objectives and are not listed in any particular order:

A. SHORT TERM GOALS

- Goal #1:** Continue the Program that will continue to operate in perpetuity.
- Goal #2:** Manage the Program to distribute loan monies to borrowing communities in a timely and efficient manner.
- Goal #3:** Administer rules, regulations and guidelines that are conducive to the proper functioning of the Program while ensuring compliance with the intent of the CWA.
- Goal #4:** Develop an Intended Use Plan (IUP), to be submitted along with the annual capitalization grant application, in a timely manner, to EPA.
- Goal #5:** Administer loan policies and procedures associated with the proper management of the CWSRF program.
- Goal #6:** Prepare an annual report which lists the State's accomplishments for the fiscal year and submit to EPA in a timely manner.
- Goal #7:** Assure full compliance with ARRA of 2009 & Title VI of the Clean Water Act and all federal crosscutting issues as required by the 1987 CWA amendments.

B. LONG TERM GOALS

- Goal #8:** Place emphasis on all municipal facilities in attaining compliance with RIPDES permits limitations.
- Goal #9:** Stress the importance of attaining general water quality standards where they are negatively impacted by municipal point-source discharges.
- Goal #10:** Coordinate CWSRF activities with both State and Federal enforcement activities.
- Goal #11:** Coordinate all state funded programs for wastewater treatment facilities with CWSRF activities.
- Goal #12:** Evaluate environmental needs throughout the state, by rating specific needs for wastewater construction and strive to distribute CWSRF funds in a priority manner.

- Goal #13:** Protect the public health and the environment and promote completion of cost-effective projects.
- Goal #14:** Assist communities during facilities planning and application for CWSRF funding.
- Goal #15:** Continue efforts to improve the water quality of the Narragansett Bay and its tributaries, which was designated as an Estuary of National Significance in March of 1988.
- Goal #16:** Assist in the development of an assessment and management program for Non-Point Source (NPS) and Estuary Protection projects to be considered for funding by the State CWSRF.

Program Issues and Initiatives

This IUP addresses the sources of monies expected to be available to the CWSRF with regard to the ARRA as of March 1, 2009. The use of the monies is expected to go beyond the term of this IUP. The financing capability of this IUP is based on the total federal capitalization grant awarded and paid into the Automated Clearing House (ACH) to date; direct loan repayments; revolved federal and state capital, Bond Proceeds and interest earnings from the CWSRF.

Projects are to be funded with the ARRA Capitalization Grant monies that total \$26,314,600 (See Table 1 below). In addition to the aforementioned, the Agency may use repaid funds from previous loans and proceeds from an anticipated bond sale in June, 2009. The total amount of loans issued in FY2009 relating to the ARRA Capitalization Grant is expected to total \$26,314,600. These resources may be allocated to long-term direct loans and pooled long-term financings (Leverage Loans). The resources available in the RI CWSRF are anticipated to be insufficient to finance all eligible projects ready for financing during this IUP period. The Agency will fund projects according to the Project Priority List and readiness to proceed.

Information on the CWSRF Activities to be supported

The FFY2009 ARRA Capitalization Grant funds for the CWSRF are intended for loans to municipalities, the Narragansett Bay Commission and other eligible borrowers using either direct loans or the "reserve" leverage method to meet project demand estimated for the immediate future. It is anticipated that all or a portion the Capitalization Grant, if leveraged, will be at a ratio of at least 2:1 (leveraged being defined as Total Loans divided by Net Capitalization Grant). The maximum permissible principal repayment period shall be 20 years following project completion, and may begin up to 12 months after construction is completed, but not to exceed 5 years from beginning of construction.

The Program intends to bank the authority to use four percent (4%) of the federal capitalization grant funds for DEM administrative costs to support the SRF program during a future period. Based upon the FFY2009 ARRA allotment of funds, the Program will bank the authority to recover \$1,052,584 of the FFY2009 ARRA funds from a future year's federal capitalization grant. . The Agency, from FFY98 through FFY05 and including the FFY2009 ARRA allotment, has "banked" the authority to use the 4% of the federal capitalization funds for DEM administrative costs to support the CWSRF program. To date, \$3,849,156 in Capitalization Grant funds for DEM's administrative costs have been banked. These "banked" funds have been loaned to various communities.

Assurances and Specific Proposals

The Agency provides the necessary assurances and certifications as part of the Operating Agreement between the Agency and the U.S. Environmental Protection Agency. Rhode Island's Operating Agreement includes the requirements of the following sections of the law:

602 (a): Environmental Reviews

The DEM has formulated the State Environmental Review Process (SERP) which has been approved by EPA. For FFY02 funds, we expect that most projects will require a Finding of No Significant Impact (FONSI), or, reaffirmation of a FONSI.

602 (b)(3): Binding Commitments

The Agency certifies that it will enter into Binding Commitments for 120% of each quarterly payment received under the Capitalization Grant within one (1) year of receipt of that payment into the EPA/ACH payment system.

602 (b)(4): Expeditious and Timely Expenditures

The Agency will expend all funds in the CWSRF in a timely and expeditious manner. Disbursements for approved CWSRF projects are dependent upon changeable construction schedules.

602 (b)(5): First Use for Enforceable Requirements

The Agency certifies that it will use CWSRF funds first to assure maintenance of progress towards enforceable deadlines, goals and requirements of the CWA.

602 (b)(6): Compliance with Title II Requirements

The Agency agrees to meet the specific statutory requirements for publicly owned wastewater treatment projects constructed in whole or in part before FY95 with funds directly made available by Federal Capitalization Grants.

Sources and Uses of Funds Potential

The estimated funds available for projects in this supplemental IUP with regard to the ARRA funds available to the Agency are summarized in Table 1 below.

The Agency is applying for a capitalization grant in the amount of \$26,314,600. This represents the amount that the Agency is eligible to receive under the State's allocation from the supplemental appropriation enacted under the ARRA.

Table 1 summarizes the sources and uses of the capitalization grant for which the Agency is Applying:

Table 1

Sources and Uses of Capitalization Grant

Source	Amount
Capitalization Grant Uses	\$26,314,600
Project Assistance Loans	
Program Loans	\$6,841,796
Green Project Reserve Loans	\$5,262,920
Project Assistance Subsidization	\$13,157,300
*4% Admin. Monies	\$1,052,584
Total Uses	\$26,314,600

*4% Admin. monies to be used for projects.

Criteria and Methods for Distribution of CWSRF Funds

The Agency and DEM conducted a comprehensive outreach campaign to alert potential borrowers of federal plans to provide economic recovery stimulus funding. In January 2009, notices were sent to the CWSRF potential borrowers. The Agency and DEM has focused on reaching out to communities with ready to go projects and those that may be eligible for principal forgiveness subsidy assistance. As a result of this effort the CWSRF program has identified over \$138 million in eligible projects that could be ready to proceed to construction within the time deadlines established by the ARRA. The attached project list (see attached) includes projects that have been assessed through the CWSRF prioritization process.

DEM has an integrated priority ranking system, approved by EPA Region I. A Project Priority List (PPL) is developed annually using this ranking system (Attachment A).

The CWSRF will provide loans for up to 100 percent of eligible project and finance costs; consistent with Federal limitations on the use of CWSRF funds, with the State determining the eligibility based on State developed criteria.

The Agency and DEM take several factors into consideration when determining which projects from the PPL will be funded by the CWSRF. These factors include:

- ✧ Relative ranking on the PPL;
- ✧ Indication that the community (or service district) has the authority to encumber debt for wastewater projects from the Agency;

- ✧ Indication that the community (or service district) will make application to the CWSRF for financing;
- ✧ Indication that the community's (or service district's) credit quality is adequate;
- ✧ Indication that the DEM will approve the project in the form of a Certificate of Approval; and
- ✧ Indication that projects are ready to proceed within six months of bonding the loan.

Projected Funding List

With the award of this grant in the amount of \$26,314,600, the Agency expects to fund portions of the projects identified in lists of projects attached hereto.

Additional Subsidization

The ARRA requires that not less than 50% of assistance provided is in the form of additional subsidies. The legislature of the State of Rhode Island is currently considering legislation which would establish authority to provide principal forgiveness and/or negative interest of loans.

The Agency will also revise its CWSRF Loan Policies and procedures to establish the authority to make principal forgiveness and negative interest loans.

Green Infrastructure

The ARRA requires that, to the extent there are sufficient eligible project applications, not less than 20% of the funds provided for projects must be used for water or energy efficiency, green infrastructure, or other environmentally innovative activities. The attached project list shows that 20% of the total assistance amount of \$5,262,920 is for projects or portions of projects meeting one or more of the specific objectives required by this provision.

The Agency and DEM intends to make a timely and concerted solicitation for additional projects, with the objective of determining no later than August 17, 2009 (180 days after Feb. 17 enactment), which additional qualifying projects it will amend its IUP to include in an effort to reach the 20% mark. Solicitation efforts will include a public announcement of the availability of funds and targeted meetings with associations and other groups involved in green infrastructure, water or energy efficiency improvements and other environmentally innovative activities.

Preference for Expeditious Activities

The ARRA requires priority be given to projects that will be ready to proceed to actual construction within 12 months of the date of enactment. In anticipation of compliance with this requirement, the State of Rhode Island is consulting with all potential assistance recipients with projects on the project priority list and making a determination as to which of these projects can be started and completed expeditiously. After receiving a capitalization grant, the Agency will provide ARRA assistance to projects who qualify for this preference. In addition, ARRA section 1602 requires that "recipients shall give preference to activities that can be started and completed expeditiously, including a goal of using at least 50 percent of the funds for activities that can be initiated not later than 120 days after enactment" of the Act. The Agency intends to implement this preference requirement by selecting for

first ARRA funding those projects that appear most likely to be able to start construction by August, 2009.

Avoidance of Reallotment/Relationship to Base Program

In order to meet the requirements and deadlines of the ARRA for the expeditious and timely commitment and expenditure of funds, the Agency and DEM will regularly review the data reported to EPA on the progress of assistance recipients under the statutory deadlines specified in this IUP to identify any issues with the timeliness of this progress. If such issues are identified, the Agency and DEM intends to work with EPA to resolve such issues. The Agency will include conditions in its assistance agreements to ensure that assistant recipients make timely progress with respect to entering into contracts and/or construction. If a recipient fails to maintain progress with these conditions, they will receive funding from other CWSRF monies so that ARRA funding can be provided for a project that is ready to proceed. The Agency understands that the EPA may deobligate grant funds from States that fail to meet requirements on use of ARRA funds. However, if the State is eligible for additional funds made available by a reallotment of ARRA funds, the State will provide EPA with a list of projects from its project priority list that are immediately prepared to proceed to construction.

Loan Terms and Fees

The Recovery CWSRF Program will offer the following loan terms:

- Standard Interest Rate = 1/3 off of Market Rate (The same rate will be offered to loans in the ongoing program.)
- Repayment Term: Up to 20 Years
- Loan Origination Fee: 1%
- Administrative Fee: .5% of the loans outstanding. The administrative fee is to help meet program operating expenses.

It is the Agency's intent to allocate 50% of the fund to approved borrowers in the form of additional subsidization of their loan rate in the form of principal forgiveness.

Schedule of Anticipated Payments into the ACH system

The Rhode Island CWSRF program anticipates deposits into the ACH for the FFY2009 capitalization grant as per the following schedule. At this time, it is also expected that the Agency will draw cash from the ACH as per the same schedule:

FFY09 ARRA CAPITALIZATION GRANT **ANTICIPATED PAYMENTS INTO EPA/ACH PAYMENT SYSTEM**

Federal Fiscal Quarter	Payment Into ACH	Cummulative Ceiling
Jan - Mar 2009 (09-2)	\$6,578,651	\$6,578,651
Apr - Jun 2009 (09-3)	\$8,771,533	\$15,350,184
Jul - Sep 2009 (09-4)	\$8,771,533	\$24,121,717
Oct - Dec 2009 (10-1)	\$2,192,883	\$26,314,600

Public Review and Comment

In compliance with the requirement in CWA sec. 606(c) to provide for public review and comment, the Agency will post this Supplemental 2009 ARRA Intended Use Plan and amended 2009 PPL in draft form at www.ricwfa.com/news.html and www.state.state.ri.us/dem/programs/benviron/water/finance/srf/index.htm respectively and in Providence Journal on April 15, 2009. A Joint public hearing between the Agency and DEM will be held on May 19, 2009.

Comments from attendees will be forwarded to EPA when received, along with responses from the Agency, if appropriate.

Assurances

The Agency agrees to comply with the Federal program requirements as outlined in the Operating Agreement between EPA and the Agency dated November 27, 1992, which was last amended and updated on January 21, 1997.

ECONOMIC STIMULUS PROJECT PROPOSALS - Clean Water State Revolving Fund "Brown" Project List

Project	PPL Rating Points	Brief Description	Relevant Construction Information					Est. Permanent Jobs	On DEM Priority List
			Cost (\$)	Plan/Design Status	Permit Status	Start Date	Est. Jobs*		
RIDEM Survey Responses									
NBC	45	Field's Pt. WWTF Biological Nutrient Removal	24,700,000	Design Completion Date: 2/28/09	Outstanding: DEM,CRMC	8/15/2009	320	0	Yes
East Providence	32	WWTF Biological Nutrient Removal Upgrade	10,000,000	Design Completion Date: Summer 2009	Outstanding: DEM,CRMC	Fall 2009	120	0	Yes
North Smithfield	29	Sewer Expansion Phs. 3 - Willerval/Tanglewood	5,000,000	Design Completion Date: Feb. 2009	Outstanding: DEM	5/1/2009	26	0	Yes
Warren	25	Water Street Stormwater & Sewer Remediation	2,000,000	Design Completion Date: Fall 2009	Outstanding: DEM,CRMC	2/1/2010	4	0	No
* Warwick	18	Sandy Lane/Cedar Swamp Sewers	1,593,343	Design Completion Date: 5/29/09	Outstanding: DEM	6/29/2009	6	0	Yes
* East Greenwich	17	Pinewood Sewers	2,600,000	Design Completion Date: 3/1/09	Outstanding: DEM	5/15/2009	10	0	Yes
* Middletown	17	Manhole Relining: Phs. II Priority Subareas	800,000	Design Completion Date: 3/15/09	Outstanding: DEM	5/1/2009	4	0	Yes
* Middletown	17	CIPP Sewer Sliplining: Phs II Subareas I, C & G	1,325,000	Design Completion Date: 3/15/09	Outstanding: DEM	5/1/2009	5	0	Yes
* Middletown	17	CIPP Sewer Sliplining: Phs II Subarea Lower Z	1,300,000	Design Completion Date: 3/15/09	Outstanding: DEM	5/1/2009	5	0	Yes
* Middletown	17	CIPP Sewer Sliplining: Phs II Subarea Lower E	3,700,000	Design Completion Date: 3/15/09	Outstanding: DEM	5/1/2009	15	0	Yes
			\$53,018,343						

* Projects to be considered if other projects are unable to proceed in a timely manner in accordance with ARRA.

ECONOMIC STIMULUS PROJECT PROPOSALS - Clean Water State Revolving Fund "Green" Project List

<i>Project</i>	<i>PPL Rating Points</i>	<i>Brief Description</i>	<i>Relevant Construction Information</i>					<i>Est. Permanent Jobs</i>	<i>On DEM Priority List</i>
			<i>Cost (\$)</i>	<i>Plan/Design Status</i>	<i>Permit Status</i>	<i>Start Date</i>	<i>Est. Jobs*</i>		
RIDEM Survey Responses									
NBC	45	Field's Pt. WWTF BNR Green Elements	2,562,920	Design Completion Date: 2/28/09	Outstanding: DEM,CRMC	8/15/2009	320	0	Yes
Providence	30	BMPs @ City Ponds & Woonasquatucket River	500,000						
Warren	25	Water Street Stormwater & Sewer Remediation	800,000	Design Completion Date: 8/01/09	Outstanding: DEM,CRMC	4/15/2009	12	0	No
Bristol	20	Green Infrastructure @ Town Beach & Muni Lots	1,000,000		Outstanding: DEM, CRMC	9/30/2009	4	0	No
Providence Water	19	Tasca Field Stormwater Improvements	400,000		Outstanding: DEM		4	0	No
			5,262,920						

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources

**Rules and Regulations for the Priority Determination System for
Federal and State Assistance to Local Governmental Units for
Construction of Water Pollution Abatement Projects**



November 1983

As Amended: August 1987, June 1991, May 1996, April 1998, August 2003 and August, 2009

Regulation # 12-190-019

AUTHORITY: These regulations are adopted pursuant to Chapters 42-17.1, 42-35, 46-12, and 46-12.2 of the Rhode Island General Laws of 1956, as amended

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RULES AND REGULATIONS FOR THE PRIORITY DETERMINATION SYSTEM
FOR FEDERAL AND STATE ASSISTANCE TO LOCAL GOVERNMENTAL UNITS
FOR CONSTRUCTION OF WATER POLLUTION ABATEMENT PROJECTS

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STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RULES AND REGULATIONS FOR THE PRIORITY DETERMINATION SYSTEM
FOR FEDERAL AND STATE ASSISTANCE TO LOCAL GOVERNMENTAL UNITS
FOR CONSTRUCTION OF WATER POLLUTION ABATEMENT PROJECTS

RULE 1. PURPOSE

The Priority Determination System is designed to achieve optimum water quality management results from the Rhode Island Department of Environmental Management's (DEM) water pollution abatement project construction assistance programs, consistent with the powers and duties of the Department denoted in Chapters 42-17.1, 46-12, and 46-12.2 of the Rhode Island General Laws (RIGL), as amended, and the Federal Water Pollution Control Act [33 U.S.C. Sec. 1251 et. seq., as amended], commonly called the Clean Water Act.

The Priority Determination System describes procedures for annually determining the priority rating and ranking of all categories of identified water pollution abatement projects proposed by local governmental units which may receive federal and/or state funding assistance from any such programs administered by the DEM.

The relative rankings of water pollution abatement projects on the Priority List developed under these regulations will be utilized by the various assistance programs of the DEM, Office of Water Resources. Actual annual assistance awards are determined by the criteria and methodology contained in the rules and regulations for each specific assistance program. These assistance programs may include, but are not limited to, the State Revolving Fund (SRF) and the Interceptor Bond Fund (IBF) account of the Rhode Island Clean Water Act Environmental Trust Fund.

RULE 2. AUTHORITY

These rules and regulations are promulgated pursuant to RIGL Chapter 42-17.1, Environmental Management, RIGL Chapter 46-12, Water Pollution, and RIGL Chapter 46-12.2, Rhode Island Clean Water Finance Agency, in accordance with RIGL Chapter 42-35, Administrative Procedures.

RULE 3. APPLICATION

The terms and provisions of these rules and regulations shall be liberally construed to permit the Department to effectuate the purposes of state law, goals, and policies.

RULE 4. DEFINITIONS

For the purposes of these regulations, the following terms shall have the following meanings:

"Agency" or "RICWFA" means the Rhode Island Clean Water Finance Agency established by RIGL Chapter 46-12.2.

"Areawide Waste Treatment Management Plan (208 Plan)" means the plan prepared by the State pursuant to Section 208 of the Clean Water Act.

"Chief Executive Officer" means the mayor in any city, the president of the town council in any town, or the executive director of any authority or commission unless some other officer or body is designated to perform the functions of a chief executive officer under the provisions of a local charter or other law.

"Clean Water Act (CWA)" means the Federal Water Pollution Control Act, codified at 33 U.S.C Sec. 1251 et seq., as amended.

"Community Comprehensive Plan (CCP)" means a plan prepared pursuant to the Rhode Island Comprehensive Planning and Land Use Regulation Act, Chapter 45-22.2 of the RIGL.

"Comprehensive Conservation and Management Plan (CCMP)" means a plan prepared pursuant to the requirements of Section 320 of the Clean Water Act.

"Construction" means any one or more of the following: Preliminary planning to determine the feasibility of treatment works, engineering, scientific, architectural, legal, fiscal, or economic investigations or studies, surveys, designs, plans, working drawings, specifications, procedures, or other necessary actions, erection, building, acquisition, alteration, rehabilitation, improvement, or extension of treatment works, or the administration, inspection, or supervision of any of the foregoing items.

"Combined Sewer" shall mean a sewer which serves as a sanitary sewer and a storm sewer.

"Combined Sewer Overflow (CSO)" means flow from a combined sewer in excess of the interceptor or regulator capacity that is discharged into a receiving water without going to a WWTF. A CSO occurs prior to reaching a WWTF and is distinguished from bypasses which are intentional diversions of waste streams from any portion of a WWTF.

"Costs" means any or all costs relating to the planning, designing, acquiring, constructing and carrying out and placing in operation a water pollution abatement project including, but not limited to, the following: planning, design, acquisition, construction, expansion, improvement and rehabilitation of facilities; acquisition of real or personal property; demolitions and relocations; labor, materials, machinery and equipment; services of architects, engineers, scientists, environmental and financial experts and other consultants; feasibility studies; rate/cost recovery/user charge studies; borings, survey, and other preliminary engineering costs; plans and specifications; administrative costs; legal costs; all costs related to project financing; and any and all other expenses necessary or incidental to the financing and construction of a water pollution abatement project.

"Department" or "DEM" means the Department of Environmental Management of the state of Rhode Island.

"Director" means the Director of the Rhode Island Department of Environmental Management or any subordinate or subordinates to whom the Director has delegated the powers and duties vested in him or her by Chapters 46-12, 46-12.2, or 42-17.1 of the RIGL, as amended.

"Fiscal Year" means the state of Rhode Island fiscal year: 1 July to 30 June.

"Growth Center" means a designated area, consistent with the state-approved local Community Comprehensive Plan, where compact, mixed-use development is accommodated without depleting a community's natural, historic and cultural resources.

"Infiltration/Inflow (I/I)" means the total flow from both infiltration and inflow without distinguishing the source.

"Landfill" means any site where the disposal of wastes and/or sludge occurs or has occurred by placing them in or on the land, compacting, and covering with a layer of soil.

"Local Governmental Unit" means any city, town, district, commission, agency, authority, board or other political subdivision or instrumentality of the state or of any political subdivision thereof responsible for the ownership or operation of a water pollution abatement project(s), including the Narragansett Bay Water Quality Management District Commission.

"Materials" means product(s) employed in or by-products generated by industrial, commercial, and/or agricultural processes.

"Materials Storage Area" means any pile, impoundment, compound, facility or other area where materials are contained, held or otherwise stored in such a manner which causes, contributes to, or contaminates runoff.

"Nonpoint Source (NPS) Management Plan" means a plan prepared pursuant to the requirements of Section 319

of the Clean Water Act.

"Onsite Wastewater Treatment System (OWTS)" means any system of piping, tanks, disposal areas, alternative toilets or other facilities designed to function as a unit to convey, store, treat and/or dispose of sanitary sewage by means other than discharge into a public sewage collection system.

"Pollution" means the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

"Project" or "Water Pollution Abatement Project" means any project that contributes to the education, removal, curtailment, or mitigation of pollution of the surface waters or groundwater of the state, or the restoration of the quality of said waters, and conforms with any applicable planning document which has been approved and/or adopted. This definition shall be construed to include the planning, design, construction or any other distinct stage or phase of a project.

"Project Priority List (PPL)" means an annual ranked listing based on relative priority ratings of all water pollution abatement projects in all categories for which federal or state assistance is requested from DEM's assistance programs.

"Raw Sewage Discharge" means any discharge to a receiving water of untreated sanitary sewage.

"Runoff" means water that drains from an area as surface flow.

"Sanitary Sewer" means a sewer which conveys wastewater from residences, commercial buildings, industrial plants, and institutions.

"State Guide Plan (SGP)" means goals, policies, or plan elements for the physical, economic, and social development of the state, adopted by the State Planning Council in accordance with Section 42-11-10 of the General Laws of Rhode Island, 1956, as amended.

"Storm Sewer" means a sewer intended to convey only storm waters, surface runoff, street wash waters, and drainage.

"Total Maximum Daily Load (TMDL)" means the amount of a pollutant that may be discharged into a waterbody and still maintain water quality standards. The TMDL is the sum of the individual wasteload allocations for point sources and the load allocations for nonpoint sources and natural background taking into account a margin of safety.

"Underground Storage Tank" means any one or a combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of petroleum product or hazardous materials, and the volume of which (including the volume of the underground pipes connected thereto) is ten percent (10%) or more beneath the surface of the ground.

"Wastewater Facilities Plan (WWFP)" means a plan prepared pursuant to the requirements of Section 201 of the federal Clean Water Act which is a detailed 20-year wastewater treatment, conveyance, and disposal plan, including an assessment of the environmental impacts of the plan, and which also contains information to meet the statutory and regulatory requirements of the DEM for systems to prevent pollution and the consistency requirements of the Comprehensive Planning and Land Use Regulation Act (RIGL 45-22.2).

"Wastewater Treatment Facility (WWTF)" means any equipment, devices, and systems for preventing, abating, reducing, storing, conveying, treating, separating, recycling, reclaiming, or disposing of sanitary or combined sewage.

"Watershed Action Plan" means a document that identifies watershed goals and management objectives along with specific action items that are needed. The plan is developed in consultation with all key stakeholders within the watershed including, but not limited to, federal, state and local governmental agencies, non-governmental organizations and the private sector.

RULE 5. PROJECT PRIORITY LIST

A project cannot receive funding from any DEM assistance program which utilizes the Priority Determination System unless it is on the approved Project Priority List. The chief executive officer of a local governmental unit must submit to the DEM, Office of Water Resources a letter of intent or equivalent document requesting that the proposed project receive funding from a DEM construction assistance program. To be rated and ranked under the project priority system, the letter of intent for a requested project must include:

- (A) Documentation that the requested project is, at a minimum, not inconsistent with: the State Guide Plan; a Community Comprehensive Plan; the Non-Point Source Management Plan; the Areawide Waste Treatment Management Plan or Plans; the Comprehensive Conservation and Management Plan; an approved Wastewater Facilities Plan. **EXCEPTION:** this requirement does not necessarily apply to request for assistance for planning or scientific investigations/studies.
- (B) A total costs estimate of all costs relating to the project.
- (C) A project description and schedule.

The Director shall annually prepare and promulgate a ranked priority list of all water pollution abatement projects for which assistance has been properly requested.

RULE 6. PROJECT RATING

The Director shall rate each project according to the project rating criteria of Appendix I of these regulations. In order to rate a project, the Director must determine that the project will contribute to achieving the State water quality policy goals and objectives. The numerical scores in Appendix I are based on the following:

- (A) The existing conditions that cause the pollution.
- (B) The benefits of the proposed project, including improvements in overall efficiency and service.
- (C) Improvements to water quality.
- (D) Intergovernmental needs, requirements, or mandates identified in: the State Guide Plan; a Community Comprehensive Plan; the Non-Point Source Management Plan; the Areawide Waste Treatment Management Plan; the Comprehensive Conservation and Management Plan; a Special Area Management Plan; an approved Total Maximum Daily Load or Watershed Action Plan, or an approved Wastewater Facilities Plan.
- (E) The degree to which a project is ready to proceed.

The Director shall assign points to each project rating criterion based upon the most current information available to him/her, including information received prior to or during the public hearing required under Rule 8 of these regulations.

Point values have been assigned to subcategories based on needs and priorities identified in but not limited to: the State Guide Plan; a Community Comprehensive Plan; the Nonpoint Source Management Plan; the Areawide Waste Treatment Management Plan; the Comprehensive Conservation and Management Plan; DEM Water Quality Regulations; RIDEM Rules and Regulations for Groundwater Quality; and an approved Wastewater Facilities Plan.

The Director shall annually evaluate the rating of each project and make such changes as deemed necessary.

RULE 7. PROJECT RANKING

Projects will be ranked based upon points accumulated under the Rule 6 rating process. The Director shall not place projects on the priority list and shall remove projects from the list when it is determined that the projects will not contribute to achieving applicable state water quality goals, policies, standards, or objectives.

RULE 8. REVIEW AND ADOPTION OF PROJECT PRIORITY LIST

The Director shall hold a public hearing annually on the proposed priority list prior to adopting and filing the final priority list with the Secretary of State.

Public notice of the availability of the proposed list and the place and time of the public hearing shall be published in a newspaper of the State with statewide circulation, or on the Department's website, for at least thirty (30) calendar days, or as required by RIGL 42-35, in advance of the hearing to afford all interested persons reasonable opportunity to submit data, views, or arguments concerning the proposed priority list. The public notice shall indicate the location where copies of the draft priority list may be obtained and/or reviewed by interested parties prior to the hearing.

The Director shall accept written comments on the draft priority list from the time of public notice of availability until seven (7) calendar days following the public hearing. The Director shall consider fully all written and oral submissions respecting the proposed rule, and make any changes deemed necessary to serve the purposes of these regulations.

The Director will adopt a final priority list and file it with the Secretary of State. Upon adoption of the final priority list, if requested to do so by an interested person, the Director will issue a concise statement of the principal reasons for and against its adoption, incorporating therein the reasons for overruling the considerations urged against its adoption. The effective date of the adopted priority list will be twenty (20) days following the filing with the Secretary of State.

The Director shall permanently retain a copy of the priority list hearing record which should include a copy of the final priority list filed with the Secretary of State, the transcript of the public hearing, copies of all comments, and any statement by the Director regarding the comments on or adoption of the final project priority list.

The Director shall include such information in the project priority list for each project as required by the EPA pursuant to the Clean Water Act and guidance issued pursuant thereto.

RULE 9. PROJECT PRIORITY LIST REVISION

As necessary, but no less than annually, the Director shall review the project priority list for changes in estimated project schedules, project costs and/or scope. The Director may propose modification of the project priority list at any time according to these procedures:

- (A) Addition to the list: projects can only be added to the list by a public hearing
- (B) Removal from the list:
 - (1) The Director may remove a project completely from the project priority list if it is determined: that it is fully funded by other assistance programs; that it is not consistent with an approved WWFP or applicable comprehensive management plan; or that significant deficiencies exist in the project scope of work or costs analysis.
 - (2) The Director shall notify by certified mail the local governmental unit whose project will be removed and the basis for the removal. The local governmental unit shall have ten (10) calendar days from receipt of the letter to submit evidence to the DEM showing that its project should not be removed.

- (3) The Director shall review his/her decision based on the information submitted by the local governmental unit and shall revise his/her decision if deemed necessary.
 - (4) A local governmental unit whose project is removed after such review by the Director may request that the Director reverse his/her decision to remove the project only if substantial rights of the applicant have been prejudiced because the administrative findings, inferences, conclusions, or decisions are without factual basis or are an unfair interpretation of the rules and regulations.
- (C) Revisions of a Clerical Nature: Revisions of a clerical nature require neither a public hearing nor documentation.

RULE 10. SEVERABILITY

If any provision of these Rules and Regulations, or the application thereof to any local governmental unit or circumstances, is held invalid by a court of competent jurisdiction, the validity of the remainder of the Rules and Regulations shall not be affected thereby.

RULE 11. SUPERSEDED RULES AND REGULATIONS

On the effective date of these Rules and Regulations, all previous Rules and Regulations, and any policies regarding the administration and enforcement of the Priority Determination System shall be superseded. However, any enforcement action taken by, or application submitted to, the Department prior to the effective date of these Rules and Regulations shall be governed by the Rules and Regulations in effect at the time the enforcement action was taken, or application filed.

RULE 12. EFFECTIVE DATE

The foregoing "Rules and Regulations for the Priority Determination System for Federal and State Assistance to Local Governmental Units for Construction of Water Pollution Abatement Projects", after due notice, are hereby adopted and filed with the Secretary of State this _____ day of August 2009 to become effective twenty (20) days thereafter, in accordance with the provisions of Chapters 42-17.1, 42-35, 46-12, and 46-12.2 of the General Laws of Rhode Island of 1956, as amended.

W. Michael Sullivan, Ph.D., Director
Department of Environmental Management

Notice Given on: May 14, 2008

Filing Date: _____

Effective Date: _____

APPENDIX I - PROJECT RATING CRITERIA

APPLICANT: _____ PROJECT: _____

		Point Values	Actual Rating	Item #
I.	<u>EXISTING CONDITIONS CRITERIA</u> †			
A.	Direct Raw Sewage Discharge/Sanitary Sewer Overflow	7		A
B-1	Failing OWTS. - Documented Water Quality Degradation	7		B-1
B-2	Failing OWTS – Other	3		B-2
C-1	Untreated/uncontrolled runoff - Documented Water Qual. Degrad. (Pathogen impacts)	5		C-1
C-2	Untreated/uncontrolled runoff - Documented Water Qual. Degrad. (Non-path. impacts)	3		C-2
C-3	Untreated/uncontrolled runoff – Other	2		C-3
D-1	Wastewater Treatment Facility	3		D-1
D-2	Collection System/Pump Station	1		D-2
E.	Combined Sewer Overflows	10		E
F.	Landfill - Closure imminent or closed	3		F
G-1	Underground Storage Tank – Leaking	3		G-1
G-2	Underground Storage Tank - Potential to leak (single wall construction)	2		G-2
H.	Materials Storage Area	3		H
I-1	Sub-surface Discharge - non-sanitary wastewater	2		I-1
I-2	Sub-surface Discharge - stormwater only	1		I-2
J.	Stormwater treatment/management facility	3		J
L.	Atmospheric Deposition	1		L
M.	Excessive Flows - exceeds design flow or operational capacity	3		M
	Section I - Total Points			
II.	<u>PROPOSED PROJECT BENEFITS CRITERIA</u> † *			
A.	Project Provides for Resource Conservation/Multiple-use Benefits	5		A
B.	Regional Project (i.e. project serves more than one community)	3		B
C-1	Treatment of Septage at Existing WWTF (from outside service area)	3		C-1
C-2	Treatment of Septage at Existing WWTF (within service area only)	2		C-2
D.	Operational Reliability Improvement	2		D
E.	Project helps to alleviate a Sewer Connection/Extension Ban in the area served	5		E
F.	Demonstration or Pilot Projects	2		F
G.	Project incorporates pollution prevention/waste minimization techniques	2		G
H.	Project protects or restores a critical aquatic habitat or resource	3		H
I.	Project provides technical assistance/public education	2		I
J.	Project improves permitted discharge from interim to final limits (discharge is presently in compliance with interim limits)	3		J
K.	Project addresses/prevents water pollution within a growth center	3		K
L.	Project incorporates energy conservation or other sustainable infrastructure measures	2		L
	Section II - Total Points			
III.	<u>WATER QUALITY IMPROVEMENT CRITERIA</u> ‡			
A.	<u>Surface Water Restoration</u> † [Use Integrated 305(b)/303(d) Report]			
A-1	Project affects a Category 4.A or 4.B waterbody	8		A-1
A-2	Project affects a Category 5 waterbody	6		A-2
A-3	Project affects a Category 4.C waterbody	4		A-3
	Subtotal III A			
B.	<u>Surface Water Protection</u> † [Use RIDEM Water Qual. Regs. & 305(b)/303(d) Report]			
B-1	Project affects an SRPW waterbody	6		B-1
B-2	Project affects a Category 2 waterbody	4		B-2
	Subtotal III B			

C.	<u>Groundwater Protection Factor [Use Rules and Regulations for Groundwater Quality] †</u>		
C-1	Project affects a Wellhead Protection Area for Community Water System Well	6	C-1
C-2	Project affects an area of GAA Groundwater	4	C-2
C-3	Project affects an area of GA Groundwater	2	C-3
C-4	Project affects an area of GB Groundwater	1	C-4

Subtotal III C _____

Section III - Total Points _____

IV. INTERGOVERNMENTAL NEEDS CRITERIA ††

A.	Project is consistent with Community Comprehensive Plan/State Guide Plan	3	A
B.	Project is consistent with an approved 201 Wastewater Facilities Plan	3	B
C.	Project is consistent with a Special Area Management (SAM) Plan	3	C
D.	Project is consistent with the Areawide Waste Management Plan (208 Plan)	1	D
E.	Project is consistent with the Nonpoint Source Management Plan (319 Plan)	3	E
F.	Project is consistent with the Comp. Conservation and Management Plan (CCMP)	3	F
G.	Project is consistent with TMDL or Watershed Action Plan	3	G
H.	Project is consistent with the Ten Priority Beaches Plan	3	H
I.	Project is consistent with the local Stormwater Management Plan	3	I

G. Population Served by the Project †

G-1	1 – 14,999	1	G-1
G-2	15,000 – 49,999	2	G-2
G-3	≥ 50,000	3	G-3

Section IV - Total Points _____

V. READINESS TO PROCEED CRITERIA

A.	Planning †		
A-1	Project Management/Recovery Plan has been approved	2	A-1
A-2	Wastewater Facilities Plan (WWFP) approved or reaffirmed	2	A-2
A-3	Environmental Assessment or Categorical Exclusion Approved	2	A-3
A-4	Lake Management Plan Approved	2	A-4
B.	Design		
B-1	Plans and Specifications approved	2	B-1
C.	Financial/Other ††		
C-1	Local bonding authority approved/ other local funds committed	2	C-1
C-2	Pre-application for SRF Funding complete (i.e. qualified for loan by RICWFA)	2	C-2
C-3	Grant funding has been secured	2	C-3
C-4	Local ordinance/zoning passed in support of the project	2	C-4

Section V - Total Points _____

Footnotes for Table I:

† Select one criterion, at most, for each category. For example, choose A-1, A-2 or neither as applicable.

† † Select each and every criterion which applies

* Points are awarded for projects at the project site if the criterion is included in the proposed project.

‡ For water bodies that are included on the surface water reclamation and protection lists, the highest total point rating under either of those lists must be used, but not both.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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APPENDIX II - PROJECT CATEGORIES FOR PRIORITY DETERMINATION SYSTEM

<u>CATEGORY</u>	<u>TYPE</u>	<u>RI#</u>	<u>EPA #</u>	<u>DEFINITION</u>
Secondary Treatment	WWTF	1	1	Replacement/modifications/additions based on an approved WWFP to achieve/maintain secondary treatment
Advanced Treatment	WWTF	2	2	Replacement/modifications/additions based on an approved WWFP to achieve/maintain advanced treatment
I/I Correction	Sewer	3A	3A	Corrective actions in sewer systems identified in an approved I/I Analysis or Sewer System Evaluation Survey
Sewer System Repair	Sewer	3B	3B	Rehabilitation is extensive repair of existing sewers/pump stations beyond scope of normal maintenance programs. Replacement is construction of parallel sewers/sewers with exact function of sewers to be abandoned. Replacement of pump stations is construction of a new pumping station with the same functions/flow capacity of the old facility. All must be in WWFP.
Collectors (Future)	Sewer	4A	4A	Sewers that will convey flows from future homes, businesses and industries identified in a CCP and approved in a WWFP
Interceptor (Future)	Sewer	4B	4B	Sewers that will convey flows from one or more Category 4A areas to another interceptor or WWTF
Collectors (Present)	Sewer	4C	---	Sewers to convey flows from present homes, Businesses, and industries identified in a CCP and approved in a WWFP
Interceptor (Present)	Sewer	4D	---	Sewers to convey flows from one or more Category 4C areas to another interceptor or WWTF
CSO	System	5	5	Combined sewer treatment/storage/separation per an approved WWFP
Planning	System	6	---	Detailed plan determining the need for and feasibility of water pollution abatement project(s)
Design	System	7	---	Plans, Specifications, & bidding documents
Non-Point	Mitig.	8	7	Implementation project per NPS Plan (SGP Element # 731)
Estuarine	Mitig.	9	---	Implementation project per Comprehensive Conservation and Management Plan (SGP Element # 715)
Onsite Wastewater Treatment System (OWTS)	WWTF	10	---	Alternative systems, subsurface (ISDS), and Wastewater Management Districts (WWMD) per RIGL 45-24.5
Stormwater	WWTF	11	6	Planning & Implementation of municipal stormwater management programs and controls
Other	Mitig.	12	---	Other water pollution abatement projects

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APPENDIX III – ANNUAL PROJECT PRIORITY LIST

This space reserved for the current Project Priority List

R.I. DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources
Amended
Fiscal Year 2009 Project Priority List

POINTS	CAT.	COMMUNITY	PROJECT NAME	COST (\$)
60	5	NBC	Cont. 302.03RS - Resident Services for Phase I Construction*	35,950,000
60	5	NBC	Cont. 302.14C Tunnel Pump Station & Site 1 Fitout	59,500,000
58	5,7	NBC	Phase II CSO Facilities*	214,000,000
56	5,6	NBC	CSO Flow Monitoring and Metering*	4,274,000
54	10	Narragansett	Septic System Management Program	250,000
50	10	North Kingstown	Community Septic System Loan Program	300,000
48	10	Charlestown	Community Septic System Repair Program	300,000
48	10	South Kingstown	Community Septic System Loan Program	1,000,000
48	4C	Warwick	Cont. #77 - Strawberry Field Road Phs. II Sewers	1,000,000
47	2	Warwick	WWTF Upgrade for Improved Nitrogen Removal	2,500,000
47	10	Westerly	Community ISDS Repair Program	1,000,000
45	2,7	NBC	Cont. 109.01 Nitrogen Removal at FPWWTF	55,752,000
45	10	Warwick	Community Septic System Loan Program	1,000,000
44	4C	Warwick	Cont. # 91 - Sherwood Park Sewers	1,300,000
43	11	Narragansett	Phase II Stormwater Program Compliance	848,665
42	4C,10	Warwick	Community Sewer Tie-In Program	2,000,000
41	10	Portsmouth	Community Septic System Repair Program	500,000
40	2,7	NBC	Cont. 809 Nitrogen Removal Facilities at BPWWTF	21,500,000
40	4C,4D	North Smithfield	St. Paul Area Sewers	6,179,700
37	3B,5	Newport	Manhole Rehabilitation and High Priority Sewer Repairs	3,000,000
37	1,4C+D,6,7	Portsmouth	Portsmouth Sewer Construction Project	90,000,000
36	4C	Narragansett	Harbour Island Sewers	7,585,600
36	5	NBC	Floatables Control Facilities for CSO Outfalls	8,500,000
35	4C,4D	North Smithfield	Phase 1-A Sewers	3,009,200
35	7	North Smithfield	Design of Phase 1 - 3 Sewers	450,000
34	10	New Shoreham	Community Septic System Repair Program	300,000
34	8	South Kingstown	Town's Share of Rose Hill Landfill Closure*	4,800,000
34	4C+D	Warwick	Cont. #87 - Greenwood East Sewers	7,100,000
33	6	Newport	CSO Long-term Control Plan Phases 3 & 4	2,000,000
33	10	Tiverton	Community Septic System Loan Program	300,000
32	2	East Providence	Biological Nutrient Removal	21,500,000
31	6	Coventry	Facilities Plan Update	150,000
31	10	Cumberland	Community Septic System Repair Program	1,000,000
31	4C	North Smithfield	Greene Street Area Sewers	1,520,900
31	4C,10	Portsmouth	Community Sewer Tie-In Program	10,000,000
31	8	Richmond	Landfill Capping	140,600
31	4C,4D	Westerly	Phased Collection System Expansion	12,326,000
30	10	Bristol	Community ISDS Repair Program	300,000
30	11,6,7	Providence	BMPs @ City Ponds & Woonasquatucket River	500,000
30	1,6,7	South Kingstown	S. Kingstown Regional WWTF Phase II Hydraulic Expansion	3,600,000
29	4D	Coventry	Refinance Fast Track/Phase I Sewers	6,485,601
29	4C	Narragansett	Baltimore/Rhode Island Avenue Sewers	1,409,300
29	4C	North Smithfield	Victory Highway/Dawley Brook Area Sewers	2,711,200
29	4C	North Smithfield	Willerval/Tanglewood Area Sewers	5,588,000
28	11	Newport	Easton's Beach UV Disinfection System	4,000,000
27	4C	Narragansett	Great Island Sewers	8,750,300
27	4C	North Smithfield	Great Road East Area Sewers	1,696,200
27	4C	North Smithfield	North Smithfield Industrial Park Area Sewers	3,097,600

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POINTS	CAT.	COMMUNITY	PROJECT NAME	COST (\$)
27	4C	North Smithfield	Park View Area Sewers	908,600
27	4C	North Smithfield	Providence Pike #1 Area Sewers	4,216,700
27	4C	North Smithfield	Providence Pike #2 Area Sewers	2,248,500
27	4C	North Smithfield	Victory Highway Area Sewers	5,439,300
27	4C,10	North Smithfield	Community Sewer Tie-In Program	300,000
27	4C	South Kingstown	Upper Salt Pond Collection System	1,600,000
27	6,7	West Warwick	Planning & Design for Improved Phosphorus Removal	150,000
26	4C,10	Coventry	Community Sewer Tie-In Program	500,000
26	4C+D	Warwick	Cont. #86A-D - Bayside-Longmeadow Sewers Phs. I -IV	16,200,000
25	4C,4D	Coventry	Contract 6: Tiogue Avenue (East) Interceptor	3,800,000
25	11	East Greenwich	Hill and Harbour District Stormwater Abatement	800,000
25	3B	East Providence	Watchemoket Cove Pump Station Replacement	9,000,000
25	3B	East Providence	Watchemoket Cove PS Force Main Extension & Interceptor	10,000,000
25	10	Smithfield	Community Septic System Repair Program	200,000
25	3B, 11	Warren	Water Street Sewer & Stormwater Remediation	2,800,000
24	3B	Newport	Long Wharf Forcemain Replacement/Rehab	10,000,000
24	4D	South Kingstown	Curtis Corner Road Interceptor	1,700,000
24	4D	South Kingstown	South Road Interceptor	1,200,000
24	4C	Warwick	Cont. #85B - Governor Francis Farms II Sewer Project	4,100,000
24	4C	Warwick	Cont. #85C - Governor Francis Farms III Sewer Project	3,700,000
23	3A,3B	Bristol	Sewer Cleaning and TV Inspection	250,000
23	4D	Coventry	Contract 7: Tiogue Ave./Nooseneck Hill Road Sewers	1,900,000
23	4C	Smithfield	Kimberly Ann Dr./Crabapple Ln/Val-Jean/Christopher Dr. Sewers	820,000
23	4C	Warwick	Cont. #90 - Northwest Gorton's Pond Sewers	2,500,000
22	1	Bristol	Phase 2 WWTP Upgrade	3,500,000
22	3A,3B	Cranston	Amanda Street Sewer and PS Improvements	500,000
22	1	South Kingstown	South Kingstown Regional WWTF Septage Receiving Facilities	500,000
21	4C	Coventry	Contract 9: Tiogue School & East Shore Drive Sewers	3,700,000
21	4C	Coventry	Contract 10: Lakeside Area II Sewers	2,100,000
21	4C,10	Cumberland	Community Sewer Tie-In Program	825,000
21	3A,7	East Greenwich	I/I Analysis	1,400,000
21	4C	East Greenwich	Phase III Sewer Extension (Cedar Heights)	5,000,000
21	4C	Narragansett	Alexander Drive Sewers	90,000
21	11	Newport	Stormwater Infrastructure Improvements	500,000
21	8	Smithfield	Ridge Road Landfill Closure	2,000,000
21	4C	South Kingstown	Saugatucket Pond (North Road) Sewers	1,800,000
21	2	West Warwick	AWT Plant Improvements - Clarifier Addition	4,000,000
20	11	Bristol	Green Infrastructure @ Town Beach & Municipal Lots	1,000,000
20	11	Middletown	Easton's Point Stormwater Improvements	1,500,000
20	11	Middletown	Stormwater Quality BMPs @ Easton's Pond Moat	300,000
20	1	Narragansett	Regional WWTF Process Upgrade	8,887,200
20	12	Smithfield	Conservation Easements (Townwide)	500,000
20	4C	Warwick	Miscellaneous Sewer Extensions (Gaps)	2,000,000
19	3A,3B	Bristol	Sewer System Repairs	1,500,000
19	10	Cranston	Community ISDS Repair Program	200,000
19	4C	Johnston	Cherry Hill Sewers	4,100,000
19	4C,10	Johnston	Community Sewer Tie-In Program	800,000
19	11	Prov. Water	Tasca Field Stormwater Improvements	400,000
19	4C	Smithfield	Cortland Ln/ Peach Blossom/ McIntosh/Baldwin Drives Sewers	635,722

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POINTS	CAT.	COMMUNITY	PROJECT NAME	COST (\$)
19	4C	Smithfield	Fanning Lane (Area) Sewers	1,320,690
19	4C	Smithfield	Friendship Lane/Domin Ave./Potter Ave./Etc. Sewers	1,429,694
19	4C	Smithfield	Green Lake Drive & Ruff Stone Drive Sewers	621,761
19	4C	Smithfield	Levesque Drive/Jambray Drive/Dongay Road Sewers	1,183,725
19	4C	Smithfield	Lookout Street Sewers	91,688
19	4C	Smithfield	Lower Sprague Reservoir (Area) Sewers	2,982,505
19	4C	Smithfield	North Candy Court Sewers	122,984
19	4C,4D	Smithfield	Highview and Hilldale Estates Sewers	3,846,893
19	1	South Kingstown	South Kingstown Regional WWTF Process Upgrades	4,100,000
18	11	Cranston	Highway Facility Runoff Improvements	400,000
18	11	Cranston	Storm Drain Cleaning Equipment	400,000
18	6	NBC	River Model Development	368,000
18	4C,10	New Shoreham	Community Sewer Tie-In Program	300,000
18	4C	Warwick	Cont. #89 - Sandy Lane/Cedar Swamp Sewers	1,900,000
17	3B	Cranston	Atwood Ave. Sewer/Randall Pump Station Repair	1,500,000
17	4C,10	Cranston	Community Sewer Tie-In Program	500,000
17	11	Cranston	Storm Drainage Ditch Upgrades	300,000
17	4C	East Greenwich	Phase IV Sewer Extension (Pinewood)	1,700,000
17	1	East Providence	Headworks Area Upgrade	6,000,000
17	3A	Middletown	Systemwide CIPP Lining & Manhole Rehabilitation	2,000,000
17	3B	Narragansett	Ouida St. Pump Station Improvement	2,000,000
17	1	NBC	Cont. 117.00 BP WWTF Building Code Upgrades	2,359,000
17	1,4D	North Kingstown	QDC Infrastructure Upgrades	5,000,000
17	4D	North Kingstown	ASQAH Road Sewer Upgrade/Replacement	600,000
17	6	Warwick	CMOM/Asset Management/GIS Survey	500,000
17	4C,10	West Warwick	Community Sewer Tie-In Program	300,000
16	6	Barrington	Facilities Plan Update	200,000
16	2	Cranston	WWTF Odor Control	5,000,000
16	6	Smithfield	Flow Monitoring Study	400,000
16	1	South Kingstown	Replace Regional WWTF Generator	200,000
16	6	West Warwick	Inflow/Infiltration Study	500,000
15	4C,10	Bristol	Community Sewer Tie-In Program	150,000
15	4C,4D	Coventry	Contract 8: Quidneck Village Sewers	5,300,000
15	11	Johnston	Townwide Stormwater Quality Improvement Projects	325,000
15	3A	Middletown	Allston Ave Area (SSES Subarea I) Sewer Repair	300,000
15	3A	Middletown	Forest Avenue Sewer Relining & Repair	2,000,000
15	3A	Middletown	Continental Village Sewer Replacement	100,000
15	1	Narragansett	Regional Wastewater Treatment Facilities Hydraulic Expansion	5,564,160
15	3B	Narragansett	Congdon Street Pump Station Improvements	650,000
15	1	NBC	Regulatory Compliance Building	10,000,000
15	12	NBC	BPWWTF Biogas Energy Project	2,121,000
15	12	NBC	FPWWTF Wind Turbine	3,800,000
15	4D	North Kingstown	Newcomb Road Sewer Upgrade/Replacement	600,000
15	4C	North Smithfield	Lamoureux Boulevard Area Sewers	98,600
15	4A,4C	Smithfield	Elna Drive Sewers	500,000
15	4C	Smithfield	Harris Road/Douglas Pike Sewers	300,000
15	4C	Smithfield	Mapleville Road/Colwell Road Sewers	1,629,543
14	3B	Cranston	Pump Station Safe Capacity Upgrades	1,400,000
14	8	Cranston	Salt Storage Shed	300,000

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POINTS	CAT.	COMMUNITY	PROJECT NAME	COST (\$)
14	11	East Greenwich	Sun Valley Stormwater Improvements	1,000,000
14	6,7,8	East Providence	Forbes Street Landfill Closure	500,000
14	11	East Providence	Bold Point Park Stormwater BMPs	823,000
14	1	Narragansett	Scarborough WWTF Facilities Upgrade	8,237,000
14	3A,6	Narragansett	Sand Hill Cove Area I/I Study & Removal	200,000
14	6	NBC	Systemwide Facilities Plan (Capacity Analysis)	3,980,000
14	4C,4D	North Kingstown	Post Road South Sewers Phases 1 & 2	12,800,000
14	4C,10	North Kingstown	Community Sewer Tie-In Program	300,000
14	1	Smithfield	Smithfield WWTF Upgrades	750,000
13	8	Barrington	Landfill #1 Closure	1,000,000
13	8	Barrington	Landfill #2 Closure	1,000,000
13	8	Barrington	Landfill #3 Closure	1,000,000
13	8	Barrington	Landfill #4 Closure	1,000,000
13	3B	East Greenwich	Water Street Collector Rehabilitation	1,400,000
13	3B	Middletown	Chestnut Hill Road Sewer Replacement	200,000
13	3B	Middletown	Miantonomi Avenue Sewer Replacement	300,000
13	3B	Middletown	West Main Road CIPP Sliplining	300,000
13	3B	Narragansett	Scarborough WWTF Influent Pump Station Upgrade	780,000
13	11	Narragansett	Porous Pavement @ Town Beach South Parking Lot	588,765
13	11	Narragansett	Porous Pavement @ Town Beach North Parking Lot	1,033,967
13	3B	Tiverton	Rehabilitation of the Ponta Pumping Station	100,000
13	4C	Tiverton	Robert Gray Area Sewers	5,000,000
13	4C,10	Tiverton	Community Sewer Tie-In Program	300,000
12	3A	Cranston	Implementation of Inflow & Infiltration Study	900,000
12	3B	Cranston	Systemwide Sewer Repair	1,000,000
12	3B	Cranston	Sewer Pump Station Flood Proofing	500,000
12	3A,6	Narragansett	Pier Area Flow Improvements	100,000
12	6	NBC	Hydraulic Systems Modeling	217,000
12	6	NBC	Site Specific Criteria	452,000
12	4C,4D	North Kingstown	Post Road North Sewers Phases 1 - 3	32,500,000
12	3A	Smithfield	I/I Removal	500,000
12	3B	Smithfield	Improvements to Town's Pump Stations	320,000
12	11	Westerly	Bradford Streetscape Subsurface Gravel Wetland	389,000
11	3B	NBC	304:44M Moshassuck Valley Interceptor Replacement	5,317,000
11	3B	NBC	Cleaning/Inspection of CSO Interceptors	200,000
11	3B	NBC	Rehabilitation of CSO Interceptors	300,000
11	6	NBC	Asset Management System Program	1,800,000
11	12	Smithfield	Woonasquatucket Res. Pollution Abatement Project	200,000
11	3B	West Warwick	Agawam Mill Inverted Siphon	850,000
10	4C	Johnston	Memorial Plat Sewers	3,000,000
10	3B	Middletown	West Main Road Manhole Installation	200,000
10	3B	Middletown	Marshall Village Pump Station Replacement	350,000
10	3B	Middletown	Stockton Drive Sewers & Pump Station Replacement	1,075,000
10	3B	Narragansett	North Interceptor Access Road	100,000
10	3B	NBC	Ernest Street Pump Station VFDs	1,740,000
10	4C	North Kingstown	Mark Drive Sewers	3,600,000
10	4C	North Kingstown	Pine River Road Sewers	1,300,000
10	3B	South Kingstown	Silver Lake/Kingston Pump Station Upgrades	500,000
9	1	Bristol	Effluent Reuse @ Bristol WWTF	500,000

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POINTS	CAT.	COMMUNITY	PROJECT NAME	COST (\$)
9	3B	Narragansett	Bonnet Shores Pump Station Improvements	100,000
9	3B	Narragansett	Mettatuxet Pump Station Improvements	90,000
9	3B	Narragansett	Sprague Pump Station	150,000
9	3B	Narragansett	Wolf Road Pump Station Improvements	50,000
9	3B	NBC	Interceptor Easements	11,000,000
9	3B	NBC	India Street Siphon House Repairs	840,000
8	3B	Barrington	Sewer Line Rehabilitation	3,500,000
8	6,3B	Barrington	Sewerline TV Surveillance	50,000
8	6	Barrington	I/I Study	500,000
8	6	Barrington	SSES	1,000,000
8	6	Barrington	GIS Software	10,000
8	12,6,7	Narragansett	Wind Energy Systems @ Town Wastewater Facilities	500,000
8	3B	NBC	Louisquissett Pike Interceptor Replacement	2,500,000
8	3B	NBC	Omega Pump Station Rack Room	768,000
8	3B	NBC	Cont 304.09 Burrington Street Sewer/Grotto Brook Siphon Repair	2,216,000
8	3B	NBC	Cont. 304.16 Elmwood Interceptor Repairs	336,000
8	6,3B	NBC	Central Avenue Pump Station Facilities Plan	3,460,000
8	3B	Newport	Hazard Ave. & Coddington Wharf PSs Improvements	200,000
8	3B	Newport	Railroad Interceptor Replacement	3,000,000
8	3B	Newport	Sherman Street Sanitary Sewer Replacement	200,000
8	3B	Newport	Thames Street Interceptor Improvements	5,000,000
7	3B	Barrington	Ejector Station Rehab./Upgrade	300,000
7	3B	South Kingstown	Replace Jet-Vac Truck	250,000
6	1	Smithfield	Upgrade Smithfield WWTF Fire Protection System	200,000
5	3B	Barrington	Sewer Easement Clearing	50,000
4	6	Narragansett	Lake Canonchet/Little Neck Pond Water Quality Analysis	200,000
4	4D	Warwick	Warwick Vet's Force Main Relocation	500,000
TOTAL:				978,283,863

* Multi-year projects requiring a series of loan agreements

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POINTS	CAT.	COMMUNITY	PROJECT NAME	COST (\$)
Not Rated - Already Funded and/or Under Construction:				
3B		Barrington	Force Main Replacement	6,000,000
3B		Barrington	Submersible Pump Stations Upgrade	50,000
4C,4D		Coventry	Contract 4: Tiogue Avenue (West) Interceptor	3,500,000
4C,4D		Coventry	Contract 5: Main Street Area Sewers	4,200,000
3B		Cranston	Sockanosset Cross Road Upgrades	1,000,000
4C		East Greenwich	Phase IV Sewer Extension (Sun Valley/Queen's Grant/Gaps)	8,000,000
3A		Middletown	Evergreen Park Sewer Replacement	700,000
3B		Middletown	SCADA System	400,000
3B		Middletown	Wave Avenue Pump Station Upgrade	2,500,000
4C		Middletown	Slate Hill Farm Subdivision Sewer Expansion	1,000,000
3B		NBC	Cont. 704 Rehab: Washington Hwy. PS & Omega PS	7,500,000
5		NBC	Cont. 302.06C Main Spine Tunnel	179,880,000
5		NBC	Cont. 302.11C Woonasquatucket Interceptor Relief	6,707,000
5		NBC	Cont. 302.13C Regulator Modifications	2,100,000
8		South Kingstown	Town's Share of West Kingston/URI Landfill Closure	1,500,000
4C+D		Warwick	Capron Farms/Claypool Sewer Project	3,362,149
4C+D		Warwick	Conimicut West Sewers	7,800,000
4C+D		Warwick	Old Buttonwoods Sewers	3,200,000
4C+D		Warwick	Warwick Cove Phs. II-B Sewers	4,050,000
3B		West Warwick	Clyde Interceptor Replacement	1,400,000
TOTAL:				244,849,149

Not Applicable:

	Barrington	Replace Utility Truck	35,000
	Barrington	Stormwater Drainage Upgrade	1,500,000
	Cranston	Lake Street Drainage Improvements	1,000,000
	Tiverton	Rehabilitation of Robert Gray Area Drainage Phs. 1	1,000,000
TOTAL:			3,535,000

Conduit Financing Only:

	Newport	Easton Pond Dam Embankment Repairs	6,650,000
TOTAL:			6,650,000

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Points	Category	Community	Project Name/Number	Cost (\$)
57	10	North Kingstown	NK Community Septic System Loan Program	\$300,000
55	5	Newport	CSO High Priority Sewer Repairs	\$2,200,000
51	5	Newport	CSO Area 6 Catch Basin Disconnect	\$600,000
47	10	Charlestown	Community ISDS Repair Program	\$300,000
46	10	South Kingstown	Community ISDS Repair Program	\$1,000,000
46	5	Newport	CSO Wellington Ave. Area Long-Term Plan	\$32,000,000
44	5	NBC	302.02 RS - Resident Services for Phase I Construction	\$36,220,000
44	5	NBC	302.14C - Tunnel Pump Station & Site 1 Fitout, 067 Facilities	\$58,900,000
44	5	Newport	CSO LTCP - SSES Washington Facility Service Area	\$1,500,000
43	11	Narragansett	Phase II Stormwater Program Compliance	\$141,750
43	10	New Shoreham	Community Septic System Loan Program	\$300,000
41	5	NBC	Floatables Control Facilities for CSO Outfalls	\$7,818,000
41	5	NBC	Phase II CSO Facilities	\$269,402,000
41	10	Westerly	Community ISDS Repair Program	\$1,000,000
40	3B	Middletown	Wave Avenue Pump Station Upgrade	\$2,500,000
39	4C	Warwick	Greenwood East Sewer Project: WSA Contract #87A	\$7,100,000
39	4C	Warwick	Sherwood Park Sewer Project: WSA Contract #91	\$1,300,000
39	4C, 10	Warwick	Community Sewer Tie-in Loan Fund	\$150,000
39	4C	Warwick	Strawberry Field Rd. Sewer Project: WSA Contract #77A	\$1,000,000
39	10	Tiverton	C-09-001 Community Septic System Repair Program	\$300,000
38	10	Narragansett	ISDS Management Program	\$250,000
38	5	NBC	CSO Flow Monitoring	\$2,491,000
37	11	Newport	UV Disinfection System - Easton Beach	\$2,644,000
36	2	NBC	FP WWTF Nitrogen Removal Upgrade	\$97,964,000
35	10	Warwick	Community Septic System Loan Program	\$1,000,000
34	10	Glocester	Community Septic Loan Program	\$300,000
34	10	Scituate	Wastewater Management Plan Implementation	\$25,000
34	10	Scituate	Community Septic System Loan Program	\$300,000
33	11	East Greenwich	Hill & Harbor District Stormwater Abatement	\$800,000
32	11	East Greenwich	Sun Valley Stormwater Improvements	\$1,000,000
32	4C, 4D	North Smithfield	St. Paul Area	\$6,179,700
31	1, 4C, 4D	Portsmouth	Sewer Construction Project	\$103,000,000
31	4C, 4D	Portsmouth	Sewer Connection Loans	\$10,000,000
30	4C, 4D	Warwick	Bayside/Longmeadow IV Sewer Project: WSA Contract #86D	\$3,800,000
29	11	Newport	Stormwater Infrastructure Improvements	\$500,000
29	4C, 4D	Warwick	Warwick Vet's Force Main Relocation	\$500,000
28	4C, 4D	Narragansett	Harbour Island Sewers	\$7,585,600
27	11	Middletown	Stormwater Quality BMP at Moat	\$300,000
27	11	Middletown	Easton's Point Stormwater Quality Improvements	\$1,500,000
27	8	Burrillville	Whipple Avenue Landfill Closure	\$2,400,000
26	4C	East Greenwich	Howland Farm Sewer Extension	\$600,000
26	4C, 4D	North Smithfield	Community Sewer Tie-in Program	\$300,000
26	10	Portsmouth	Community Septic System Repair Loan Program	\$500,000
26	4C, 4D	Warwick	Bayside/Longmeadow I, II, III Sewer Project: WSA Contract #86C	\$12,100,000
26	11	Cranston	Storm Drain Cleaning Equipment	\$400,000
26	2	NBC	BP WWTF Nitrogen Removal Facilities	\$36,700,000
25	2	East Providence	Biological Nutrient Removal	\$21,500,000
25	8	Cranston	Salt Storage Shed	\$300,000

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Points	Category	Community	Project Name/Number	Cost (\$)
25	4C	Warwick	Northwest Gorton Pond Sewer Project: Contract #88	\$2,500,000
24	4C, 4D	Narragansett	Great Island Sewers	\$8,750,300
24	11	Barrington	Stormwater Drainage Upgrade/Rehabilitation	\$1,500,000
24	10	RI State Police	Onsite Waste Treatment System	\$500,000
24	4C	North Smithfield	North Smithfield Industrial Park Area	\$3,097,600
24	1	North Kingstown	QDC Infrastructure Upgrades	\$5,000,000
24	4C, 4D	North Kingstown	Post Road North 3	\$3,500,000
24	4D	North Kingstown	Newcomb Road Sewer Main Replacement	\$600,000
24	4C, 4D	North Kingstown	Community Tie-in Program	\$300,000
23	11	Glocester	Catch Basin Retrofit Program	\$250,000
23	8	Cranston	Highway Facility Runoff Improvements	\$400,000
23	6	Cranston	Facility Plan Amendment for the Cranston WPCF	\$550,000
23	2	Cranston	WWTP Nutrient Upgrades	\$7,000,000
23	11	Cranston	Storm Drainage Ditch Upgrades	\$300,000
23	4C	South Kingstown	Upper Salt Pond Collection System	\$1,600,000
23	4C, 4D	Westerly	Town-Wide Sewer Expansion	\$91,850,000
22	6	Coventry	Facilities Plan Update	\$50,000
22	10	Glocester	Village Corridor District Wastewater System & Micro-hydro System.	\$980,000
22	4C, 4D	North Smithfield	Great Road East Area	\$1,696,200
22	4C, 10	New Shoreham	Community Sewer Tie-in Program	\$300,000
22	4C, 4D	North Kingstown	Post Road North 1	\$20,500,000
22	4C, 4D	North Kingstown	Post Road North 2	\$8,500,000
21	11	East Greenwich	McHale Athletic Fields Stormwater Management	1,500,00.00
21	3B	Newport	Long Wharf Force Main Replacement/Rehabilitation	\$10,000,000
21	2	Warwick	WWTF Upgrades to Comply with New RIPDES Permit	\$15,000,000
21	6	Woonsocket	Facility Plan	\$850,000
21	8	Smithfield	Landfill Closure (Ridge Road)	\$2,500,000
21	4C, 10	Lincoln	Elimination of septic systems adjacent to Scott Pond	\$150,000
20	4C, 4D	Coventry	Main Street Area Sewer Project - Contract 5	\$700,000
20	11	Smithfield	Woonasquatucket Reservoir Pollution Abatement Project	\$208,000
20	4C	North Smithfield	Willerval/Tanglewood Area	\$5,588,000
19	10	Bristol	ISDS Plan	\$300,000
19	4C, 10	Bristol	Service Connection Loan Program	\$150,000
19	4C	Johnston	Cherry Hill Sewer Project	\$5,500,000
19	3B	Middletown	SCADA System	\$400,000
19	4C	Narragansett	Baltimore/Rhode Island Avenue Sewers	\$1,409,300
19	1	Narragansett	Regional WWTF Process Upgrade	\$8,887,200
19	1	East Providence	Headworks Area & Primary Treatment Upgrade	\$6,000,000
19	10	Cranston	Community ISDS Repair Program	\$200,000
19	6.7	West Warwick	Facilities Plan Update (Phosphorous Removal)	\$150,000
19	1	South Kingstown	SK Regional WWTF Septage Receiving Facilities	\$500,000
18	4C	North Smithfield	Victory Highway Area	\$5,439,300
18	4C	North Smithfield	Park View Area	\$908,600
18	4C, 4D	Westerly	Phased Collection System Expansion	\$30,000,000
17	1	Narragansett	Regional WWTF Hydraulic Expansion	\$5,564,160
17	11	RI Airport Corp.	Glycol Collection & Treatment Facility	\$25,255,000
17	10	Smithfield	Community Septic System Repair Program	\$200,000
17	4C	Burrillville	Eastern Village Sewers - Contract 19A-3 (Construction)	\$2,100,000

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Points	Category	Community	Project Name/Number	Cost (\$)
17	4C, 4D	Burrillville	Eastern Village Sewers - Contract 19C (Construction)	\$2,300,000
17	4C	Burrillville	Union/Emerson Sanitary Sewers - Contract 20	\$1,100,000
17	4C	Burrillville	Expansion of Sanitary Sewer System - Contract 21	\$2,100,000
16	4C, 4D	Coventry	Fast Track Sewer Interceptor (Contracts 1 & 2) Refinance	\$6,485,601
16	4C	East Greenwich	Phase IV Sewer Extension - Pinewood	\$3,500,000
16	8	Richmond	Landfill Closure	\$100,000
16	4C, 4D	Smithfield	Cortland Ln., Peach Blossom Dr., McIntosh Dr. & Baldwin Dr.	\$635,722
16	4C	Smithfield	Kimberly Ann Dr., Crabapple Ln., Val-Jean Dr. & Christopher Dr.	\$820,000
16	4C, 4D	Smithfield	Lower Sprague Reservoir (Area)	\$2,982,505
16	4C, 4D	South Kingstown	Saugatucket Pond (North Road Sewers)	\$1,800,000
16	1	South Kingstown	Regional WWTF Replacement Generator	\$200,000
16	1	South Kingstown	SK Regional WWTF Process Upgrades	\$4,100,000
16	1	South Kingstown	SK Regional WWTF Phase II Hydraulic Extension	\$3,600,000
16	3B	NBC	Improvements to NBC Sewers - FY 2009	\$2,700,000
16	4C	North Smithfield	Providence Pike No. 1 Area	\$4,216,700
16	4C	North Smithfield	Providence Pike No. 2 Area	\$2,248,500
15	3B	Bristol	Sewer Cleaning & TV Inspection: Phase III	\$270,000
15	3A	Bristol	Sewer System Repairs: Phase II Area	\$1,500,000
15	1	Bristol	WWTF Headworks & Miscellaneous Improvements	\$4,000,000
15	5	NBC	Tunnel Odor Control	\$1,000,000
15	4C	Burrillville	Eastern Village Sewers - Contract 19B-2 Nasonville (Construction)	\$2,800,000
14	4C, 4D	Coventry	Lakeside 1 Sewer Project - Contract 6	\$2,000,000
14	4C	Narragansett	Alexander Drive Sanitary Sewers	\$90,000
14	3A	Cranston	Atwood Ave. Sewer Repair & Randall Pump Station	\$1,500,000
14	3A	Cranston	I & I Study Implementation	\$900,000
14	3B	Cranston	Pump Station Safe Capacity Upgrades	\$1,400,000
14	4C	Warwick	GAPS (Miscellaneous Sewer Extensions)	\$2,000,000
14	4C	Smithfield	Mapleville Rd./Colwell Rd.	\$1,629,543
14	12	NBC	FP WWTF Wind Turbine	\$5,700,000
14	12	NBC	BP WWTF Biogas Energy Project	\$2,200,000
14	12	NBC	FP WWTF Flow Control Efficiencies	\$1,740,000
14	3B	NBC	Louisquisset Pike Interceptor Replacement	\$2,600,000
14	3B	NBC	Lincoln Septage Station - Lakeside Unit Replacement	\$612,000
14	4C, 10	Tiverton	C-10-002 Community Sewer Tie-In Program	\$300,000
14	4C	Tiverton	C-10-003 Summerfield Ln./Craig Ave. Area Sewers	\$275,000
14	4C	Tiverton	C-10-004 Shove Street Connector Sewer	\$150,000
14	4C	Tiverton	C-10-005 Randolph Avenue Sewers	\$585,000
14	4C	Tiverton	C-10-006 Old Colony Area Sewers	\$4,400,000
14	4C	Tiverton	C-10-007 Bay Street Area Sewers	\$5,300,000
13	3A	Middletown	Town-Wide CIPP Sliplining & Manhole Rehabilitation Annual Program	\$1,000,000
13	3A	Middletown	Miantonomi Avenue Area Sewer Replacement	\$400,000
13	3A	Middletown	Continental Village Sewer Replacement	\$100,000
13	3A	Middletown	Allston Avenue Area (SSES Subarea I) Sewer Repair	\$300,000
13	3A	Middletown	Chestnut Hill Road Sewer Replacement	\$200,000
13	3A	Middletown	Sewer Main Upgrades (Newport/Middletown Line)	\$575,000
13	3A	Middletown	Forest Avenue Sewer Relining & Repair	\$2,000,000

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Points	Category	Community	Project Name/Number	Cost (\$)
13	3A	Middletown	West Main Road & Valley Road CIPP Sliplining & Upgrade	\$400,000
13	3B	East Providence	Watchemoket Cove Pump Station Replacement	\$9,200,000
13	3B	East Providence	Watchemoket Cove Pump Station Force Main Extension & Interceptor	\$10,000,000
13	8	East Providence	Forbes St. Landfill Closure: Study & Design	\$500,000
13	4C, 10	Cranston	Community Sewer Tie-in Program	\$500,000
13	6	Warwick	CMOM/Asset Management/GIS Survey	\$500,000
13	2	West Warwick	Advanced WWTP Improvements - Clarifier Addition	\$4,000,000
13	1	Woonsocket	Drive Unit for Screw Pump	\$25,000
13	1	Woonsocket	New Screening Device	\$225,000
13	1	Woonsocket	Primary Sludge Pump	\$225,000
13	1	Woonsocket	Air Blowers	\$500,000
13	1	Woonsocket	Odor Control Scrubber & Equipment	\$300,000
13	1	Woonsocket	Winterization of Equipment to Comply with Phosphorous Limit	\$100,000
13	4D	South Kingstown	Curtis Corner Road Interceptor	\$1,700,000
13	4C, 10	Scituate	Community Sewer Tie-in Program	\$300,000
13	3B	West Warwick	Clyde Interceptor	\$1,400,000
12	12	Bristol	Wind Energy	\$2,400,000
12	1	Narragansett	Scarborough WWTF Upgrade	\$8,237,000
12	3B	Newport	Railroad Interceptor Short-Term Improvements	\$500,000
12	6	Warren	Facility Plan Updates for Nitrogen Removal & Flow Discharge Limit	\$420,000
12	3A	Cranston	Amanda St. Sewer & P.S. Repair & Upgrade	\$500,000
12	1	Smithfield	Smithfield Treatment Plant Upgrades	\$750,000
12	3B	NBC	Cleaning and Inspection of NBC Interceptors	\$2,000,000
12	4C	North Smithfield	Lamoureux Boulevard Area	\$98,600
11	3A	Bristol	Wastewater Storage Facilities	\$8,100,000
11	3A	East Greenwich	Inflow/Infiltration Analysis	\$1,400,000
11	11	Glocester	Chepachet River Park Stormwater Retrofit	\$609,000
11	4C, 10	Johnston	Community Sewer Tie-in Program	\$800,000
11	3B	Narragansett	Sprague Pumping Station	\$150,000
11	11	Narragansett	Phase II - Porous Pavement BMP at Town Beach North Parking Lot	\$1,033,967
11	11	Narragansett	Phase I - Porous Pavement BMP at Town Beach South Parking Lot	\$588,795
11	8	Barrington	Landfill Closure #1	\$1,000,000
11	8	Barrington	Landfill Closure #2	\$1,000,000
11	8	Barrington	Landfill Closure #3	\$1,000,000
11	8	Barrington	Landfill Closure #4	\$1,000,000
11	3B	Cranston	System-Wide Sewer Repair	\$1,400,000
11	6	West Warwick	I & I Study	\$500,000
11	6	NBC	River Model Development	\$378,000
10	4D	Coventry	Tiogoe Ave. West (Nooseneck Hill Rd.) - Contract 7	\$1,200,000
10	4C	Coventry	Hopkins Hill East Sewer Project	\$2,000,000
10	4C, 4D	Coventry	Quidnick Village - Contract 8	\$4,800,000
10	4C, 4D	Coventry	Tiogoe School & East Shore Dr. - Contract 10	\$4,100,000
10	4C	Coventry	Wendell Avenue Sewer Project - Contract 9	\$700,000
10	4C	Coventry	Lakeside Area II Sewer Project - Contract 11	\$2,100,000
10	4C, 10	Coventry	Community Sewer Tie-in Program	\$500,000
10	4C	Coventry	Huron Pond Area Sewer Project	\$2,600,000

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Points	Category	Community	Project Name/Number	Cost (\$)
10	3B	Middletown	Marshall Village Pump Station Replacement	\$350,000
10	3B	Middletown	Stockton Drive Collection System & Pump Station Replacement/Removal	\$900,000
10	12	Narragansett	Scarborough & SK Regional Treatment Plant's Wind Energy Feasibility Study & Data Collection	\$250,000
10	6	Barrington	Sewer System Evaluation Study	\$1,000,000
10	3A	Barrington	Sewer Line Rehabilitation	\$3,500,000
10	4C	Warwick	Governor Francis Farms III Sewer Project: WSA Contract #85B	\$4,400,000
10	3B	Smithfield	Improvements to Town's Pump Stations	\$320,000
10	4C	Smithfield	Levesque Dr, Jambray Dr. & Dongay Rd. (Stillwater Reservoir is a Category 3)	\$1,183,725
10	4C, 4D	Smithfield	Highview & Hilledale Estates	\$3,846,893
10	4C, 4D	Smithfield	Harris Rd - Douglas Pike	\$300,000
10	4C, 4D	Smithfield	Friendship Ln., Domin Ave., Potter Ave. & Rawson Ave.	\$1,429,694
10	4C	Smithfield	Fanning Lane	\$1,452,759
10	4C	Smithfield	Green Lake Dr. & Russ Stone Dr.	\$621,761
10	1	NBC	Regulatory Compliance Building	\$21,100,000
10	4C, 4D	Scituate	Hope Village & Sanitary District Sewer Extension	\$228,000
9	3B	East Greenwich	Water Street Collector Rehabilitation	\$1,600,000
9	3A	Narragansett	Sand Hill Cove Area I & I Study/Removal	\$200,000
9	3A	Narragansett	Pier Area Flow Improvements	\$100,000
9	3B	Narragansett	Congdon Street Pumping Station	\$650,000
9	3B	Narragansett	Bonnet Shores Pumping Station	\$100,000
9	3B	Narragansett	Wolf Road Pumping Station	\$50,000
9	3B	Narragansett	Mettatuxet Pumping Station	\$90,000
9	3B	Cranston	Sewer Pump Station Flood Proofing	\$500,000
9	1	Smithfield	Upgrade WWTP's Fire Protection System	\$200,000
9	6	NBC	Site Specific Study	452, 000
9	6	NBC	Hydraulic Systems Modeling	\$217,000
9	3B	Lincoln	Replacement of Angell Rd. South Pump Station	\$1,620,000
9	3B	Lincoln	Replacement of Lower River Rd. Pump Station	\$607,500
9	1	Burrillville	WWTF - General Improvements and Maintenance Upgrades	\$150,000
8	6, 11	Narragansett	Lake Canonchet/Little Neck Pond (Beach Pond) Water Quality Analysis	\$100,000
8	2	Cranston	Odor Control at the Plant & Covering the Clarifiers	\$5,000,000
8	12	Smithfield	Conservation Easements (Town-Wide)	\$500,000
8	6	Woonsocket	I & I Study	\$1,000,000
8	3B	South Kingstown	Silver Lake/Kingston Pump Station Upgrades	\$500,000
8	3B	South Kingstown	Replacement Jet-Vac Truck	\$250,000
8	6	NBC	Asset Management System Program	\$2,559,000
8	4C, 4D	North Kingstown	Post Road South 1	\$3,500,000
8	4C, 4D	North Kingstown	Post Road South 2	\$9,300,000
8	4C	North Kingstown	Mark Drive	\$3,600,000
8	4C	North Kingstown	Pine River Road	\$1,300,000
8	4D	North Kingstown	ASQAH Road Sewer Replacement	\$600,000
7	3B	Middletown	West Main Rd. Sewer Manholes (RI-DOT 1R)	\$200,000
7	3B	Barrington	Ejector Stations (5) rehab/upgrade	\$300,000
7	6	Barrington	GIS Software	\$10,000
7	3A	Smithfield	Smithfield I & I Removal	\$500,000
7	4C	Smithfield	Elna Drive	\$500,000

R.I. DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources

Fiscal Year 2010 Project Priority List

Points	Category	Community	Project Name/Number	Cost (\$)
7	4C	Smithfield	North Candy Court	\$122,984
7	4C	Smithfield	Lookout Street	\$91,688
7	4C, 4D	West Warwick	Community Tie-in Program	\$300,000
7	4D	South Kingstown	South Road Interceptor	\$1,200,000
7	3B	NBC	Central Ave. Pump Station	\$750,000
7	3B	NBC	Omega Pump Station	\$768,000
7	3B	Burrillville	Pumping Stations - General Improvements and Maintenance Upgrades	\$500,000
6	3B	Middletown	Wave Avenue PS Force Main Abandonment	\$80,000
6	6	NBC	NBC System-Wide Facilities Planning	\$1,427,000
6	2	Westerly	WWTF Expansion	\$7,500,000
5	3B	NBC	NBC Interceptor Easements	\$11,000,000
5	3B	NBC	Moshassuck Valley Interceptor Replacements	\$5,317,000
5	3B	NBC	Rehabilitation of NBC CSO Interceptors	\$3,000,000
4	3B	Narragansett	North Interceptor Access Road	\$100,000
4	12	Barrington	Vactor Truck	\$220,000
4	3B	Newport	Hazard Ave. & Coddington Wharf Pump Station Improvements	\$200,000
4	3B	Newport	Sherman St. Sanitary Sewer & Storm Drain Improvements	\$250,000
4	3B	Newport	Railroad Interceptor Replacement/Rehabilitation	\$3,000,000
4	3B	Newport	Wellington Ave. Interceptor Improvements	\$2,500,000
4	3B	Newport	Thames St. Interceptor Improvements	\$5,000,000
4	3B	Warren	Locust Terrace Pump Station Upgrade	\$350,000
4	3B	Warwick	Upgrades to the Knight St. Pump Station	\$1,000,000
4	3B	Warwick	Upgrade to the Oakland Beach Pump Station	\$400,000
4	3B	Warwick	Reconstruction of Bellows St. Pump Station	\$800,000
4	3B	Warwick	Upgrades to the Warwick Ave. Pump Station	\$300,000
4	3B	Warwick	Redirect Lockwood Force Main Away from Apponaug Pump Station	\$1,000,000
4	3B	Woonsocket	Miller Lane	\$160,012
4	3B	Woonsocket	Mendon Road	\$915,738
4	3B	Woonsocket	Jillson Avenue	\$1,501,191

Total: \$1,321,250,588

R.I. DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Resources

Fiscal Year 2010 Project Priority List

Conduit Financing Only:

Points	Category	Community	Project Name/Number	Cost (\$)
10	12	Newport	Easton Pond Dam Embankment Repairs	\$6,650,000

Total: \$6,650,000

Not Rated - Project Already Funded and/or Under Construction

Points	Category	Community	Project Name/Number	Cost (\$)
---	3A	Middletown	Boulevard & High Street Area (Evergreen Park) Sewer Replacement	\$700,000
---	4C	North Smithfield	Victory Highway/Dawley Brook Area	\$2,711,200
---	6	Smithfield	Smithfield Sewer Authority Flow Monitoring Study	\$0
---	4C, 4D	Warwick	Governor Francis Farms II Sewer Project: WSA Contract # 85A	\$4,100,000
---	4C	Warwick	Sandy Lane/Cedar Swamp Sewer Project: WSA Contract # 89	\$1,900,000
---	11	Westerly	Misquamicut Municipal Drainage Project	\$880,000

Total: \$10,291,200

Not Applicable

Points	Category	Community	Project Name/Number	Cost (\$)
---	---	Barrington	Utility Truck	\$70,000
---	---	Barrington	Compost Screener	\$300,000

Total: \$370,000

TOWN OF COVENTRY
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ORDINANCE NO. 05-09-275

REGULATIONS GOVERNING THE USE OF PUBLIC AND PRIVATE SEWERS AND DRAINS, PRIVATE SEWAGE DISPOSAL, THE INSTALLATION AND CONNECTION OF BUILDING SEWERS, AND THE DISCHARGE OF WATERS AND WASTE INTO THE PUBLIC SEWER SYSTEM; AND PROVIDING PENALTIES FOR VIOLATIONS THEREOF; IN THE TOWN OF COVENTRY, STATE OF RHODE ISLAND, AND PROVIDENCE PLANTATIONS.

Be it ordained and enacted by the Town Council of the Town of Coventry, State of Rhode Island, as follows:

ARTICLE I - DEFINITIONS

Unless the context specifically indicates otherwise, the meaning of those terms used in these regulations shall be as follows:

- 1.1 **ACT** (or **THE ACT**) shall mean the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C., 1251, et. Seq.
- 1.2 **BEST MANAGEMENT PRACTICES** (or **BMPs**) shall mean schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in Sections 2.1A and 2.1B 40 CFR 403.5(a)(1) and (b). BMPs include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage, alternative means (i.e., management plans) of complying with, or in place of, certain established pretreatment standards and effluent limits.
- 1.3 **BOD** (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20°C, expressed in milligrams per liter.
- 1.4 **BUILDING DRAIN** shall mean that part of the lowest piping of a drainage system which receives the discharge from waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer, ending five (5) feet outside the inner face of the building wall.
- 1.5 **BUILDING SEWER** shall mean the extension from the building to the public sewer or other place of disposal; also called house connection, and is generally a 6-inch pipe.
- 1.6 **COLLECTION SYSTEM** shall mean the equipment, structures and processes used for the collection, transportation and pumping of sewage.
- 1.7 **COMMISSION** shall mean the Board of Sewer Commissioners of the Town, if any, appointed pursuant to the Public Laws of Rhode Island, as amended. In the event that there is no such Board of Sewer Commissioners, functions assigned to it hereunder shall be performed by the

Town Council. For the avoidance of doubt, the advisory sewer subcommittee of the Town is not the Board of Sewer Commissioners unless the Town Council otherwise expressly provides pursuant to a Resolution or by Ordinance.

- 1.8 **DEVELOPER** shall mean an individual or group of individuals who are responsible for bringing a project through the development review process and the infrastructure construction to create a new developable lot(s) or area. If the developer is not the owner, they must submit evidence that he/she is acting on behalf of the owner.
- 1.9 **DIRECTOR OF PUBLIC WORKS** shall mean the Director of Public Works for the Town of Coventry or his/her duly appointed deputy agent or representative.
- 1.10 **DWELLING UNIT** shall mean a house, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants have either:
- a. Direct access from the outside of the building or through a common hall, or
 - b. Complete kitchen facilities for the exclusive use of the occupants.
- 1.11 **EASEMENT** shall mean an acquired legal right for the specific use of land owned by others.
- 1.12 **EDU**, for assessment purposes, shall be defined as an "equivalent dwelling unit" whose wastewater flow is equal to 345 gallons per day. The basis by which projected daily wastewater flows will be determined are based upon current RIDEM-published Onsite Wastewater Treatment Systems (OWTS) values per establishment. For wastewater flow volumes not stated in the OWTS Regulations, standard engineering values will be used.
- 1.13 **FLOATABLE OIL** is oil, fat, or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pre-treatment facility. A wastewater shall be considered free of floatable oil if it is properly pretreated and the wastewater does not interfere with the collection system.
- 1.14 **GARBAGE** shall mean the animal and vegetable waste resulting from the handling, preparation, cooking, and serving of foods.
- 1.15 **INDUSTRIAL WASTES** shall mean the wastewater from industrial processes, trades, or business as distinct from domestic (sanitary) wastes.
- 1.16 **INFECTIOUS WASTE** shall mean waste which contains pathogens with sufficient virulence and quantity so that exposure to the waste by a susceptible host could result in disease. Under this definition, the normal microflora of the body are not classified as infectious. Categories of waste designated as infectious are as follows:
- a. "Human Blood, Body Fluids and Blood Products" – means all waste human blood, blood products (such as serum, plasma, and other blood components) and body fluids (such as suction fluid and wound drainage) which exist in non-absorbed liquid form in more than trace quantities.

- b. "Contaminated Sharps" - consists of discarded sharps (e.g., hypodermic needles, syringes, Pasteur pipettes, broken glass and scalpel blades) which may have come into contact with infectious agents during use in patient care or in medical research or have been removed from their original sterile container.
 - c. "Contaminated Animal Carcasses, Body Parts, and Bedding" – refers to carcasses, body parts and bedding of animals that were exposed to pathogens in research and in the production of biologicals or in vivo production of pharmaceuticals.
 - d. "Discarded Cultures and Stocks of Infectious Agents and Associated Biological" – constitute infectious wastes because pathogenic organisms are present at high concentration in these materials. Included in this category are pathological laboratories and pharmaceutical companies, wastes from the production of biological and discarded live and attenuated vaccines. Also, culture dishes and devices used to transfer, inoculate and mix cultures shall be designated as infectious waste.
 - e. "Pathological Waste" – consists of tissues, organs, body parts, removed during surgery and autopsy.
- 1.17 **INTERFERENCE** shall mean a discharge that, alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the POTW, its treatment processes or operations or its sludge processes, use or disposal; and, therefore, is a cause of a violation of the Town's NPDES permit or of the prevention of sewage sludge use or disposal in compliance with any of the following statutory/regulatory provisions or permits issued thereunder, or any more stringent State or location regulations: Section 405 of the Act; the Solid Waste Disposal Act, including Title II commonly referred to as the Resource Conservation and Recovery Act (RCRA); any State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the Solid Waste Disposal Act; the Clean Air Act; the Toxic Substances Control Act; and the Marine Protection, Research and Sanctuaries Act.
- 1.18 **LATERAL SEWER** shall mean a sewer that discharges into a main or other sewer and has no other common sewer tributary.
- 1.19 **MAY** is permissive (see SHALL, 1.39).
- 1.20 **NATURAL OUTLET** shall mean any outlet, including storm sewers, into a wastewater pond, ditch, lake, or other body of surface or groundwater.
- 1.21 **ONSITE WASTEWATER TREATMENT SYSTEM (or OWTS)** shall mean a system approved by the Rhode Island Department of Environmental Management (RIDEM) which provides sanitary sewerage disposal by means other than discharge into a public sewer.
- 1.22 **ORDINANCE** shall mean the Sewers Ordinance of the Town of Coventry (Chapter 191 of the Town Code of Ordinances).
- 1.23 **OWNER** means any person who alone, or jointly:
- a. Has a legal title to any premises, or

- b. Has control of any premises, such as an agreement to purchase, agent, executor, administrator, trustee, lessee or guardian of the estate of a holder of a legal title.
- 1.24 **pH** shall mean the degree of acidity or alkalinity of a solution often expressed as the negative logarithm of the reciprocal of the hydrogen ion concentration. The concentration is the weight of hydrogen ions, in gram equivalents, per liter of solution. Neutral water, for example, has a pH value of 7 and a hydrogen ion concentration of 10^{-7} . PH values of 0 to 7 indicate acidity and from 7 to 14 indicate alkalinity.
- 1.25 **POLLUTANT** shall mean any dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.
- 1.26 **PRETREATMENT** means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to, or in lieu of, introducing such pollutants into the POTW. This reduction or alteration can be obtained by physical, chemical or biological processes, by process changes or by other means, except by diluting the concentration of the pollutants unless allowed by an applicable pretreatment standard.
- 1.27 **PUBLIC SANITARY SEWER SYSTEM** shall mean the public system of sanitary sewers installed by the Town of Coventry pursuant to the authority conferred by the Public Laws.
- 1.28 **PRETREATMENT COORDINATOR** shall mean the representative of the Town of West Warwick who is responsible for administrating the Rules and Regulations of the Commercial and Industrial Users.
- 1.29 **PRETREATMENT STANDARDS** shall mean all applicable Federal rules and regulations implementing Section 403 of the Act, as well as any non-conflicting State or local standards. In cases of conflicting standards of regulations, the more stringent thereof shall be applied.
- 1.30 **PRIVATELY OWNED WASTEWATER TREATMENT FACILITY** shall mean pump station(s), collection system(s) and/or wastewater treatment facility(ies) owned by a user and/or association that is connected to a publicly-owned wastewater treatment or collection system.
- 1.31 **PUBLICLY OWNED TREATMENT WORKS (or POTW)** shall mean a treatment works as defined by Section 212 of the Act (33 U.S.C., Section 1292), which is owned by West Warwick or the Town. This definition includes any devices or systems used in the collection, storage, treatment, recycling and reclamation of sewage or industrial wastes of a liquid nature and any conveyances which convey wastewater to a treatment plant (also referred to as a public sewer).
- 1.32 **PUBLIC SEWER** shall mean any portion of the municipal sanitary sewer system in which all owners of abutting properties have equal rights, and which is controlled by municipal authority.
- 1.33 **RIDEM** shall mean the Rhode Island Department of Environmental Management.

- 1.34 **RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM** (or **RIPDES**) shall mean the Rhode Island system for using, modifying, revoking and re-issuing, terminating, monitoring and enforcing discharge permits and imposing and enforcing pretreatment requirements pursuant to Title 46, Chapter 12 of the General Laws of Rhode Island and the Clean Water Act.
- 1.35 **SANITARY SEWER** shall mean a conduit that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities of ground water, and surface waters that are not admitted intentionally.
- 1.36 **SEWAGE** is the used water of a community. The preferred term is "wastewater," 1.47.
- 1.37 **SEWER** shall mean a pipe or conduit that carries wastewater.
- 1.38 **SHALL** is mandatory (see **MAY**, 1.19).
- 1.39 **SLUG LOAD OR SLUG DISCHARGE** shall mean any discharge at a flow rate or concentration which could cause a violation of the prohibited discharge standards in Article II of this Ordinance. A Slug Discharge is any discharge of a non-routine, episodic nature including, but not limited to, an accidental spill or a non-customary batch discharge which has a reasonable potential to cause interference of pass-through, or in any other way violates the POTW's regulations, Local Limits or Permit conditions.
- 1.40 **SUPERINTENDENT** shall mean the Superintendent of Water Pollution Control for the West Warwick Regional Treatment Facility or his/her duly authorized deputy, agent, or representative.
- 1.41 **TOTAL SUSPENDED SOLIDS** (or **SUSPENDED SOLIDS**) shall mean the total suspended matter that floats on the surface of, or is suspended in, water, wastewater, or other liquid, and that is removable by laboratory filtering.
- 1.42 **TOWN** shall mean the Town of Coventry, Rhode Island or any duly authorized officer, agent, or representative of the Town of Coventry.
- 1.43 **TOXIC** shall mean any substance listed as toxic under Section 307(a)(1) of the Clean Water Act, as amended, 33 U.S.C. 1251 et. Seq., listed under the Hazardous Substances Right-to-Know Act, R.I.G.S. §28-21-1 et seq., and as may otherwise be designated by the Town.
- 1.44 **UNPOLLUTED WATER** is water of quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sewers and wastewater treatment facilities provided.
- 1.45 **USER** means any person who discharges or causes or permits the discharge of wastewater into the Town's wastewater facilities.
- 1.46 **WASTEWATER** shall mean liquid and water-carried industrial wastes and sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions (whether treated or untreated) which are contributed to the POTW.
- 1.47 **WASTEWATER FACILITIES** shall mean the structures, equipment, and processes required to collect, transport, and treat domestic and industrial wastes and dispose of the effluent.

- 1.48 **WASTEWATER TREATMENT WORKS** shall mean an arrangement of devices and structures for treating wastewater, industrial wastes, and sludge. Sometimes used as synonymous with the West Warwick Treatment Facility or "waste treatment plant" or wastewater treatment plant" or "water pollution control plant."

ARTICLE II - USE OF PUBLIC SEWERS REQUIRED

- 2.1 It shall be unlawful for any person to place, deposit, or permit to be placed or deposited in an unsanitary manner on public or private property within the Town of Coventry, or in any area under the jurisdiction of said Town, any human or animal excrement, garbage, or other objectionable waste.
- 2.2 It shall be unlawful to discharge to any natural outlet within the Town of Coventry, or in any area under the jurisdiction of said Town, any wastewater or other polluted water, except where suitable treatment has been provided in accordance with subsequent provisions of these regulations.
- 2.3 Except as hereinafter provided, it shall be unlawful for property owners to construct or repair any privy vault, septic tank, cesspool, or other facility intended or used for the disposal of wastewater where a public sewer abuts the property line and where permission to enter such sewer can be obtained from the authority having jurisdiction over it.
- 2.4 The owners of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the Town and abutting on any street, alley, or right-of-way in which there is located, a public sewer of the Town, are hereby required at their expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of these regulations, or within ninety (90) days after date of receipt of official notice from the Town. Said connections shall be made without exception, unless for reasons as determined by the Town and unless a waiver is granted by the Town Council.

ARTICLE III - ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS)

- 3.1 When permitted. Where a public sanitary sewer is not accessible and available, the building sewer shall be connected to an OWTS complying with the requirements of the Town and the Rhode Island Department of Environmental Management.
- 3.2 Required approval. Before commencement of construction of a private sewage disposal system, the owner shall first obtain approval from the Town and the Director of RIDEM. Evidence of such approval shall be filed with the Superintendent.
- 3.3 Abandoning and filling when public sewer becomes available. When it is determined by the Commission that a public sewer is accessible and available to property served by a private sewage disposal system, a direct connection shall be made to the public sewer in accordance with the provisions of this article, and any septic tanks, cesspools, and similar private sewage disposal facilities shall be cleaned of sludge and filled with clean sand or gravel within one (1) year of the time of connection, or within such other time as may be specified by the Commission.

- 3.4 Operation of Private Disposal Systems. The owner shall operate and maintain private sewage disposal facilities (OWTS) in a sanitary manner at all times, at no expense to the Town.
- 3.5 Proper Removal and Disposal. In the maintaining of these OWTS the owner shall be responsible for the proper removal and disposal by the appropriate means of the captured material and shall maintain records of the dates and means of disposal which are subject to review by the Town and Director of Public Works.

ARTICLE IV - BUILDING SEWERS AND INSTALLATION

- 4.1 No unauthorized person(s) shall uncover (excavate), make any connections to, or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Director of Public Works or, in the case of commercial and industrial users only, the West Warwick Sewer Commission. Any person proposing a new discharge into the public sewer, a substantial change in the volume or character of pollutants or any change which may affect the potential for a slug discharge into the public sewer shall notify the Director of Public Works or, in the case of commercial and industrial users only, the West Warwick Sewer Commission, at least ninety (90) days prior to the proposed change or connection. All industrial users proposing to connect to or to contribute to the POTW shall obtain a Wastewater Discharge Permit before connecting to or contributing to the POTW. All existing industries, who currently have a permit to discharge shall obtain a wastewater permit within 90 days after this ordinance is adopted by the Town Council.
- 4.2 There shall be two (2) classes of building sewer installation permits: (a) for residential and commercial service whose sewage flow is less than 25,000 gallons per day; and (b) for service to establishments producing industrial waste flow or any flow greater than 25,000 gallons per day. In either case, the owner(s) or his/her agent shall make a permit application on a special form furnished by the Town. The permit application shall be supplemented by plans, specifications, or other information considered pertinent in the judgment of the Director of Public Works. A permit application fee which shall include all costs associated with the inspection of the building sewer installation, shall be paid to the Town at the time the application is filed. Permit application fee shall be levied as adopted from time to time.

In addition, commercial and industrial users must also file applications and receive approval from the West Warwick Sewer Commission.

- 4.3 If a building connection from the public sewer to the property has not been provided, all costs and expenses incidental to the installation of the building sewer and connection to the public sewer shall be borne by the owner(s) including the completion of roadway repairs in accordance with the Code of Ordinances of the Town and as determined by the Director of Public Works. The owner(s) shall indemnify the Town from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.
- 4.4 A separate and independent building sewer shall be provided for every building. A privately owned wastewater treatment facility (collection system) may be allowed at the discretion of the Director of Public Works and the Superintendent.

- 4.5 Existing (old) building sewers may be used in connection with new building construction only when they are found, on examination and test by the Director of Public Works, to meet all requirements of these regulations. All expenses relating to such examination and testing shall be the responsibility of the applicant.
- 4.6 The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing, and backfilling the trench shall conform to the requirements of the Director of Public Works acting on behalf of the Town Council and the building and plumbing code or other applicable rules and regulations of the Town. At a minimum, all requirements of the West Warwick Sewer Use Ordinance must be met. In the absence of code provisions or in amplification thereof, the materials and procedures as set forth in appropriate specifications of the American Society of Testing Materials (ASTM) and the Water Environment Federation (WEF) Manual of Practice No. 7 "OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS" shall apply.
- 4.7 Whenever possible, the building sewer shall be installed to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, the wastewater carried by such building drain shall be pumped by an approved means and discharged to the building sewer.
- 4.8 No person(s) shall make connection of roof down spouts, foundation drains, areaway drains, or other sources of surface runoff or groundwater, to a building sewer or building drain which in turn is connected directly or indirectly to the public sewer unless such connection is approved by the Director of Public Works and the Superintendent for purposes of disposal of polluted surface drainage.
- 4.9 The connection of the building sewer to the public sewer shall conform to the requirements of the Director of Public Works on behalf of the Town Council and the building and plumbing code or other applicable rules and regulations of the Town, or the procedures set forth in appropriate specifications of the ASTM and the WEF Manual of Practice No. 7. All such connections shall be made gas tight and water tight and verified by proper testing. Any deviation from the prescribed procedures and materials must be approved by the Director of Public Works before installation.
- 4.10 The applicant for the building sewer permit shall notify the Director of Public Works when the building sewer is ready for inspection and connection to the public sewer. The connection and testing shall be made under the supervision of the Director of Public Works or his/her representative.
- 4.11 Cleanouts shall be installed where the distance from the building to the main sewer is greater than seventy five (75) feet or where bends greater than 22½ degrees are used in the building sewer. Cleanouts shall be made by installing a "Y" and one-eighth (1/8) bends of the same diameter as the building sewer. The cleanouts shall ordinarily be installed at the point of connection between the building sewer and the outside part of the house plumbing system, at curves on the building sewer and on the straight part of the house sewer to the main sewer. The clean out shall be brought up from the building sewer to four (4) inches below ground level and be properly capped. Locations of all cleanouts shall be recorded and provided to the Director of Public Works.
- 4.12 All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the Town.

- 4.13 One backflow valve per unit shall be installed prior to connection to the Town's sewer system for all residential and multi-unit dwellings. The quantity of backflow valves necessary for commercial and industrial establishments must be submitted and approved by the Director of Public Works prior to installation.
- 4.14 Privately owned wastewater treatment facilities that are physically connected to, and so empty into, a Municipal Wastewater Treatment Facility must comply with Article XIX.
- 4.15 Low pressure grinder pumps shall be manufactured by Environmental One, or equal. The unit shall consist of a grinder pump, level controls, siphon breaker, check valve and 70 gallon high density polyethylene tank. The unit shall be equipped with an electrical quick disconnect plug, a discharge line shut-off valve and a quick disconnect assembly. The alarm/disconnect panel shall contain circuit breakers, an audible and visual alarm transfer switch and generator receptacle. A second check valve shall be provided at the curb stop.

ARTICLE V – CONSTRUCTION OF SEWERS BY PRIVATE DEVELOPERS

- 5.1 Commercial, industrial or residential developments of more than two housing units shall not be approved by the Town of Coventry until the developer has executed with the Sewer Commissioners a permit-agreement as hereinafter provided unless requirement is waived by the Commissioners as provided in sub-paragraph (c) below. Any such permit-agreement shall provide for installation of a sewer system as provided in Article IV and as further provided below:
 - a. The developer shall install not only the lateral sewer in the street but also the building sewer from the lateral sewer to the property line. In addition, if the developer is constructing a new home on a lot, the building sewer shall be extended to connect with the building plumbing. In the case of new street construction, the developer shall make such installation before surfacing of the street is completed.
 - b. When an owner of any lot, or his agent, applies for a building permit, the Building Inspector shall require, as a condition of the issuance of such permit, that said owner or agent show on the plot plan the layout of the future connection from the lateral sewer to the building drain, including the elevation of the building sewer at the street line, elevation of the finished first floor and/or cellar floor, and elevation of the building drain to which the future building sewer would be connected.
 - c. The developer shall cap all open ends of the sewer and shall, along with completed as-built plans of the sewer, provide exact ties and elevations so that the capped ends can be readily located.
 - d. The Commission shall provide elevations at each point where the sewers are capped, and the developer shall design and build the sewer to these elevations. The Commission shall provide design capacities for the sewers.
 - e. Where topography prevents installation of the sewer within the street, the developer shall install the sewer with rights-of-way that shall be of adequate width as determined by the Commission and deeded to the Town of Coventry.
 - f. The Commission, in considering the acceptance of a new development for sewer service into the established system of sewers, as hereinbefore defined, shall employ the following as guidelines in

determining an acceptable means and/or particular method by which said service may be achieved.

1. Wherever and whenever possible, sewer service shall be achieved by gravity means. All proposals will be reviewed by the Commission based on the system's capacity to handle additional sewerage and compliance with this Ordinance.
2. If gravity sewer service is not feasible, as determined by the Commission, sewer service shall be achieved by extending service to an existing pumping facility within the established system, subject to the Commission's normal review process as stated above.
3. If an existing pumping facility is not accessible or feasible under normal engineering standards, as determined by the Commission, pressure/force mains with related pumping facilities may be considered by the Commission.
 - a) For new dwelling units and/or developments that are inaccessible for gravity sewer service, the Commission may consider the acceptance of a pumping facility into the Town's sewer system on a case by case basis. The overall need for such a facility in lieu of other viable options must be proved by the developer to the satisfaction of the Commission prior to the Commission's preliminary approval. The pumping facility must be designed and installed under the supervision of an individual licensed as a Registered Professional Engineer in the State of Rhode Island. The work shall be in accordance with the Commission's standards and shall include all appurtenances necessary to establish a functional and acceptable facility as determined by the Commission. Upon preliminary acceptance of a facility, the Commission and developer shall negotiate a permitting agreement whereby the developer shall pay to the sewer commission, prior to the new system being accepted, a sufficient sum to defray all estimated operational and maintenance costs of the facility for a period of ten (10) years after acceptance. The amount of this payment shall be based on estimates at the time of the proposal as determined and approved by the Commission. Said payment shall be in the form of a certified check payable to the Town of Coventry.
 - b) Proposed pumping facilities servicing new or proposed commercial and/or industrial developments shall not be considered for acceptance by the Commission. If required and installed, the ultimate ownership and operational and maintenance responsibilities of such a facility shall remain the responsibility of the property owner.
4. If a pumping facility is deemed necessary by the Commission to serve a new development, the Commission shall require either that the developer install said pumping facility and appurtenant equipment or that the developer pay to the Town of Coventry a sum sufficient to defray the cost of engineering (design, review and inspection), constructing, equipping and installing said pumping facility. The amount of this payment shall be based on estimates developed and approved by the Commission. The payment may be in the form of a certified check payable to the Town of Coventry and such funds shall be used only for the engineering (design, review and inspection), construction, equipping and installation of the pumping facility. This amount is in addition to that designated in Item 3.a above.
5. Upon installation and acceptance by the Commission of the pumping facility and appurtenance equipment, the Developer shall deed the site, the facility and equipment to the Commission and assign its rights in all warranties and guarantees to the Commission. The deed and assignment shall be in a form approved by legal counsel to the Commission.

- g. If the Developer retains ownership of the pump station and/or collection system, the Developer must comply with Article XIX.
 - h. The developer shall be required to include as a part of the capped sewer construction any pipes, pumping stations or other appurtenances which would be required for or would serve areas outside of the development in question, without remediation from the Town.
- 5.2 A new development for which a permit-agreement is required, as described under subparagraph (5.1) hereof, shall not be approved by the Commission until the Commission has approved a design of the sewers serving said development or has waived the requirement therefore pursuant to subparagraph (5.3) below. Said design shall be prepared by the developer at his expense, shall conform to accepted engineering practices and existing installation requirements, and shall provide for an economical and effective future installation of the sewers. Any rights-of-way called for by such design as approved by the Commission shall be deeded to the Town of Coventry.
- 5.3 The Commission may grant relief from any of the requirements imposed by subparagraph (a) and (b) above if it determines that the need for the construction or design of sewers is impractical or remote taking into consideration (1) the date upon which the sewers might be connected to the Town wastewater collection system, (2) the estimated cost of construction, and (3) the anticipated need for sewers within the development. Such need shall be determined after consideration of all available information, including any report or evidence submitted by the developer of such proposed development.
- 5.4 For any development or a portion thereof, consisting of more than a single unit having individual unit ownership, whether residential or commercial, with a common sanitary sewer system that is privately owned by an ownership, community or condominium type association or entity and discharges to the Towns' publicly owned sanitary sewer system, the association or entity of record shall be fully responsible and accountable for the ownership, operation and maintenance of said sanitary sewer system in its entirety, including all regulatory compliance issues related thereto and must comply with Article XIX.
- 5.5 If a developer subdivides lots fronting on an existing town road, the Commission may waive the requirement installation of capped sewers serving such lots if it finds such installation to be impracticable, provided that any easements necessary for future sewers installations are dedicated to the Town of Coventry. The Commission may by agreement with the developer provide for immediate or future construction of the capped sewers by the developer as provided herein at their expense. The Commission is authorized to enter into agreements on behalf of the Town of Coventry with developers or other owners of land for the engineering (design, review and inspection) and construction of sewers by and at the expense of such developers or owners which sewers may become part of the public sewer system under the conditions hereinafter stipulated. The Commission is empowered to make, from time to time, any necessary regulations stipulating the terms and conditions of said agreement consistent with the provisions of this ordinance. The conditions under which a permit-agreement may be executed are as follows:
- a. The Chairman of the Commission is authorized to sign on behalf of the Town of Coventry all such agreements when the same have been authorized by said Commission.
 - b. The terms and text of an agreement for any particular project under Article V of this ordinance shall be as approved by the Commission's legal counsel.
 - c. The Commission shall specify in the terms of such agreements, or on plans which are made a part thereof, the limits, sizes and grades of the sewers to be built and the nature of and limitations on the waste or liquids to be conveyed. All the terms of and all subsequent amendments to this Ordinance shall be applicable to work done under such agreements.

- d. Such agreements shall provide that the full cost of engineering (design, review and inspection), and construction of the sewer and all expenses incidental thereto shall be borne by the developer or owner who shall, before commencing any work, deposit with the Finance Director of the Town of Coventry a sum deemed by the Commission or such engineers as the Commission may employ, to be sufficient to defray the cost of preliminary surveys, of the preparation of designs and plans, of other expenses of preliminary engineering, of inspection, supervisory engineering, grade staking, measuring, testing and all other expenses of the Town of Coventry incurred prior to or during construction, or during any maintenance period stipulated, including allowances for pension, insurance and similar costs related to payroll. Such agreements shall also provide that, in case said deposit proves to be insufficient at any time during the progress of the work, further deposit shall be made upon notification by the Finance Director of said town and that, upon acceptance of the sewer, any unspent portion of said deposit shall be returned to the developer or owner.
- e. All such agreements shall provide that the developer or owner shall assume all risks and hold the Town of Coventry or their agencies harmless from any and all claims for damage arising from the work or its conduct. To secure such risks, adequate liability, property damage and compensation insurance in amounts fixed by the Commission shall be required of the developer or owner who shall furnish proper and acceptable certificates of insurance before starting work.
- f. The Commission, whenever in its opinion there is possibility of loss by the Town of Coventry by reason of failure of the owner or developer to complete the work contemplated in the agreement, or any part thereof, or to comply with any maintenance requirements, may require as a part of said agreement that adequate bond or other surety acceptable to the Town of Coventry be submitted to insure completion and maintenance of the work.
- g. Such agreements shall require, whenever the work is not in a duly accepted public road, that adequate rights-of-way be conveyed to the Town of Coventry prior to the acceptance of the sewer, the terms of conveyance being subject to the approval of the Commission's legal counsel.
- h. After certification by the Commission or such engineers as the Commission may employ, that any sewer constructed under the terms of this Article has been completed in accordance with the plans, specifications, and standards of the Town of Coventry and that the maintenance period fixed in the agreement has expired, and that all roadways, curbs, walks and other surfaces and appurtenances disturbed by the work have been properly restored, or that adequate security by bond or otherwise has been furnished to assure such restoration, the Commission may, by resolution, incorporate said sewer into the Town's wastewater collection system, to become effective as specified in such resolution.

ARTICLE VI - USE OF THE PUBLIC SEWERS

- 6.1 No person(s) shall discharge or cause to be discharged any unpolluted waters such as storm water, surface water, groundwater, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, or non-contact cooling water to any sewer. Storm water runoff from limited areas, which storm water may be polluted at times, may be discharged to the sanitary sewer only with the permission of the Director of Public Works and the Superintendent.
- 6.2 Storm water other than that exempted under Article 5.1, and all other unpolluted drainage, shall be discharged to such sewers that are specifically designated as storm sewers or to a natural outlet approved by the Director of Public Works and other regulatory agencies. Unpolluted industrial cooling water or process waters may be discharged, on approval of the Director of Public Works, to a storm sewer, or natural outlet.
- 6.3 No person(s) shall discharge or cause to be discharged any of the following described waters or wastes to any public sewers:

- 6.3.1 Pollutants which create a fire or explosive hazard in the POTW, including but not limited to, wastestreams with a closed-cup flashpoint of less than 140°F (60°C) using the test methods specified in 40 CFR 261.21, including any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas.
- 6.3.2 Any waters containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interface with any waste treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the wastewater treatment plant.
- 6.3.3 Any water or wastes having a pH lower than 6.0 s.u., or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the wastewater facilities.
- 6.3.4 Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the wastewater facilities such as, but not limited to, ashes, bones, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders (in no case greater than ¾" in any direction).
- 6.4 No person shall discharge or cause to be discharged the following described substances, materials, waters, or wastes if it appears likely in the opinion of the Superintendent that such wastes can harm either the sewers, sewage treatment process, or equipment, have an adverse effect on the receiving stream, or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming his/her opinion as to the acceptability of these wastes, the Superintendent will give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant, and other pertinent factors. The substances prohibited are:
- 6.4.1 Wastewater having a temperature greater than 150°F (65°C), or which will inhibit biological activity in the treatment plant resulting in interference, but in no case, wastewater which causes the temperature at the introduction into the treatment plant to exceed 104°F (40°C).
- 6.4.2 Fats, oils or grease of animal or vegetable origin in concentrations greater than 100 mg/l.
- 6.4.3 Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with motor of three-fourths (¾) horsepower (0.76 hp metric) or greater shall be subject to the review and approval of the Director of Public Works. No commercial or industrial user shall operate a garbage grinder unless specifically approved by the Director of Public Works and may only be used in conjunction with an in-ground grease interceptor specifically designed to accept such waste.

- 6.4.4 Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances; or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite sewage at the sewage treatment works exceeds the limits established by West Warwick Sewer Use Ordinance for such materials.
- 6.4.5 Any waters or wastes containing phenol or other taste or odor producing substances, in such concentrations exceeding limits which may be established by the West Warwick Sewer Use Ordinance as necessary, after treatment of the composite sewage to meet the requirements of the State, Federal, or other public agencies with jurisdiction for such discharge to the receiving waters.
- 6.4.6 Wastewater containing any radioactive wastes or isotopes except in compliance with applicable State or Federal regulations.
- 6.4.7 Any waters or wastes having a pH in excess of 10.
- 6.4.8 Materials which exert or cause:
- 6.4.8.1 Unusual concentration of inert suspended solids (such as, but not limited to, Fullers earth, lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate.)
- 6.4.8.2 Wastewater which imparts color which cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts color to the treatment plant's effluent, thereby violating West Warwick's RIPDES permit.
- 6.4.8.3 Unusual BOD, Total Suspended Solids, Total Nitrogen or Total Phosphorus in such quantities as to constitute a significant load on the sewage treatment works. Industrial surcharge requirements will be assessed by the West Warwick Sewer Commission for BOD and Total Suspended Solids greater than 250 mg/l for each parameter. Total Nitrogen in excess of 40 mg/l and Total Phosphorus in excess of 7 mg/l will also be subject to industrial surcharges. Industries exceeding these limitations shall be considered "significant" and shall require permitting by the West Warwick Sewer Commission. Flow reflects each industry's average daily discharge. In the event that loadings to the West Warwick Regional Wastewater Treatment Facility approach capacity, the West Warwick Sewer Commission reserves the right to place more stringent limitations on these parameters.
- 6.4.8.4 Miscellaneous Pollutants Limitations:
- a. All permitted industrial facilities shall discharge miscellaneous pollutants only in accordance with the limitations stated in their permits.

If the Superintendent permits the pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the Superintendent and subject to the requirements of all applicable codes, regulations, and laws.

- 6.7 Grease, oil, and sand interceptors shall be provided when, in the opinion of the Superintendent, they are necessary for the proper handling of liquid wastes containing amounts of grease and oil, or sand; except that such interceptors shall not be required for private living quarters or dwelling units. All such interceptors shall be of a type and capacity approved by the Superintendent, and shall be located as to be readily and easily accessible for cleaning and inspection. In the maintaining of these interceptors, the owner(s) shall be responsible for the proper removal and disposal by appropriate means of the captured material and shall maintain records of the dates, and means of the disposal which are subject to review and approval by the Superintendent. Any removal and handling of the collected materials not performed by owner(s)' personnel must be performed by properly licensed waste disposal firms,
- 6.8 Where pretreatment or flow-equalizing facilities are provided or required for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner(s) at his/her expense.
- 6.9 When required by the Superintendent, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable structure together with such necessary meters and other appurtenances in the building sewer to facilitate observations, sampling, and measurement of the wastes. Such structure, when required, shall be accessible and safely located and shall be constructed in accordance with plans approved by the Superintendent. The structure shall be installed by the owner at his/her expense and shall be maintained by him/her so as to be safe and accessible at all times.

The monitoring equipment shall be located and maintained on the industrial user's premises outside of the building. When such a location would be impractical or cause undue hardship on the user, the Town may allow such facility to be constructed in the public street or sidewalk area, with the approval of the Director of Public Works, and located so that it will not be obstructed by public utilities, landscaping, or parked vehicles.

When more than one user can discharge into a common sewer, the Superintendent may require installation of separate monitoring equipment for each user. When there is a significant difference in wastewater constituents and characteristics produced by different operations of a single user, the Superintendent may require that separate monitoring facilities be installed for each separate discharge. Whether constructed on public or private property, the monitoring facilities shall be constructed in accordance with the Superintendent's requirements and all applicable construction standards and specifications.

- 6.10 All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in these regulations shall be determined in accordance with 40 CFR Part 136. The user must collect wastewater samples using 24-hour flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the Superintendent. Where time-proportional composite sampling or grab sampling is authorized by the Superintendent, the samples must be representative of the discharge. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance,

multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols and sulfides, the samples may be composited in the laboratory or in the field; for volatile organics and oil and grease, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the Superintendent, as appropriate. In addition, grab samples may be required to show compliance with Instantaneous Limits. Samples for oil and grease, temperature, pH, cyanide, total phenols, sulfides and volatile organic compounds must be obtained using grab collection techniques. The number of grab samples required will be determined by the Superintendent.

The samples shall be determined at the control manhole provided, or upon suitable samples taken at said control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole to which the public sewer is connected.

ARTICLE VII - PROTECTION FROM DAMAGE

- 7.1 No person(s) shall maliciously or willfully break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance or equipment which is a part of the wastewater facilities. Any person(s) violating this provision shall be subject to immediate arrest under charge of malicious damage as set forth in the Rhode Island General Laws 1956, as amended.

ARTICLE VIII - POWERS AND AUTHORITY OF INSPECTORS

- 8.1 The Director of Public Works, the Superintendent and their duly authorized representative(s), bearing proper credentials and identification, shall be permitted to enter all private properties for the purpose of inspection, observation, measurement, sampling, and testing pertinent to discharge to the wastewater facilities in accordance with the provisions of these regulations.

Upon reasonable notice, the Director of Public Works, the Superintendent and their duly authorized representative(s), bearing proper credentials and identification, shall be permitted to enter all commercial and/or industrial properties for the purpose of inspection, observation, measurement, sampling, and testing pertinent to discharge to the wastewater facilities in accordance with the provisions of these regulations.

Upon reasonable notice, for cause shown, the Director of Public Works, the Superintendent and their duly authorized representative(s), bearing proper credentials and identification, shall be permitted to enter all residential properties for the purpose of inspection, observation, measurement, sampling, and testing pertinent to discharge to the wastewater facilities in accordance with the provisions of these regulations.

- 8.2 The Director of Public Works, the Superintendent or their duly authorized representative(s) are authorized to obtain information concerning industrial processes which have a direct bearing on the kind and source of discharge to the wastewater facilities. The information and data on a User obtained from reports, surveys, wastewater discharge permit applications, individual wastewater discharge permits and monitoring programs, and from the Superintendent's inspection and sampling activities, shall be available to the public without restriction, unless the User specifically requests (and is able to demonstrate to the satisfaction of the Superintendent) that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets under applicable State law. Any such request must be asserted at

the time of submission of the information or data. When requested and demonstrated by the User furnishing a report that such information should be held confidential, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, but shall be made available immediately upon request to governmental agencies for uses related to the RIPDES Program or Pretreatment Program, and in enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics and other effluent data, as defined in 40 CFR 2.302 shall not be recognized as confidential information and shall be made available to the public without restriction.

- 8.3 The Director of Public Works, Superintendent and their duly authorized representative(s), bearing proper credentials and identification, shall be permitted to enter all private properties through which the Town holds a duly negotiated easement for the purpose of, but not limited to, inspection, observation, measurement, sampling, repair, and maintenance of any portion of the wastewater facilities lying within said easement. All entry and subsequent work, if any, on said easement, shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property.

The Director of Public Works, Superintendent and their duly authorized representative(s), bearing proper credentials and identification, shall have the right to enter the premises of any User to determine whether the User is complying with all requirements of this Ordinance and any individual wastewater discharge permit or order issued hereunder. Users shall allow the Director of Public Works, Superintendent and their duly authorized representative(s) ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and the performance of any additional duties.

- a. Where a User has security measures in force which require proper identification and clearance before entry into its premises, the User shall make necessary arrangements with its security guards so that, upon presentation of suitable identification, the Director of Public Works, Superintendent and their duly authorized representative(s) shall be permitted to enter without delay for the purposes of performing specific responsibilities.
- b. The Director of Public Works, Superintendent and their duly authorized representative(s) shall have the right to set up on the User's property (or require installation of) such devices as are necessary to conduct sampling and/or metering of the User's operations.
- c. The Director of Public Works, Superintendent and their duly authorized representative(s) may require the User to install monitoring equipment, as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the User at its own expense. All devices used to measure wastewater flow and quality shall be calibrated at least annually to ensure their accuracy.
- d. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the User at the written or verbal request of the Director of Public Works or Superintendent, and shall not be replaced. The costs of clearing such access shall be borne by the User.
- e. Unreasonable delays in allowing the Director of Public Works, Superintendent and their duly authorized representative(s) access to the User's premises shall be a violation of this Ordinance.

If the Director of Public Works, Superintendent and their duly authorized representative(s) have been refused access to a building, structure or property, or any part thereof, and is able to demonstrate probable cause to believe that there may be a violation of this Ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program of the Town or West Warwick designed to verify compliance with this Ordinance or any permit or order issued hereunder, or to protect the overall public health, safety and welfare of the community, the Director of Public Works may seek issuance of a search warrant.

ARTICLE IX - PENALTIES

- 9.1 When the Director of Public Works or the Superintendent finds that User has violated, or continues to violate, any provision of this Ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other Pretreatment Standard or Requirement, the Director of Public Works or Superintendent may serve upon that User a written Notice of Violation. Within thirty (30) days of the receipt of such notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted by the User to the Director of Public Works or Superintendent. Submission of such a plan in no way relieves the User of liability for any violations occurring before or after receipt of the Notice of Violation. Nothing in this section shall limit the authority of the Director of Public Works or Superintendent to take any action, including emergency actions or any other enforcement action, without first issuing a Notice of Violation.
- 9.1.1 Consent Orders: The Director of Public Works or the Superintendent may enter into Consent Orders, assurances of compliance or other similar documents establishing an agreement with any User responsible for non-compliance. Such documents shall include specific actions to be taken by the User to correct the non-compliance within a time period specified by the document. Such documents shall have the same force and effect as the administrative and shall be judicially enforceable.
- 9.1.2 Show-Cause Hearing: The Director of Public Works or the Superintendent may order a User which has violated, or continues to violate, any provision of this Ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other Pretreatment Standard or Requirement, to appear before the Director of Public Works or Superintendent and show cause why the proposed enforcement action should not be taken. Notice shall be served on the User specifying the time and place for the meeting, the proposed enforcement action, the reasons for such action, and a request that the User show cause why the proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least five (5) days prior to the Hearing. Such notice may be served on any authorized representative of the User. A Show-Cause Hearing shall not be a bar against, or prerequisite for, taking any other action against the User.
- 9.1.3 Compliance Orders: When the Director of Public Works or the Superintendent finds that a User has violated, or continues to violate, any provision of this Ordinance, an individual wastewater discharge permit or order issued hereunder, or any other Pretreatment Standard or Requirement, the Director of Public Works or the Superintendent may issue an order to the User responsible for the discharge directing that the User come into compliance within a specified time. If the User does not come into compliance within the

time provided, sewer service may be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders also may contain other requirements to address the non-compliance, including additional self-monitoring and management practices designed to minimize the amount of pollutants discharged to the sewer. A Compliance Order may not extend the deadline for compliance established for Pretreatment Standard or Requirement, nor does a Compliance Order relieve the User of liability for any violation, including any continuing violation. Issuance of a Compliance Order shall not be a bar against, or prerequisite for, taking any other action against the User.

9.1.4 Cease and Desist Orders: When the Director of Public Works or the Superintendent finds that a User has violated, or continues to violate, any provision of this Ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other Pretreatment Standard or Requirement, or that the User's past violations are likely to recur, Director of Public Works or the Superintendent may issue an order to the User directing it to cease and desist all such violations and directing the User to:

- a. Immediately comply with all requirements; and
- b. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge. Issuance of a Cease and Desist Order shall not be a bar against, or prerequisite for, taking any other action against the User.

9.1.5 Administrative Fees:

- a. When the Director of Public Works or the Superintendent finds that a User has violated, or continues to violate, any provision of this Ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other Pretreatment Standard or Requirement, the Director of Public Works or the Superintendent may fine such User an amount not to exceed \$25,000. Such fines shall be assessed on a per-violation, per-day basis. In the case of monthly or other long-term average discharge limits, fines shall be assessed for each day during the period of violation.
- b. A lien against the User's property shall be sought for unpaid charges, fines and penalties.
- c. Users desiring to dispute such fines must file a written request for the Director of Public Works or the Superintendent to reconsider the fine along with full payment of the fine amount within fifteen (15) days of being notified of the fine. Where a request has merit, the Director of Public Works or the Superintendent may convene a hearing on the matter. In the event the User's appeal is successful, the payment, together with any interest accruing thereto, shall be returned to the User. The Director of Public Works or the Superintendent may add the costs of preparing administrative enforcement actions, such as notices and orders, to the fine.
- d. Issuance of any administrative fine shall not be a bar against, or prerequisite for, taking any other action against the User.

9.1.6 Emergency Suspensions: The Director of Public Works or the Superintendent may immediately suspend a User's discharge, after informal notice to the User, whenever such suspension is necessary to stop an actual or threatened discharge, which reasonably appears to present, or cause, an imminent or substantial endangerment to the health or welfare of persons. The Director of Public Works or the Superintendent may also immediately suspend a User's discharge, after notice and opportunity respond, that threatens to interfere with the operation of the POTW, or which presents, or may present, an endangerment to the environment.

- a. Any User notified of a suspension of its discharge shall immediately stop or eliminate its contribution. In the event of a User's failure to immediately comply voluntarily with the suspension order, the Director of Public Works or the Superintendent may take such steps as deemed necessary, including immediate severance of the sewer connection, to prevent or minimize damage to the POTW, its receiving stream, or endangerment to any individuals. The Director of Public Works or the Superintendent may allow the User to recommence its discharge when the User has demonstrated to the satisfaction of the Director of Public Works or the Superintendent that the period of endangerment has passed, unless the termination proceedings of this Ordinance are initiated against the User.
- b. A User that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement describing the causes of the harmful contribution and the measures taken to prevent any future occurrence to the Director of Public Works or the Superintendent prior to the date of any Show-Cause or Termination Hearing.

Nothing in this section shall be interpreted as requiring a hearing prior to any Emergency Suspension under this section.

9.1.7 Termination of Discharge: Any User who violates the following conditions is subject to discharge termination.

- a. Violation of individual wastewater discharge permit conditions;
- b. Failure to accurately report the wastewater constituents and characteristics of its discharge;
- c. Failure to report significant changes in operations or wastewater volume, constituents and characteristics prior to discharge;
- d. Refusal of reasonable access to the User's premises for the purpose of inspection, monitoring, or sampling; or
- e. Violation of the Pretreatment Standards.

Such User will be notified of the proposed termination of its discharge and be offered an opportunity to show cause under Article 8.1.1 of this Ordinance why the proposed action should not be taken. Exercise of this option by the Director of Public Works or the

Superintendent shall not be a bar against, or prerequisite for, taking any other action against the User.

- 9.2 If the violation is not corrected by timely compliance, the Town may order any person who causes or allows an unauthorized discharge to show cause before the Town Council why service should not be terminated. A notice shall be served on the offending party, specifying the time and place of a hearing to be held by the Town Council regarding the violation and directing the offending party to show cause before said authority why an order should not be made directing the termination of service. The notice of the hearing shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days before the hearing. Notice may be made on any agent or officer of a corporation.
- 9.3 The Town Council may conduct the hearing and take the evidence, or may designate any of its members or any officer or employee of the Town to:
- 9.3.1 Issue in the name of the Town Council notices of hearings requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in any such hearings.
- 9.3.2 Take the evidence.
- 9.3.3 Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the Town Council for action thereon.
- 9.4 At any public hearing, testimony taken before the hearing authority or any person designated by it, must be under oath and recorded stenographically. The transcript or any part of the hearing, so recorded, will be made available to any member of the public upon payment of the usual charges.
- 9.5 After the Town Council has reviewed the evidence, it may issue an order to the party responsible for the discharge directing that, following a specified time period, the sewer service be discontinued unless adequate treatment facilities, devices or other related appurtenances shall have been installed or existing treatment facilities, devices, or other related appurtenances are properly operated, and such further orders and directives as are necessary and appropriate.
- 9.6 Any discharge in violation of the substantive provisions of this ordinance or an order of the Town Council shall be considered a public nuisance. If any person discharges sewage, industrial wastes or other wastes into the public sewer contrary to the substantive provisions of this ordinance or any order of the Town Council, the Town Solicitor may commence an action for appropriate legal and/or equitable relief in the appropriate court.
- 9.7 The Town Council will publish an annual list of violators.
- 9.8 Any person who is found to have violated an Order of the Town Council or who willfully or negligently failed to comply with any provisions of this Ordinance, and the orders, rules, and regulations issued hereunder, shall be fined not less than one hundred dollars (\$100) nor more than twenty five thousand dollars (\$25,000) for each offense. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. In addition to the penalties provided herein, the Town may recover reasonable attorneys' fees, court costs, court reporters' fees, and

other expenses of litigation by appropriate suit of law against the person found to have violated this Ordinance or the Orders, rules and regulations issued hereunder.

ARTICLE X – ENFORCEMENT PROCEDURES

- 10.1 General. Any owner, person, user or significant industrial user found in violation of any part of this Ordinance, discharge permit, compliance schedule or order, or any order of the Town shall be subject to enforcement procedures. Such procedures shall include but are not limited to: revocation of permit, suspension of discharge, show cause hearing, Commission Order, legal action and/or penalty costs.
- 10.2 Compliance Schedule. When the Superintendent finds that a user has violated or continues to violate the Ordinance or a permit or Order issued thereunder, he may issue an Order to the user responsible for the discharge directing that, following a specified time period, sewer service shall be discontinued unless adequate pretreatment facilities, devices, or other related appurtenances have been installed and are properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including installation of pretreatment technology, addition self-monitoring and management practices.
- 10.3 Permit Revocation.
- 10.3.1 ENFORCEMENT COSTS. The permittee agrees to reimburse the Town and/or the West Warwick Sewer Commission for the cost of enforcing the permit, including reasonable attorney's fees, if violation of the permit is found by a hearing officer during the course of a show cause hearing or if such decision is appealed, then in court of competent jurisdiction.
- 10.3.2 DAMAGE TO FACILITIES. The permittee agrees to indemnify and hold harmless the Town from and against any liability, loss, cost, expense or actual damage (including reasonable attorney's and accountants' fees incurred in defending or prosecuting any claim for any such liability, loss, cost, expense or damage) suffered by the Town and/or the West Warwick Sewer Commission and caused by discharges from the permittee, either singly or by interaction with other wastes.
- 10.3.3 Violation of any of the following conditions may result in the revocation of a Wastewater Discharge Permit.
- a. Failure to accurately and fully report the wastewater volume, constituents, and characteristics of its discharge.
 - b. Failure to report significant changes in wastewater volume, constituents, or characteristics.
 - c. Failure to allow Town personnel statutorily authorized access for the purpose of inspection or monitoring.
 - d. Failure to pay any and all costs.
 - e. Violation of any condition of a permit or the Ordinance.
 - f. Failure to correct violations that have already resulted in the suspension of the permit.
 - g. Failure to adhere to compliance schedule or Order.

10.4 Suspension of Discharge. The Town or, in the case of commercial and industrial users only, the West Warwick Sewer Commission, may suspend the wastewater service and/or a Wastewater Discharge Permit when such suspension is necessary, in the opinion of the Town or (as applicable) such Commission, in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or welfare of persons, to the environment or causes interference or pass through to the Collection System or Wastewater Treatment System.

10.4.1 Any person notified of a suspension of the wastewater treatment service and/or a Wastewater Discharge Permit shall immediately stop or eliminate the contribution. In the event of a failure of the person to comply voluntarily with the suspension order, the Town shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the system or endangerment to any individuals. The Town shall reinstate the Wastewater Discharge and/or the wastewater service upon proof of the elimination of the non-complying discharge. A detailed written statement submitted by the user describing the causes of the harmful contribution and the measures taken to prevent any further occurrence shall be submitted to the Town within 15 days of the date of occurrence.

10.5 Show Cause Hearing.

10.5.1 If a violation is not corrected within the time frame mandated by the Town or the West Warwick Sewer Commission, the Director of Public Works may order any person who causes or allow an unauthorized discharge to show cause before the Commission why service should not be terminated. A notice shall be served on the offending party, specifying the time and place of a hearing to be held by the Commission regarding the violation and directing the offending party to show cause before said authority why an order should not be made directing the termination of service. The notice of the hearing shall be served personally or by registered or certified mail (return receipt requested) at least (10) days before the hearing. Service may be made on any agent or officer of a corporation.

10.5.2 At any public hearing, testimony taken before the hearing authority or any person designated by it, must be under oath and recorded stenographically. The transcript, so recorded, will be made available to any member of the public or any part of the hearing upon payment of the usual charges.

10.5.3 After the Commission had reviewed the evidence, it may issue an order to the party responsible for the discharge directing that, following a specified time period, the sewer service be discontinued unless adequate treatment facilities, devices or other related appurtenances shall have been installed or existing treatment facilities, devices, or other related appurtenances are properly operated, and such further orders and directives as are necessary and appropriate.

10.6 Legal Action. Any discharge in violation of the substantive provisions of this Ordinance or an Order of the Commission shall be considered a public nuisance. If any person discharges sewage, industrial wastes or other wastes into the Town collection system contrary to the substantive provision of this Ordinance or any Order of the Commission, the Town Solicitor shall commence an action for appropriate legal and/or equitable relief in the Superior Court of this County.

- 10.7 Penalty Costs. Any person who is found to have violated an Order of the Town Council or who has failed to comply with any provision of a discharge permit issued by the Town, or provision of this Ordinance, and the orders, rules and regulations issued hereunder, shall be fined in accordance with Section 8-42, SUMMARY OF PENALTIES. In addition, the Town may recover reasonable attorneys' fees, court costs, court reporters' fees and other expenses of litigation by appropriate suit at law against the person found to have violated this Ordinance or the orders, rules, regulations, and permits issued by the Town.

ARTICLE XI - APPEALS

- 11.1 Board of Sewer Appeals. In order that the provisions of this article may be reasonably applied and substantial justice done in instances where unnecessary hardship would result from carrying out the strict letter of this article, the Town Council shall serve as a Board of Sewer Appeals. The Board of Sewer Appeals shall consider appeals from decisions of the Board of Sewer Commissioners and shall determine in particular cases whether any deviation from the strict enforcement of this article will violate its intent or jeopardize the public health and safety.
- 11.2 Procedure. Any person aggrieved by any decision of the Board of Sewer Commissioners shall, in addition to any other remedy provided by law, have the right to appeal to the Board of Sewer Appeals within thirty (30) days of the decision appealed from. The Board of Sewer Appeals shall consider the appeal and give the aggrieved person a reasonable opportunity to be heard. The final disposition of the appeal shall be in the form of a resolution reversing, modifying or affirming, the decision appealed from.

ARTICLE XII – SAVING CLAUSE

- 12.1 If any provision, paragraph, word, section or article of this Ordinance is invalidated by any court or competent jurisdiction, the remaining provisions, paragraphs, words, sections, and articles shall not be affected and shall continue in full force and effect.

ARTICLE XIII - CONFLICT

- 13.1 All ordinances and parts of ordinances inconsistent or conflicting with any part of this Ordinance are hereby repealed to the extent of such inconsistency or conflict.

ARTICLE XIV - ASSESSMENT

The following procedures have been established in order to recover the cost of construction, operating and maintaining the wastewater collection system. These costs shall be recovered by the collection of assessments.

- 14.1 The Town Council shall, by Ordinance, adopt an assessment charge for real property (improved and unimproved) from time to time. The assessment charges shall be used for the purpose of recovering capital cost of the Town's sewage facilities and all or such portion of the Town's share of the capital cost of the Regional Wastewater Treatment Facility against residential, commercial and industrial properties.

14.2 Notwithstanding the foregoing, the Town shall have discretion to defer sewer assessment against parcels of land if the owner of such parcel, within seven (7) years of the date of the sewer assessment, has installed a new septic system, provided that such parcel shall remain subject to assessment and shall begin paying such assessment at least seven (7) years from the date of initial assessment.

14.3 Parcels of real property (improved and unimproved) which are not included in a specific sewer district not yet connected to the Town's sewer system, but which, in the future, may connect into the public sewer system will be charged a sewer assessment as outlined in Section 14.4 unless the property has been included in a specific assessment district.

14.4 The assessments are as follows:

14.4.1 **Residential Assessments:**

Single Family Homes	\$12,900 per housing unit
Two Family (Duplex) Homes	\$12,900 per housing unit
Multi-Family Homes, Condominiums and Apartments	\$12,900 per housing unit
Mobile Homes	\$6,600 per housing unit

14.4.2 **Non-Residential Assessments:**

Minimum Assessment	\$12,900 per property
Commercial Properties (includes Condominiums)	\$60 per \$1,000 property valuation
Industrial Properties (includes Condominiums)	\$60 per \$1,000 property valuation
Hospital, Nursing and Convalescent Homes	\$6,600 per bed
All Other Properties (includes Public and Quasi-Public Properties)	\$60 per \$1,000 property valuation

14.4.3 Vacant land shall be assessed at the time improvements are made to the parcel.

14.4.4 All of the assessment amounts specified in this Section 14.4 shall be automatically increased on an annual basis by an amount equal to the increase in the Consumer Price Index for the previous year. The Town's finance director shall determine the Consumer Price Index for each year and adjust the assessments accordingly. In no event shall the assessment amounts be reduced due to any annual decline in the Consumer Price Index.

14.5 **Assessments for Privately-Built Sewers.** Notwithstanding any other provisions of this Ordinance, it is hereby determined that sanitary sewer lines built by and at the expense of a private party shall pay the following betterment assessment.

14.5.1 For each parcel of land which abuts a public highway or a highway which by general use is generally believed to be a public highway or a right-of-way, or a private road in which

sanitary sewer lines are installed by a private party and which are connected to the public sanitary system, the following betterment assessments shall apply.

14.5.2 Residential Assessments:

Single Family Homes	\$12,900 per housing unit
Two Family (Duplex) Homes	\$12,900 per housing unit
Multi-Family Homes, Condominiums and Apartments	\$12,900 per housing unit
Mobile Homes	\$6,600 per housing unit

14.5.3 Non-Residential Assessments:

Minimum Assessment	\$12,900 per property
Commercial Properties (includes Condominiums)	\$60 per \$1,000 property valuation
Industrial Properties (includes Condominiums)	\$60 per \$1,000 property valuation
Hospital, Nursing and Convalescent Homes	\$6,600 per bed
All Other Properties (includes Public and Quasi-Public Properties)	\$60 per \$1,000 property valuation

14.5.4 Vacant land shall be assessed at the time improvements are made to the parcel.

14.5.5 All of the assessment amounts specified in this Section 14.5 shall be automatically increased on an annual basis by an amount equal to the increase in the Consumer Price Index for the previous year. The Town's finance director shall determine the Consumer Price Index for each year and adjust the assessments accordingly. In no event shall the assessment amounts be reduced due to any annual decline in the Consumer Price Index.

14.6 Assessments outlined in 14.4 and 14.5 shall be payable by the parcel owner annually over not more than twenty (20) years, commencing the year following sewer installation. Interest on the unpaid balance shall be eight percent (8%), such same rate to apply until the assessment is paid in full. Any assessment may be paid in full at any time. Unpaid assessments shall be liened and foreclosed upon in accordance with the general statutes governing the collection of property tax.

14.7 Future Sewer Assessment.

14.7.1 The assessment program for future sewer districts will be structured so that each assessment includes principal and interest amount. The interest shall be eight percent (8%), such same rate to apply until the assessment is paid in full. The principal and interest payments shall be due over a twenty-year term. A participant can choose to pay the entire remaining principal balance during that period without any interest penalty. In addition, a participant may make other periodic principal payments throughout the term of the bond, if so desired. Unpaid assessments shall be liened and foreclosed upon in accordance with the general statutes governing the collection of taxes.

14.7.2 The future sewer district assessment cost is calculated by establishing the final project cost (construction, administration, legal services and borrowing fees) which is then divided by the actual number of EDUs contained in the district. The assessment for the residential

users shall be as follows: 1 EDU charge per single family unit; for each additional attached unit there shall be an additional 0.5 EDU charge; condominiums shall be charged 1 EDU per condominium unit. The assessment for the commercial and industrial users within the district shall be based upon an Equivalent Dwelling Unit (EDU). The EDUs will equate each commercial and industrial user to a single family residential user. An EDU defined herein shall be as a unit whose wastewater flows are equal to 345 gallons per day. This equivalent flow of 345 gallons per day shall be divided by commercial or industrial user flows to establish the specific number of EDUs. Fractional EDUs are rounded to the nearest whole number. The minimum EDU charge is one. For example, a commercial facility using 930 gallons per day will translate to 2.7 (or 3) EDUs.

- 14.7.3 Vacant residential land shall be assessed as one single family residential user (1 EDU). If, at the time the vacant land is developed and those improvements result in greater than a single family residence, the Town will re-assess that property. The additional assessment shall be imposed for a twenty (20) year period.
- 14.7.4 Vacant commercial and industrial lands shall be assessed as one single family residential user (1 EDU). Once the property is developed, the Town shall re-assess that property and establish a new EDU value. The new EDU value shall be imposed for a twenty (20) year period.
- 14.7.5 Notwithstanding the foregoing, the Town shall have discretion to defer sewer assessments against parcels of land if the owner of such parcel, within seven (7) years of the date of the sewer assessment, has installed a new septic system, provided that such parcel shall remain subject to assessment and shall begin paying such assessment at least seven (7) years from the date of initial assessment.
- 14.7.6 Notwithstanding anything to the contrary in this Section 14.7, the assessments calculated and payable under this Section 14.7 shall not be less than the base assessment amounts specified in Sections 14.4 and 14.5 above. To the extent that the assessment calculated pursuant to Section 14.7 is lower than it would have been had it been calculated pursuant to Section 14.4 or Section 14.5 above, the higher assessment shall apply.
- 14.7.7 Ramblewood Estates. In consideration of the easement granted to the Town by the Ramblewood Estates Housing Cooperative Corporation on September 29, 2006 and recorded March 5, 2007 in the Town's land evidence records, the assessment for each owner of property with mobile homes on Lane D (but only on Lane D) in the Ramblewood Estates shall not be due or payable until such owner is connected to the Town sewer system, at which time such owner shall pay the then applicable assessment as set forth in Section 14.4 or Section 14.5, as applicable. For the avoidance of doubt, this Section 14.7.7 shall not apply to any other owners of property with mobile homes in the Ramblewood Estates; it shall only apply to owners of property with mobile homes on Lane D in the Ramblewood Estates. All owners of property with mobile homes in the Ramblewood Estates not located on Lane D shall be responsible for any applicable sewer assessments pursuant to the general provisions of this Article 14.
- 14.8 If the Town finds it necessary to install (where proposed low pressure sewer is being created or a dwelling that is located in a low lying area along a gravity sewer system) grinder pumps as part of the future project area, the Town will provide one grinder pump unit to each developed parcel at no

cost to the dwelling owner. The availability of the grinder pump shall remain in effect up to one year of the project acceptance. For an undeveloped parcel, the Town will provide a credit to be determined by the Commission at the time the parcel is improved. The installation of the grinder pump is the responsibility of the dwelling owner. The operation and maintenance of the grinder pump system shall be the responsibility of the dwelling owner. The owner shall obtain a service contract from a qualified firm to provide operation and maintenance to the system and a copy of the service contract shall be submitted with the permit application in order to receive an approval to connect to the sanitary system. The owner shall provide emergency power to the grinder pump system during power outages. The Town is not responsible to provide emergency power or to provide maintenance to the grinder pump system(s). The owner will be responsible for the replacement of the pump if the need arises.

- 14.9 Assessments collected in excess of the bond indebtedness shall be retained in the Town's Sewer Fund to be used for capital improvements projects. The funds within the Sewer Fund shall be retained in an account for renewal and replacement of capital equipment and/or the reduction of existing and future debt repayment.
- 14.10 All assessed funds shall be held in a special revenue account ("Town of Coventry Sewer Fund") under the custody of the Finance Director, Town of Coventry. This fund shall be designated for use by the Town of Coventry for sewer related purposes.

ARTICLE XV – USE CHARGE

- 15.1 The following annual charges for use of the sewerage system of the Town of Coventry are hereby established, to be paid by every person, firm or corporation whose particular sewer enters into said system.
- 15.1.1 The cost of operation and maintenance of the complete sewer system shall be financed solely from sewer customer charges.
- 15.1.2 A sewer charge shall be levied to each customer upon connection to the public sewage system. The service charge shall be based upon the quantity of water used at the premises of the customer as measured by the water meter in use thereat, except as otherwise hereinafter provided.
- 15.1.3 For domestic and commercial users, the rates and charges for each billing period shall be determined by each user's annual water use. The usage rates, charges and fees shall be established from time to time by Town Council Resolution. (Assessments shall be established by Ordinance only, per Article XIV.) The Council may establish a minimum amount per billing period which all customers must pay for which a maximum contribution of wastewater is allowed.
- 15.1.4 The wastewater usage shall be based upon eighty percent (80%) of the water meter reading as determined by the Kent County Water Authority
- 15.1.5 Industrial users exceeding the limits set forth herein for BOD and Total Suspended Solids, Total Nitrogen and Total Phosphorus concentrations shall be surcharged with rates established by the West Warwick Sewer Commission.

- 15.1.6 In the event a lot, parcel of land, building or premises discharging sanitary commercial or industrial sewage or other liquids into the Town sewage system either directly or indirectly, is not a user of water in the whole supplied by public or private water utility, then, in each such case the consumption shall be set at 10,000 cubic feet per year unless a meter is installed and readings are provided to and verified by the Town. The Director of Public Works must be notified if and when a property is connected to a well.
- 15.1.7 In the event two or more lots, parcels of real estate residences, dwelling units or buildings discharging sanitary sewage water or other liquids into the sanitary sewage system of the Town are users of water and the quantity of water is measured by a single water meter, then, in each case for billing purposes, the minimum charge for the sewer rates and charges shall be multiplied by the number of lots, parcels or real estate, residences, dwelling units or buildings served through the single water meter.
- 15.1.8 Charges for the sewage disposal service shall be billed and collected by the Town.
- 15.1.9 Outside Meters: In the event water is used for purposes which do not enter the Town sewage system, including but not limited to water used in pools and sprinkler systems, the owner of such premises may, at his own expense, install such meter as shall be approved by the Director of Public Works for the measurement of water so used in order that a proper allowance may be made, and the sewage service charge reduced accordingly. The Director of Public Works may set policies and procedures for documentation of outside water usage.
- 15.1.10 The rates and charges may be billed to the tenant or tenants occupying the property serviced, but such billing shall in no way relieve the owner or owners from liability in the event payment is not made as herein required. The owners of property served which are occupied by tenants shall have the right to examine the collection records of the Town for the purpose of determining whether such rates and charges have been paid by such tenants, provided that such examination shall be made at the office in which the records are kept and during the regular business hours of such office.
- 15.1.11 Each charge or service fee levied pursuant to this Ordinance is hereby made a lien upon the corresponding lot, land or premises served by the connection to the sanitary sewage system of the Town. Failure to pay said charge or service fee within the prescribed period of time, such charge or fee shall then be collected as other Town taxes are collected. The official record of the Town shall constitute notice of penalty and of said lien as herein provided.
- 15.1.12 All money collected under the provisions of the Ordinance shall be deposited in a sewage enterprise fund and expenditures from which are to be made only for maintenance, operation, administration, debt service and other related sewage system expenses.
- 15.1.13 The Town, in addition to the other remedies provided by this Ordinance may institute legal proceedings to collect overdue sewer service charges. Penalties may be added to the original sewer bill for late payment which penalties shall be set by the Town Council by resolution.

ARTICLE XVI- CHANGES IN THESE REGULATIONS

- 16.1 These regulations may be rescinded or modified or added to by the Town Council at any time when, in their opinion, such action is for the best interests of the Town of Coventry.

ARTICLE XVII- CONSTRUCTION BY LICENSED DRAIN LAYER ONLY

- 17.1 Construction of all sewer service connections within the Town of Coventry shall be performed only by drain layers who are licensed by the Town of Coventry and who shall furnish a bond with surety to the Town of Coventry on the form furnished by said Town.

ARTICLE XVIII- LOW PRESSURE SEWERS

- 18.1 In areas where the Town Council determines that the expansion of the sewer works through use of gravity sewer lines is impracticable, the Town may authorize the construction of sewer lines which can be used only by means of pressure pumps on the property of individual users. Such lines shall be called low pressure sewers (LPS). Any person whose property connects to a LPS shall be assessed in the same manner, and at the same rate as a property owner who abuts a gravity line on a town street or highway.

- 18.1.1 Any person who applies for connection to a LPS shall be required to obtain approval from the Town of any pumps to be used by that person necessary for connection to the LPS.

ARTICLE XIX – PRIVATELY OWNED WASTEWATER TREATMENT FACILITIES

- 19.1 Owners of privately owned wastewater treatment facilities shall maintain the system in good working order and operate as efficiently as possible. Proper operation and maintenance shall include, but not be limited to, effective performance based on facility design, adequate operator staffing and training and adequate laboratory and process controls, including quality assurance procedures as determined to be appropriate by the Board and backup or auxiliary facilities or similar systems to assure compliance or effective performance. Proper operation and maintenance must include emergency procedures and reporting requirements in case of power outages, natural disaster, labor shortage (whether the result of intentional work stoppages or epidemic), equipment failure, acts of terrorism/vandalism or sanitary sewer overflow. Reporting requirements shall include verbal notification to the Director of Public Works and the RIDEM as soon as possible, but not exceeding twenty-four (24) hours of discovery of the event; a written report must be submitted to the Director of Public Works, the Superintendent and RIDEM not more than five (5) business days of the event's ending.
- 19.2 The Owner shall submit (for review and approval by the Director of Public Works and the Superintendent) an Operations and Maintenance Plan describing standards and procedures by which the wastewater treatment facility will be staffed, operated and maintained during normal and emergency conditions. Should development of the Plan include the practice of engineering, the Plan must then be prepared and certified by a Registered Professional Engineer registered in the State of Rhode Island.
- 19.3 The Owner of a new wastewater treatment facility shall submit an Operations and Maintenance Plan to the Director of Public Works for review and approval prior to commencement of the construction of the new wastewater treatment facility.

- 19.3 The Owner of an existing wastewater treatment facility without an approved Plan must submit for approval a Plan necessary to comply with the requirements herein within six (6) months of the promulgation of this Ordinance.
- 19.4 The contents of the Plan shall include, at a minimum, the following:
- a. Description and schematics of the entire Wastewater Treatment Facility. This description and schematic must include:
 - 1) Sewer line maps of the collection system, which will include, but not be limited to, the overall service area, pipe, diameter, distances between centers of manholes, slope or direction of flow, and the locations of the system's components (i.e., pump station).
 - 2) A summary of all design criteria, including capacity calculations for the Wastewater Treatment Facility.
 - 3) A site plan depicting the location of the buildings, utilities and property line. The plan shall be formatted in geodetic coordinates (NAVD 1983, NAD1988). The as-built plans shall be submitted electronically in AutoCAD format 2000 or later and in paper format with an original stamp. The plan shall include the entire collection system to the municipal system. Such systems may include a private system not owned by the owner of the connection collection system. All easements must also be indicated on the plan.
 - b. Descriptions of, and detailed operating procedures for, pump station and/or treatment processes and major and essential equipment, including sampling and monitoring equipment (if required).
 - c. A preventative maintenance plan for the pump station, collection system or Treatment Facility.
 - d. A list of supplies and essential spare parts necessary to be kept on site for normal and emergency use throughout the wastewater treatment facility.
 - e. A staffing plan, whether the positions are full- or part-time, and required Grade of Licensure, as stated by any rules and regulations promulgated by the Rhode Island Board of Certification of Operators of Wastewater Treatment Facilities.
 - f. A security system.
 - g. Emergency procedures and reporting requirements in case of power outages, natural disaster, labor shortage, equipment failure, acts of terrorism/vandalism or sanitary sewer overflow. Reporting requirements shall include verbal notification to the Rhode Island Department of Environmental Management, the Town, and the Superintendent, if applicable, as soon as possible but not exceeding twenty-four (24) hours of discovery of the event; a written report must be submitted not more than five (5) business days of the event's ending.
 - h. Emergency contact information shall be posted on or near the pump station so as to be visible from a public access area. A contact list must also be provided to the Director of Public Works and the Superintendent which shall include: Owner's contact information, facilities contact

person information, monitoring service contact information, contract services contact information and preferred vendor's information and any other contact which may be required to mitigate or control a sewer overflow.

- i. A monitoring plan for force main systems which includes, at a minimum, redundant level control and failure notification. An hour meter is required for each pump.

ARTICLE XX

20.1 These regulations shall be in full force and effect from and after its passage, approval, recording, and publication as provided by law.

PROPOSED BY:/s/ Laura Flanagan

POSTED BY TOWN CLERK: April 30, 2009

INTRODUCED: COUNCIL MEETING HELD ON: May 18, 2009

ADVERTISED IN: Kent County Daily Times on June 19, 2009

HEARD DATE: July 6, 2009

DULY ADOPTED ON: July 6, 2009

FIRST AMENDED AND RESTATED
INTERMUNICIPAL AGREEMENT FOR
WASTEWATER SERVICES
BETWEEN
THE TOWN OF WEST WARWICK
AND
THE TOWN OF COVENTRY

THIS AGREEMENT made this 20th day of JULY A. D. 19 99 by and between the TOWN of WEST WARWICK, a municipal corporation of the State of Rhode Island, by and through the WEST WARWICK SEWER COMMISSION, hereinafter collectively referred to as "WEST WARWICK," and the TOWN of COVENTRY, a municipal corporation of the State of Rhode Island, hereinafter referred to as "COVENTRY."

WITNESSETH:

WHEREAS, WEST WARWICK has constructed and has in operation a municipal wastewater treatment plant and other appurtenant facilities, located in WEST WARWICK, to collect, treat and dispose of the wastewater for the residents of WEST WARWICK, as well as portions of COVENTRY, WARWICK, SCITUATE, CRANSTON AND WEST GREENWICH; and

WHEREAS, the Federal government is empowered under Public Law 95-217, as amended, to make Federal grants for the construction of public treatment works, and to impose conditions on the award of such grants; and

WHEREAS, WEST WARWICK has accepted State and Federal grants for the construction of public wastewater treatment works, and must abide by the applicable State and Federal laws, rules and regulations; and

WHEREAS, WEST WARWICK wastewater treatment operation is regulated by Rhode Island Pollutant Discharge Elimination System Permit No. RI 0100153; and

WHEREAS, the State and Federal grants received by WEST WARWICK reflect inclusion of wastewater flows from COVENTRY as the basis for the design of the funded facilities as a condition of said grants; and

WHEREAS, WEST WARWICK and COVENTRY mutually agree it is in the best interest of both municipalities and the State of Rhode Island to enter into an Agreement whereby WEST WARWICK would receive, treat and dispose of wastewater from COVENTRY; and

WHEREAS, wastewater collection and disposal is a mutual problem involving financing, construction, operation and maintenance of facilities; and

WHEREAS, WEST WARWICK and COVENTRY have previously entered into an Agreement for "Sewer Construction and Sewage Disposal," dated November 28, 1983, and a supplemental Agreement regarding

"Payments Owed by the Town of COVENTRY to the Town of WEST WARWICK for Sewer Construction Costs," dated October 6, 1994; and

WHEREAS, certain modifications and/or additions have been made to the wastewater collection and treatment facilities of WEST WARWICK in order to collect and treat the wastewater from COVENTRY; and

WHEREAS, additional modifications are required to be made to the wastewater collection system in order to convey wastewater from COVENTRY; and

WHEREAS, the aforementioned previously executed Agreements only address the secondary upgrade to the status of the Regional Project, and

WHEREAS, Rhode Island Department of Environmental Management (RIDEM) developed a Consent Agreement (No. 90-6679) which mandated that the WEST WARWICK treatment system shall be upgraded to produce an effluent quality of a tertiary level. These improvements have been dictated by the need to improve the quality of the Pawtuxet River to Class C waters; and

WHEREAS, COVENTRY is obligated to share in the capital cost of the required upgrades which have been deemed necessary by RIDEM and WEST WARWICK. Percentage of COVENTRY'S share is presented in Appendix "A"; and

WHEREAS, WEST WARWICK and COVENTRY are authorized by law to enter into contracts with each other for the purpose of aiding in the prevention or abatement of water pollution and/or to make mutually suitable arrangements for the disposal of wastewater;

WHEREAS, COVENTRY, as a participating municipality has or is in the process of fulfilling its financial obligation and WEST WARWICK has fulfilled its obligations to expand their wastewater treatment facility as provided in the previous agreement dated November 28, 1983; and

WHEREAS an amendment to the original agreement dated November 28, 1983 is necessary in order to address the financial obligations to meet the requirements of RIDEM Consent Agreement (No. 90-6679) as well as updating the procedural issues in administration of the agreement before and after the completion of the project; and

WHEREAS, the acceptance and execution of this Amendment, represents the acknowledgment of the parties that the obligations of COVENTRY, as a participating municipality, and the Town of WEST WARWICK as set forth in the original agreement have been met and this amendment is intended to redefine the procedure issues to be followed by COVENTRY, as a participating community and as such, upon execution of this agreement the prior agreement dated November 28, 1983 will become null and void and of no further force and effect.

NOW, THEREFORE, in consideration of these premises and the mutual undertaking of the parties hereto, the parties agree as follows:

1. DEFINITIONS AND REPRESENTATIONS

1.1 For all purposes of this Agreement and amendments thereto, the following listed terms shall have the meanings set forth below:

- A. "Average Daily Flow" shall mean the total annual volume of wastewater recorded at a metering station or other point divided by the number of days in the year.
- B. "Biochemical Oxygen Demand" (BOD) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under the standard laboratory procedure of five (5) days, at 20 degrees C expressed in terms of weight and concentration (milligrams per liter).
- C. "Building Service Connection" shall mean the service extension from a residential, commercial, industrial or other building to the public sewer (or other place of disposal), also called a house connection. This is generally a 4 inch or 6 inch diameter pipe.
- D. "Capital Cost" shall mean the costs of planning, design, financing, and construction of wastewater works, including but not limited to engineering and legal fees, easements and other interests in real estate, and amortization costs.
- E. "Class C Waters" shall mean waters that are suitable for fish, shellfish and wildlife habitat; suitable for recreational boating and industrial cooling; good aesthetic values.
- F. "COVENTRY Flow" means the amount of wastewater flowing from COVENTRY into the WEST WARWICK System as determined by Article 4 hereof.
- G. "COVENTRY Interceptor Areas" are as defined in COVENTRY's approved Facilities Plan.
- H. "COVENTRY O & M Share" means that portion of the annual cost of operation and maintenance, determined in accordance with Article 4 hereof.
- I. "COVENTRY Project Share" means and is limited to the amount of the total project costs allocated to COVENTRY in accordance with the percentages of each item of the project cost listed on Appendix "A".
- J. "COVENTRY System" means the sanitary sewer interceptor lines, lateral sewer lines and other appurtenances located, or to be located in the Town of COVENTRY which are intended to convey wastewater from sources in COVENTRY to the WEST WARWICK System.
- K. "Disposal" shall mean the disposition of wastewater or sludge by WEST WARWICK after treatment by its wastewater treatment plant.
- L. "Domestic Wastes" means liquid wastes:
 - (i) From the noncommercial preparation, cooking, and handling of food; or

- (ii) Containing human excrement and similar matter from the sanitary conveniences of dwellings, commercial buildings, industrial facilities, and institutions. It shall not contain groundwater, storm water, surface water, or cooling water or industrial wastewater.
- M. "Dwelling Unit" shall mean a house, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants have either:
- (i) Direct access from the outside of the building or through a common hall; and/or
 - (ii) Complete kitchen facilities for the exclusive use of the occupants.
- N. "Easement" shall mean a legal right for specific use of land owned by others.
- O. "Fiscal year" means the annual accounting period commencing July 1 and ending June 30 of each year. The fiscal year is denoted by the calendar year in which the fiscal year ends (i.e., FY96 ends in June 1996).
- P. "Holding Tank Waste" means the wastewater from a domestic Individual Sewerage Disposal System.
- Q. "Industrial Wastewater" means the liquid wastes resulting from the processes employed in industrial, manufacturing, trade, or business establishments, as distinct from domestic wastes.
- R. "Infiltration" shall mean the water entering a sewer system from the ground through such means as defective pipe, pipe joints, connections or manhole walls. Infiltration does not include and is distinguished from inflow.
- S. "Inflow" shall mean the water discharged to a sewer system (including service connections) from such sources as roof leaders, cellar, yard, and area drains; foundation drains; cooling water discharges; drains from springs and swampy areas; manhole covers; cross-connection from sewers; catch basins; stormwater runoff; street wash waters; and drainage in general. Infiltration/inflow is the total quantity of water entering a sewer system from both infiltration and inflow.
- T. "Maximum Daily Flow" shall mean the highest total volume measured at a metering station or other point over a continuous twenty-four hour period.
- U. "Measured Wastewater Flow" means the total unadjusted flow volume recorded at flow metering devices, referred to in Article 4 hereof.
- V. "Monthly Average" shall mean the total volume or quantity for a calendar month divided by the number of days in that month.

- W. "Net Capital Cost" shall mean the capital cost after deduction of federal and state grants and other capital income such as earnings on the investment of bond proceeds.
- X. "North Branch Interceptor" means an underground interceptor sewer collecting wastewater from the northeast area of COVENTRY, as well as parts of CRANSTON and SCITUATE, running parallel to the North Branch of the Pawtuxet River, and transporting said wastewater to the WEST WARWICK system at the town line on Main Street (Route 115).
- Y. "Operation and Maintenance Costs" or "O & M Costs" includes the total annual expenses actually incurred by WEST WARWICK in the operation and maintenance of the Regional Wastewater Treatment Facilities pursuant to a budget covering the categories of annual operating and maintenance costs described in Article 4 hereof.
- Z. "Participating Municipality" means any one of the following municipal corporations: WEST WARWICK, COVENTRY, SCITUATE, WEST GREENWICH, CRANSTON and WARWICK. The term "Participating Municipalities" is the collective designation for more than one Participating Municipality.
- AA. "Peak Hourly Flow" shall mean the highest volume of wastewater recorded at a metering station or other point over a continuous sixty minute period.
- AB. "Person" shall include an individual, trust, firm, joint stock company, corporation (including a quasi-government corporation), partnership, association, syndicate, municipality, municipal or state agency, fire district, club, non-profit agency or any subdivision, commission, department, bureau, agency or department of state or federal government (including quasi-government corporation) or of any interstate body.
- AC. "Pretreatment" shall mean the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to an acceptable state prior to or in lieu of discharging or otherwise introducing such pollutants into a water pollution control facility. The reduction or alteration can be obtained by physical, chemical, or biological processes, except as prohibited by Title 40, Code of Federal Regulations, Section 403.6(d).
- AD. "Pretreatment Standards" means all applicable Federal rules and regulations implementing section 403 of the Act, as well as any nonconflicting State or local standards. In cases of conflicting standards or regulations, the more stringent thereof shall be applied.
- AE. "Regional Interceptors" shall mean the interceptor sewers that will service the Participating Municipalities in WEST WARWICK. They are the Maisie Quinn Interceptor, Upper Maisie Quinn Interceptor, Maisie Quinn Connecting Sewer, Clyde Interceptor, Natick Relief Sewer and Natick Interceptor, COVENTRY North Branch, COVENTRY New London Turnpike.
- AF. "Regional Project(s)" shall mean the development, design and construction work performed in connection with upgrading and expanding the existing WEST WARWICK wastewater

collection and treatment system to transport, treat and dispose of wastewater from COVENTRY and other Participating Municipalities.

- AG. "Regional Pumping Stations" shall mean pumping stations which service the Participating Municipalities that are located in WEST WARWICK. They are the Clyde Pumping Station and Glen Drive Pumping Station.
- AH. "Regional System" shall mean those portions of the WEST WARWICK system which handle wastewater from COVENTRY and WEST WARWICK.
- AI. "Regional Wastewater Treatment Facility" shall mean the wastewater treatment facility, including an arrangement of devices and structures used for treating wastewater, industrial wastes and sludges, located in WEST WARWICK which was constructed and upgraded to treat wastewater generated in the Participating Municipalities.
- AJ. "Reserve Capacity" shall mean the hydraulic limits based upon the flow presented in Exhibit A and the associated organic load for Domestic Waste for BOD and total suspended solids of 250 mg/l each.
- AK. "Rhode Island Department of Environmental Management" (RIDEM) shall mean the State agency which administers and regulates wastewater discharges.
- AL. "Rhode Island Pollutant Discharge Elimination System" (RIPDES) means the Rhode Island system for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing discharge permits and imposing and enforcing pretreatment requirements pursuant to Title 46, Chapter 12 of the General Laws of Rhode Island and the Clean Water Act.
- AM. "Sanitary Sewer" shall mean a sewer which carries sewage and to which storm, surface, and groundwater are not intentionally admitted.
- AN. "Septage Waste" means the wastewater from a domestic Individual Sewage Disposal System.
- AO. "Sewage" shall mean a combination of the water-carried wastes from residences, business buildings, institutions and industrial establishments.
- AP. "Shall" is mandatory; "May" is permissive.
- AQ. "Significant Industrial User" (SIU) means any industrial user of the Participating Municipalities wastewater treatment system whose flow exceeds:
- (i) An average of 25,000 gallons per day of process wastewater to the wastewater treatment system (excluding sanitary, non-contact cooling or boiler blowdown wastewater); or

- (ii) Five (5) percent or more of the average dry weather hydraulic or organic capacity of the wastewater treatment system; or
 - (iii) Whose wastewater concentration of BOD and total suspended solids exceeds 250 mg/l; or
 - (iv) A federal EPA categorical industry; or
 - (v) Industries with sanitary or non-toxic discharges using solvents, toxic chemicals and/or hazardous chemicals that could potentially be discharged into the sewers.
- AR. "Sludge" shall mean waste containing varying amounts of solid contaminants removed from water, sanitary sewer, wastewater or industrial wastes by physical, chemical and biological treatment.
- AS. "Storm Drain" (sometimes termed "storm sewer") shall mean a sewer which carries storm and surface waters and drainage, but excludes sewage and industrial wastes, other than unpolluted cooling water.
- AT. "Storm Water" means any flow occurring during or immediately following any form of natural precipitation and resulting therefrom.
- AU. "Total Flow" means the total amount of wastewater flowing into the WEST WARWICK system, and includes the wastewater contributed to such system by the Participating Communities.
- AV. "Total Suspended Solids" means the total suspended matter that floats on the surface of, or is suspended in, wastewater, or other liquids, and which is removable by laboratory filtering.
- AW. "Toxic Waste" shall mean any substance listed as toxic under section 307(a)(1) of the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., listed under the Hazardous Substances Right-to-Know Act, R.I.G.L. §28-21-1 et seq., and as may otherwise be designated by the town.
- AX. "User Charges" shall mean charges levied in proportion to the use of wastewater works. As required by State Law and by regulations promulgated by the U.S. Environmental Protection Agency; such charges must, to the extent possible, distribute operation and maintenance (including replacement and necessary additional requirements) cost to each user in proportion to the user's contribution to the total loading of the wastewater works, where construction of such works may have been financed in part by a Federal grant.
- AY. "Wastewater" means the liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any groundwater, surface water, and storm water that may be present, whether treated or untreated, which is discharged into or permitted to enter the Town's wastewater treatment system.

AZ. "Wastewater Treatment System or Wastewater Treatment Facility" means any devices, facilities, structures, equipment or works owned or used by the Participating Municipalities for the purpose of the transmission, storage, treatment, domestic or industrial wastes, including intercepting sewer, outfall sewers, sewage collection systems, pumping, power, and other equipment and their appurtenances, extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide standby treatment units and clear well facilities; and any work, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues from such treatment.

BA. "WEST WARWICK System" means the existing WEST WARWICK wastewater collection and treatment system that are not part of the Regional Project.

2. GENERAL AGREEMENT

- 2.1 WEST WARWICK agrees to receive for treatment and disposal, subject to such limitations and exceptions as provided for in this Agreement, all wastewater emanating from within COVENTRY, including all industrial and commercial wastewater. WEST WARWICK agrees to reserve 2.25 million gallons per day of the total capacity of both liquid and solid treatment with an equivalent or organic loading of 4700 pounds per day of BOD and total suspended solids, in the collection and disposal system for COVENTRY for the duration of this Agreement.
- 2.2 COVENTRY agrees to construct and maintain, at its own cost, the sewer collection system, including collector and interceptor sewers, pumping facilities and sewer force mains, within COVENTRY required to convey wastewater to the WEST WARWICK sewer system, except as provided for in this Agreement.
- 2.3 COVENTRY agrees to pay its share of the cost to upgrade the interceptor sewers and pumping stations located in WEST WARWICK. COVENTRY'S share shall be based upon a percentage of the total average daily flow of the regional wastewater flow as presented in Appendix A.
- 2.4 The COVENTRY sewer system shall connect with and into the WEST WARWICK sewer system at the following locations along the COVENTRY-WEST WARWICK town line:
- A. the existing sewer on Main Street (Route 115);
 - B. a proposed sewer on Pulaksi Street;
 - C. the existing sewer on Tiogue Avenue (Route 3), North Road Terrace;
 - D. the existing sewer on New London Turnpike;
 - E. at other lesser points of connection where existing sewers enter WEST WARWICK, including but not limited to: Washington Street (Route 117), Harris Avenue, Park Avenue, Hebert Street, and Ames Street; and
 - F. at other points which are mutually agreed upon, where WEST WARWICK sewers are capable of handling additional flows. Negotiation of these points shall be in accordance with the requirements set forth in other section of this Agreement.

- 2.5 There are certain wastewater sources located in COVENTRY which are presently connected to the WEST WARWICK wastewater collection system. Such sources may continue to discharge wastewater to WEST WARWICK. (This provision does not include sources of wastewater covered under separate Agreements, as described in Article 11 hereof.)
- 2.6 For the design and construction of the North Branch Interceptor, COVENTRY shall enter into separate Agreements with the Town of SCITUATE and the City of CRANSTON.

3. PROJECT COSTS AND PAYMENT

- 3.1 Prior to execution of this Agreement, WEST WARWICK has completed work on upgrading and expanding the Regional Wastewater Treatment Facility to provide secondary wastewater treatment for an average daily flow of 7.89 million gallons per day of wastewater from all sources tributary to the facility. In addition, WEST WARWICK has begun work on upgrading and expanding portions of its wastewater collection system addition, including the East Natick Interceptor, portions of the Maisie Quinn Interceptor, the Clyde Pumping Station and Force Main and portions of the Clyde Interceptor, which will transport wastewater from COVENTRY to the Regional Wastewater Treatment Facility. This work included provisions for treating and disposing of an average daily wastewater flow 2.25 million gallons per day and an organic concentration of BOD and total suspended solids of 4700 pounds per day from COVENTRY.
- 3.2 Prior to execution of this Agreement, COVENTRY has paid to WEST WARWICK a total of approximately \$1,200,427 for its share of project costs for the secondary upgrade/expansion of the WEST WARWICK wastewater facilities. In addition, on October 6, 1994, COVENTRY and WEST WARWICK entered into an Agreement whereby COVENTRY would pay to WEST WARWICK an additional \$501,000 for its share of these project costs. The sum of these amounts (\$1,701,427) represents COVENTRY'S cost to meet the secondary treatment requirements to accommodate for the reserved capacity of 2.25 million gallons per day (average daily flow) and an organic load of BOD and total suspended solids of 4700 pounds per day, as well as its share of all facilities planning costs for the Tertiary Treatment Project currently being proposed for the Regional Wastewater Treatment Facility.
- 3.3 On 28 February 1999, the Rhode Island Department of Environmental Management approved an amendment to the Tertiary Treatment Facilities Plan. The average design flow is 10,500,000 gallons per day of wastewater from all sources tributary to the facility. COVENTRY's wastewater contribution to the Tertiary Facility shall remain at 2.25 million gallons per-day and an organic concentration of BOD and total suspended solids of 4700 pounds per day.
- 3.4 WEST WARWICK is currently completing the planning of a Tertiary Treatment Project, which will upgrade the Regional Wastewater Treatment Facility to provide advanced wastewater treatment and improve the quality of the effluent discharged to the Pawtuxet River. COVENTRY was given a final copy of the Tertiary Facilities Plan which outlines the estimated costs to design, construct and operate the proposed improvements, including the anticipated amount of any Federal and/or State grants and loan assistance to be received; the proposed wastewater flows to be used in design of the improvements; and the calculated COVENTRY share of such project costs.

- 3.5 WEST WARWICK is required by the Tertiary Consent Agreement RI 90-6679 to have a preliminary design report issued within six (6) months of DEM approval of the Facilities Plan, twelve (12) months later have fifty-percent design plans, and six (6) months to complete one hundred percent design plans.
- 3.6 Project costs for the Tertiary Treatment Project, and any other Regional Project projects, shall include the total cost of construction and equipment, the cost of design, engineering and supervisory costs, inspection, legal costs, costs of acquiring real and personal property in WEST WARWICK for said treatment facilities, fiscal costs, financing costs, and all other costs of establishing the project and making it ready for operation, including the cost of borrowing in anticipation of Federal and/or State aid. The Net Capital Cost shall be the project cost less any State and/or Federal aid received.
- 3.7 COVENTRY shall be responsible for its share of the Net Capital Costs of such Regional Projects follows:

$$\frac{(\text{Net Capital Cost of the Project}) \times (\text{COVENTRY'S Design Flow})}{(\text{Total Facility Design Flow})}$$

COVENTRY's Design Flow for each facility shall be the wastewater flow from COVENTRY tributary to the particular Regional Project facility.

- 3.8 COVENTRY shall pay its share of the design cost within thirty (30) days of the execution of the design contract. If there are any changes to the final design fee due to Addenda, the appropriate adjustments will be made at the conclusion of the design. COVENTRY will be invoiced, and within forty-five (45) days shall remit payment to WEST WARWICK
- 3.9 At the completion of the design phase, COVENTRY shall be given the option to pay its local share of the construction cost either in a lump sum payment based upon the bid price at the start of the construction phase or monthly, plus interest. The interest shall be based upon WEST WARWICK interest cost to offset the lag State and Participating Communities reimbursement. At the conclusion of the construction phase, adjustments will be made to reflect any change orders.
- 3.10 The amount of such progress payments made by COVENTRY to WEST WARWICK shall not exceed ninety-eight percent (98%) of the amount calculated as due from COVENTRY, with the remaining two percent (2%) being paid upon project completion. Monthly payments will be fifteen (15) days of receipt of such statements. If payment is not received within that time frame, WEST WARWICK will assess an additional one and one half percent (1½%) interest per month from the date of the invoice.
- 3.11 Upon completion of the Tertiary Treatment Project or other Regional Projects, and receipt by COVENTRY of a certificate from the WEST WARWICK Treasurer's Office certifying such completion and showing the final amounts paid by WEST WARWICK and COVENTRY on account of the Regional Project, COVENTRY will pay the balance of the COVENTRY share, within thirty (30) days of the receipt of such certificate.

- A. The certificate of Project Completion shall include the certification by the authorized representative for WEST WARWICK and the consulting engineer for the project. Such certificate shall not be issued prior to substantial completion of the project and use of the project facilities is approved by the appropriate Federal and/or State regulatory agencies.
- B. The final amount to be paid to WEST WARWICK on account of any Regional Project shall be verified by an independent auditor selected by COVENTRY, at its own cost, if such an audit is determined to be necessary. This end of project audit will be conducted on behalf of COVENTRY within twelve (12) months of the final payment to WEST WARWICK.
- C. The final project costs to be paid by COVENTRY and WEST WARWICK shall be subject to the final audit prepared on behalf of the Federal and/or State regulatory agencies funding the project(s).

4. OPERATION AND MAINTENANCE

- 4.1 WEST WARWICK shall continue to accept wastewater flows from all sources in COVENTRY which are currently discharging to the WEST WARWICK system. WEST WARWICK shall accept wastewater from new collection facilities in COVENTRY if capacity is available at the Wastewater Treatment Facility in the Regional Interceptor and Pumping Station, up to the reserved capacity identified hereinbefore, upon at least thirty (30) days notice from COVENTRY of completion of such wastewater collection facilities.
- 4.2 WEST WARWICK agrees to provide adequate and qualified operating personnel for the Regional Wastewater Treatment Facility, wastewater collection system and all components thereof.
- 4.3 The annual cost for operation and maintenance of the Regional Wastewater Treatment Facility shall be the basis of the operation and maintenance charge. The cost shall include wages, fringe benefits, maintenance, repairs, chemicals, utility costs, equipment rentals and replacements, administration costs and other costs related to the operation of the Regional Wastewater Treatment Facility. However, the annual O & M costs (a) shall not include any principal, interest or other charges in connection with any indebtedness incurred by WEST WARWICK, and (b) shall not include any WEST WARWICK expenses not directly attributable to, and included in, such annual budget of the Regional Wastewater Treatment Facility.
 - A. Any and all revenue generated at or by the operation of the Regional Wastewater Treatment Facility and wastewater collection system, including but not limited to: septage receiving/treatment fees; revenues from sale of composted sludge; and Federal, State and/or regional funding for operation and maintenance, or for any use of the facilities; shall be applied to the annual operation and maintenance budget, thereby reducing the operation and maintenance costs.
- 4.4 In March of each calendar year, COVENTRY shall provide a list of new ownership by plat and lot.

- 4.5 In May of each calendar year, WEST WARWICK shall prepare a budget for the upcoming fiscal year for operation and maintenance of the Regional Wastewater Treatment Facility. Copies of the budget shall be distributed to COVENTRY no later than June 1 of each year, such that COVENTRY may plan its user charge billings accordingly.
- 4.6 For the purposes of determining the "COVENTRY O & M share", the total measured (or estimated) wastewater flow from COVENTRY shall be determined based on the following methodology:
- A. Wastewater flows shall be determined based on water use records. Wastewater flows shall be eighty percent (80%) of the water use for the properties, based on water meter records provided by Kent County Water Authority, billed directly to the properties by WEST WARWICK. COVENTRY users not connected to a public water supply will be billed at the fixed consumption established by WEST WARWICK.
 - B. Significant Industrial Users shall be billed directly by WEST WARWICK in accordance with WEST WARWICK'S Sewer Ordinance based upon flow excess concentration of organic loadings (BOD and total suspended solids).
- 4.7 WEST WARWICK shall maintain adequate records showing wastewater flow, capital costs, operation and maintenance costs and computation of the amount due from COVENTRY. Such records, as well as all parts of the regional wastewater collection and treatment system, shall be open and available for inspection by representatives of COVENTRY upon request.
- 4.8 No charges shall be billed to COVENTRY for annual operation and maintenance of the Regional Wastewater Treatment Facility or the WEST WARWICK system for any portion of the COVENTRY reserve capacity which is not being used by COVENTRY. No charges shall be assessed to COVENTRY for operation and maintenance of the WEST WARWICK local wastewater collection system.

5. ASSESSMENTS

- 5.1 Any parcel of land located in COVENTRY, from which the building service connection can conveniently and economically be tied directly into a sewer line located in, owned and maintained by WEST WARWICK, shall be allowed to do so upon receiving written permission from both COVENTRY and WEST WARWICK. Consistent with the WEST WARWICK Sewer Ordinance, these parcels shall be assessed a sewer assessment by COVENTRY and shall be considered a part of COVENTRY'S sewer capacity.
- 5.2 Any parcel of land located in COVENTRY from which the building service connection is tied directly to a sewer line located in, owned and maintained by WEST WARWICK, and any parcel located in COVENTRY, shall be assessed an annual sewer user charge by WEST WARWICK. This annual sewer user charge shall be based on water use records, as used for and at the same rates as if the parcel was located in WEST WARWICK.

- 5.3 Any Significant Industrial User located in COVENTRY shall be assessed directly by WEST WARWICK in accordance with the WEST WARWICK Ordinance and Pretreatment Program for annual permit fees and excess concentrations of BOD and total suspended solids. In the event that the metering devices are not installed or the SIU is connected directly to a WEST WARWICK line, WEST WARWICK shall also assess them for flow.
- 5.4 All parcels located in COVENTRY which are connected to the sewer collection system, except those parcels presently being assessed by WEST WARWICK as mutually agreed upon, shall be assessed a sewer assessment by COVENTRY based on the Sewer Ordinance adopted by COVENTRY.
- 5.5 The amount of any sewer assessments collected by WEST WARWICK from properties located in COVENTRY which were improperly collected and from which the building service connection is not tied directly into a sewer line located in, owned and maintained by WEST WARWICK shall be credited the individual and notify the owner of COVENTRY'S assessment plans. COVENTRY has one year from the date of each annual assessment to file an appeal stating the conditions why WEST WARWICK is not entitled to that assessment. WEST WARWICK will credit a maximum of one (1) year's fees to the individual.

6. REGULATIONS OF OPERATION

- 6.1 The Participating Municipalities shall comply with the Sewer Ordinances and Industrial Pretreatment Program as may be adopted by WEST WARWICK as amended. COVENTRY shall delegate to WEST WARWICK, through adoption of an Industrial Pretreatment ordinance, the enforcement of industrial pretreatment of wastes to insure wastewater is acceptable to meet local, State and Federal standards. The Regional Wastewater Treatment Facility shall be operated in such a manner that the effluent discharge into the Pawtuxet River complies with applicable State and Federal standards.
- 6.2 In exercising the foregoing reservations, permissions and rights of WEST WARWICK with respect to COVENTRY, WEST WARWICK agrees that it will not impose any standard or requirement which would be arbitrary, discriminatory or unreasonable or would treat the participant or users of the COVENTRY system on a different basis than is applicable to users similarly situated in WEST WARWICK or any other participating municipality.
- 6.3 WEST WARWICK and COVENTRY agree to maintain complete and accurate books and records concerning all matters relative to this Agreement and the performance thereof, to retain the same for a period of at least seven (7) years following the fiscal year to which such books and records relate, and to permit the agents, accountants and other duly authorized representatives of the other party to have access to all such books and records during reasonable business hours for the purpose of examining any of the same and making extracts or copies thereof. WEST WARWICK and COVENTRY agree to make available to the representatives and agents of the other party, all facilities and equipment related to the wastewater system of each, especially all meters, metering devices and records.

7. ALTERATIONS, ADDITIONS AND EXPANSION

- 7.1 WEST WARWICK may be required to alter, add or expand the Regional Wastewater Treatment Facility or Regional Interceptors as a result of DEM requirement or failure of the present components, or to meet the needs of Participating Municipalities. WEST WARWICK shall notify the Participating Municipalities affected by this action. The cost for these modifications shall be shared in accordance with Article 3.
- 7.2 When combined flows from the Participating Municipalities reaches eighty percent (80%) of the designed capacity of the Regional Wastewater Treatment Facility for a ninety (90) day period, or when the individual flow of any of the Participating Municipalities reaches 80% of their respective design capacity for a ninety (90) day period, WEST WARWICK shall cause a new projection of wastewater flows from the Participating Municipalities to be made. The Project Management Committee shall then determine the amount of expansion capacity for treatment facilities necessary, if any, to serve the Participating Municipalities. Before any expansion of capacity is made or before any major capital alteration or change in treatment is planned, the parties shall first negotiate and agree upon appropriate changes in the terms of this Agreement to assist with such expansion or changes and the method of financing the same. The method of financing shall provide for project costs to be shared proportionately by the Participating Municipalities, in the proportion of the increased design capacities provided by the expansion for the respective municipality.
- 7.3 If after completion of the Regional Project, improvements, alterations or additions (hereinafter "improvements") of a capital nature which do not increase the capacity of the Regional Wastewater Treatment Facility are deemed necessary, WEST WARWICK shall notify COVENTRY and the other Participating Municipalities of the nature of the improvements and other factors. COVENTRY and the other Participating Municipalities will be responsible for their proportional share.
- 7.4 If COVENTRY anticipates a major increase of flow as a result of new development, whether commercial, industrial or residential, which will cause COVENTRY'S need for capacity to exceed the capacity (hydraulic and/or organic) reserved through this Agreement, it may petition WEST WARWICK to increase its capacity. WEST WARWICK shall determine the amount of capacity available, the capacity the participant requires, the capacity of sewer lines to handle this increased flow and the cost required to purchase this capacity. Cost shall be based on:
- $$\frac{(\text{Additional Capacity to be purchased}) \times (\text{Total local cost of design \& construction})}{(\text{Total capacity of WWTF})}$$
- 7.5 If COVENTRY determines that it will not require the entire reserve capacity (hydraulic and organic) as set forth in this Agreement, and another Participating Municipality (or other person acceptable to WEST WARWICK) can be found who is in need of a portion of this unused capacity, COVENTRY may petition WEST WARWICK to transfer, sell, assigns or lease that portion of its reserved capacity to a Participating Municipality or third party upon such terms and conditions as COVENTRY shall deem acceptable. WEST WARWICK shall determine the amount of reserve capacity COVENTRY has available and the capacity of sewer lines to handle this increased flow.

In no event shall COVENTRY transfer, sell, assigns or lease more than ten (10%) percent of its reserve capacity in any calendar year to any Participating Municipality or third party. Any and all monies received by COVENTRY as a result of any such transfer, sale, assignment or letting shall be placed in a separate account to be used solely for server associated debt retirement, maintenance and repairs of wastewater collection facilities located within the Town of COVENTRY and/or maintenance and repairs to individual septic disposal systems.

The amount of COVENTRY'S reserved capacity and the amount paid for such capacity shall be calculated as of the date of the transfer of the capacity. This Agreement shall be amended to make the appropriate provisions for such a decrease in COVENTRY's flows.

8. CONSTRUCTION OF THE COVENTRY SYSTEM IN WEST WARWICK

- 8.1 Completion of the COVENTRY system requires the installation of a section of interceptor pipeline, hereinafter referred to as the Washington Interceptor, in WEST WARWICK. The Washington Interceptor will be located in Pulaski Street and/or Robinson Way, between the COVENTRY-WEST WARWICK town line and the South Branch of the Pawtuxet River, and will connect to the existing 30 inch diameter Maisie Quinn Interceptor at Pulaski Street on the eastern side of the South Branch of the Pawtuxet River.
- 8.2 COVENTRY will, at its expense, construct the Washington Interceptor, including portions of the pipeline in WEST WARWICK. Copies of the plans and specifications for such construction shall be provided to WEST WARWICK prior to executing a construction contract, for review and approval by WEST WARWICK. WEST WARWICK agrees to cooperate with COVENTRY and its agents and contractors for the purpose of enabling such construction to proceed without delay and will promptly provide or obtain all such licenses, permits and approvals as may be necessary for the construction.
- 8.3 COVENTRY will require any construction contract for work in WEST WARWICK to include provisions requiring the contractor to maintain liability insurance in which COVENTRY, WEST WARWICK and their respective agents shall be named as additional insured with limits of coverage not less than \$5,000,000.
- 8.4 The completed Washington Interceptor located in COVENTRY shall be owned, operated and maintained by COVENTRY, at its expense. COVENTRY hereby gives to WEST WARWICK, at no cost, the portion of the Washington Interceptor located in WEST WARWICK. WEST WARWICK shall operate and maintain that portion of the interceptor.
- 8.5 WEST WARWICK agrees not to impose any restrictions, requirements or costs upon the construction, operation and maintenance of the Washington Interceptor, which are different than those restrictions, requirements or costs which are imposed on sewers constructed and maintained by WEST WARWICK.
- 8.6 Prior to the construction of interceptors within COVENTRY, WEST WARWICK must determine if the Regional Interceptors are adequate to handle the additional flow. If the Regional Interceptor(s) is(are) inadequate to handle the increased flow, COVENTRY, WEST WARWICK and the Regional

Participants must agree to a time frame for the upgrading prior to the construction of any interceptors within WEST WARWICK.

- 8.7 In the future, COVENTRY and WEST WARWICK may mutually agree to allow COVENTRY to construct other portions of its sewer system in WEST WARWICK. In such case the conditions shall be similar to those agreed to herein for the construction of the Washington Interceptor.

9. PROJECT MANAGEMENT COMMITTEE

- 9.1 There is hereby established a Project Management Committee. The purpose of this Committee is to oversee the Regional Project which shall entail the development of engineering plans, specifications and construction arrangements; the review of any change orders during construction; the development of policies and program that shall be applicable to all participating municipalities; and the review of any proposed improvements, additions or changes in the Regional Project. The Committee shall consist of a representative of each Participating Municipality.

- 9.2 The Committee will be chaired by the WEST WARWICK representative. Vacancies will be filled in the manner as original appointees. Each member shall have a weighted vote based upon the percentage of its reserved capacity. Meetings of the Committee shall be held as necessary during the development and construction of any upgrade, and quarterly thereafter, and at the call of the Chairperson to carry out the duties of the Committee. The Committee may appoint advisors who may attend and participate in all meetings except that they shall not be counted for a quorum, nor vote on Committee actions.

- 9.3 WEST WARWICK will act as the contracting and management agent (Owner) for the Regional Project and its Town Council acting as the Sewer Commission, will sign all contracts, advertise all bids, supervise construction and be liable for any violation of EPA or DEM Rules and Regulations.

10. SEPTAGE

- 10.1 WEST WARWICK agrees to accept residential septic tank and/or cesspool waste (septage) generated within the boundaries of COVENTRY for treatment. WEST WARWICK agrees to make every effort to accept all septage from COVENTRY as the process permits.

- 10.2 If at any time the amount of septage which the regional wastewater treatment facility is capable of accepting and treating is limited, WEST WARWICK will accept septage generated from the Participating Municipalities, in preference to septage generated in other communities.

- 10.3 The charge for accepting and treating septage shall be reasonable and based on the cost for providing such services set by the WEST WARWICK Sewer Commission.

11. MISCELLANEOUS CLAUSES

- 11.1 Notwithstanding any other provision of this Agreement, COVENTRY shall not be required to observe or perform any obligation under this Agreement unless WEST WARWICK shall have obtained and

made available to COVENTRY all necessary easements, licenses, permits and approvals as required by Federal, State and local entities for completion of the regional project and COVENTRY'S wastewater collection system.

- 11.2 No failure or delay in performance of this wastewater disposal Agreement by either party shall be deemed to be a breach thereof when such failure or delay is occasioned by or due to any act of God, strikes, lockouts, wars, riots, epidemics, explosions, sabotage, breakage or accident to machinery or lines of pipe, the binding order of a Court or governmental authority, or any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party involved.
- 11.3 Agreement shall be reviewed annually by both parties hereto with the intention that any inequity which may arise or any error discovered be corrected through negotiations.
- 11.4 If any section, subsection, sentence, clause, phrase or portion of this Agreement is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions hereof.
- 11.5 A copy of the final construction plans and specifications, a copy of Federal and State Grant applications and offers, a copy of all contracts, a copy of all regulatory agency project inspection reports, a copy of all regulatory agency project inspection reports, a copy of the final construction cost audit shall be sent to and filed with the Town Clerk of COVENTRY and the Town Clerk of WEST WARWICK for record purposes, within forty-five (45) days of completion.
- 11.6 There is at present Agreement between WEST WARWICK and Woodland Manor Associates which is not now part of this Intermunicipal Agreement. Through this contract an average daily flow of 200,000 gallons per day is set aside for sewer users in the service area. No change or alteration in the Woodland Manor Agreement, no increase in flow nor any additional usage of said line shall be made by Woodland Manor Associates unless a new Agreement is made between WEST WARWICK, COVENTRY and said Woodland Manor Associates. It is understood that the capacity granted to Woodland Manor Associates is not part of the COVENTRY reserve capacity under this Agreement (Appendix B).
- 11.7 There is at present an Agreement between WEST WARWICK and the state of Rhode Island and Providence Plantations (State) which is not now part of this Agreement. Through this contract a minimum of 320,000 gallons per day of average flow and a maximum of 800,000 gallons per-day of average flow is set aside for sewer users in the service area, which includes out-of-town users. COVENTRY is, through this contract, an out-of-town user; therefore, residential, business and industrial users located within COVENTRY'S boundaries may use this sewer. It is agreed that a residential, business or industrial user who wishes to use this sewer shall be allowed to do so in accordance with the intermunicipal Agreement between WEST WARWICK and COVENTRY. Further, no change or alteration in the Agreement between the State and WEST WARWICK, no increase in flow or any additional usage of said line shall be made unless a new Agreement is made between WEST WARWICK, COVENTRY and the State (Appendix C).

enumerated or any matter requiring negotiation or Agreement herein then the following procedures shall be followed:

- A. The Chief Administrative Officers of WEST WARWICK and COVENTRY shall discuss the issue or issues informally with the hope that the issue or issues will be resolved through the informal discussions. Said informal discussions will be conducted as soon as practicable but in no event later than fifteen (15) days after receipt of a written request for the scheduling of such an informal discussion.
- B. If the Chief Administrative Officers of WEST WARWICK and COVENTRY are unable to resolve the issue or issues informally, then notice shall be given immediately forwarded to the legislative bodies of WEST WARWICK and COVENTRY who shall conduct informal joint discussions with the hope that the issue or issues will be resolved. These informal discussions between the legislative bodies of the respective towns shall take place as soon as practicable but in no event later than fifteen (15) days after receipt of said notice.
- C. If the issue(s) are not resolved by informal discussion, either WEST WARWICK or COVENTRY may request, at any time subsequent to the expiration of sixty (60) days from the date of the commencement of the first informal discussions as set forth in subparagraph (A) above, a joint public meeting of the legislative bodies of WEST WARWICK and COVENTRY. Within fourteen (14) days of receipt of such request, a joint meeting of the legislative bodies of WEST WARWICK and COVENTRY shall be held to discuss the issue(s).
- D. If the issue or issues are not resolved within ten (10) days after the joint public meeting of the legislative bodies of WEST WARWICK and COVENTRY, then, in that event, either WEST WARWICK or COVENTRY may request that the unresolved issue or issues be submitted to arbitration. Within seven (7) days after arbitration has been requested, WEST WARWICK and COVENTRY shall each select and name one arbitrator and shall immediately thereof notify each other in writing of the name and address of the person so selected. The two (2) arbitrators so selected and named shall, within ten (10) days from and after the selection, agree upon and select and name a third arbitrator. If within said ten (10) days the arbitrators are unable to agree upon the selection of a third arbitrator, such third arbitrator shall be selected in accordance with the rules and procedures of the American Arbitration Association. Whether the third arbitrator is selected by Agreement or under the rules and procedures of the American Arbitration Association, the said third arbitrator shall not be a resident of the State of Rhode Island. The arbitration procedures shall be conducted in accordance with the rules and procedures of the American Arbitration Association. The decision of the arbitration panel shall be final and binding upon WEST WARWICK and COVENTRY.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective fully authorized officers and their corporate seals affixed hereto the day and year first above written.

TOWN OF WEST WARWICK

Carl Brown

Benjamin F. Maguire

[Signature]

Robert B. Morehead

Town Council

TOWN OF COVENTRY

James J. Green

King M. Lapinski

Ronald M. Lee

Ronald J. Wood

Douglas C. Kessler

Town Council

**APPENDIX A
PERCENTAGE OF CONSTRUCTION COST**

Interceptor	West Warwick	Coventry	West Greenwich	Scituate	Cranston	Warwick
Maisie Quinn	41%	56%	3%			
Maisie Quinn Relief	54%	34%	8%			4%
Clyde Interceptor & Pumping Station	63%	32%		4%	1%	
Natick Interceptor	58%	35%	2%	0.5%	0.2%	4.3%
Treatment Facility & East Natick Interceptor	72.72%	21.43%	1.28%	.74%	1.07%	2.77%

PERCENTAGE OF DESIGN COST

Treatment Facility & East Natick Interceptor	72.72%	21.43%	1.28%	.74%	1.07%	2.77%
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TOWN OF COVENTRY

RESOLUTION

OF THE

TOWN COUNCIL

NO. 05-03-2203

BE IT RESOLVED by the Town Council of the Town of Coventry that the Town Council President and Town Manager are hereby authorized to execute the attached Addendum to the Intermunicipal Agreement for Wastewater Services between the Town of Coventry and the Town of West Warwick.

PASSED AND ADOPTED this 3rd day of February, 2003.

APPROVED Ronald S. Wood
Council President

ATTEST: Roberta H. Johnson, CMC
Town Clerk

A certified true copy

ATTEST: Roberta H. Johnson, CMC
Roberta H. Johnson, CMC
Town Clerk

February 5, 2003

TOWN OF WEST WARWICK

RESOLUTION

OF

TOWN COUNCIL

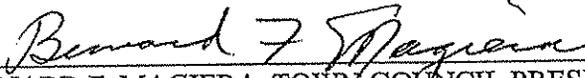
ACTING AS A SEWER COMMISSION

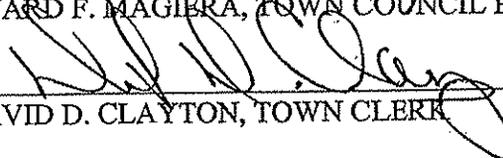
NO. SC2003-07

**SUBJECT: ADDENDUM TO THE INTERMUNICIPAL AGREEMENT WITH
COVENTRY**

BE IT RESOLVED by the Town of West Warwick Town Council, Acting as a Sewer Commission, that the Town Council President and Town Manager are hereby authorized to execute the attached Addendum to the Intermunicipal Agreement for Wastewater Services between the Town of Coventry and the Town of West Warwick.

PASSED AND APPROVED ON THIS 18th DAY OF FEBRUARY 2003.

APPROVED: 
BERNARD F. MAGIERA, TOWN COUNCIL PRESIDENT

ATTEST: 
DAVID D. CLAYTON, TOWN CLERK

**ADDENDUM TO THE INTERMUNICIPAL AGREEMENT
FOR WASTEWATER SERVICES
BETWEEN THE TOWN OF COVENTRY AND THE TOWN OF WEST WARWICK**

THIS AGREEMENT is made this 3 day of February, 2007, by and between the Town of Coventry ("Coventry") and the Town of West Warwick ("West Warwick"), both municipalities within the State of Rhode Island.

WHEREAS, on July 20, 1999, the parties hereto entered into an Intermunicipal Agreement for Wastewater Services ("Intermunicipal Agreement"), under which Coventry shall utilize the wastewater treatment facility located in and operated by West Warwick, pursuant to various terms and conditions set forth in said Intermunicipal Agreement; and

WHEREAS, pursuant to and as part of the terms and conditions of the Intermunicipal Agreement, Coventry has agreed to pay its share of the costs and expenses associated with the enlargement and modernization of the wastewater treatment facility and regional collection system; and

WHEREAS, pursuant to the Intermunicipal Agreement, Coventry has agreed to pay West Warwick its share of the costs and expenses for the advanced wastewater treatment upgrade ("AWT project"); and

WHEREAS, West Warwick agrees to request a loan from the Rhode Island Clean Water Finance Agency ("CWFA") for both its share and Coventry's share of the AWT project costs; and

WHEREAS, the parties desire to enter into an agreement for the payment by Coventry for its share of the AWT project; and

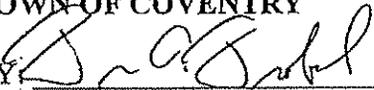
WHEREAS, it is agreed by the parties that this Agreement for payment shall be made and become an Addendum to the July 20, 1999 Intermunicipal Agreement.

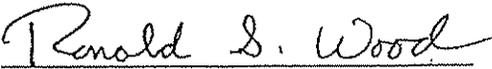
NOW THEREFORE, in consideration of the foregoing, it is hereby mutually agreed as follows:

1. The current estimated AWT project cost (construction and engineering) less available grant funds is \$21,721,264.
2. Coventry's share of the estimated AWT project expenses is \$4,654,867 which represents 21.43 % of the total cost.
3. At the conclusion of the construction phase of the AWT project, adjustments will be made to reflect all final costs.

4. Coventry agrees to pay and West Warwick agrees to accept payment for Coventry's share of the actual AWT project costs plus any interest assessed by CWFA in the manner and amounts dictated by the loan repayment schedule as set forth by CWFA (*estimated debt service schedule attached*). The final debt service schedule will be provided from CWFA at the conclusion of the construction project.
5. Coventry agrees pay West Warwick its share of the CWFA loan payment via an electronic transfer of funds into the designated West Warwick bank account at least two (2) days prior to the loan payment date as set forth by CWFA.
6. It is agreed that receipt of the total annual debt service payments for Coventry's share of the AWT project costs plus interest over the entire term of the loan shall close the Coventry account for payment of its share of the AWT project.
7. In the event Coventry fails to make the payments as set forth herein, then in such event, the parties acknowledge that West Warwick may take whatever remedial action is available to it in order to enforce the collection of the monies due and to recover all costs and damages incurred in collecting the debt. West Warwick may also assess and recover delinquent interest to the maximum amount allowable by law. Remedial action may include, but is not limited to, legal action and the denial of future sewer tie-ins by Coventry to the West Warwick Regional Wastewater Treatment Facility.
8. Except as set forth herein, all other terms and conditions set forth in the July 20, 1999 Intermunicipal Agreement remain in full force and effect.
9. The parties agree that this signing this Agreement have the authority as vested in them by a vote of or as Council Members of their respective communities.

TOWN OF COVENTRY

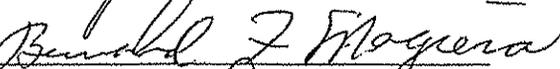
BY: 
TOWN MANAGER

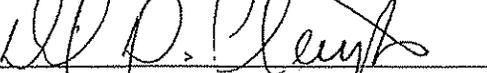
BY: 
TOWN COUNCIL PRESIDENT

BY: 
TOWN CLERK

TOWN OF WEST WARWICK

BY: 
TOWN MANAGER

BY: 
TOWN COUNCIL PRESIDENT

BY: 
TOWN CLERK

TOWN OF COVENTRY
RESOLUTION
OF THE
TOWN COUNCIL

NO.
RESOLUTION OF THE TOWN OF COVENTRY
AUTHORIZING EXECUTION AND DELIVERY OF
AN ADDENDUM TO THE INTERMUNICIPAL AGREEMENT
FOR WASTEWATER SERVICES BY AND BETWEEN THE
TOWN OF COVENTRY AND THE TOWN OF WEST WARWICK

WHEREAS, pursuant to the Intermunicipal Agreement for Wastewater Services between the Town of West Warwick and the Town of Coventry dated July 20, 1999 (the "Intermunicipal Agreement"), the Town of West Warwick is undertaking the advanced wastewater treatment project (the "AWT Project"), a Regional Project, as defined in the Intermunicipal Agreement; and

WHEREAS, the Town of Coventry has agreed to pay 21.43% of the costs of Regional Projects under the Intermunicipal Agreement; and

WHEREAS, the parties desire to memorialize their agreement with respect to the sharing of costs for the AWT Project; and

WHEREAS, the parties executed an Addendum to the Intermunicipal Agreement on February 3, 2003; and

WHEREAS, the Town of West Warwick has requested and obtained a loan from the Rhode Island Clean Water Finance Agency ("RICWFA") for the AWT Project Costs; and

WHEREAS, in connection with the loan from the RICWFA, the parties seek to amend and restate their agreement with respect to the sharing of costs for the AWT Project;

NOW, THEREFOR, BE IT RESOLVED by the Town Council of the Town of Coventry, that the Town Manager, the Town Council President and the Town Clerk are authorized, empowered and directed, on behalf of the Town of Coventry to execute and deliver an Amended and Restated Addendum to the Intermunicipal Agreement with respect to sharing the cost of the AWT Project in substantially the form attached hereto or with such changes, omissions, insertions or revisions as said officers shall approve.

This Resolution shall take effect upon its passage.

PASSED AND ADOPTED this 14th day of July 2003

APPROVED Ronald D. Wood
President

ODMAMHODMA\manag32;372142;1

ATTEST: Roberta H. Johnson, cnc
Town Clerk

TOWN OF WEST WARWICK

RESOLUTION

OF

TOWN COUNCIL

ACTING AS A SEWER COMMISSION

NO. SC2003-44

SUBJECT: ADDENDUM TO THE INTERMUNICIPAL AGREEMENT WITH
COVENTRY

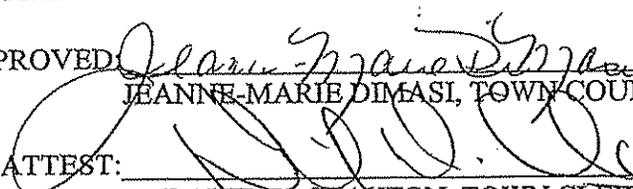
BE IT RESOLVED by the Town of West Warwick Town Council, Acting as a Sewer Commission, that the Town Council President and Town Manager are hereby authorized to execute the attached Addendum to the Intermunicipal Agreement for Wastewater Services between the Town of Coventry and the Town of West Warwick.

A TRUE COPY
ATTEST:

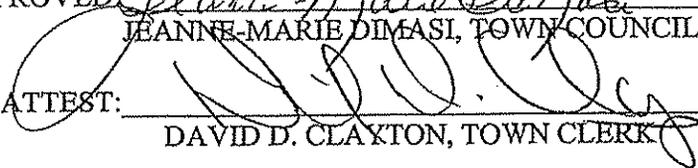

SEWER COMMISSION CLERK

PASSED AND APPROVED ON THIS 19th DAY OF AUGUST 2003.

APPROVED:


JEANNE-MARIE DIMASI, TOWN COUNCIL PRESIDENT

ATTEST:


DAVID D. CLAXTON, TOWN CLERK

AMENDED AND RESTATED ADDENDUM TO THE INTERMUNICIPAL
AGREEMENT FOR WASTEWATER SERVICES BETWEEN
THE TOWN OF COVENTRY AND THE TOWN OF WEST WARWICK

THIS AGREEMENT is made this 19th day of AUGUST, 2003, by and between the Town of Coventry ("Coventry") and the Town of West Warwick ("West Warwick"), both municipalities within the State of Rhode Island.

WHEREAS, on July 20, 1999, the parties hereto entered into an Intermunicipal Agreement for Wastewater Services ("Intermunicipal Agreement"), which document contains the understandings and agreements of the parties as they relate to the present and continued use by Coventry and its residents of the West Warwick Treatment Facility and the present and continued services to be provided by West Warwick for this use; and

WHEREAS, pursuant to and as part of the terms and conditions of the Intermunicipal Agreement, Coventry has agreed to pay its share of the costs and expenses associated with the enlargement and modernization of the wastewater treatment facility and regional collection system; and

WHEREAS, pursuant to the Intermunicipal Agreement, in order to assist the Town of West Warwick in providing for advanced wastewater treatment services for the Town of Coventry, Coventry has agreed to pay West Warwick for a share of the costs and expenses for the advanced wastewater treatment upgrade ("AWT project"), a Regional Project as defined in the Intermunicipal Agreement; and

WHEREAS, Coventry and West Warwick executed an Addendum to the Intermunicipal Agreement on February 3, 2003 to memorialize their agreement with respect to the sharing of costs of the AWT Project; and

WHEREAS, West Warwick has requested a loan from the Rhode Island Clean Water Finance Agency ("RICWFA") for the AWT project costs; and

WHEREAS, in connection with the loan from the RICWFA, the parties desire to amend and restate their agreement relating to the payment by Coventry for its share of the AWT project; and

WHEREAS, it is agreed by the parties that this Agreement for payment shall be made and become an Addendum to the July 20, 1999 Intermunicipal Agreement and shall amend and restate the Addendum dated February 3, 2003.

NOW THEREFORE, in consideration of the foregoing, it is hereby mutually agreed as follows:

1. The current estimated AWT project cost (construction and engineering) less available grant funds is \$21,721,264.
2. Coventry's share of the estimated AWT project expenses is \$4,654,867 which represents 21.43 % of the total cost.
3. At the conclusion of the construction phase of the AWT project, adjustments will be made to reflect all final costs.
4. In consideration of the improvements to the wastewater treatment facility and its benefits to the citizens of Coventry, Coventry agrees to pay and West Warwick agrees to accept payment for Coventry's share of the actual AWT project costs plus any financing costs assessed by RICWFA to West Warwick in the manner and amounts dictated by West Warwick's loan repayment schedule as set forth by RICWFA (*estimated debt service schedule attached*). The final debt service schedule will be provided from RICWFA at the conclusion of the construction project. It is hereby agreed that such payments are not intended to be a debt of Coventry.
5. Coventry agrees pay West Warwick its share of West Warwick's RICWFA loan payment via an electronic transfer of funds into the designated West Warwick bank account at least two (2) days prior to the loan payment date as set forth by RICWFA.
6. It is agreed that receipt of the total annual debt service payments for Coventry's share of the AWT project costs plus financing costs over the entire term of the loan shall close the Coventry account for payment of its share of the AWT project.
7. In the event Coventry fails to make the payments as set forth herein, then in such event, the parties acknowledge that West Warwick may take whatever remedial action is permitted by the Intermunicipal Agreement in order to enforce the collection of the monies due. Remedial action may include, but is not limited to, the denial of future sewer tie-ins by Coventry to the West Warwick Regional Wastewater Treatment Facility.
8. Section 12.2 of the July 20, 1999 Intermunicipal Agreement is amended to read as follows:
 - 12.2 This Agreement shall commence upon its execution. This document contains the understandings and agreements of the parties as they relate to the present and continued use by COVENTRY and its residents of the WEST WARWICK Treatment Facility and the present and continued services to be

provided by WEST WARWICK for this use. Accordingly, this Agreement shall remain in full force and effect for a period of forty (40) years from its effective date of July 20, 1999, unless and until it is amended by the mutual consent of all parties.

9. This Agreement is authorized and entered into pursuant to the laws of Rhode Island, including, but not limited to, Rhode Island General Laws § 46-12.2-10, Chapter 2005 of the Public Laws of 1920, as amended, and Chapter 330 of the Public Laws of 1997 in connection with financial assistance provided by the RICWFA. Coventry does hereby pledge and assign its wastewater system revenues pursuant to Rhode Island General Laws § 46-12.2-10(v) in order to secure its obligations in connection with financial assistance provided by the RICWFA.
10. This contract shall be recorded in the office of the Coventry Town Clerk, and West Warwick shall be entitled to the benefits of Section 21 of Chapter 2005 of the Public Laws of 1920, as amended.
11. Except as set forth herein, all other terms and conditions set forth in the July 20, 1999 Intermunicipal Agreement remain in full force and effect.
12. The parties agree that in signing this Agreement that they have the authority as vested in them by a vote of or as Council Members of their respective communities.

TOWN OF COVENTRY

By: *Francis C. Grohl*
TOWN MANAGER

By: *Ronald S. Wood*
TOWN COUNCIL PRESIDENT

By: *Roberto H. Johnson, CMC*
TOWN CLERK

TOWN OF WEST WARWICK

By: *[Signature]*
TOWN MANAGER

By: *Marie-Maria D'Amico*
TOWN COUNCIL PRESIDENT

By: *[Signature]*
TOWN CLERK

::ODMA\HODMA\manag32;370051;2

Rhode Island Clean Water Finance Agency
 Water Pollution Control Revolving Fund Revenue Bonds
 Series 2003A Bonds

Loan Debt Service
 Coventry - \$4,643,000 Federal Direct Loan
 (Loan Through West Warwick)

Date	Principal	Loan Rate	Interest	Fees @ 0.500%	Total Fees & Interest	Net Fees & Interest	Total Debt Service	Annual Debt Service	0% Program Requirement
06/05/03									
9/1/2003			1,623.98	712.27	2,336.25	2,336.25	2,336.25	2,336.25	1,623.98
3/1/2004			11,685.59	5,125.25	16,810.84	16,810.84	16,810.84		11,685.59
9/1/2004			21,522.87	9,439.84	30,962.71	30,962.71	30,962.71	47,773.55	21,522.87
3/1/2005			26,317.88	11,542.91	37,860.79	37,860.79	37,860.79		26,317.88
9/1/2005	244,000.00	0.490%	26,465.15	11,607.50	38,072.65	38,072.65	282,072.65	319,933.44	26,465.15
3/1/2006			25,867.35	10,997.50	36,864.85	36,864.85	36,864.85		25,867.35
9/1/2006	244,000.00	0.590%	25,867.35	10,997.50	36,864.85	36,864.85	280,864.85	317,729.70	25,867.35
3/1/2007			25,147.55	10,387.50	35,535.05	35,535.05	35,535.05		25,147.55
9/1/2007	244,000.00	0.710%	25,147.55	10,387.50	35,535.05	35,535.05	279,535.05	315,070.10	25,147.55
3/1/2008			24,281.35	9,777.50	34,058.85	34,058.85	34,058.85		24,281.35
9/1/2008	244,000.00	0.810%	24,281.35	9,777.50	34,058.85	34,058.85	278,058.85	312,117.70	24,281.35
3/1/2009			23,293.15	9,167.50	32,460.65	32,460.65	32,460.65		23,293.15
9/1/2009	244,000.00	0.920%	23,293.15	9,167.50	32,460.65	32,460.65	276,460.65	308,921.30	23,293.15
3/1/2010			22,170.75	8,557.50	30,728.25	30,728.25	30,728.25		22,170.75
9/1/2010	244,000.00	1.020%	22,170.75	8,557.50	30,728.25	30,728.25	274,728.25	305,456.50	22,170.75
3/1/2011			20,926.35	7,947.50	28,873.85	28,873.85	28,873.85		20,926.35
9/1/2011	244,000.00	1.100%	20,926.35	7,947.50	28,873.85	28,873.85	272,873.85	301,747.70	20,926.35
3/1/2012			19,584.35	7,337.50	26,921.85	26,921.85	26,921.85		19,584.35
9/1/2012	244,000.00	1.140%	19,584.35	7,337.50	26,921.85	26,921.85	270,921.85	297,843.70	19,584.35
3/1/2013			18,193.55	6,727.50	24,921.05	24,921.05	24,921.05		18,193.55
9/1/2013	244,000.00	1.180%	18,193.55	6,727.50	24,921.05	24,921.05	268,921.05	293,842.10	18,193.55
3/1/2014			16,753.95	6,117.50	22,871.45	22,871.45	22,871.45		16,753.95
9/1/2014	244,000.00	1.220%	16,753.95	6,117.50	22,871.45	22,871.45	266,871.45	289,742.90	16,753.95
3/1/2015			15,265.55	5,507.50	20,773.05	20,773.05	20,773.05		15,265.55
9/1/2015	244,000.00	1.260%	15,265.55	5,507.50	20,773.05	20,773.05	264,773.05	285,546.10	15,265.55
3/1/2016			13,728.35	4,897.50	18,625.85	18,625.85	18,625.85		13,728.35
9/1/2016	244,000.00	1.290%	13,728.35	4,897.50	18,625.85	18,625.85	262,625.85	281,251.70	13,728.35
3/1/2017			12,154.55	4,287.50	16,442.05	16,442.05	16,442.05		12,154.55
9/1/2017	244,000.00	1.330%	12,154.55	4,287.50	16,442.05	16,442.05	260,442.05	276,884.10	12,154.55
3/1/2018			10,531.95	3,677.50	14,209.45	14,209.45	14,209.45		10,531.95
9/1/2018	244,000.00	1.360%	10,531.95	3,677.50	14,209.45	14,209.45	258,209.45	272,418.90	10,531.95
3/1/2019			8,872.75	3,067.50	11,940.25	11,940.25	11,940.25		8,872.75
9/1/2019	244,000.00	1.390%	8,872.75	3,067.50	11,940.25	11,940.25	255,940.25	267,880.50	8,872.75
3/1/2020			7,176.95	2,457.50	9,634.45	9,634.45	9,634.45		7,176.95
9/1/2020	244,000.00	1.430%	7,176.95	2,457.50	9,634.45	9,634.45	253,634.45	263,268.90	7,176.95
3/1/2021			5,432.35	1,847.50	7,279.85	7,279.85	7,279.85		5,432.35
9/1/2021	244,000.00	1.450%	5,432.35	1,847.50	7,279.85	7,279.85	251,279.85	258,559.70	5,432.35
3/1/2022			3,663.35	1,237.50	4,900.85	4,900.85	4,900.85		3,663.35
9/1/2022	244,000.00	1.470%	3,663.35	1,237.50	4,900.85	4,900.85	248,900.85	253,801.70	3,663.35
3/1/2023			1,869.95	627.50	2,497.45	2,497.45	2,497.45		1,869.95
9/1/2023	251,000.00	1.490%	1,869.95	627.50	2,497.45	2,497.45	253,497.45	255,994.90	1,869.95
3/1/2024			-	-	-	-	-		-
9/1/2024			-	-	-	-	-		-
3/1/2025			-	-	-	-	-		-
9/1/2025			-	-	-	-	-		-
3/1/2026			-	-	-	-	-		-
9/1/2026			-	-	-	-	-		-
	<u>4,643,000.00</u>		<u>637,443.67</u>	<u>247,677.77</u>	<u>885,121.44</u>	<u>885,121.44</u>	<u>5,528,121.44</u>	<u>5,528,121.44</u>	<u>637,443.67</u>

RHODE ISLAND CLEAN WATER FINANCE AGENCY

LOAN POLICIES AND PROCEDURES

COMMUNITY SEPTIC SYSTEM LOAN PROGRAM

REVISED - MARCH, 2005

AUTHORITY: Policies and Procedures adopted in accordance to Title VI of the Federal Clean Water Act and Chapter 46-12.2 of the General Laws of Rhode Island.

RHODE ISLAND CLEAN WATER FINANCE AGENCY

LOAN POLICIES AND PROCEDURES

for the

COMMUNITY SEPTIC SYSTEM LOAN PROGRAM

- I. **PURPOSE:** These Loan Policies and Procedures of the Rhode Island Clean Water Finance Agency (Agency) have been established to govern the lending activities between the Agency and local governmental units in the state of Rhode Island in connection with a Community Septic System Loan Program (CSSLP) under and pursuant to Title VI of the Federal Clean Water Act and Chapter 46-12.2 of the General Laws of Rhode Island as amended.
- II. **DEFINITIONS:** Except as otherwise defined herein, the words and phrases used within these Loan Policies and Procedures have the same meaning as the words and phrases have in Chapter 46-12.2 of the General Laws of Rhode Island as amended.
- III. **FINANCIAL ASSISTANCE:** The objective of these Loan Policies and Procedures is to provide financial assistance to local governmental units to initiate a program of septic system repair in their community. The CSSLP is a source of funds to provide subsequent loans to homeowners for the repair or replacement of failed or failing septic systems or substandard systems within areas identified in the local government unit's On-site Wastewater Management Plan.

The RICWFA and the local governmental unit will establish a relationship to be evidenced by a loan agreement to provide financing for repair or replacement of failed, failing or substandard systems in that community. Rhode Island Housing and Mortgage Financing Corporation (RI Housing) will be the loan servicer on the subsequent homeowner loans. RI Housing will: accept applications from homeowners; coordinate payments to septic system installers/homeowners; collect repayments from homeowners; credit the homeowner repayments to the principal payment responsibility of the local governmental unit; and make monthly reports to both the Agency and the local governmental unit.

- IV. **LOAN APPLICATION:** Request for financing under the Community Septic System Loan Program should be submitted in writing by the chief executive officer of the local governmental unit to the Executive Director of the Agency. No particular form of application shall be required but the written request should generally include:
 - 1) A projection of the estimated need for repair or replacement of failed or failing system as contemplated by the Community's program and identified

in the On-site Wastewater Management Plan prepared by the local governmental unit.

- 2) Indication of approval of the Local Governmental Unit program for on-site septic system repair or replacement as outlined in its On-site Wastewater Management Plan by the Department of Environmental Management (DEM).
- 3) A description of the dedicated source of loan security in the event of homeowner loan default or non-payment, i.e., pledge of general revenues from property taxes of cities and towns, property liens, or other source available to the local governmental unit and deemed appropriate by the RICWFA.
- 4) A description of the overall operation of the local governmental unit with an emphasis on (a) legal structure; (b) management; (c) sources of revenues; (d) operating expenses; (e) operating surpluses or deficits; (f) actual results versus budget; and (g) sources of financial liquidity. The most recent annual report or audited financials may be submitted in satisfaction of all or any part of this item.
- 5) Legal authority or authorities to borrow for the Community Septic System Loan Program.
- 6) Such other information as will support a finding by the Agency that committing to the loan will not have an adverse impact on the finances of the Agency or its other borrowers.

V. LOAN APPROVAL PROCESS: Subject to availability of Agency funds and to prioritization by DEM of programs as outlined in the communities' On-site Wastewater Management Plans, loans will be approved by the Board of Directors of the Agency for any eligible local governmental unit. The local governmental unit will provide a general obligation pledge, note in fully marketable form, or other assurance deemed appropriate by the Agency to ensure repayment of the CSSLP loan. A credit review of the local governmental unit and report by the Executive Director will be taken into consideration:

- 1) sources of revenue and financial liquidity;
- 2) historical and projected financial operating results;
- 3) present and future debt service requirements;
- 4) impact of dedicated user fees and/or general revenues;
- 5) socioeconomic conditions and trends; and
- 6) effects of legal structure and any regulatory control.

VI. TERMS AND CONDITIONS: The homeowner repayment stream will be credited towards the community's responsibility for repayment of the principal portion of the CSSLP loan.

- 1) Rate - The subsequent loans to homeowners will carry a rate equivalent to 2% which will include all homeowner fees to be distributed as follows:

RI Housing	1.0%	Homeowner Loan Origination Fee
	0.5%	Homeowner Loan Service Fee
RICWFA	.5%	Community Loan Service Fee
	<u>2.0%</u>	Total CSSLP Rate

(CSSLP loan rates are subject to periodic changes as per Section X of this document.)

- 2) Community Fees - The local governmental unit will be responsible for its own out of pocket closing costs, i.e. borrower's counsel fees and financial advisor fees.
- 3) Amortization - The loan repayments from the homeowners will provide the principal and interest repayments to the Agency. As the primary borrower, the local government unit is responsible for any shortfall or default in the repayments from the homeowners. Amortization on the local governmental unit's loan will begin on the first day of the quarter after the loan closing and on a quarterly basis thereafter. RI Housing will collect payments from the homeowners and make principal and interest payments to the Agency on behalf of the local governmental unit.
- 4) Prepayments - The loan may be prepaid by the borrower at any time but may be subject to a prepayment penalty based on the cost of reinvesting the prepayment or any other negative financial impact to the Agency.
- 5) Security - Loans will have a pledge of (a) general revenues; and/or (b) may be secured by any revenues or other assets which the Agency deems appropriate to protect the interest of the other participants in the loan programs of the Agency, other creditors of the Agency, bondholders, or the finances of the Agency. The obligations of the Borrower may be subject to and dependent upon appropriations being made by the Borrower for such purposes.
- 6) Loan Advances - The local governmental unit will indicate in written form an estimate of its yearly requirement for septic system or substandard system repairs. As loans to homeowners are originated, the Agency will advance the necessary amount for disbursement for approved project costs. RI Housing will act as paying agent on behalf of the local

governmental unit for payments to contractors/homeowners for approved project costs.

- 7) Community Specific Criteria for Homeowner Loans - The community may apply specific homeowner loan criteria such as; number of estimates needed from licensed septic system installers; maximum number of housing units per structure allowed access to CSSLP; owner/non-owner occupied borrowers; whether inhabitants of areas planned for sewer extension are eligible; and other such specific requirements. The community may not raise or lower the current homeowner CSSLP rate of 2% but may combine the CSSLP with other sources of money so as to provide a greater dollar amount available for loans or to provide a greater economic incentive for homeowners to repair or replace the failed septic systems. Any additional criteria applied by the local governmental unit cannot negate or otherwise overrule any federal and state laws and regulations which apply to the CSSLP.
- 8) Ineligible Project Costs - The funding of group or cluster septic system projects is not allowed under the CSSLP. Septic system projects on commercially owned property are not allowed under the CSSLP. Homeowner loans will be used for septic system repair or replacement only. CSSLP loans cannot be used for bathroom or kitchen improvements, additions or remodeling.

VII. REPORTING REQUIREMENTS: Community borrowers will be required to provide information to the Agency during the life of the loan. Required information includes:

- 1) A record of the number and type of repaired or replaced septic systems funded by this program.
- 2) A copy of its Annual Audited Financial Statements in accordance with Generally Accepted Government Accounting Standards annually within 180 days of end of fiscal year.
- 3) Copies of reports submitted to RIDEM, the Environmental Protection Agency (EPA) and any other regulatory agency relating to the septic systems financed by the loan.
- 4) Other information or reports that the Agency deems appropriate.

VIII. LOAN DOCUMENTS: The terms and conditions of each loan will be evidenced by a agreement outlining the specific terms and conditions of the loan and such agreement will be accompanied by an opinion of counsel, as required by the Agency enabling act.

- IX. COMPLIANCE WITH STATE AND FEDERAL LAW:** Recipients (the community) of loans must comply with all applicable state and federal laws and regulations.
- X. MODIFICATIONS:** Where deemed appropriate by the Agency, waiver or variation of any provisions herein may be made or additional requirements may be added.

Anthony B. Simeone, Executive Director

Public Notice Date: March 21, 2005
Public Hearing Date: April 11, 2005
Filed With Secretary of State: April 13, 2005
Effective Date: May 3, 2005



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

December 3, 2009

Kent M. Nichols, P.E., Vice President
Weston & Sampson, Inc.
Five Centennial Drive
Peabody, MA 01960-7985

RE: Wastewater Facilities Plan Update Comments (DEM file #09-G)
Coventry, Rhode Island

Dear Mr. Nichols:

The Rhode Island Department of Environmental Management, Office of Water Resources (OWR) has reviewed the above referenced document as prepared by Weston & Sampson, Inc. and has the following comments that must be addressed prior to OWR approving the Town of Coventry's Wastewater Facilities Plan Update (FPU):

1. In the Final FPU submittal, please include all Public Meeting/Public Hearing handouts, transcripts, public notices, etc. in the Appendices. Also, please include all Intergovernmental Review correspondence in the Appendices.
2. On page 3-23, in the last paragraph, please consider referencing the study areas by the new letter designation rather than the numerical designation to maintain consistency throughout the FPU.
3. On page 3-27, please revise the third paragraph under Section 3.6.1 regarding the average and peak flows at the West Warwick WWTF. The average daily flow is currently 10.5 MGD, not 7.89 MGD and the peak flow is 25.34 MGD, not 18.15 MGD. Also in the fourth paragraph, it states that West Warwick currently accepts septage. It is OWR's understanding that West Warwick does not accept any septage, although they have the equipment in place to do so.
4. On page 4-7 Table 4-3, shouldn't Study Area P also be highlighted in green due to reallocation of flows (Rhodes and Clariant)? Please revise if necessary. Also, Figure 4-2 shows Rhodes and Clariant in Study Area O, not P. The text says Rhodes and Clariant flows are part of Study Area P. Is it that Rhodes and Clariant are, in fact, located in Study Area O, but the wastewater will discharge to Study Area P? Please explain and revise the FPU if necessary.
5. On page 5-19, in the second paragraph, the discussion on septage again mentions West Warwick as a septage receiving WWTF. Please revise the text accordingly.
6. On page 7-4, please consider revising the text in Section 7.1.4 which states, "*This is reasonable since all taxpayers may benefit directly from the use of West Warwick WWTF for wastewater treatment and/or septage disposal.*" Since West Warwick doesn't accept any septage, there appears to be no benefit to the Coventry homeowners that will remain on septic systems to contribute to the local cost allocation of improvements to West



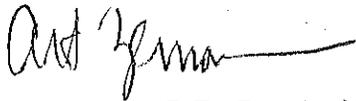
Kent Nichols, P.E.
December 3, 2009
Page 2 of 2

Warwick's wastewater treatment and collection system. This statement is mentioned again on page 7-8 in the second paragraph of Section 7.1.7. Please revise these sections accordingly.

Please provide a narrative response to the above comments and submit a copy of all revised or additional pages. Upon satisfactorily addressing all comments and completing the Intergovernmental Review and Public Hearing processes, OWR will approve the FPU.

If you have any questions, please call me at 401-222-4700, x7251 or email me at art.zeman@dem.ri.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Art Zeman", with a long horizontal flourish extending to the right.

Art Zeman, P.E., Principal Engineer
Wastewater Treatment Facilities Program

AGZ/agz

Pc: Thomas Hoover, Coventry Town Manager

Division of Planning - Statewide Planning Program

One Capitol Hill
Providence, Rhode Island 02908
(401) 222-6480

MEMORANDUM

To: Kent M. Nichols, Jr., Vice-President, Weston & Sampson
Art Zeman, RI DEM Office of Water Resources

Subject: Request for Intergovernmental Review - State Guide Plan Consistency

Date: 09.22.09

From:  Nancy Hess, Supervising Land Use Planner

Project: Wastewater Treatment Facilities Plan Update August 2009

Applicant: Town of Coventry

I reviewed the facilities plan update dated August 2009 for consistency with the Rhode Island State Guide Plan (SGP). The Plan is dependent upon the executed agreement between the Town of Coventry and the Town of West Warwick reserving 2.25 million gallons per day of wastewater capacity in the West Warwick regional waste water treatment facility (WWTF). Based upon this agreement, the Plan examines the current and expected future conditions in Coventry, regarding the treatment and disposal of wastewater.

The major actions of the Plan are focused on the onsite wastewater treatment systems (OWTS) problems in eastern Coventry. The Plan says that the current system of wastewater disposal through OWTS in this area is not an acceptable long term solution. The continued operation of OWTS will increase pollutant loads to ground and surface water resources, limit property values, negatively impact quality of life for residents and introduce potential public health concerns. The plan includes the following components:

- A wastewater collection and transmission system to serve portions of eastern Coventry with the treatment of wastewater and septage at the West Warwick WWTF.
- The continued use of OWTS in areas where this option is feasible.

I reviewed the appropriate elements of the SGP related to protecting water resources, and reducing non-point source pollution in assessing the Update. The Updated Facilities Plan, when implemented, proposes to provide infrastructure support as needed for remediation of existing water quality concerns which is consistent with the goals of these Elements. The recommended actions are divided into three main phases, each of which will require further SGP review upon implementation.

For areas not proposed to be covered by the Facilities plan, the Town should implement a municipal wastewater management program for management of OWTS for consistency with the Rhode Island Nonpoint Source Pollution Management Plan (SGP 731).

Thank you for the opportunity to comment on the Update. I appreciated the submission of the Update in digital format. Should you have any questions about this review, please feel free to contact me at the number above.

planning, permitting,
design, construction,
operation, maintenance,
design/build, & equipment

Weston&Sampson.

**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

Mr. Christopher J. Raithel
RI-DEM
Division of Fish and Wildlife
Great Swamp Field Headquarters
277 Great Neck Road
West Kingston, RI 02892

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

Dear Mr. Christopher J. Raithel

On behalf of the Town of Coventry, Rhode Island, Weston & Sampson, Inc. is informing you of the impending submittal of an Update to the Town's Wastewater Facilities Plan (FP). This letter is to notify your department of the submittal provide a brief background of the changes incorporated into the FP Update and allow you to request a copy of the FP Update document for review, if your department has any questions/comments.

The original FP that this document is updating was approved to RI-DEM May 1995, with a Re-affirmation approved in 2003. The FP Update specifically addresses reallocation of planning area projected wastewater flows to accommodate recent and planned developments that will have greater projected wastewater flows than what were projected under the original 1995 FP. The Town is limited by an inter-municipal agreement (IMA) with West Warwick on the amount of wastewater capacity they own at the West Warwick Wastewater Treatment Facility. This limit requires the removal of areas from the recommended sewer plan to accommodate the additional flows from new and proposed users mentioned above.

Research was conducted to update pertinent information and to determine the need for off-site wastewater management in the planning areas, as selected in the 1995 FP. This FP Update removes three full planning areas and five partial planning areas from the recommended sewer plan. These changes were made based on considering the need for sewers, as well as any environmental and economic impacts incurred by sewerage/not sewerage a planning area. Areas removed will continue the use of their existing on-site wastewater treatment systems (OWTSs), while continuing to be monitored in future planning processes. Removing only portions of a Planning Area allows the more densely populated areas (or areas with slightly more sewer need) to remain sewerage, while other areas within the same Planning Area with less need can continue to use OWTSs.

It should be noted that the full or partial removal of an area from the planned sewer areas does not mean the area will never be sewerage. Circumstances may arise that could cause a Planning Area to be reinstated to the recommended plan for sewerage, such as a sudden increase in need or

increased wastewater capacity obtained by the Town to dispose of wastewater. These circumstances will continue to be monitored in future planning exercises and changes made based upon the findings. Figure 6-1 shows the planning areas selected as part of the 1995 FP, as well as planning areas not recommended for sewerage in the 1995 FP, 2003 Reaffirmation and this FP Update.

Please note that the 21 day review period commences upon the receipt of this letter. We are assuming that if no questions and/or comments have been identified in this 21 day review period, then there are no concerns with the work under the FP Update within your department.

Planned draft submittal of the FP Update is being made on August 31st, and final submittal will occur within the next month. If you or your department has any concerns, please request a copy of the FP Update that will be submitted to Mr. Art Zeman, at the RIDEM Office of Water Resources for review.

Please contact either myself (800-726-7766 x2408) or Tim DeGuglielmo (x2421) with any questions concerning the intergovernmental review of the Coventry Wastewater Facilities Plan Update.

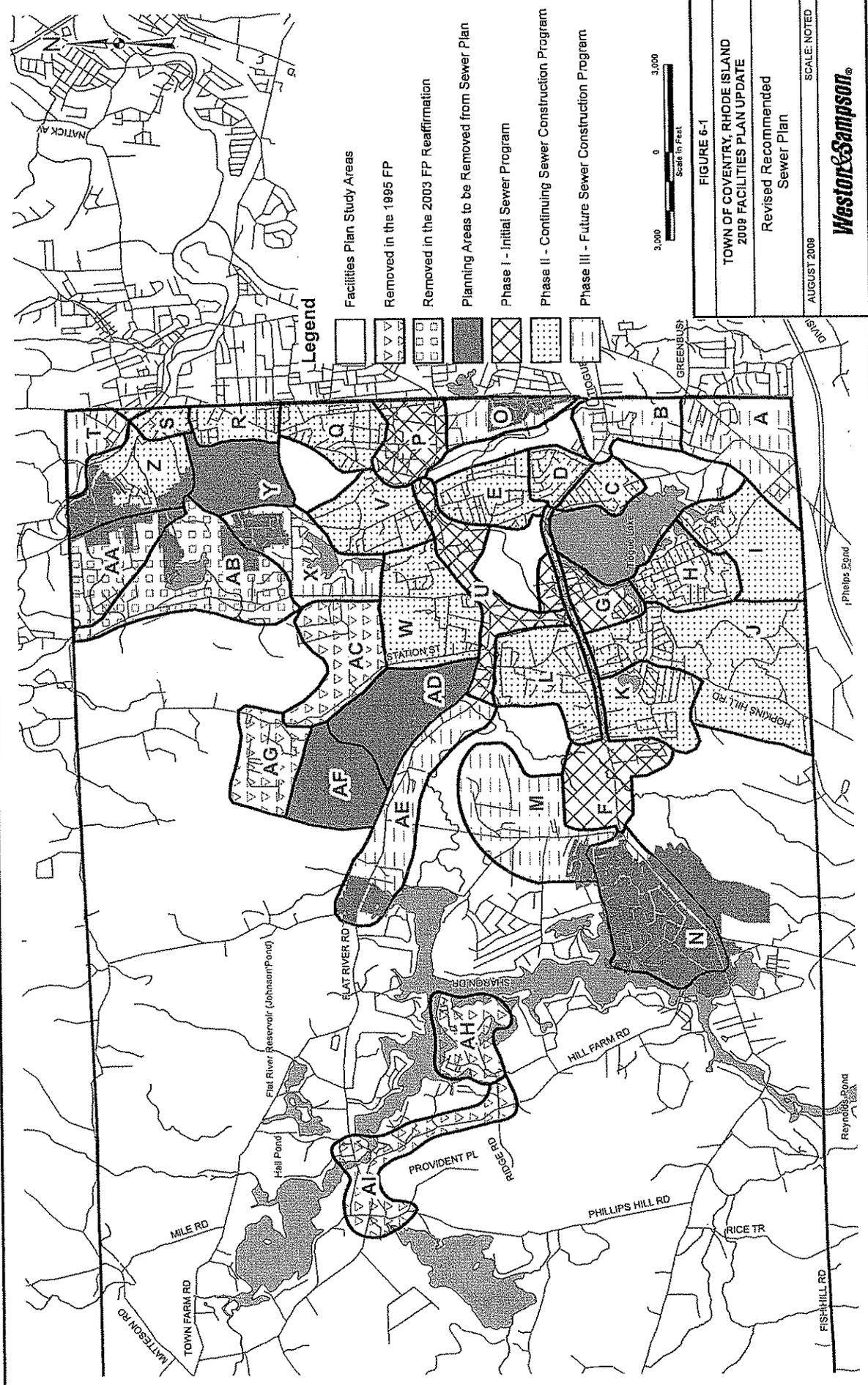
Very truly yours,
WESTON & SAMPSON ENGINEERS, INC.



Kent M. Nichols, Jr., P.E.
Vice President

Enclosures

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Legend

- Facilities Plan Study Areas
- Removed in the 1995 FP
- Removed in the 2003 FP Reaffirmation
- Planning Areas to be Removed from Sewer Plan
- Phase I - Initial Sewer Program
- Phase II - Continuing Sewer Construction Program
- Phase III - Future Sewer Construction Program



FIGURE 6-1

TOWN OF COVENTRY, RHODE ISLAND
2008 FACILITIES PLAN UPDATE

Revised Recommended
Sewer Plan

AUGUST 2008

SCALE: NOTED

Weston&Sampson

**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

Ms. Nancy Hess
Principal Environmental Planner
Rhode Island Statewide Planning Program
One Captol Hill
Providence, RI 02903-1029

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

Dear Ms. Nancy Hess

On behalf of the Town of Coventry, Rhode Island, Weston & Sampson, Inc. is informing you of the impending submittal of an Update to the Town's Wastewater Facilities Plan (FP). This letter is to notify your department of the submittal provide a brief background of the changes incorporated into the FP Update and allow you to request a copy of the FP Update document for review, if your department has any questions/comments.

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Ms. Nancy Hess
September 1, 2009
Page 2

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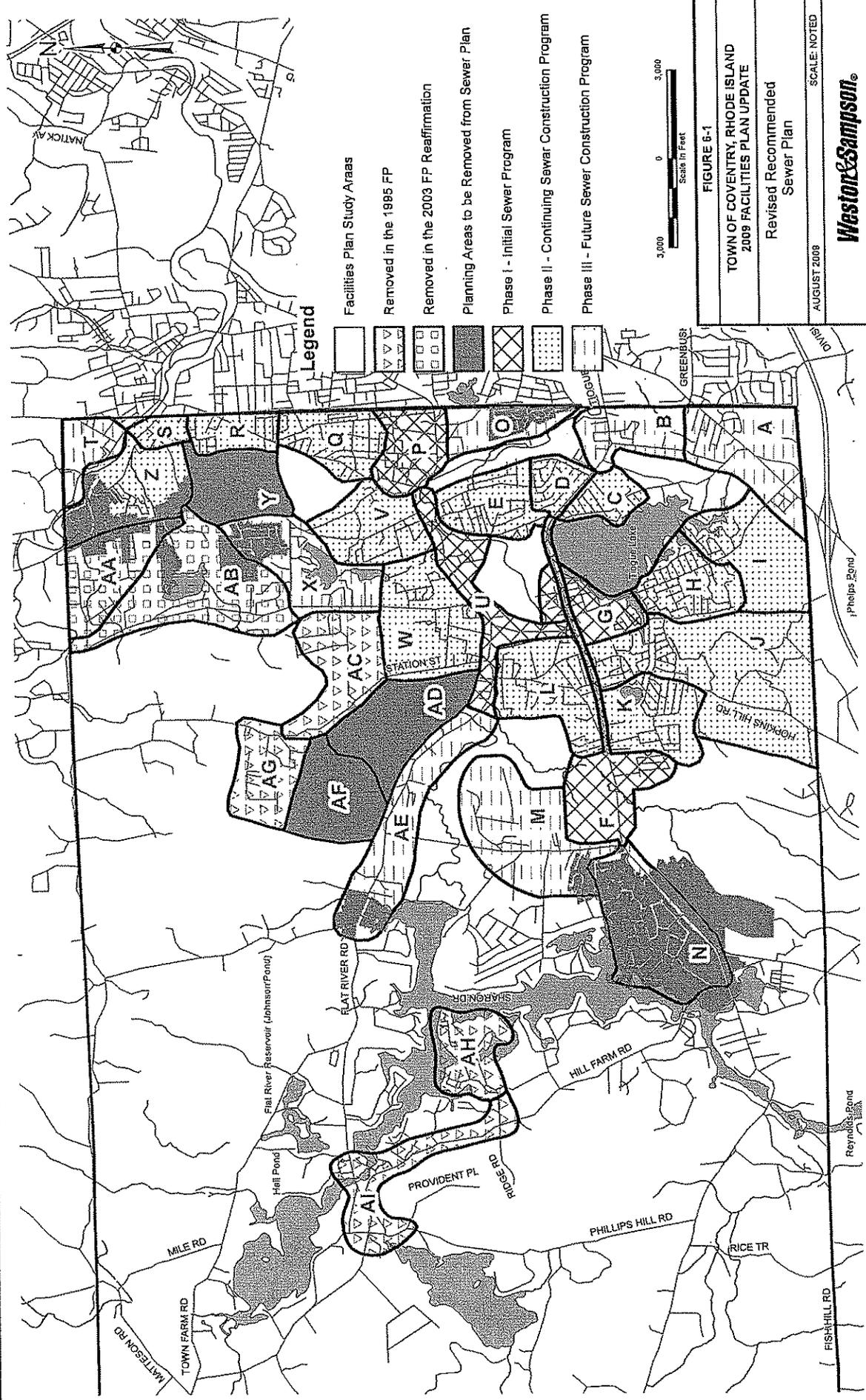
Very truly yours,
WESTON & SAMPSON ENGINEERS, INC.



Kent M. Nichols, Jr., P.E.
Vice President

Enclosures

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planning, permitting,
design, construction,
operation, maintenance,
design/build, & equipment

Weston&Sampson.

**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

Mr. J. Michael Bennett, P.E.
Deputy Chief Engineer
Rhode Island Department of Transportation
Two Capitol Hill, Rm. 226
Providence, RI 02903-1029

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

Dear Mr. J. Michael Bennett, P.E.

On behalf of the Town of Coventry, Rhode Island, Weston & Sampson, Inc. is informing you of the impending submittal of an Update to the Town's Wastewater Facilities Plan (FP). This letter is to notify your department of the submittal provide a brief background of the changes incorporated into the FP Update and allow you to request a copy of the FP Update document for review, if your department has any questions/comments.

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Mr. J. Michael Bennett, P.E.
September 1, 2009
Page 2

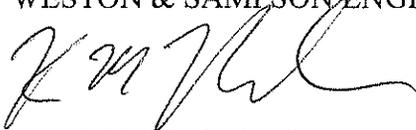
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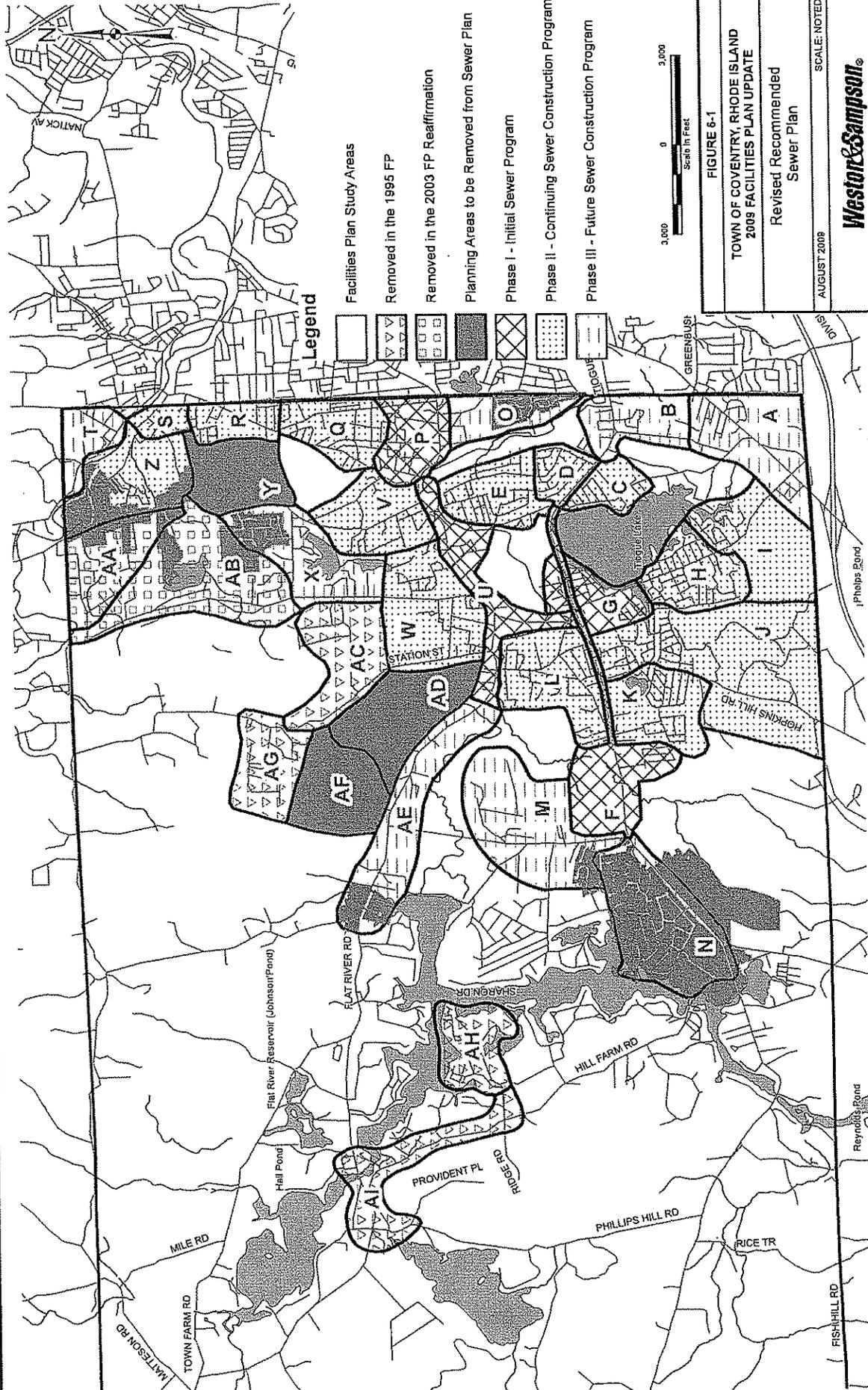
Very truly yours,
WESTON & SAMPSON ENGINEERS, INC.



Kent M. Nichols, Jr., P.E.
Vice President

Enclosures

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planning, permitting,
design, construction,
operation, maintenance,
design/build, & equipment

Weston&Sampson.

**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

Mr. Edward F. Sanderson, Executive Director
Deputy State Historic Preservation Officer
Historical Preservation & Heritage Commission
Old State House
150 Benefit Street
Providence, RI 02903-1029

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

Dear Mr. Edward F. Sanderson, Executive Director

On behalf of the Town of Coventry, Rhode Island, Weston & Sampson, Inc. is informing you of the impending submittal of an Update to the Town's Wastewater Facilities Plan (FP). This letter is to notify your department of the submittal provide a brief background of the changes incorporated into the FP Update and allow you to request a copy of the FP Update document for review, if your department has any questions/comments.

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Research was conducted to update pertinent information and to determine the need for off-site wastewater management in the planning areas, as selected in the 1995 FP. This FP Update removes three full planning areas and five partial planning areas from the recommended sewer plan. These changes were made based on considering the need for sewers, as well as any environmental and economic impacts incurred by sewerage/not sewerage a planning area. Areas removed will continue the use of their existing on-site wastewater treatment systems (OWTSs), while continuing to be monitored in future planning processes. Removing only portions of a Planning Area allows the more densely populated areas (or areas with slightly more sewer need) to remain sewerage, while other areas within the same Planning Area with less need can continue to use OWTSs.

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Mr. Edward F. Sanderson, Executive Director
September 1, 2009
Page 2

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Please contact either myself (800-726-7766 x2408) or Tim DeGuglielmo (x2421) with any questions concerning the intergovernmental review of the Coventry Wastewater Facilities Plan Update.

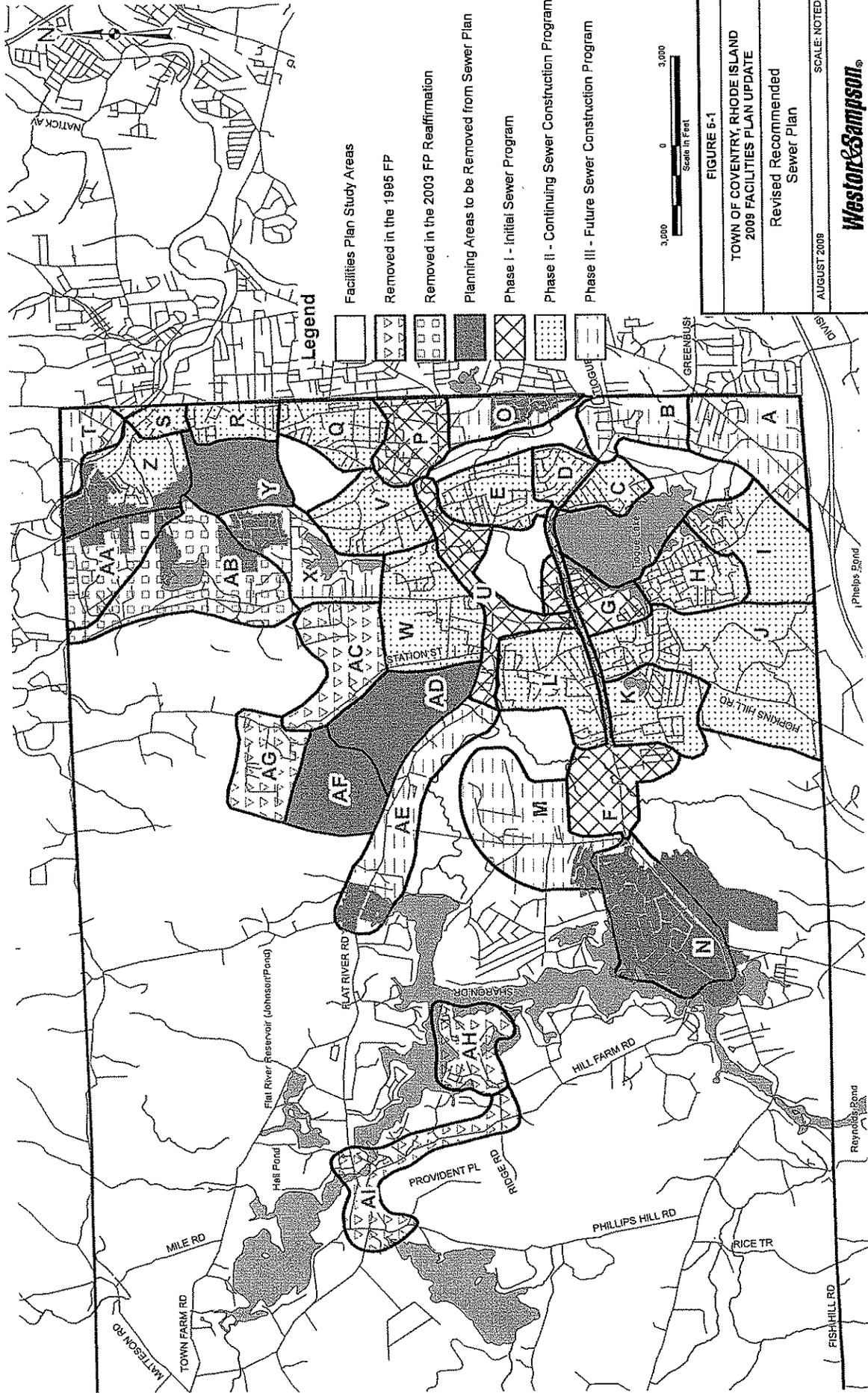
Very truly yours,
WESTON & SAMPSON ENGINEERS, INC.



Kent M. Nichols, Jr., P.E.
Vice President

Enclosures

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Legend

- Facilities Plan Study Areas
- Removed in the 1985 FP
- Removed in the 2003 FP Reaffirmation
- Planning Areas to be Removed from Sewer Plan
- Phase I - Initial Sewer Program
- Phase II - Continuing Sewer Construction Program
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FIGURE 5-1

**TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN UPDATE**

Revised Recommended
Sewer Plan

AUGUST 2008

SCALE: NOTED



planning, permitting,
design, construction,
operation, maintenance,
design/build, & equipment

Weston&Sampson.

**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

Mr. John Brown
Tribal Council Member
Narragansett Indian Tribe
PO Box 268
Charlestown, RI 02813

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

Dear Mr. John Brown

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Mr. John Brown
September 1, 2009
Page 2

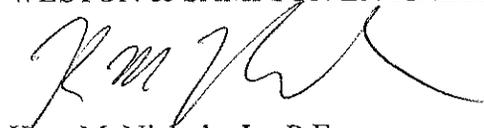
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Very truly yours,
WESTON & SAMPSON ENGINEERS, INC.



Kent M. Nichols, Jr., P.E.
Vice President

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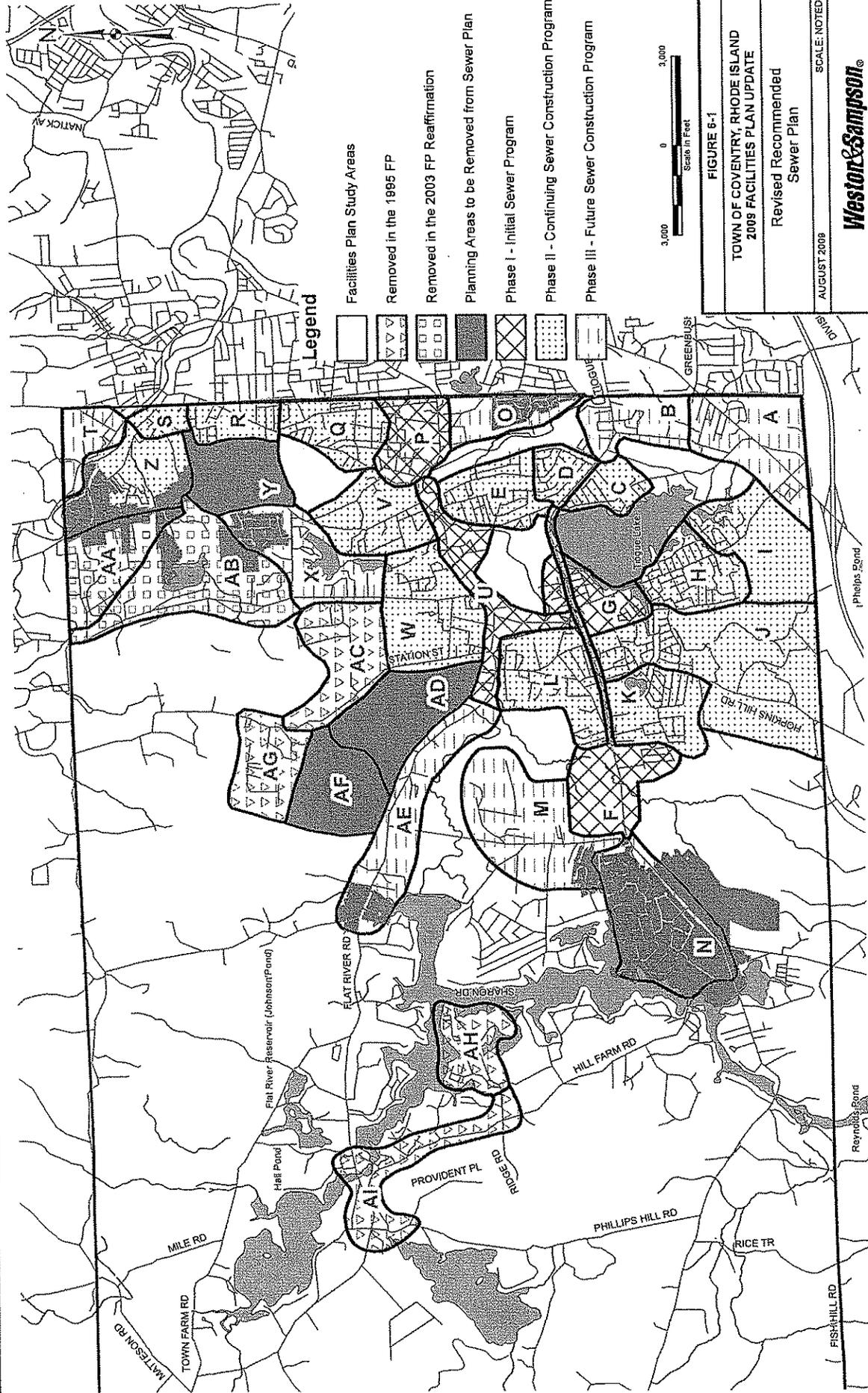


FIGURE 6-1

TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN UPDATE

Revised Recommended
Sewer Plan

AUGUST 2006

SCALE: NOTED



planning, permitting,
design, construction,
operation, maintenance,
design/build, & equipment

Weston&Sampson®

**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

NOAA/NMFS
Habitat Conservation Division
212 Rogers Avenue
Milford, CT 06460

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

To Whom It May Concern:

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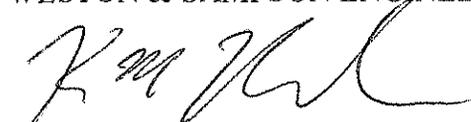
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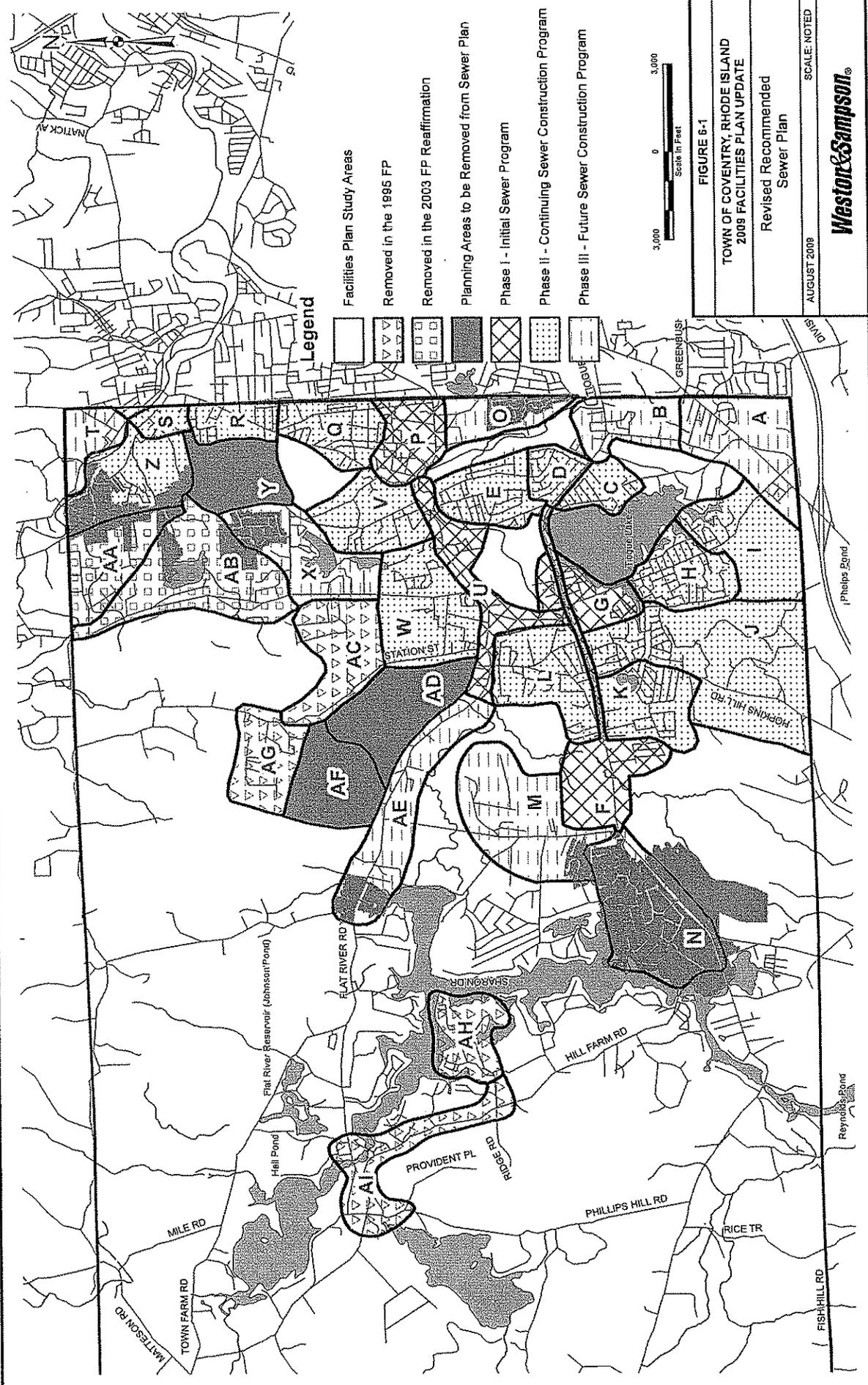
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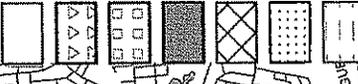


FIGURE 6-1

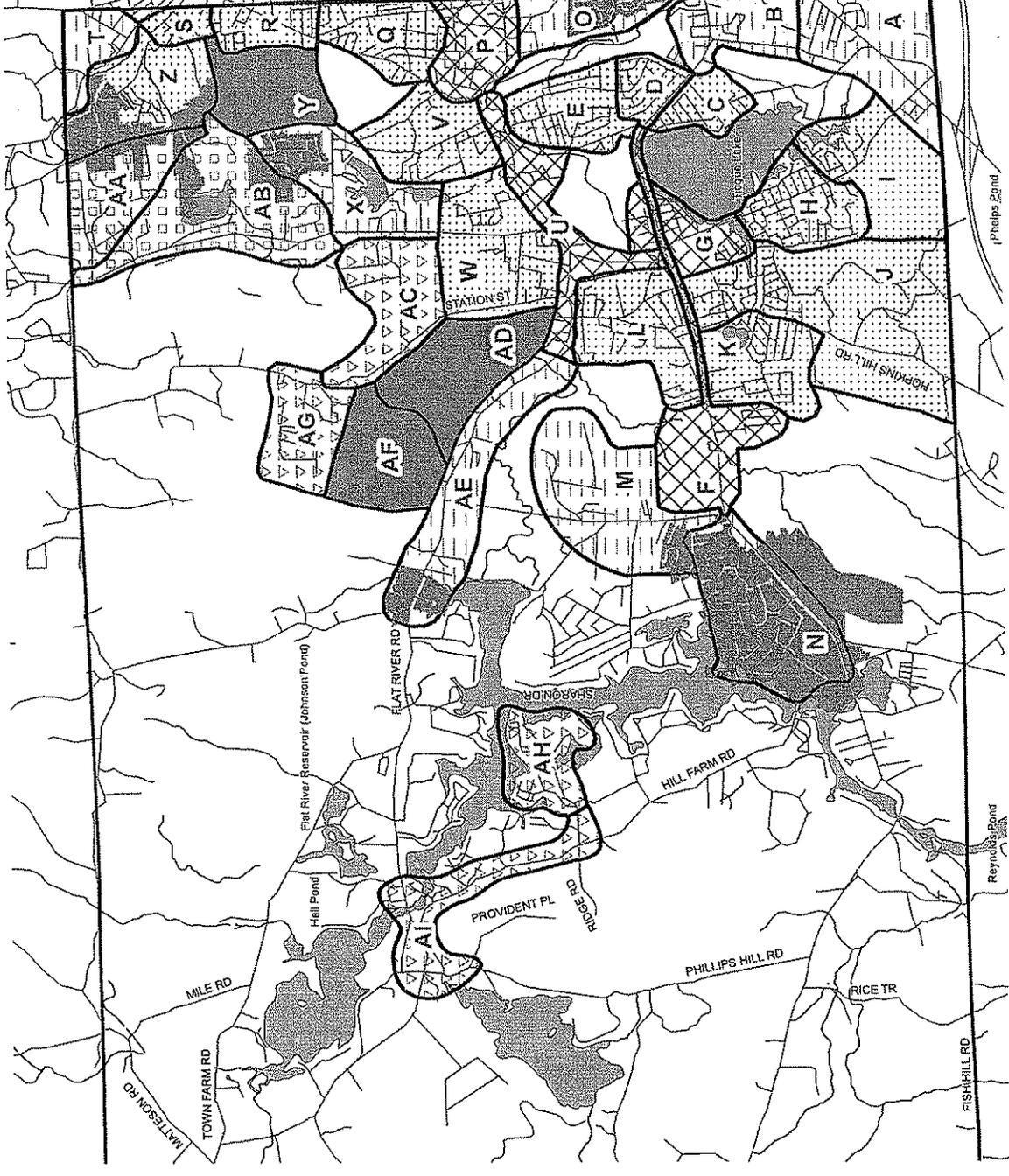
TOWN OF COVENTRY, RHODE ISLAND
2009 FACILITIES PLAN UPDATE

Revised Recommended
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AUGUST 2009

SCALE: NOTED

Weston&Sampson



**Town of Coventry, Rhode Island
W&S Project No. 2090239.A**

September 1, 2009

Mr. Grover J. Fugate, Executive Director
Coastal Resources Management Council
Oliver H. Stedman Government Center
4808 Tower Hill Road - Suite 3
Wakefield, RI 02879-1900

Re: Intergovernmental Review Request
Facilities Plan Update – Coventry, RI

Dear Mr. Grover J. Fugate, Executive Director

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Appendix N

Public Meeting Summary

The public meetings associated with this project included both informational meetings and public hearings.

The first informational public meeting was held on June 15, 2009 during the Coventry Sewer Subcommittee (SSC) Meeting at the Town Hall. This was the initial presentation to the SSC regarding the Facilities Plan Update Project. Complete meeting minutes are included in this Appendix.

The second informational public meeting was held on July 8, 2009 during the SSC Meeting at the Town Hall. This informational meeting was also a workshop with the SSC regarding the required changes/revisions that needed to be included in the Facilities Plan Update document. Complete meeting minutes and a copy of the PowerPoint Presentation are included in this Appendix.

The first public hearing was held on August 3, 2009 during the SSC Meeting at the Town Hall. Notice of this meeting was advertised in the Kent County Daily Times on August 1, 2009. Complete meeting minutes and a copy of the PowerPoint Presentation are included in this Appendix.

The second public hearing was held on August 24, 2009 during the Town Council Meeting at the Town Hall. Notice of this meeting was advertised in the Kent County Daily Times on August 21, 2009. Complete meeting minutes and a copy of the PowerPoint Presentation are included in this Appendix. During this meeting the Town Council also approved the Facilities Plan Update document.

The final public hearing was scheduled for February 16, 2010 during the SSC Meeting at the Town Hall, but was canceled due to inclement weather and rescheduled for March 2, 2010. Notice of this meeting was advertised in the Kent County Daily Times on February 12, 2010 (for the February 16, 2010 meeting) and February 24, 2010 (for the March 2, 2010 rescheduled meeting). Complete meeting minutes and a copy of the PowerPoint Presentation are included in this Appendix.

June 15, 2009

Coventry Sewer Subcommittee

REVISED

Coventry Sewer Subcommittee
Minutes

June 15, 2009

Members Present:

Chairman Hall
Mr. Narkiewicz
Councilman Shibley
Mr. DiPadua
Councilman Hyde (left at 8:15pm)

Members Absent:

None

Members Excused:

Mr. Avedisian

Also Present:

Mr. Yaceshyn
Mr. Nichols

Meeting called to order at 6:35 pm. Attendance taken.

Review of emergency evacuation plan.

ACCEPTANCE AND APPROVAL OF MARCH 16, 2009 MEETING MINUTES:

Mr. DiPadua motioned to table the acceptance of the minutes of the March 16, 2009 meeting; the clerk has some questions/blanks. Mr. Hyde seconded, all other members voted Aye, motion carried.

GUEST/CUSTOMER BUSINESS:

None.

SEWER TIE-IN APPLICATIONS:

Gregory Sykes, 730/732 Washington St:

This tie-in was reviewed by Weston & Sampson. Mr. DiPadua asked if they were satisfied with those things that were not ok. Mr. Yaceshyn answered "Yes". Mr. DiPadua motioned to accept Resolution #2009-5, Councilman Hyde seconded, all voted Aye, motion carried.

Tri-Level Const. Co., Inc., 282 Pulaski St:

Engineer Craig Carrigan from Carrigan Engineering Inc. and applicant Brian Lind are present for the owner. The tie-in is for a 4 unit commercial storage facility; each one will have a water closet and a lav. The Planning Commission is allowing the Town Planner to grant administrative approval. Mr.

Narkiewicz said that this application came before the Conservation Commission and there were significant concerns. He asked if they were taken care of. Mr. Carrigan said he wasn't aware of the problems. Someone asked what the units would be used for; Mr. Lind answered "contractor storage". Councilman Shibley asked how close they were to Rhodes Technology; Chairman Hall said he thinks they are separated by wetlands. Mr. Yaceshyn said they were almost at their back door. Councilman Shibley asked if this would interfere with anything at Rhodes; Mr. Yaceshyn said "no". Mr. DiPadua told the engineer that he is very thorough. Mr. Narkiewicz asked if they had a permit from KCWA yet, the answer was "no, they are waiting for fire flows from the nearest hydrant. Someone said if the amount of flow changed they would need to re-apply. Mr. DiPadua motioned to approve Resolution #2009-6, Councilman Hyde seconded, all voted Aye, motion carried.

REPORTS:

Progress report on Project 5:

Mr. Yaceshyn reported that there has been some progress with the punch list. D'Ambra was out today finishing up paving where the water main broke. The loop detectors at all lights have been installed on Fairview Ave. There is still some loaming and seeding to be done. Chairman Hall asked if the Town has deemed the project complete; when does the 1 year warranty end? Mr. Yaceshyn answered for pipe in the fall and for paving in December of 2009. Chairman Hall asked for documentation showing the beginning of the warranty period so the SSC can look and make sure any problems are taken care of before the warranty period ends. Mr. DiPadua asked the Councilmen when the paving on Boston St would be fixed. Councilman Hyde asked about the sidewalks on Anthony St. Mr. Yaceshyn answered that the paving on Anthony and Fairview streets were not part of the sewer project; this was done for financial reasons. The Town made the decision not to pave Anthony St until the sidewalks could be fixed and they won't be fixed until the tie-ins are done. Councilman Hyde asked who paved Boston St, the answer was D'Ambra, as part of Contract 5. Boston St is still on warranty as part of Contract 5. Mr. Narkiewicz asked who gave the okey dokey for the warranty period on Contract 5. Chairman Hall answered that it was done administratively. Mr. Yaceshyn said Contract 5 was approved in segments.

OLD BUSINESS:

None.

NEW BUSINESS:

Presentation and possible action on Conceptual Approval for Village at East Shore:

The applicant cancelled.

McElroy Property, 759-763 Washington St, discussion and possible recommendation to the Town Council regarding assessment:

Chairman Hall read a letter from Mr. Sprague in response to a letter received from Mr. McElroy. He is seeking relief in the form of a reduction in interest rate or in the form of a payment plan. His wife was the mortgage holder on the property and recently foreclosed on the owners. The McElroys were unaware of the bill until the foreclosure and have recently made the first payment. The property is only 5 units not 6; they would like someone to go out and look at the property. Someone explained that the Ordinance says that the interest is "not to exceed 8% interest on the unpaid balance". Mr. McElroy is looking for a better interest rate, he says prime is 3 1/4%; he is looking for something that is fair. Chairman Hall said as it stands the assessment is what it is unless it is determined the number of units is incorrect; he asked if people will be put out on the street. Mr. McElroy answered that they didn't intend to put people out as long as they continued to pay their rent. He also said that the building is in such terrible shape that the

rents are very low. Chairman Hall told the McElroys that the rate of 8% interest has been the standard practice; he would like to suggest starting the 20 year clock all over again when the assessment bills go out in September; the assessment would be based on the current assessment of \$6,600.00 per unit. This would be a recommendation based solely on the tenants; we are not here to put people on the streets; this is not for the landlord. Councilman Hyde made a motion based on Chairman Hall's recommendation, Mr. Narkiewicz seconded, all voted Aye, motion carried to make a recommendation to the Town Council that the 20 year clock for the assessment of 759-763 Washington St, Plat 54 Lot 98 start in August.

Mr. Cambio is present to discuss his request for additional sewer allocation for the Centre of New England. Chairman Hall told him that he was supposed to come before the SSC once a year, he will check the last time it was discussed.

Facilities Plan update presentation:

Hand out by Mr. Yaceshyn, the numbers seen on the map after a letter designation show average daily flow and gallons per day. Mr. Yaceshyn said one of the tasks that needs to be looked into is providing additional capacity for Rhodes Technology. They are looking for flow ranging from 56,000/gpd. Clariant Corp. was looking for 35,000 but some of the capacity came out so now they are looking for 25,000.

The other developments that were being looked at are Brookside for 100,000 – 120,000 gallons. Also CoNE, Harris Mill, Anthony Mill, River Walk Commons and Coventry Housing Authority will require additional capacity. The map gives information on the number of failed septic systems and areas of poor soil for outside waste water treatment plants. The handout contained a map of failures as identified by DEM. Chairman Hall asked Mr. Yaceshyn to go into the process of updating the Facilities Plan and the importance of the time table, what the process is, public hearings, etc. Mr. Yaceshyn said there is a time table for providing a public hearing, a public meeting. The draft has to get to DEM and be completed by the end of August. This meeting is considered a work session and public hearing can be heard at both the SSC and Town Council levels; the SSC July meeting will be a public meeting and there should be a hearing around the first of August. The SSC needs to render a recommendation at the July meeting so the Town Council has August to do whatever they have to do to get it completed. Mr. Yaceshyn said he would put together the time line and get it to Stephani so she could distribute it. At a previous meeting there was talk about taking some of the flow out of area N, the thought was to leave stuff that surrounds the lake; this would remove about 2/3 of the flow in area N. Chairman Hall asked how the public hearing would be advertised at the next meeting. Mr. Yaceshyn said in the paper and on the Town website. The properties that are crosshatched on the map were cut out previously for the re-allocation for CoNE (185,000gpd). Mr. Yaceshyn said that now cuts have to be made somewhere to allocate for businesses such as Brookside, the Mill and Rhodes. Mr. Narkiewicz asked him where he recommended be removed. Mr. Yaceshyn said he liked the majority of N and portions or all of AF. Chairman Hall told Mr. Narkiewicz and Mr. DiPadua that when the staff met last week they discussed that special attention should be given to environmental issues (including failing septic systems), business districts and the eastern end of town where properties sit on 10,000 square foot lots and all of the houses that are 150 years old. He said when deciding what areas to cut it needs to be decided what is needed for capacity (for Anthony Mills, Brookside, CoNE, Harris Mill). Chairman Hall said we not only need to look at potential actual projects for mill re-vitalization but we also want to leave some capacity allocated to areas so that a developer coming in is secure in the fact that they could re-vitalize a mill that we are not even aware of right now; these are the areas we need to protect. Mr. Yaceshyn said that one other location that caught his eye is the little triangle above X, above Gervais St. Chairman Hall wants to give Mr. Yaceshyn a list of areas that the SSC feels need to be protected so that when he comes back before

them in July with possible areas that can be cut those areas will be excluded. Chairman Hall would like to see the areas in Contracts 6-10 protected, the business districts, the entire Harris section of Town (T), wetlands, CoNe, Oak Haven (E & D). Chairman Hall would like to keep the hashed out properties designated as hashed out on the map and designate when they were eliminated, and pick a different color 2009 so that if we ever get to the point where we are able to obtain additional capacity we will know the order in which the areas were removed from the Facilities Plan so they can be undone.

PUBLIC/SUBCOMMITTEE MEMBER COMMENT:

Chairman Hall told Mr. Cambio the SSC last assessed his available capacity on March 27, 2008 so for the purposes of the update of the Facilities Plan his engineer would have to calculate the actual usage. Mr. Cambio said John P. Caito Engineering could get what was needed. He wants to bring to the SSC's attention that out of the 185,000 gallons that were allocated in 2003, they are approaching about 165,000 gallons of usage. Chairman Hall told him he was 170,827 back in March 27, 2008 but a lot of that was based on estimates so that number will probably come down.

Mr. Cambio: The homeowners who bought from me are kind of all my age, 50's, 60's and 70's. There are a few in their 80's and 90's believe it or not so they are not using a lot of water. I think to the best of my knowledge there are only 4 families with children, one is my daughter with my granddaughter, one is my brother's daughter with his granddaughter, one is my sister with her daughter and one other couple. So there's 4 kids in your schools with over 100 and some odd homes, about 135 to be exact. So there is not a lot of sewer usage but on the other hand the reason why I am here is there is little or no retail business going on with absolutely zero commercial business meaning there are empty buildings like Mac, can't get them re-leased so we're not using sewers but we are building and creating some new product types, I call them product types, houses, units, condos whatever you want to call it, residential units and they're primarily geared towards the older crowd even older than the ones I got now and young, extremely young. When I say extremely young, 35 and under. The units are gonna be in the 500 to 700 square foot range so only be generally 1 bedroom or if a miracle we'll have 2 at this price range so you're gonna have little or probably no impact on the school system, I'll be surprised if you have 2 kids out of a hundred units, that would be a miracle.

He said ½ of the units will be 1 bedroom and ½ will be 2 bedrooms. Sales are becoming active and he expects to do about 200 units per year. He doesn't expect businesses coming in for the next 3-5 years. Mr. Narkiewicz asked Mr. Cambio how many gallons he thought he would need. Mr. Cambio said Mr. Caito would generate the facts. The units will be off Hopkins Hill Rd behind Amgen. He thanked the SSC for their time and effort. He said "I would just like to put on the record that I need gallonage for 250 homes" and wanted to let the Committee know that he has gone through major discussions with the Board of Assessment for value of real estate on one hand they want to charge him a billion dollars yet its worth a billion dollars on the other hand I've got no gallonage. You can't have a piece of land with no sewers and no water.

Chairman Hall asked Mr. Cambio to have his engineering firm (Caito) put together a report like he does every year with the actual water use and in the case of the Highlands the actual discharge by the July meeting. Mr. Cambio will have Caito call Mr. Yaceshyn.

Continuation of NEW BUSINESS:

SSC member re-appointment recommendation to Town Council:

Chairman Hall explained that the Town Council is changing the way re-appointments are being done. They want a recommendation from the Chairman. He has made it clear that he will not do it alone so he

will hold off on any new appointees. He explained that the SSC consists of members at large who have 3 year terms. The current openings are his term which expired in January of 2009 and Mr. Avedisian's which expired in January of 2008. Mr. Narkiewicz asks that they are both re-appointed. Mr. DiPadua agrees; he says Chairman Hall has done a phenomenal job and Mr. Avedisian knows his stuff. This would make Mr. Avedisian's term end in January of 2011 and Chairman Hall's end in January of 2012. Councilman Shibley asked if Mr. Avedisian was interested in being re-appointed. Chairman Hall answered yes. Councilman Shibley said he is all for both of the re-appointments, all voted Aye. Mr. Narkiewicz's appointment is as a representative from the Conservation Commission. Chairman Hall asked if Conservation Commission agreed. Mr. Narkiewicz answered that he didn't think anyone wanted it or was qualified. Chairman Hall made a motion to re-appoint Mr. Narkiewicz. Mr. DiPadua seconded and added that Mr. Narkiewicz was a member he highly respected and that he has done a phenomenal job. Mr. Narkiewicz's term will expire in January of 2010. All voted Aye, motion moved. There is also a vacancy from the EDC and 2 alternate positions, the Town Council granted the approval for the alternate positions but never appointed anyone to them. The liaison to the West Warwick Sewer Commission had usually been a Town Council member but Chairman Hall was asked by Councilwoman Flannigan to continue and he said yes; he will accept re-appointment as liaison to the W.W. Sewer Commission, Mr. Narkiewicz motioned to move this, Councilman Shibley seconded, all voted Aye, motion carried.

Discussion and possible re-scheduling of July regular monthly meeting:

Chairman Hall doesn't like to change meeting dates but he will be on vacation the week of July 20th. Wednesday July 8, 2009 works for all the members and the Town Council Chambers are free. Mr. DiPadua motioned to change the date of the July SSC meeting from Monday, July 20, 2009 to Wednesday, July 8, 2009. Mr. Narkiewicz seconded, all voted Aye, motion carried.

Continuation of PUBLIC/SUBCOMMITTEE MEMBER COMMENT:

Mr. Gizzarelli, 50 Harrington Rd. He is present to give the SSC some public viewpoint. He is concerned with how soon sewers will get going at Tiogue Lake. He was told that it falls under Contract 6, the Lakeside area. He asked what about Lakeshore Dr. Chairman Hall answered it was under Contract 9 but the Village at East Shore may change that time table. Mr. Gizzarelli said he hoped it could be expedited; he is concerned with the detention pond right near the shoreline of the lake.

He also feels that it is important that the public knows when they can speak; he would like the public to be able to speak before a motion is made. He feels as if they may have information that is prevalent to the issue. He would like "Public Agenda Comment Only" added; he thinks the public feels left out.

Mr. Deady, Environmental Affairs Manager for Rhodes Technology, wants to thank the Committee for updating the Facilities Plan, he also thanks Weston & Sampson. He has worked for Rhodes for 10 years and wants them to thrive going forward in Coventry. He doesn't want to eliminate folks having sewers by getting usage. They need waste water discharge to be able to continue doing business. They are on a tight time table with Clariant shutting down its business. Chairman Hall said conceptual approval is not needed; they can go right to the tie-in process; he asked if the Facilities Plan needed to be approved prior to them tying in. Mr. Nichols said a major issue is with West Warwick and the Town of Coventry. West Warwick will need the Facility Plan to finish their paperwork but he believes they have agreed that we can proceed with their connection installation. Mr. Deady said he had filed the tie-in application with Coventry and they are working parallel with West Warwick on pretreatment approval and are very, very close there. He thinks they are very close and thanks every one for their help and they need that last push.

Page 6 of 6

Chairman Hall asked what Clariant's shut down date was. Mr. Deady answered they are contracted through February but they extended that and will need a discharge permit.

Mr. DiPadua motioned to adjourn, Councilman Shibley seconded, all voted Aye, so moved. Meeting adjourned at 9:48 pm. Next meeting Wednesday, July 8, 2009-Town Council Chambers.

July 8, 2009

Coventry Sewer Subcommittee

Coventry Sewer Subcommittee
Minutes

July 8, 2009

Members Present:

Chairman Hall
Mr. Narkiewicz
Councilman Shibley
Mr. DiPadua
Councilman Hyde

Members Excused:

Mr. Avedisian

Also Present:

Mr. Yaceshyn
Mr. DeGuglielmo

Meeting called to order at 6:45 pm. Attendance taken.

Review of emergency evacuation plan.

ACCEPTANCE AND APPROVAL OF MARCH 16, 2009 AND JUNE 15, 2009 MEETING MINUTES:

Members helped the clerk fill in some blanks in the minutes. Anthony St still only has temporary patch on it. There is no money in this budget for road resurfacing; it will have to come from stimulus money. Anthony St should have been done in previous years. Mr. Yaceshyn believes a lot of the resurfacing budget went into Tiogue Ave. Mr. DiPadua motioned to accept the minutes of the March 16, 2009 meeting and ask Councilmen Hyde and Shibley to find out officially where the resurface budget was spent and bring the information to the next meeting, Councilman Hyde seconded, all voted Aye, motion carried.

Page 5, third to the last line blank after **can** insert "proceed with their connection installation". Second to last line blank after **on** insert "pretreatment approval". Mr. DiPadua motioned to accept the minutes of the June 15, 2009 meeting after filling in the blanks on page 5, Councilman Shibley seconded, all voted Aye, motion carried.

GUEST/CUSTOMER BUSINESS:

None.

SEWER TIE-IN APPLICATIONS:

Kevin Dubis, 18/20 Whitford St:

Mr. Yaceshyn told the Committee they have the report and that every thing has been addressed based on Weston & Sampon's recommendations. Mr. Narkiewicz asked Mr. Yaceshyn about the use of the word "recommend" when addressing the need for an exterior cleanout. Mr. Yaceshyn explained that under the current sewer regulations they can't enforce this. Mr. DiPadua motioned to accept Resolution #2009-07, Councilman Hyde seconded. Mr. Narkiewicz asked if all the conditions have been taken care of Mr. Yaceshyn answer No. Mr. DiPadua amended his motion to change the wording on Resolution#2009-07

from “has sufficiently fulfilled” to “shall sufficiently fulfill”. Councilman Hyde seconded the amendment, Chairman Hall read the resolution, all voted Aye, motion carried.

Alexander Borelli, 759 Tiogue Ave, Plat 38, Lot 103:

Scott Moorehead is the engineer for the applicant; he explained that the tie-in is for Little Pumpkins, the consignment shop. Borelli’s Bakery is already tied in to the high pressure system. The shop has 1 employee, daily flow is 15gpd based on water use records, average water use is 11gpd. The plans have been revised according to Weston & Sampon’s recommendations. Mr. Narkiewicz asked why Borelli’s is being left on the high pressure system. Mr. Moorehead explained that he suggested it to Mr. Borelli but he rejected the idea; he didn’t want to do it right now. Mr. Narkiewicz said that was unfortunate and asked if the SSC should write a letter suggesting they alter their decision. Chairman Hall said that they are already tied in to a system that is working. Mr. Narkiewicz asked Mr. Yaceshyn what his feeling about the longevity of the 10” force main on Tiogue Ave. Mr. Yaceshyn answered that it has been broken several times and has seen better days. Chairman Hall asked who would have a complete list of the properties on Tiogue Ave that are actually tied in to that line. Mr. Yaceshyn said that he could get it. Mr. Moorehead said that he thinks West Warwick should have that information. Chairman Hall said that the problem with that is just because they tied in doesn’t mean they applied to tie-in. He would like to work on getting a list of who is tied in to the private line. Mr. Narkiewicz still feels very uncomfortable about Borelli’s not tying in. Mr. Moorehead explained that he suggested one tie-in to Mr. Borelli but that he wanted to keep them all separate because they were 3 separate parcels. Councilman Hyde said that in the event the private line fails the people will come to the Town by necessity. Chairman Hall asked Mr. Yaceshyn if when the Town put in its line on Tiogue Ave did they leave a service connection to every property even if they were tie-in to the private line. Mr. Yaceshyn answered, absolutely. Mr. DiPadua motioned to accept Resolution #2009-08, Mr. Narkiewicz seconded. The Resolution was read by the clerk. All vote Aye, motion carried.

REPORTS:

Progress report on Project 5:

Mr. Yaceshyn informed the Committee that D’Ambra is fixing the water valve covers. The SSC asked for some Certificates of Final Completion, he doesn’t have the signed ones but Boston, Main and Tiogue were completed and beneficial occupancy was July 14, 2008. Final restoration was December 15, 2008; so one year warranty is December 2009. Contentment, Carly Dr. and portions of Sandy Bottom were much earlier; warranties expired April of this year. Chairman Hall asked what warranty was still active. Mr. Yaceshyn answered Boston St and Main St from Coventry Credit Union to Kenray Dr; warranty expires December 15, 2009. Chairman Hall asked what the process was for reporting something that needs to be fixed prior to the end of the warranty period. Mr. Yaceshyn said to either let himself or the Town know and it would be put on D’Ambra’s list to get done. Chairman Hall will schedule a field trip for the September meeting. Mr. Yaceshyn has been in discussion with Bob Boyer for Jerry’s Plaza, approval has already come before the SSC. As of last week a final letter was sent to Stephani from Weston & Sampon because they did some of the review. There should also be a letter from Bob Rose. Chairman Hall asked if Bob’s work was done. Mr. Yaceshyn said yes, only construction is left to be done.

OLD BUSINESS:

Work session – Facilities Plan Update:

Hand outs, copy of presentation- 2009 Coventry Wastewater Facilities Plan, draft memorandum and additional information regarding study areas. Mr. Yaceshyn explained that the Facilities plan needs to be

redone every 5 years per DEM regulations. A re-affirmation was done in 2003. DEM is requesting an update due to significant changes that have been made, for example Rhodes Technologies, new subdivisions and new mill conversions. Coventry currently has 2.25mgd capacity at the treatment plant. For additional flows needing allocation see page 2 of the presentation. Rhodes will be putting out flows about 6 times the strength of regular household waste. This doesn't need to be allocated for in our facilities plan because it calls for a build out and a build out will dilute their flows to the point where the bod's would be lowered. Right now Rhode's waste is going through Clariant's treatment plant.

There about 180,000gpd of re-allocation needed; this is all over and above what has already been allocated. See page 3 of presentation for the recommendation of areas to remove to allow for the re-allocation. Chairman Hall asked what the failure rate was for area O; Mr. Yaceshyn answered 8 repairs since 2002. Area AE, city water ends at Read School House Rd. Mr. Narkiewicz thinks that if this has to been done again in 5 years that the conversation is ridiculous; the areas can just be added back in 5 years. It was suggested to remove the following areas: T, Z, S, Y, R,X,V and O. This would give 400,000gpd and would be for areas that won't be gotten to for a long, long time. Chairman Hall asked Mr. Yaceshyn to get a G.I.S. map of CoNE and indicate what has already been developed and what is left. Mr. Yaceshyn showed a plan; the property is only 2/3 built out and they are only using 177,000gpd. Chairman Hall requested that CoNE's number (flows to consider allocation) change from 20,000gpd to 75,000gpd. He also asked the council members for their support with the Interim Town Manager in getting authorization to advertise the public hearing for the next SSC meeting.

NEW BUSINESS:

Work session – Annual CoNE capacity review:
Cancelled by applicant.

PUBLIC/SUBCOMMITTEE MEMBER COMMENT:

Mary Day of Kiley Way, she owns PJ's Diner at 608 Tiogue Ave and is in the process of purchasing 599 Tiogue Ave. She has consulted DEM and will only be allowed to do take out there with out a sewer tie-in. She is wondering when the next phase will start. Chairman Hall explained that Contract 6 is currently in design; there are elevation issues and a problem with the culverts in the street. The Town has submitted for stimulus money for the project and is waiting for President Obama.

Mike Smith of 27 Hazard St (corners of Hazard & Knight) wanted to double check that the properties being eliminated didn't include Hazard St. Chairman Hall told him that they did not. He asked Mr. Yaceshyn to give Mr. Smith his email address so he can forward his plat and lot numbers. DEM told Mr. Smith that he must have sewers or a new system. Chairman Hall asked Weston & Sampson to do up a cost/assessment projection for the August meeting; he also told Mr. Smith to bring his neighbors because his area is at least 3 years away from service.

Everyone motioned to adjourn and seconded, all voted Aye, so moved. Meeting adjourned at 8:43 pm. Next meeting Monday, August 17, 2009-Town Council Chambers.

2009 Coventry Wastewater Facility Plan

Presented by:
Barry A. Yaceshyn, P.E. Weston & Sampson
Tim S. DeGuglielmo, Weston & Sampson

Presented at:
Coventry Sewer Commission Meeting
July 8, 2009

Introduction

- Facility Plan required by RI-DEM to be updated/re-affirmed every 5-years.
- Latest was 2003 Re-affirmation
- DEM requires accepted Draft FPU
– August 31, 2009
- Updating Due to Significant Changes
- New Users – Rhodes Technologies
- New Subdivisions
- Changes in use – Mill Conversions

Original Flows from Planning Areas

Area	Est. Flow (GPD)	Area	Est. Flow (GPD)	Area	Est. Flow (GPD)
A	99,280	N	98,135	AA	Removed (2003)
B	50,282	O	59,190	AB	Removed (2003)
C	50,698	P	99,244	AC	OWTS (1995)
D	69,600	Q	94,220	AD	39,482
E	100,150	R	25,341	AE	58,596
F	90,588	S	29,610	AF	40,356
G	54,078	T	69,663	AG	OWTS (1995)
H	89,356	U	89,863	AH	Community OWTS (1995)
I	77,866	V	76,931	AI	OWTS (1995)
J	261,416	W	99,748		
K	72,846	X	60,766		
L	109,663	Y	26,007		
M	100,221	Z	58,421		

**TOTAL =
2,248,727 GPD**

Additional Flows Needing Allocation

- Rhodes Technologies: 56,000 GPD
 - CHA's Contentment Drive: 4,000 GPD
 - CHA's Coventry Meadow: 11,100 GPD
 - Village at East Shore Drive: 8,200 GPD
 - Brookside Development: 21,500 GPD
 - Riverwalk Common⁽¹⁾: 15,000 GPD
 - Harris Mill⁽¹⁾: 15,000 GPD
 - Anthony (Concordia) Mill⁽¹⁾: 4,200 GPD
- 135,000 GPD**

Proposed Developments Plan
(1) - Estimated Flows

Flows to Consider Allocation

- Center of New England⁽¹⁾: 20,000 GPD
 - Clariant Corporation: 24,000 GPD
- 44,000 GPD**
- Total of Re-Allocation = 179,000 GPD Required

Proposed Developments Plan
(1) - Estimated Flows

Proposed Areas to be Removed

Flows that need to be accounted for (New Developments)	
Rhodes Technologies	56,000 GPD
CHA's Contentment Drive Additions	4,000 GPD
CHA's Coventry Meadow (all 15-acre Areas)	11,100 GPD
Village at East Shore Drive	8,200 GPD
Brookside Development	21,500 GPD
Riverwalk Common (MR Redevelopment)	15,000 GPD (Estimated)
Harris Mill (MR Redevelopment)	15,000 GPD (Estimated)
Concordia Mill (MR Redevelopment)	4,200 GPD (Estimated)
Total	135,000 GPD

Additional Flows that the Town may want to consider	
Center of New England	20,000 GPD (Estimated)
Clariant Corporation	24,000 GPD (Estimated)
Total	44,000 GPD

FLOW REDUCTIONS BASED ON REMOVAL OF PARCELS			
Area N (Option 1)	47,800 GPD (Estimated)	Area N (Option 2)	74,570 GPD (Estimated)
Area M	8,630 GPD (Estimated)	Area X	8,200 GPD (Estimated)
Area AF	40,356 GPD (Estimated)	Area AF	40,356 GPD (Estimated)
Area X	26,520 GPD (Estimated)	Area XI	26,520 GPD (Estimated)
Area Y	21,210 GPD (Estimated)	Area Y	21,210 GPD (Estimated)
Area Z	31,500 GPD (Estimated)	Area Z	31,500 GPD (Estimated)
Area O	23,400 GPD (Estimated)	Area O	23,400 GPD (Estimated)
Area AE	5,670 GPD (Estimated)	Area AE	5,670 GPD (Estimated)
Total	211,256 GPD	Total	238,046 GPD

Proposed Area to be Removed Plans

Recommendation

- Portion of Study Area N
 - Therefore portion of Area M
- Portion of Study Area AE
- All of Study Area AF
- Portion of Study Area X
- Portion of Study Area Y
- Portion of Study Area O

Proposed Area to be Removed Plans

August 3, 2009

Coventry Sewer Subcommittee

June 29, 2009

Kent Count Daily Times
Brie Wetherell, legals
1353 Main St
West Warwick, RI 02893
Account #6363

Dear Brie:

Please advertise the following in Location Daily Times on Saturday, August 1, 2009.

Town of Coventry
Notice of Public
Hearing Sewer
Subcommittee Note
Change of Time &
Location
Notice is hereby given
that the Sewer
Subcommittee is in
session at the Town
Council Chambers
1670 Flat River Rd
Coventry, RI on Mon-
day, August 3, 2009
at 5:30 p.m. to up-
date the Town
Wastewater/Sewer
Facilities Plan.
Individuals request-
ing interpreter ser-
vices for hearing im-
paired must notify the
Town Clerk's Office at
822-9173, 72 hours in
advance of hearing
date. Devices for the
hearing impaired are
available.
Per order of Sewer
Subcommittee
Chairman,
Bill Hall

NOTE C

Notice is hereby given that the
Council Chambers, 1670 Flat River Rd,
for Update of Town's Wastewater

Individuals requesting interpre-
Clerk's Office at 822-9173, 72
hearing impaired are available.

Per order
Chairman,

RY
ARING
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LOCATION

is in session at the Town Council
ay, August 3, 2009 at 5:30 p.m.
Plan.

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hearing date. Devices for the

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Subcomm.
Session
Council
8/3/09

Coventry Sewer Subcommittee
Minutes

August 3, 2009

Members Present:

Chairman Hall
Mr. Narkiewicz
Councilman Shibley
Councilman Hyde
Mr. Avedisian

Members Absent:

None

Members Excused:

Mr. DiPadua

Also Present:

Mr. Yaceshyn
Mr. DeGuglielmo
Mr. Hoover
Mr. West

Meeting called to order at 5:40 pm. Attendance taken.

Review of emergency evacuation plan.

WORK SESSION AND PUBLIC HEARING ON THE TOWN'S WASTERWATER FACILITIES PLAN UPDATE WITH POSSIBLE ENSUING ACTION ON RECOMMENDATION TO THE TOWN COUNCIL:

Chairman Hall publicly introduced Tom Hoover, the new Town Manager.

Mr. Yaceshyn handed out a copy of his presentation and a Planning Area Map. Chairman Hall explained that this was the SSC's third work session on this topic; the goal is to render a recommendation to the Town Council tonight. Mr. Yaceshyn explained that the Facilities Plan is being updated because it needs to be updated every 5 years; it represents a 20 year forecast. The previous full Facilities Plan was done in 1995 and it was re-affirmed in 2003 for the sewer project. The other reason it is being updated is to provide availability to new users, new subdivisions and new mill conversions. A resolution is needed from the SSC to the Town Council recommending a re-allocation of the flows that were presented in the 2003 Facilities Plan. The next step in the time line is to have a draft Facilities Plan in by August 24th incorporating the changes from today. It will then be submitted to DEM by the end of the month for intergovernmental review. After this there needs to be a public comment period and a public hearing in September. With the pharmaceutical company Rhodes coming into the picture, under the 1995 & 2003 Facilities Plan & re-affirmation they did not include a parcel that included Rhodes Technology and Clariant Corp. They weren't previously included because they have an existing wastewater treatment

facility on their property; a 1.5 mgd treatment facility that is permitted by DEM. Now that Clariant is closing down its operation, Rhodes wants capacity; they are currently in the application process. Clariant Corp. has asked for 23,100 gallons to be added to the Facilities Plan; all domestic use. The Town is heading upwards to a little bit above its existing discharge limit which currently is 2.25 mgd; since this is a 20 year projection it should not make people scared but more capacity will be needed eventually. Areas that have been identified as needing additional capacity are Rhodes Technology, 56,000 gpd; 2 Coventry Housing Authorities, 15 gpd; a new subdivision off East Shore Drive, The Village of East Shore; Riverwalk Commons, a mill conversion; Riverside Landing, a mill conversion; Harris Mill & Anthony Mill, more mill conversions. These areas were included in the 1995 and 2003 updates but they require a change of flow capacities above and beyond what was on the Facilities Plans. Then there are two additional areas in CoNE; they would like an additional 78,000 gpd (over and above the 185,000 already allocated).

Ben Caito from John P. Caito Corporation is representing Nick Cambio of CoNE. They are estimating 78,000 gpd of additional capacity; this should be good for 1 year. CoNE is currently within 20,000 gpd of their 185,000 gpd of allotment. Nick Cambio wanted to emphasize that the 78,000 gpd is based on what the market is calling for now. He is trying to be as reasonable as possible based on the market.

Suggested changes:

Eliminate all of area N, including the outer perimeter. Eliminate a small portion of area M. Eliminate area S, AD. Eliminate a small portion of area X. Eliminate Y and Z. Eliminate area O and AE. These areas are primarily all part of the original Facilities Plan in 1995 and the 2003 re-affirmation as areas that were under the Phase 3 sewer construction. Chairman Hall asked about area N, which is Wood Estates. That would bring the line just up to Reservoir Rd and stop; it would not give any business district beyond that. The entire business district of the Town was one of the priorities previously set; Chairman Hall would hate to exclude Nooseneck Hill Rd.

Motion made and seconded to open the Public Hearing. Chairman Hall explained to the public that the required Facilities Plan public hearing is done at the Town Council level; this public hearing being done by the Sewer Subcommittee is not required but because it will impact several residents they chose to make a second public hearing. Mr. Cambio asked how many gallons the Town has above and beyond what has already been used from West Warwick. Chairman Hall answered that through the inter municipal agreement with West Warwick the Town of Coventry has allocated 2.24 millions gpd and are at less than 10% usage right now. Mr. Hoover asked for an explanation of the private plant that is at Clariant; what is going to happen with that? Mr. Yaceshyn answered that he doesn't exactly know what is going to happen with it but they are in sales at the moment trying to sell the property. He doesn't know if Clariant will retain the right to the discharge permit or whether someone will buy it out. Mr. Hoover asked hypothetically if the Town picked it up would it add to the Town's allocation. Mr. Yaceshyn said it would add everything being taken out plus more; the permit is for 1.5 million gallons of discharge. He cautioned that it is a chemical treatment plant and not a tertiary or domestic plant; it would need some high dollar upgrades. Mr. Sprague has opened dialog with Clariant about this but nothing is currently being done about/with it. Mr. Hoover would hate to see the permit lost.

Chairman Hall asked the members for their thoughts starting with Councilman Hyde. He said the plant at Clariant is high in his radar because it is in his district and it is viable; it would add capacity to the Town. If they (Clariant) want capacity from the Town they should give something back. Mr. Caito told the Committee that Clariant Corporation is also a client of Caito Corporation he would like to propose that

Clariant attend the SSC's meeting on the 17th. Mr. Caito will set up a meeting with Mr. Hoover and representatives of Clariant and add the item to the next agenda if necessary. Councilman Shibley would like to take more from area Z as discussed to free up allocation needed for the Centre of New England and Nooseneck Hill Rd. He would like to see a workable arrangement made with Clariant to benefit the Town. Mr. Narkiewicz asked whether or not it was short sighted of the SSC to only consider 78,000 gpd for Mr. Cambio so as not to need more one year from now. Would it be a big issue to re-affirm next year? Mr. Yaceshyn said it was not a major issue. Mr. Hoover strongly suggests not over allocating due to the current economy. Mr. Avedisian was not present for the first two discussions due to health issues; he didn't know about the Clariant issue but he thinks is it important. Mr. Hoover had nothing to add. Chairman Hall made a recommendation on a motion to recommend to the Town Council a Facilities Plan Update that includes the elimination of District N, the identified district M as presented by Weston & Sampson, the area identified with in O, all of AD & AF, the identified areas in AE, all of Y, the areas identified in X, the areas identified in Z. Reinstate the area of Nooseneck Hill Rd from Reservoir to the top of the hill and the area of C&A Landscaping. Increase the CoNE allocation from 75,000 to 78,000 gpd and the balance needed to add those areas back in will come from Z, starting from the West end of Z working Easterly; not to affect the proposed mill revitalization on Howard Ave. Councilman Hyde seconded. There was no one from the public who wanted to speak; Chairman Hall motioned to close the public hearing, Councilman Hyde seconded, no discussion, all voted Aye, motion carried to close the public hearing. No further discussion on the recommendation motion, all voted Aye, motion carried.

Everyone motioned to adjourn, everyone seconded, all voted Aye, so moved. Meeting adjourned at 6:47pm.

2009 Coventry Wastewater Facility Plan Recommendation of Planning Areas

Presented by:
Barry A. Yaceshyn, P.E. Weston & Sampson
Tim S. DeGuglielmo, Weston & Sampson

Presented at:
Coventry Sewer Commission Meeting
August 3, 2009

Introduction

- Facility Plan to be updated every 5-years for a 20-year future planning period.
- Update to include significant changes
 - New users
 - Proposed subdivisions
 - Proposed changes in use (i.e. Mill Conversions)
 - In accordance with Town CCP Plan
- Resolution recommending planning study area flow re-allocation.

Timeline

Coventry Sewer Sub-Committee Flow Re-Allocation Resolution	August 3, 2009
Town Council Recommendation of Draft Facilities Plan (FP) Update	August 24, 2009
Submission of Draft FP Update to RI-DEM	By August 31, 2009
Public Hearing on FP Update	September 2009

Original Flows from Planning Areas for 20-year Planning Period (2030)

Area	Est. Flow (GPD)	Area	Est. Flow (GPD)	Area	Est. Flow (GPD)
A	84,095	N	105,095	AA	Removed (2003)
B	57,117	O	80,050	AB	Removed (2003)
C	56,351*	P	99,506*	AC	OWTS (1995)
D	70,137	Q	94,990	AD	43,542
E	107,072	R	25,901	AE	72,439
F	102,640*	S	30,870	AF	45,746
G	56,468*	T	72,804*	AG	OWTS (1995)
H	89,776	U	89,874*	AH	Community OWTS (1995)
I	81,744	V	90,551	AI	OWTS (1995)
J	232,317*	W	106,282*	TOTAL = 2,331,870 GPD	
K	75,310	X	73,433		
L	125,539	Y	32,305		
M	104,298	Z	65,657*		

(*) - Additional Flows to be added based on proposed developments

Causes of Flow Re-Allocation

Additional Flows Need Re-Allocation (New Re-Developments)	
Rhodes Technologies (Area P)	56,000 GPD
CHA's Cornerment Drive Addition (Area W)	4,000 GPD
CHA's Coventry Meadow (Area G)	11,100 GPD
Village at East Shore Drive (Area O)	8,300 GPD
Enclave Development (Area F)	29,700 GPD
Rivewalk Common Mill Redevelopment (Area Z)	10,200 GPD
Riverside Landing (Area T)	1,600 GPD
Harris Mill Redevelopment (Area U)	7,300 GPD
Arbony Mill Redevelopment (Area U)	18,700 GPD
	148,200 GPD
Additional Flows to Consider	
Center of New England (Area J)	78,000 GPD
Clarinet Corporation (Area P)	24,000 GPD
	102,000 GPD
TOTAL ADDITIONAL FLOWS	250,200 GPD
TOTAL PLANNING AREA FLOWS (2030)	2,331,870 GPD
TOTAL ESTIMATED FLOW FROM TOWN	2,682,170 GPD
DISCHARGE AGREEMENT TO WEST WARWICK	2,236,000 GPD
TOTAL FLOW NEEDING RE-ALLOCATION	332,170 GPD

Proposed Developments Plan

Recommended Study Areas for Removal

RECOMMENDED FLOW REDUCTIONS BASED ON REMOVAL OF PARCELS		
FLOWS NEEDING RE-ALLOCATION	332,170 GPD	
Area N	105,095 GPD	(Full Area Elim.)
Area M	8,820 GPD	(Partial Area Elim.)
Area AF	45,746 GPD	(Full Area Elim.)
Area AD	43,542 GPD	(Full Area Elim.)
Area X	26,520 GPD	(Partial Area Elim.)
Area Y	32,305 GPD	(Full Area Elim.)
Area Z	31,500 GPD	(Partial Area Elim.)
Area O	31,280 GPD	(Partial Area Elim.)
Area AE	5,670 GPD	(Partial Area Elim.)
FLOW REDUCTIONS OBTAINED	332,486 GPD	

Recommendation

- All of Study Area N
 - Proposed Phase III sewered area.
 - Pump station and/or low pressure sewers required.
 - Project scheduling, extension beyond Reservoir Road.
 - Construction Cost.
- Portion of Study Area M
 - Subdivision with larger lot areas.
 - Gravity sewer incoming from Planning Area N.
- Portion of Study Area AE
 - Project scheduling.
 - Outskirts of Flat River Road, beyond Town Hall parcel (Phase III sewered area).
 - Larger lots allow for more conventional OWTS systems.
- All of Study Area AF
 - Proposed Phase III sewered area.
 - Project scheduling.
 - Larger lots allow for more conventional OWTS systems.
 - Newer homes with theoretically newer OWTS systems.

Recommendation (cont'd)

- Portion of Study Area X
 - Proposed Phase III sewered area.
 - Northern section of the Study Area (i.e. isolated).
 - Construction cost.
 - Project scheduling.
- All of Study Area Y
 - Proposed Phase III sewered area.
 - Isolated planning area.
 - Project scheduling.
 - Larger lots allow for more conventional OWTS systems.
- Portion of Study Area Z
 - Proposed Phase III sewered area.
 - Gravity sewer in from Y
 - Makes sense economically, if Y is eliminated to eliminate Z.
 - Isolated planning area.
 - Project scheduling.
 - Larger lots allow for conventional OWTS systems.

Recommendation (cont'd)

- Portion of Study Area O
 - Proposed Phase III sewered area.
 - Pump station required (Construction Cost)
 - Isolated area
 - Project Scheduling.
 - Potential WWTF would result in gravity service availability.
- All of Study Area AD
 - Proposed Phase III sewered area.
 - Larger lots allow for conventional OWTS systems.
 - Isolated area
 - Project Scheduling.

August 24, 2009

Coventry Town Council Meeting

Cheryl A. George, CMC
Town Clerk



TOWN OF COVENTRY
1670 Flat River Road, Coventry, RI 02816
Tel. (401) 822-9173 Fax (401) 822-9132

August 18, 2009

Kent County Daily Times
Brie Wetherell, legals
1353 Main St
West Warwick, RI 02893
Account #6363

Dear Brie:

Please advertise the following in the Kent County Daily Times on Friday, August 21, 2009.

Notice is hereby given that the Coventry Town Council is in session at the Town Council Chambers, 1670 Flat River Rd, Coventry, RI on Monday, August 24, 2009 at 7:00 p.m. for Approval of Wastewater/Sewer Facilities Plan.

Copies of the plan are available in the Town Clerk's Office.

Individuals requesting interpretation services for hearing impaired must notify the Town Clerk's office at 822-9173 72 hours in advance of hearing date. Devices for the hearing impaired are available.

**Town of Coventry
Notice of Public
Hearing**
Notice is hereby given that the Coventry Town Council is in session at the Town Council Chambers, 1670 Flat River Rd, Coventry, RI on Monday, August 24, 2009 at 7:00 p.m. for Approval of Wastewater/Sewer Facilities Plan.
Copies of the plan are available in the Town Clerk's Office.
Individuals requesting interpretation services for hearing impaired must notify the Town Clerk's office at 822-9173 72 hours in advance of hearing date. Devices for the hearing impaired are available.
Cheryl A. George
CMC Town Clerk

**ENTRY
HEARING**

Council is in session at the Town RI on Monday, August 24, 2009 at 7:00 p.m. for Approval of Wastewater/Sewer Facilities Plan.

rk's Office.

hearing impaired must notify the Town Clerk's office at 822-9173 72 hours in advance of hearing date. Devices for the hearing impaired are available.

George
Town Clerk

Column Legal Ad

Handwritten signatures and initials:
1
M. George
M. George
MP

TOWN COUNCIL MEETING
August 24, 2009 - 7:00 p.m.

Present: Frank Hyde, Kenneth Cloutier, Glen Shibley, Ray Spear, Laura Flanagan

Town Manager Thomas Hoover
Town Solicitor Patrick Rogers

Pledge of Allegiance led by Town Sergeant
Invocation by Reverend Chris Baker of Knotty Oak Baptist Church
Review of Emergency Evaluation Plan

President's Comments

President Spear announced that Ken Young's application for a hawker's license will be tabled to a future meeting and the application of Tin Cup Golf and Driving Range will be limited to discussion and action on the golf course and liquor license, with the matter of a driving range to be taken up with the Planning Department.

Manager Hoover informed the Council that Colonel DaSilva has requested that the Town Clerk's Office begin requiring a peddler's license for door to door sales of magazines and publications. Colonel DaSilva stated it will be helpful to the Police Department with regard to enforcement. Manager Hoover agreed; effective immediately a peddler's license will be required for door to door sales.

President Spear raised an issue with regard to consideration which is being given by some representatives in the State legislature pertaining to a bill establishing binding arbitration as a means of resolving disputes with teacher unions. Though it is not an agenda item tonight, President Spear is bringing the matter before the Council this evening, as this information has just come forward. I do not personally believe that we need binding arbitration. With this legislation comes the possibility of mandating that contracts, upon their termination dates, would be automatically extended to continue until such time as a new agreement has been reached. I have asked our town manager if he would be kind enough to develop a resolution that we could at least consider this evening.

Resolution reads as follows:

Whereas, mandatory binding arbitration on all issues, including wages and benefits, presently in force for local police and fire, has led Rhode Island, according to RIPEC, to having the 5th highest police costs in the nation and the highest paid firefighters nationally; and

Whereas, Connecticut mandatory binding arbitration has led to contract awards that have resulted in the highest paid teachers in the country; and

Whereas, unions don't generally strike, they "work to rule"; and

Whereas, teachers' contracts would be automatically extended if agreement is not reached by the end of the expiring contract; and

Whereas, Rhode Island cities and towns have to comply with statutory and decreasing property tax caps; and

Whereas, binding arbitration chills the negotiation process and would create a disincentive for teacher unions to settle the unresolved issues by negotiations as they will perceive that they will gain more thru an arbitration award rather than a negotiated labor agreement; and

Whereas, arbitration can take well over a year and cost tens of thousands of dollars; and

Whereas, the proposed mandatory binding arbitration legislation being advanced by the teacher unions does not take student welfare into account, conform to the existing property tax caps ("3050"), and does not recognize management rights that our courts have established or prevent strikes or work to rule.

NOW, THEREFORE, BE IT RESOLVED the Coventry Town Council respectfully requests the Rhode Island General Assembly to reject Senate Bill S-713 and any and all binding arbitration legislation currently being considered for teacher contracts and not mandate the extension of contracts for teachers beyond their expiration date.

BE IT FURTHER RESOLVED that the Town Clerk is hereby instructed to submit a copy of this resolution to State Senators and State Representatives in the Rhode Island General Assembly seeking their consideration and support.

Vice-President Flanagan suggested using the actual bill number (S-713) in the proposed resolution in the clause that begins... "Therefore, Be It Resolved....."

Mr. Hyde raised a question as to why resolution did not appear on the agenda; as a result he hasn't had time to review and discuss. President Spear said that time is of the essence; he understands the General Assembly will be in session the first week in September. Mr. Spear commented to Councilman Hyde that if binding arbitration is implemented it would mean that when teachers unions reach a point of inability to resolve a contract settlement or particular grievance issue, it would go to mandatory binding arbitration and be settled by an arbitrator, whether we as a town can afford to pay it or not. Don't feel that this is the best way to handle the settlement of negotiations between teachers and school committees and it further creates a disincentive for teachers to want to sit and negotiate. Mr. Hyde stated that he believes that he feels the same way.

Representative Scott Guthrie cautioned that an opinionated letter should not be sent, the bill is likely to change, Council should have all the facts and he further stated that costs regarding police and fire are RIPEC's opinion.

President Spear encourages anyone who represents this community not to pass bills that mandate arbitration with teacher contracts. Mrs. Flanagan further stated that she understands that Bill S-713 would allow contracts to continue even when they expire and a new contract has not been negotiated.

Representative Guthrie indicated that although the bill may be modified it requires binding arbitration as the ultimate resolution if there is an impasse, as opposed to the current arrangement, which is negotiation.

Mrs. Flanagan questioned whether a teacher's contract could then never expire. Solicitor Rogers responded that, for instance, if there is a dispute as to whether or not a contract that has expired by its terms, is null and void, or is "evergreen", meaning that it always continues, is a legal question right now. This proposed legislation would basically prohibit contracts from expiring; it would allow contracts to be effectively perpetual pending binding arbitration to amend them. Mrs. Flanagan commented that we need to get to a point where we can negotiate good contracts, and if we can never get to a point where they expire or if we are forced to binding arbitration, it takes away the school committee's ability to negotiate a new contract in good faith. I do think this Council has the right to form an opinion and voice that to our state legislature.

Mr. Shibley agrees and believes Council needs to send a clear message from the Town to the General Assembly. Mr. Cloutier asked about the effect this could have on "3050" and President Spear responded that arbitrator could possibly rule a higher amount of settlement than the town could meet because of the cap.

Solicitor Rogers advised that if the Council decides to place the resolution on the agenda, that the first item be a unanimous vote of consent to put resolution on the agenda, then proceed with a second vote on the resolution.

Jean Tierney, 76 Fairway Drive, feels that the Council should not rush to the General Assembly, especially since President Spear stated that he just received the information. Binding arbitration has often been the way that things get done.

Arthur Capaldi, Esq., 1035 Main Street, stated that the proposed bill is strictly union, could place a burden on the towns and cities, and urges the Town Council to invite representatives to a meeting to discuss the resolution.

Motion made by Laura Flanagan seconded by Glen Shibley to add resolution to agenda. Vote: In favor (4); opposed (1- Mr. Hyde votes no). Without a unanimous decision, motion fails.

Mr. Hyde explains that he needs more time to study the issue, know what people want and talk to the Representatives and Senators. He also raised concern with regard to the opening paragraph's references to police and fire costs.

Solicitor Rogers advised Council of the requirement of 12 hours notice for emergency meeting per Sec. 3.13 of the Charter.

Motion made by Laura Flanagan seconded by Glen Shibley to call a special meeting on August 25, 2009 at 9:00 a.m. for specific purpose of consideration of this resolution. Vote 4-1 (Mr. Hyde votes no.) Motion passes.

President Spear announced that the Town Council will be filling vacancies on the Sewer Subcommittee, Friends of Human Services, Planning Board and Juvenile Hearing Board. Applications should be filed with the Town Clerk with a deadline of September 9, 2009. The Town Council will make a determination as to who is appointed by the fourth Monday in September.

President Spear further noted that the Town Council is considering the establishment of a Charter Review Commission to take a look at some issues, for example adoption of the capital budget before the operating budget. He asked council members to give thought to matters which may need to be adjusted or changed in the Charter in order that a determination can be made as to whether it would be worthwhile to establish a commission.

- Motion made by Laura Flanagan seconded by Ken Cloutier to approve minutes of July 27, 2009 and August 3, 2009. All voted Aye. So voted.
- President Spear presented Mr. Raymond Gandy with a proclamation recognizing him for his accomplishment in swimming across the English Channel

CONSENT AGENDA

1. Application by Bruce Capwell for renewal of Private Detective license
2. Application by Francis Brosnan for renewal of Private Detective license
3. Resolution approving financing and refinancing of sewer system extensions and improvements and approving the issuance of wastewater system revenue bonds and notes therefore in an amount not to exceed \$10,000,000
4. Resolution affirming award of contract for recycle truck body per the approved Capital Improvement Program
5. Resolution affirming award of contract for recycle truck cab and chassis per the approved Capital Improvement Program.
6. Resolution allowing sewer tie-in for Rhodes Technologies, 498 Washington Street
7. Resolution appointing Town Manager Thomas Hoover, Finance Director Warren West and Union Representative Brian Sullivan to the Police Pension Board

Motion made by Kenneth Cloutier seconded by Frank Hyde to approve Consent Agenda. All voted Aye.

- Resolution requesting the Planning Commission to delete provisions for the allowance of future Residential Compounds within the Town of Coventry

President Spear explained that the situation was brought to his attention by citizens living in one of the compounds who are paying a lot of taxes and getting no services.

We allow the construction of small housing developments, which initially started as family compounds, where an individual having sufficient acreage has the ability to build homes with road construction and everything within the compound being the responsibility of the family. These are on private streets built by the developer. The understanding is that everyone who buys the homes realizes that they will not get services that require road travel by town vehicles such as buses, plows and garbage trucks. Some people are paying as much as \$15,000 a year to the town in taxes and are getting none of the services.

Mrs. Flanagan suggested finding a way to develop a tax rate for people who live in residential compounds. After consulting with an attorney with expertise in municipal taxation, I was advised that there are four different classifications of taxation allowed under RI law. We would need to have legislation introduced at the state level that would allow a fifth tax rate for

these compounds. There is really no mechanism that exists now for us to give people any kind of credit. We can't maintain the roads because they were not built to town standards.

Mr. Spear believes the right thing to do is to establish a resolution that we are not going to build compounds in this community anymore. We are just creating a problem for the people that build them. When asked how much tax money is coming in to the Town from compounds, Manager Hoover stated about \$775,000.

Mr. Spear suggested that if citizens in the compounds want to rebuild their roads to town specifications, then the town would be obligated to provide services. I have asked the council to endorse a resolution which recommends to the Planning Commission that they not allow any further construction of compounds in this community.

Cindy Fagan, 770 Phillips Hill Road, Chairperson, Planning Commission stated that the Planning Board is in the process of changing subdivision regulations, and has been considering the idea of reducing the amount of homes in compounds to get back in line with the original family compound, no more than three homes. Gentry Farms has 20 homes and I don't know how that was passed. If the Council doesn't want any new compounds, we can accommodate that.

Mrs. Flanagan suggested that the Council talks to state legislators to see if we can get the introduction of a bill to create that fifth tax rate in the State of RI, which would allow us to tax those homes at a lower rate.

Manager Hoover is in agreement that we should adjust what people pay for what services they get. Would prefer to see roads improved and brought up to standards, then dedicate these subdivisions to be public so residents could therefore receive and enjoy all of the services that other residents enjoy.

Wayne Asselin, 30 Lorraine Ave., asked if people get some kind of credit now for compounds and condos. Mrs. Flanagan responded that we can't give compounds a credit under current tax law in RI, would need a new tax rate in RI. There are no special tax rates for condos.

Deborah Costa, Program Manager, Washington Village states that each homeowner in Washington Village is taxed on a percentage of the total land at Washington Village. Through the years the people of Washington Village have been told by the town that they are getting a tax credit and not being taxed at the same rate as an individual home owner, and that's why we don't have service either. If you go looking at these family compounds and try to help them out, what are you going to do for the condo associations when they want services?

Mrs. Flanagan responded that she would think that if any condo associations brought their roads up to the standard of a public road, the same deal would be on the table.

Mr. Hoover commented that condos are a bit different and parallel more of a commercial establishment than residential. Would have to look into that a little further.

Motion made by Frank Hyde seconded by Ken Cloutier to adopt resolution. All voted aye.

LICENSES

Application by Ken Young, 15B Hill Farm Road, for new hawker's license

Motion made by Frank Hyde seconded by Laura Flanagan to table until further information is received. All voted aye.

PUBLIC HEARINGS

Application by Shane and Mark Martin for transfer of Class B Ltd. Liquor license with victualling from A-1 Pizza, 1600 Nooseneck Hill Road, to Brick Alley Pizza, LLC.

Steven Marcello, Esq. represented the Martins and stated that his clients have signed a purchase and sales agreement with everything subject to approval of a B Ltd. License. The plan is to employ 4-8 people; the application tonight is for transfer of ownership. Motion made by Laura Flanagan seconded by Glen Shibley to grant B Ltd. License with victualling. All voted aye.

Application by Michael D. Cornicelli, Tin Cup Golf & Driving Range, LLC, for a new Class B Liquor License at 2 Fairway Drive

Applicant Michael Cornicelli, 94 Wood Cove Drive, was in attendance seeking permission to operate a six hole golf course with a Class B liquor license. Mr. Cornicelli stated that he will hold off on the driving range until he receives approval from Planning.

Robert DiPadua, 62 Laurel Avenue, spoke in favor of Mr. Cornicelli's application. Mr. DiPadua states that he has had business dealings with Mr. Cornicelli in the past and encountered no problems.

Debra Costa, property manager for Washington Village Condo Association, stated that she has spoken with the Cornicellis, have the questions and concerns of the association answered. Mr. Cornicelli agrees to make Washington Village an additional insured on his policy. The golf course has never looked so good and the association welcomes him.

Motion made by Glen Shibley seconded by Laura Flanagan to grant license. All voted aye.

Approval of Sewer Facilities Plan (Presentation by Weston & Sampson)

Manager Hoover announced that Chairman Bill Hall of the Sewer Subcommittee, representatives from Weston & Sampson, and project manager Barry Yacheshyn will provide a short presentation of the facilities plan. Mr. Hoover recommends moving expeditiously to approve this as we have until the end of this month to get it to DEM.

Barry Yacheshyn of Weston & Sampson presented facilities plan. (See full presentation in Town Council folder) He explained that the facilities plan needs to be updated every five years. This update includes changes with regard to new users, proposed subdivisions, and proposed changes in uses. He discussed the timeline of where we stand now, depicting the original flows for a 20 year Planning period. He further discussed flow re-allocations which would pertain to developments such as Coventry Housing Authority, Brookside Development and Center of New England. Mr. Yacheshyn also described additional flows that should be considered along with areas that should be studied for removal.

The Town can reaffirm, update or redo the facilities plan. We have been advised by DEM that we have to update because of some significant changes that are taking place in town as well as the inclusion of Rhodes Technologies, which was not originally included in the facilities plan.

Chairman Hall further discussed various reasons why certain areas were removed as the Sewer Subcommittee reprioritized the list based on environmental and economic development.

Mrs. Flanagan has concerns as to whether any businesses coming to Coventry would be affected by the revised plan. Mr. Hall explained that had been taken into consideration, but we have the ability to take usage from one area and use for another. There is a standing resolution now for the Centre of New England. Once the facilities plan has been passed by the Town Council, we will ask for another standing resolution re-written for another 78,000 gallons per day for Centre of New England. Every year we review what they are actually using.

Motion made by Frank Hyde seconded by Laura Flanagan to accept sewer facilities plan as presented. All voted aye.

PUBLIC COMMENT

Presentation on the "Preserve America" program and an event at the Paine House

Norma Smith, 1196 Main Street, spoke on behalf of the Western RI Civic and Historical Society. The Society will host Heritage Day on September 12. Paine House will be open for tours, a band will perform between 10:00 a.m. and 1:00 p.m. Parking will be available in the field across the street next door to fire station and possibly near the bike path. Solicitor Rogers indicated that no approvals would be required from the town. Mr. Spear suggested that Ms. Smith notify the police department so that they are aware of the event. Should also check with Guy Lefebvre in Recreation if you plan to park near the bike path.

Ms. Smith stated that "Preserve America" is applying for a grant. One of the requirements is that the town has to become a Preserve America community. We need the town to submit a resolution regarding preservation. Mr. Spear asked that Ms. Smith provide the council with what she needs and Council will work with her. Mrs. Flanagan suggested she get in touch with the Town Manager as she would like him to review the materials before it gets to Council.

No further public comment.

Motion made by Frank Hyde seconded by Laura Flanagan to adjourn meeting. All voted aye.


Town Clerk

2009 Coventry Wastewater Facility Plan Recommendation of Planning Areas

Presented by:
Barry A. Yaceshyn, P.E. Weston & Sampson
Tim S. DeGuglielmo, Weston & Sampson

Presented at:
Town Council Meeting
August 24, 2009

Introduction

- Facility Plan to be updated every 5-years for a 20-year future planning period.
- Update to include significant changes
 - New users
 - Proposed subdivisions
 - Proposed changes in use (i.e. Mill Conversions)
 - In accordance with Town CCP Plan
- Resolution recommending planning study area flow re-allocation.

Timeline

Coventry Sewer Sub-Committee Flow Re-Allocation Resolution	August 3, 2009
Town Council Recommendation of Draft Facilities Plan (FP) Update	August 24, 2009
Submittal of Draft FP Update to RI-DEM	By August 31, 2009
Public Hearing on FP Update	September 2009

Original Flows from Planning Areas for 20-year Planning Period (2030)

Area	Est. Flow (GPD)	Area	Est. Flow (GPD)	Area	Est. Flow (GPD)
A	84,056	N	105,095	AA	Removed (2003)
B	57,117	O	60,050	AB	Removed (2003)
C	56,351*	P	99,506*	AC	OWTS (1995)
D	70,137	Q	94,990	AD	43,542
E	107,072	R	25,801	AE	72,439
F	102,640*	S	30,870	AF	45,746
G	56,468*	T	72,804*	AG	OWTS (1995)
H	89,778	U	89,874*	AH	Community OWTS (1995)
I	81,744	V	90,551	AI	OWTS (1995)
J	232,317*	W	106,282*		
K	75,310	X	73,433		
L	125,539	Y	32,305		
M	104,298	Z	65,657*		
					TOTAL = 2,332,300 GPD

(*) - Additional Flows to be added based on proposed developments

Causes of Flow Re-Allocation

Additional Flows Need Re-Allocation (New Re-Developments)	
Rhodes Technologies (Area P)	56,000 GPD
CHA's Contentment Drive Addition (Area W)	3,910 GPD
CHA's Coventry Meadow (Area G)	11,040 GPD
Village at East Shore Drive (Area C)	8,190 GPD
Brookside Development (Area Z)	21,430 GPD
Rivercroft Common Mill Redevelopment (Area Z)	10,370 GPD
Riverside Landing (Area T)	1,510 GPD
Harris Mill Redevelopment (Area T)	7,725 GPD
Anthony Mill Redevelopment (Area U)	18,710 GPD
Center of New England (Area J)	78,000 GPD
	217,875 GPD
Additional Flows to Consider	
Proposed Industrial Lot Inclusion (Area P)	24,000 GPD
	24,000 GPD
TOTAL ADDITIONAL FLOWS	241,875 GPD
TOTAL PLANNING AREA FLOWS (2030)	2,332,300 GPD
TOTAL ESTIMATED FLOW FROM TOWN	2,574,175 GPD
DISCHARGE AGREEMENT TO WEST WARWICK	2,250,000 GPD
TOTAL FLOW NEEDING RE-ALLOCATION	324,175 GPD

Proposed Developments Plan

Recommended Study Areas for Removal

RECOMMENDED FLOW REDUCTIONS BASED ON REMOVAL OF PARCELS		
FLOWS NEEDING REALLOCATION (from previous page)	324,175 GPD	
Area N	87,085 GPD	(Partial Area Elm.)
Area AF	45,746 GPD	(Full Area Elm.)
Area AD	43,542 GPD	(Full Area Elm.)
Area X	30,308 GPD	(Partial Area Elm.)
Area Y	32,305 GPD	(Full Area Elm.)
Area Z	37,359 GPD	(Partial Area Elm.)
Area O	34,685 GPD	(Partial Area Elm.)
Area AE	6,493 GPD	(Partial Area Elm.)
FLOW REDUCTIONS OBTAINED	327,521 GPD	

Recommendation

- Portion of Study Area N
 - Proposed Phase III sewer area.
 - Pump station and/or low pressure sewers required.
 - Project scheduling, extension beyond Reservoir Road.
 - Construction Cost.
- Portion of Study Area AE
 - Project scheduling.
 - Outskirts of Flat River Road, beyond Town Hall parcel (Phase III sewer area).
 - Larger lots allow for more conventional OWTS systems.
- All of Study Area AF
 - Proposed Phase III sewer area.
 - Project scheduling.
 - Larger lots allow for more conventional OWTS systems.
 - Narrower homes with theoretically newer OWTS systems.

Recommendation (cont'd)

- Portion of Study Area X
 - Proposed Phase III sewer area.
 - Northern section of the Study Area (i.e. isolated).
 - Construction cost.
 - Project scheduling.
- All of Study Area Y
 - Proposed Phase III sewer area.
 - Isolated planning area.
 - Project scheduling.
 - Larger lots allow for more conventional OWTS systems.
- Portion of Study Area Z
 - Proposed Phase II sewer area.
 - Gravity sewer in from Y
 - Makes sense economically, if Y is eliminated to eliminate Z.
 - Pump station required.
 - Isolated planning area.
 - Project scheduling.
 - Larger lots allow for conventional OWTS systems.

Recommendation (cont'd)

- Portion of Study Area O
 - Proposed Phase III sewer area.
 - Pump station required (Construction Cost)
 - Isolated area
 - Project Scheduling.
 - Potential WWTF would result in gravity service availability.
- All of Study Area AD
 - Proposed Phase III sewer area.
 - Larger lots allow for conventional OWTS systems.
 - Isolated area
 - Project Scheduling.

*

February 16, 2010

Coventry Sewer Subcommittee

(Canceled due to Weather and Rescheduled to March 2, 2010)

February 8, 2010

Kent Count Daily Times
Brie Wetherell, legals
1353 Main St
West Warwick, RI 02893
Account #6363

Dear Brie:

Please advertise the following in the Kent County Daily Times on Friday, February 12, 2010.

TOWN OF COVENTRY
NOTICE OF PUBLIC HEARING
SEWER SUBCOMMITTEE

Notice is hereby given that the Sewer Subcommittee is in session at the Town Council Chambers, 1670 Flat River Rd, Coventry, RI on Tuesday, February 16, 2010 at 6:30 p.m. for Final Review of Town's Wastewater/Sewer Facilities Plan.

Individuals requesting interpreter services for hearing impaired must notify the Town Clerk's Office at 822-9173, 72 hours in advance of hearing date. Devices for the hearing impaired are available.

Per order of Sewer Subcommittee
Chairman, Bill Hall

Column Legal Ad

Change to Sewer Subcommittee

March 2, 2010

Coventry Sewer Subcommittee

February 24, 2010

Kent County Daily Times
Brie Wetherell, legal
1353 Main St
West Warwick, RI 02893
Account #6363

Dear Brie:

Please advertise the following in the Kent County Daily Times on Friday, February 25, 2010.

TOWN OF COVENTRY
NOTICE OF PUBLIC HEARING
SEWER SUBCOMMITTEE

Notice is hereby given that the Sewer Subcommittee is in session at the Town Council Chambers, 1670 Flat River Rd, Coventry, RI on Tuesday, March 2, 2010 at 7:00 p.m. for Final Review of Town's Wastewater/Sewer Facilities Plan.

Individuals requesting interpreter services for hearing impaired must notify the Town Clerk's Office at 822-9173, 72 hours in advance of hearing date. Devices for the hearing impaired are available.

Per order of Sewer Subcommittee
Chairman, Bill Hall

Column Legal Ad

Coventry Sewer Subcommittee
Minutes

March 2, 2010

Members Present:

Chairman Hall
Mr. Avedisian
Councilman Shibley
Mr. Colaluca
Mr. Mullaney
Mr. Piette
Ms. Simpanen

Members Absent:

Councilman Hyde

Members Excused:

Mr. Skurka

Also Present:

Mr. Joyal
Mr. Yaceshyn
Mr. DeGuglielmo

Meeting called to order at 7:00 pm. Attendance taken. Mr. Piette will stand in for Councilman Hyde and Mr. Colaluca will stand in for the Mr. Skurka.

Review of emergency evacuation plan.

Chairman Hall introduced the newest member of the Committee, Judy Simpanen. She has an extensive back ground with clean water vs. dirty water. He welcomes her experience.

ACCEPTANCE AND APPROVAL OF JANUARY 19, 2010 MEETING MINUTES:

Mr. Avedisian motioned to accept the January 19, 2010 minutes as presented, Mr. Piette seconded, Ms. Simpanen abstained because she was not present at that meeting. Everyone else voted Aye, motion carried.

GUEST/CUSTOMER BUSINESS:

None.

SEWER TIE-IN APPLICATIONS:

Emergency tie-in for Normand Morin, 543 Washington St:

Paperwork handed out to members. Mr. Smith called Chairman Hall in regards to a critical septic failure at the above address. DEM would not approve a new septic system because sewers were on the street. Chairman Hall gave Mr. Smith verbal approval based on review of the plans. Mr. Joyal said construction

went fine. Mr. Avedisian motioned to recommend tie-in approval to the Town Council, Mr. Colaluca seconded, all voted Aye, motion carries.

REPORTS:

None.

OLD BUSINESS:

Report by Town Council Liaisons re: Anthony St re-surface, tabled from January 19, 2010 meeting:

Councilman Hyde was not present to speak about this, tabled to March meeting.

Final Review of Town's Wastewater Facilities Plan:

2 handouts; Weston & Sampson's presentation and DEM's comments. Mr. Yaceshyn explained, for the benefit of the new members, that the Facilities Plan is a long, drawn out process. It must take place every 5 years for the Town to get funding through Clean Water Financing. Tonight is the Final Phase. There have been a few public meetings. After tonight's public hearing DEM can issue the Finding of No Significant Impact (FONSI). Mr. Yaceshyn said that DEM's comments were fairly mild; they were more about wording than anything substantial. Motion was made by Councilman Shibley to open the Public Hearing, seconded by Mr. Avedisian. Councilman Shibley, Mr. Mullaney, Chairman Hall, Ms. Simpanen and Mssrs. Colaluca, Avedisian and Piette all voted Aye, motion carries.

Public Hearing:

Joyce Jorinscay of 18 Lakeside Dr said they have been told for years that there wouldn't be sewers on Lakeside Dr so they put in a new septic system. They found out last week that sewers are going in the area. Chairman Hall told her the question is not appropriate for the public hearing but she can speak during Public Comment.

Colette Blais of Montana Ave said she goggled Tiogue Lake and sewers and saw information that said the project will be paid by stimulus money. She wants to know if this is true. Chairman Hall said this will be address during Public Comment.

There were no members of the public to speak regarding the Final Review of the Town's Wastewater Facilities Plan. Motion made by Mr. Avedisian to close the Public Hearing, seconded by Councilman Shibley. Council Shibley, Mr. Mullaney, Chairman Hall, Ms. Simpanen and Mssrs. Colaluca, Avedisian and Piette voted Aye, motion carries.

Chairman Hall asked what the next step was. Mr. Yaceshyn answered to wait for DEM to issue the FONSI. Once it is issued, he will distribute it.

NEW BUSINESS:

Alternate funding for sewer projects:

Mr. Yaceshyn said they have tapped their ability to use SRF Funding and because Tiogue dam doesn't have any clean water impact it can't be funded by Clean Water Financing. The Clerk will try to make contact with Marie Sorman to find out specifics of the financing she spoke with Mr. DiPadua about.

PUBLIC/SUBCOMMITTEE MEMBER COMMENT:

Sewer Subcommittee
March 2, 2010

No Subcommittee member comment.

Public Comment:

Chairman Hall asked Mrs. Jorinscay if she has installed a new septic system within the last 7 years; she answered yes. He explained to her the new policy about septic systems installed within 7 years of sewers being available. The projected date to accept the flows of Contract 6 is August or September 2010. Mrs. Jorinscay asked Mr. Yaceshyn if he was aware of the high ground water table in her neighborhood; he is. She also expressed concern in regards to traffic during the construction. Mr. Yaceshyn said the roads will be open during the night but will be tough to pass 7am to 4pm. Chairman Hall further explained that there will be information on the construction distributed, homeowners will know in advance.

Ms. Blais told the Committee that it was a shock to see the writing on the street. In 1999 she got rid of her cesspool and installed a septic system. She is stunned at how much this will cost the homeowners. She asks if the project is using stimulus funds why the project is so expensive. Mr. Yaceshyn explained that the project is not just Lakeside, it is also Montana, Arizona, Idaho, Colorado & Alaska streets; the whole triangle near the lake.

Susan Verrill of 34 Lakeside Dr is worried about having a water problem caused by digging; she doesn't want large puddles in front of her house. Mr. Yaceshyn told her that the contractor is well aware of the water problems in the area and that they have worked in high water areas before. She asked if they would get a totally new road vs. just a patch job. Chairman Hall explained the repaving process; patch down for 3 months for settling purposes and then a final curb to curb resurface.

Ms. Blais asked if there was any financial aide available. Mr. Yaceshyn answered that there was talk of some but he doesn't know where it stands. Chairman Hall thanked the public for attending the meeting.

Mr. Colaluca motioned to adjourn, Mr. Avedisian seconded, all voted Aye, so moved. Meeting adjourned at 8:05pm.

2009 Coventry Wastewater Facilities Plan Update

Presented by:
Barry A. Yaceshyn, P.E. Weston & Sampson
Tim DeGuglielmo, Weston & Sampson

Presented at:
Coventry Sewer Subcommittee Meeting
February 16, 2010

Introduction

- Facility Plan to be updated every 5-years for a 20-year future planning period.
- Update to include significant changes
 - New users
 - Proposed subdivisions
 - Proposed changes in use (i.e. Mill Conversions)
 - In accordance with Town CCP Plan
- Final Public Hearing
 - Begin 30-day public comment
 - Issue of Finding Of No Significant Impact (FONSI) by RI-DEM

Timeline

Coventry Sewer Sub-Committee Flow Re-Allocation Resolution	August 3, 2009	✓
Town Council Recommendation of Draft Facilities Plan (FP) Update	August 24, 2009	✓
Submittal of Draft FP Update to RI-DEM	August 31, 2009	✓
Public Hearing on FP Update	February 16, 2010	
RI-DEM Issue FONSI	March 16, 2010	

Original Flows from Planning Areas for 20-year Planning Period (2030)

Area	Est. Flow (GPD)	Area	Est. Flow (GPD)	Area	Est. Flow (GPD)
A	84,058	N	105,095	AA	Removed (2003)
B	57,117	O	60,050	AB	Removed (2003)
C	56,351*	P	99,506*	AC	OWTS (1995)
D	70,137	Q	94,980	AD	43,542
E	107,072	R	25,901	AE	72,439
F	102,640*	S	30,870	AF	45,746
G	56,468*	T	72,804*	AG	OWTS (1995)
H	89,778	U	89,874*	AH	Community OWTS (1995)
I	61,744	V	90,551	AI	OWTS (1995)
J	232,317*	W	106,282*		
K	75,310	X	73,433		
L	125,539	Y	32,305		
M	104,288	Z	65,657*		
TOTAL =					2,332,300 GPD

(*) - Additional Flows to be added based on proposed developments

Causes of Flow Re-Allocation

Additional Flows Need Re-Allocation (New/Re-Developments)	
Rhodes Technologies (Area P)	56,000 GPD
CHA's Contentment Drive Addition (Area W)	3,910 GPD
CHA's Coventry Meadow (Area G)	11,040 GPD
Village at East Side Drive (Area C)	8,190 GPD
Broadside Development (Area F)	21,420 GPD
Riverwalk Common Mill Redevelopment (Area Z)	10,370 GPD
Riverside Landing (Area T)	1,510 GPD
Harris Mill Redevelopment (Area T)	7,725 GPD
Anbony Mill Redevelopment (Area U)	19,710 GPD
Center of New England (Area J)	78,000 GPD
TOTAL	217,675 GPD
Additional Flows to Consider:	
Proposed Industrial Lot Inclusion (Area P)	24,000 GPD
	24,000 GPD
TOTAL ADDITIONAL FLOWS	241,675 GPD
TOTAL PLANNING AREA FLOWS (2030)	2,332,300 GPD
TOTAL ESTIMATED FLOW FROM TOWN	2,574,175 GPD
DISCHARGE AGREEMENT TO WEST WARWICK	2,250,000 GPD
TOTAL FLOW NEEDING RE-ALLOCATION	324,175 GPD

Proposed Developments Plan

Recommended Study Areas for Removal

RECOMMENDED FLOW REDUCTIONS BASED ON REMOVAL OF PARCELS		
FLOWS NEEDING REALLOCATION (from previous page)	324,175 GPD	
Area N	97,085 GPD	(Partial Area Elim.)
Area AF	45,746 GPD	(Full Area Elim.)
Area AD	45,842 GPD	(Full Area Elim.)
Area X	30,306 GPD	(Partial Area Elim.)
Area Y	32,305 GPD	(Full Area Elim.)
Area Z	37,359 GPD	(Partial Area Elim.)
Area O	34,685 GPD	(Partial Area Elim.)
Area AE	6,493 GPD	(Partial Area Elim.)
FLOW REDUCTIONS OBTAINED	327,521 GPD	

Recommendation

- Portion of Study Area N
 - Proposed Phase III sewer area.
 - Pump station and/or low pressure sewers required.
 - Project scheduling, extension beyond Reservoir Road.
 - Construction Cost.
- Portion of Study Area AE
 - Project scheduling.
 - Outskirts of Flat River Road, beyond Town Hall parcel (Phase III sewer area).
 - Larger lots allow for more conventional OWTS systems.
- All of Study Area AF
 - Proposed Phase III sewer area
 - Project scheduling.
 - Larger lots allow for more conventional OWTS systems
 - Newer homes with theoretically newer OWTS systems.

Recommendation (cont'd)

- Portion of Study Area X
 - Proposed Phase III sewer area.
 - Northern section of the Study Area (i.e. isolated).
 - Construction cost.
 - Project scheduling.
- All of Study Area Y
 - Proposed Phase III sewer area.
 - Isolated planning area.
 - Project scheduling.
 - Larger lots allow for more conventional OWTS systems.
- Portion of Study Area Z
 - Proposed Phase II sewer area.
 - Gravity sewer in from Y
 - Makes sense economically, if Y is eliminated to eliminate Z.
 - Pump station required.
 - Isolated planning area.
 - Project scheduling.
 - Larger lots allow for conventional OWTS systems.

Recommendation (cont'd)

- Portion of Study Area O
 - Proposed Phase III sewer area.
 - Pump station required (Construction Cost)
 - Isolated area
 - Project Scheduling.
 - Potential WWTF would result in gravity service availability.
- All of Study Area AD
 - Proposed Phase III sewer area.
 - Larger lots allow for conventional OWTS systems.
 - Isolated area
 - Project Scheduling.