



Environmental Impact Evaluation for the Town of Farmington Water Pollution Control Facility

1.1 PROJECT IDENTIFICATION:

The Upgrade and Expansion of the Town of Farmington's Water Pollution Control Facility (WPCF) located at 921 Farmington Avenue in Farmington, Connecticut.

1.2 SUMMARY OF ENVIRONMENTAL REVIEW

The Town of Farmington operates a wastewater collection system which services Farmington and portions of the Towns of Avon, Canton and Burlington (project location, figure 1). The Town of Farmington also accepts some wastewater flows from the Towns of New Britain and Plainville. The Town of Farmington has proposed modifications to the wastewater treatment facility in accordance with the facilities planning document prepared by Wright-Pierce, "Wastewater Facilities Plan for the Farmington Water Pollution Control Facility, Town of Farmington, Connecticut, April 2012". The Facility Plan and all associated comments submitted in regard to this project have been reviewed by the Connecticut Department of Energy and Environmental Protection (DEEP) in accordance with the Connecticut Environmental Policy Act Regulations, Sections 22a-1a-1 through 22a-1a-12. This document summarizes the findings of the facility plan.

The Farmington WPCF is designed for an average flow rate of 5.65 million gallons per day (mgd) with secondary treatment and seasonal nitrification. It currently processes an annual average of approximately 4.67 mgd. In order to meet current environmental regulations and projected growth, the Farmington WPCF will require an expansion and upgrade. The Town of Farmington's WPCF will face more stringent nitrogen and phosphorus limitations for its effluent discharge which will require additional treatment and modifications to the existing treatment facilities. In addition the projected future wastewater flow and pollutant loads are expected to increase by approximately thirty-five percent (35%) by 2035. These projections were based on an assessment of the influent flows and loads for a 20-year planning period of the following sources:

- Residential flows in the Town of Farmington
- Industrial and commercial flows in the Town of Farmington
- Flows from the UCONN Health Center
- Flows from Miss Porter's School
- Flows from Westfarms Mall
- Flows committed to the Towns of Avon and Canton

The expanded and upgraded facility will require installation of new mechanical bar screens, vortex grit removal system and a new raw sewage pump station. Primary tank upgrades and aeration tank upgrades including conversion to the Modified Ludzack-Ettinger (MLE) process will be required. The MLE process upgrade will include the demolition of the existing trickling filters, construction of a third aeration tank and third secondary clarifier, and the construction of anoxic zone baffle walls and internal recycle pumps. The aeration tanks will be configured so they can be operated in either the MLE process configuration or the A2O (anaerobic-anoxic-oxic) configuration. Because biological phosphorus removal may not be desirable at all times, provisions for chemical precipitation of phosphorus are also included. Additionally, the Farmington WPCF will be required to comply with new phosphorus limits before a comprehensive upgrade can be completed. Therefore, interim improvements to provide for chemical precipitation of phosphorus in the WPCF's existing secondary clarifiers are also planned. A new fine bubble diffused aeration system will be provided.

The solids handling system will be upgraded to provide a separate waste activated sludge thickening system. Improvements to the sludge dewatering equipment will reduce the concentrations of nitrogen and phosphorus in the solids handling recycle streams and reduce the potential for odor generation. The facility will require HVAC (heating, ventilation, and air condition), instrumentation and SCADA (supervisory control and data acquisition) upgrades and electrical improvements including modifications of existing equipment to comply with the NFPA 820 for fire protection. The upgrade will also include new odor control systems for the headworks, primary clarifiers and solids handling facilities to reduce potential odorous emissions from the site.

The project will be designed to allow for continual operation of the facility while the expansion and upgrades are implemented.

1.2.2 Existing Conditions

The Town of Farmington WPCF processes wastewater from Farmington as well as from the towns of Avon, Burlington and Canton, which have inter-municipal agreements with Farmington. The Farmington WPCF also accepts flows from small portions of the towns of New Britain and Plainville. After primary and secondary treatment and disinfection, treated effluent is discharged via the outfall into the Farmington River which further discharges into the Connecticut River and finally into Long Island Sound.

The existing Farmington WPCF has a design annual average flow rate of approximately 5.65 MGD and currently processes an annual average flow rate of approximately 4.67 MGD and a peak hour flow rate of 13.9 MGD. The plant provides primary and secondary biological wastewater treatment with the ability to remove some nitrogen. The existing solids handling facility dewateres the sludge and cake generated is hauled to the Hartford WPCF for final incineration.

1.2.3 Purpose and Need

The Town of Farmington's WPCF was originally constructed in 1960. The WPCF was upgraded

Several options for upgrading this facility were considered and are outlined below:

Modified Ludzack- Ettinger (MLE) Process

The MLE process is generally considered a baseline alternative for nitrogen removal in wastewater treatment plants. In some circumstances, modification of the MLE process to an A2O process can achieve both biological nitrogen and biological phosphorus removal. A review of the existing conditions indicates insufficient aeration tank volume for either of these processes. Even with additional aeration tank volume, neither process has the potential to meet the 2014 TN limit without the purchase of equivalent nitrogen credits. An option to use chemical phosphorus precipitation would provide flexibility to maximize the biological nitrogen removal process. Implementing the MLE process would require the construction of one additional aeration tank and one additional secondary clarifier to accommodate projected future flows and loads.

Four-Stage or Five Stage Bardenpho Process

The Four-stage and Five-stage Bardenpho process can achieve significantly greater reductions in nitrogen than the MLE or A2O processes and can also achieve biological phosphorus removal (five-stage process). As with the MLE process, there is insufficient existing aeration tank volume for these processes. Based on modeling of future flows and loads, three additional aeration tanks and one additional secondary clarifier would be required to implement the Bardenpho process.

MLE process utilizing Integrated Fixed Film Activated Sludge (IFAS) technology

The IFAS technology combines suspended growth and attached growth to effectively increase the capacity of an activated sludge system. Media is added to the mixed liquor to provide the surface for biofilm growth. The main benefit of the IFAS technology is its ability to provide effective treatment with considerably less aeration tank volume than competing conventional technologies. The IFAS process can be configured as a MLE, A2O or Bardenpho process. Preliminary analysis would indicate that utilizing the IFAS media in combination with the MLE process would be more cost-effective than a Bardenpho configuration.

MLE process followed by post-denitrification Moving Bed Biofilm Reactor (MBBR)/Actiflo process

MBBRs are continuous flow-through, non-clogging bio-film reactors containing media with a high specific surface area that does not require backwashing or cleaning. The biomass that treats the wastewater is attached to the surfaces of the media in an aerobic environment or anoxic environment. Unlike activated sludge and IFAS processes, there is no return sludge in MBBR systems and all the sludge that settles in the final clarifiers is blown down to the sludge handling facilities. At the Farmington facility, this technology would be best suited as a post-denitrification step following secondary clarification. Effluent from the MBBR would require clarification prior to discharge to the outfall to remove solids that grow and slough off the media. It is assumed that a modest nutrient removal upgrade within the activated sludge process (i.e.,

conditions. The existing trickling filter process would be eliminated. The anoxic zone of the MLE process would be configured to allow for a portion to operate in an anaerobic mode (A2O process) for biological phosphorus removal.

Other improvements included would provide support to the new treatment system and provide increased plant reliability and energy efficiency. These include the addition of a raw sewage screening system, improved grit removal, replacement of the existing raw sewage pump station and primary clarifiers with new facilities, separate handling of primary and secondary sludge to reduce nutrient recycle loads to the treatment process and reduce the odor generation potential of the solids handling facilities, replacement of aging sludge dewatering equipment and improvements to various plant support systems and buildings such as electrical improvements, plant-wide instrumentation and control systems, building systems, site improvements and other miscellaneous improvements.

This alternative would add needed treatment capacity and allow for meeting effluent phosphorus limits and provide for increased nitrogen removal. This alternative would rely on the purchase of nitrogen credits to meet the WPCF's obligation under the General Permit for Nitrogen Discharges, however, the facilities plan allows for future capital improvements to be incorporated into the treatment process to meet these nitrogen limits without purchasing credits, if necessary. A copy of figure 10-3 from the 2012 Facility Plan shows the layout of the upgrade of the treatment plant.

1.3 IMPACT OF PROPOSED PROJECT ON THE ENVIRONMENT

1.3.1 Direct Impact

1.3.1.1 Air Quality

As a result of the construction, the proposed project will have negative air quality impacts from construction equipment and dust. Both impacts are short term and will be mitigated by inclusion of dust control measures in the construction contracts. The project also includes the construction of additional odor control systems which will help to reduce off-site odors following completion of the construction project.

1.3.1.2 Aesthetics, Traffic and Noise

As a result of the construction, the proposed project will have no negative impact on aesthetics as the construction will not be outside the project area. During construction, there may be hauling of excess excavated material or backfill material, concrete deliveries or equipment deliveries, however, this will be limited in working hours from 7:00 am to 4:00pm. The Contractor will be alerted to existing traffic conditions in the area near the entrance to the WPCF and may utilize traffic control flaggers or police officers during periods of heavy truck traffic such as concrete pours for new structures. Noise impacts from construction and demolition will be mitigated by requiring the Contractor to comply with the Town of Farmington noise ordinance which includes limiting work hours from 7:00 am to 6:00pm except when cause can be shown to allow work outside of these hours.

rainfall will occur. No construction equipment will be operated, located, or stored in the wetlands areas. All exposed soils will be restored to their former condition, either with appropriate foliage or with erosion-resistant stone cover.

1.3.4.5 Socio-Economic Impacts

The opinion of the overall program costs for the Town of Farmington WPCF upgrade is presented in the table below.

	COST
Pretreatment & Primary Treatment	\$ 7,920,000.00
Aeration System Modifications / Nitrogen Removal	\$ 4,380,000.00
Secondary Clarifier Improvements	\$ 2,930,000.00
Disinfection System Modifications	\$ 1,470,000.00
Solids handling Facilities	\$ 2,710,000.00
Miscellaneous Building and Structures	\$ 2,340,000.00
Subtotal	\$ 21,750,000.00
Instrumentation & Control & SCADA	\$ 600,000.00
Site work & Specials	\$ 2,870,000.00
HVAC / Plumbing	\$ 2,010,000.00
Electrical	\$ 5,210,000.00
General Contractor's OH&P, Bonds, General Conditions	\$ 5,890,000.00
Subtotal	\$ 38,330,000.00
Design Contingency (15%)	\$ 5,825,000.00
Inflation to mid-point of construction (3%/yr for 2.5 yrs)	\$ 3,386,000.00
Construction Total	\$ 47,541,000.00
Technical Services (Design, Bidding, Const. Admin)	\$ 6,330,000.00
Construction Contingency (5%)	\$ 2,377,000.00
Materials Testing, Lead Paint & Asbestos Abatement	\$ 290,000.00
Legal, Administration & Financing	\$ 950,000.00
Project Total (based on bidding in 2014)	\$ 57,488,000.00

It is anticipated that the overall local share of the project costs will be reduced through a grant from the CT DEEP Clean Water Fund. Revenue will be generated through sewer user fees as well as revenue generated from the towns of Avon, Canton and Burlington, based on the capacity allocated to these towns as defined within the specific inter-municipal agreements. It should be noted that the WPCF's annual operating budget is based on sewer user fees including residential users that are charged a flat rate and commercial users that are charged based on water usage. The debt retirement for Farmington's portion of the capital improvements will be through the Town's General Fund under the current Town ordinance. As described in Chapter 156, Article V, Section §156-50, the cost for the upgrade of the wastewater treatment plan is the Town's responsibility with the funding source for this being general obligation bonds paid by general taxpayers. This same section defines the cost responsibility for studies and engineer work to fall on the Water Pollution Control Authority with the funding source being Sewer use fees paid by all users of the system. The approximate annual debt retirement cost won't impact the current Farmington sewer user fees.

1.3.3 Irreversible and Irretrievable Commitment of Resources

Resources being committed to the implementation of the project include all fuel, labor, and materials necessary for work involving the waste water treatment facility. This project also requires a long-term commitment on the part of the town to provide labor and management resources to properly operate and maintain the wastewater collection and conveyance system as well as the wastewater treatment facility.

1.3.4 Relationship of Project to Approved Land Use Plans

At the time the Farmington Wastewater Facilities Plan was completed in April 2012, the state's 2005 to 2010 Plan of Conservation and Development Policies Plan map was being utilized. Since that time, the state has adopted a revised Plan of Conservation and Development for 2013 to 2018. The attached map shown in Figure 2 identifies the Farmington Sewer Service Area as well as the sewer service area boundaries for the areas within the adjacent towns of Avon, Burlington, Canton, New Britain and Plainville. Consistency with the revised state plan is discussed below. The Connecticut General Assembly recently adopted the Conservation and Development Policies Plan for 2013 to 2018 on June 5, 2013.

1.3.4.1 Farmington Sewer Service Area

As discussed in the 2012 Wastewater Facilities Plan, there are several areas within the Town of Farmington's sewer service area that appeared to be inconsistent with the State's 2005 to 2010 Plan of Conservation and Development (C&D). Many of these areas are local schools, parks and other recreation areas that are shown as Existing Preserved Open Space on the State's C&D map. These facilities have existing bath houses or other sanitary facilities that are connected to the sanitary sewer system. Other areas that appeared to be inconsistent included a residential neighborhood with potential septic disposal issues, areas with existing sewers that are shown as open space or rural land on the State's C&D map and areas for proposed sewered growth where the State's C&D map is not consistent with the town's Plan of Conservation and Development. Discussions were held with the DEEP and the State's Office of Policy and Management (OPM) regarding these apparent inconsistencies. During development of the 2012 Wastewater Facilities Plan, OPM indicated that these areas are consistent with the State's Plan of Conservation and Development. A copy of Figure 2-7 from the 2012 Wastewater Facilities Plan is included showing the Farmington Sewer Service Area.

Based on the information presented in Figure 2, the majority of the Town of Farmington is within one of the Priority Funding Areas (PFAs) shown on the 2013 to 2018 OPM map. The only area not included in one of the PFAs is in the northeast portion of Farmington that is part of the town's Sewer Avoidance Area. The areas of town that are either within the sewer service area or within Protected Lands appear to be consistent with what was previously discussed with OPM as part of the development of the 2012 Wastewater Facilities Plan.

1.3.4.2 Adjacent Towns with Sewer Connections to the Farmington Collection System

Portions of the sanitary sewer systems in Avon, Burlington, Canton, New Britain and Plainville discharge into the Town of Farmington's sanitary sewer collection system for treatment at the

Use map shows that the Protected Land areas appear to be consistent with parcels indicated to be either "Open Space" or "Proposed Open Space" on the Town's map. Based on a review of this information, it appears that the portion of the Town of Avon's SSA that discharges to the Farmington WPCF is consistent with the state's Priority Funding Areas. It is also noted that Avon's SSA was recently developed as part of their Wastewater Facilities Plan developed in 2006 and approved by the DEEP.

Burlington: A portion of the Town of Burlington located adjacent to the area surrounding Lake Garda has been sewerred and discharges to the Farmington WPCF. This area was sewerred previously as part of a state-funded project. The proposed sewer service area boundary for the portion of Burlington that flows into the Farmington collection system is shown in Figure 2. The boundary of the Burlington Sewer Service Area in this location is based on the map prepared by Fuss & O'Neill, Inc. dated 12/27/94 entitled Attachment C – Burlington/Farmington Waste Water Management District. As can be seen in Figure 2, the proposed sewer service area is within a Priority Funding Area on Burlington's LGM and does not have any Protected Lands shown within the boundary.

Canton: Secret Lake Rd., Forest Lane Rd., Elizabeth Rd. and parts of Old Albany Rd. and Colonial Road are sewer areas that generate flow from the Town of Canton that are discharged through the Avon collection system and into the Farmington collection system for treatment at the Farmington WPCF. The area served by these sewers is currently designated as a Priority Funding Area and is generally consistent with the State's C&D map. The boundary of the Secret Lake Sewer Shed is shown in Figure 2. There are some parcels located north of Washburn Road on Juniper Circle that are shown to be within the boundary of the Canton Sewer Service Area that discharges to Avon but that are not within the Priority Funding Area. While the sewer maps obtained from Canton do not show public sewers extending to this area, the Sewer Service Area boundary included on the Interactive Locational Guide Map on OPM's web site includes these parcels and therefore it was included in Figure 2. These parcels have existing houses and may be connected to the Canton collection system through a private sewer connection.

New Britain: The Branford Walk Condominiums are located partly in Farmington and partly in New Britain. Wastewater generated in the condominium complex flows into the Town of Farmington collection system. These condominiums are existing and are located in an area that is currently classified as a Priority Funding Area which is consistent with the State's Plan of Conservation and Development. This area is shown on Figure 2.

Plainville: Two to four industrial parcels on Spring Lane in Plainville discharge into the Town of Farmington collection system. This area is currently classified as a Priority Funding Area is consistent with the State's Plan of Conservation and Development.

1.3.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts are limited to short-term impacts directly related to construction. Dust and noise will be present during construction operations. Erosion and sedimentation may occur on the site. All these adverse impacts can be minimized, as shown below.

is presented below.

- Local Inland Wetland Approval (upland review area is a 150' buffer from wetlands)
- Planning & Zoning Commission Approval
- Local Building Permits (by the Contractor)
- Fire Marshall Approval

1.5 COMMENTS ON SCOPING NOTICE

A scoping notice was issued by the CT DEEP in the Environmental Monitor on January 21, 2014. In response to this scoping notice, the CT DEEP received one comment letter from the Office of Policy and Management, Intergovernmental Policy Division dated February 21, 2014. This letter contained three separate questions/comments on the scoping notice. A summary of these questions/comments is presented below and reference is given to where in the Environmental Impact Evaluation these issues are addressed.

Item 1 – There were questions as to whether the project anticipated an expansion of any of the sewer service areas for either Farmington or its contract communities.

This issue is addressed in Section 1.3.4 of the EIE. Section 1.3.4.1 discusses the Farmington Sewer Service Area. The Town had a previous sewer master plan that identified areas where future sewer extensions were anticipated. The consistency of these areas with the State's C&D plan was discussed with DEEP and OPM during the facilities planning process. The final Sewer Service Area map was presented as Figure 2-7 of the 2012 Wastewater Facilities Plan and is included as an attachment to this EIE.

Based on discussions with the contract communities, there were no identified extensions of their Sewer Service Areas. It is noted that portions of the existing Sewer Service Areas in some contract communities include areas where sewer extensions have been planned in the past but have not necessarily been installed at this time.

Item 2 – It was noted that the flow projections included additional I/I from proposed sewer extensions as well as continued deterioration of the existing collection system.

It is standard practice to account for potential future I/I flows and is recommended in *TR-16, Guides for the Design of Wastewater Treatment Works*. As noted in Section 1.2.1, the Town has undertaken a separate infiltration and inflow (I/I) analysis and is currently rehabilitating some of the sources of I/I identified separately from the WPCF upgrade project that is the subject of this EIE.

Item 3 – The comment expressed concern that the WPCF operations budget and debt retirement costs could have a significant impact on current users if user rates are based on water consumption and, as is currently a trend, water consumption continues to decline due to conservation and low-flow fixtures. The comment also expresses the concern that this could put



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1.2 SUMMARY OF ENVIRONMENTAL REVIEW

The Town of Farmington operates a wastewater collection system which services Farmington and portions of the Towns of Avon, Canton and Burlington (project location, figure 1). The Town of Farmington also accepts some wastewater flows from the Towns of New Britain and Plainville. The Town of Farmington has proposed modifications to the wastewater treatment facility in accordance with the facilities planning document prepared by Wright-Pierce, "Wastewater Facilities Plan for the Farmington Water Pollution Control Facility, Town of Farmington, Connecticut, April 2012". The Facility Plan and all associated comments submitted in regard to this project have been reviewed by the Connecticut Department of Energy and Environmental Protection (DEEP) in accordance with the Connecticut Environmental Policy Act Regulations, Sections 22a-1a-1 through 22a-1a-12. This document summarizes the findings of the facility plan.

The Farmington WPCF is designed for an average flow rate of 5.65 million gallons per day (mgd) with secondary treatment and seasonal nitrification. It currently processes an annual average of approximately 4.67 mgd. In order to meet current environmental regulations and projected growth, the Farmington WPCF will require an expansion and upgrade. The Town of Farmington's WPCF will face more stringent nitrogen and phosphorus limitations for its effluent discharge which will require additional treatment and modifications to the existing treatment facilities. In addition the projected future wastewater flow and pollutant loads are expected to increase by approximately thirty-five percent (35%) by 2035. These projections were based on an assessment of the influent flows and loads for a 20-year planning period of the following sources:

- Residential flows in the Town of Farmington
- Industrial and commercial flows in the Town of Farmington
- Flows from the UCONN Health Center
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- Flows committed to the Towns of Avon and Canton

- Flows committed to the Town of Burlington
- Expected infiltration and inflow associated with the collection system

The projected future flows included increases from planned sewer connections in Farmington as well as accounting for the full capacity allotments of the existing inter-municipal agreements with Avon and Burlington.

As a result of the aging system, increased environmental regulations that include nutrient removal, and projected increased flows, the Town and their Water Pollution Control Authority proactively elected to evaluate and plan for improvements to the WPCF. The findings and recommendations were summarized in a Wastewater Facilities Plan (Wright-Pierce, April 2012) for the comprehensive upgrade to the Farmington WPCF. In accordance with the regulations of the Connecticut Environmental Policy Act sections 22a-1a-1 to 22a-1a-12, the finding and recommendations made as part of that plan are summarized below.

The Agency's contact for this project is:

Stacy Pappano
Municipal Facilities
Planning and Standards Division
Bureau of Water Protection and Land Reuse
Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
860-424-3704
stacy.pappano@ct.gov

1.2.1 Project Description

The 2012 Wastewater Facilities Plan (2012 Facilities Plan) identifies strategies for the Town of Farmington's WPCF to remain in compliance with current and proposed regulations and to accommodate increased flows and loads. These regulations include the Total Nitrogen to Long Island Sound TMDL requirement as well as phosphorus removal requirements.

The 2012 Facilities Plan assesses operation and maintenance requirements of the existing facility, evaluates the physical condition of the existing system and presents recommendations for facilities and equipment improvements. The 2012 Facilities Plan also presents a plan to implement nitrogen reduction and other improvements at the plant through 2035 and assesses planning level funding requirements.

As part of the facilities planning effort undertaken by the Town, a separate Infiltration and Inflow (I/I) evaluation was performed followed by a Sewer System Evaluation Survey (SSES) to identify sources of I/I entering the collection system. The WPCF staff are implementing rehabilitation efforts for some of the sources identified as part of their annual collection system maintenance efforts. This work is separate from the WPCF upgrade project that is the subject of this EIE.

The expanded and upgraded facility will require installation of new mechanical bar screens, vortex grit removal system and a new raw sewage pump station. Primary tank upgrades and aeration tank upgrades including conversion to the Modified Ludzack-Ettinger (MLE) process will be required. The MLE process upgrade will include the demolition of the existing trickling filters, construction of a third aeration tank and third secondary clarifier, and the construction of anoxic zone baffle walls and internal recycle pumps. The aeration tanks will be configured so they can be operated in either the MLE process configuration or the A2O (anaerobic-anoxic-oxic) configuration. Because biological phosphorus removal may not be desirable at all times, provisions for chemical precipitation of phosphorus are also included. Additionally, the Farmington WPCF will be required to comply with new phosphorus limits before a comprehensive upgrade can be completed. Therefore, interim improvements to provide for chemical precipitation of phosphorus in the WPCF's existing secondary clarifiers are also planned. A new fine bubble diffused aeration system will be provided.

The solids handling system will be upgraded to provide a separate waste activated sludge thickening system. Improvements to the sludge dewatering equipment will reduce the concentrations of nitrogen and phosphorus in the solids handling recycle streams and reduce the potential for odor generation. The facility will require HVAC (heating, ventilation, and air condition), instrumentation and SCADA (supervisory control and data acquisition) upgrades and electrical improvements including modifications of existing equipment to comply with the NFPA 820 for fire protection. The upgrade will also include new odor control systems for the headworks, primary clarifiers and solids handling facilities to reduce potential odorous emissions from the site.

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The existing Farmington WPCF has a design annual average flow rate of approximately 5.65 MGD and currently processes an annual average flow rate of approximately 4.67 MGD and a peak hour flow rate of 13.9 MGD. The plant provides primary and secondary biological wastewater treatment with the ability to remove some nitrogen. The existing solids handling facility dewateres the sludge and cake generated is hauled to the Hartford WPCF for final incineration.

1.2.3 Purpose and Need

The Town of Farmington's WPCF was originally constructed in 1960. The WPCF was upgraded

and expanded in 1970 to provide additional capacity for secondary treatment. An upgrade was also completed in 1994 to provide for seasonal nitrification to achieve ammonia limits. Portions of the existing plant date back to the original plant construction in 1960 and have been in service for over 50 years. Additionally, the Farmington WPCF was not designed to denitrify, although WPCF staff have achieved some level of denitrification through operational modifications. The Farmington WPCF has also recently received a renewed discharge permit with effluent phosphorus limits.

Upgrades to the Farmington WPCF are required to provide capacity for additional flows and loads, to improve nitrogen removal and to meet new effluent phosphorus limits. There are also needs to update other areas of the facility to improve nutrient removal performance, replace aging structures and equipment, improve energy efficiency and reduce the potential for off-site odors. In addition to reviewing the needs for nutrient removal processes, there are needs for raw wastewater screening, improved grit removal, a new influent pump station, primary clarifier improvements, plant-wide instrumentation and control systems improvements and electrical system upgrades.

1.2.4 Discussion of Alternatives

1.2.4.1 No Action

The Town of Farmington can elect to forgo a denitrification upgrade and continue the purchase of nitrogen credits. The Farmington WPCF does not currently meet the upcoming effluent phosphorus limits at all times and will require capital improvements to achieve these limits.

1.2.4.2 Upgrade and Expand Facility

Upgrading the facility will allow for proper treatment of wastewater to meet NPDES permit requirements with future flow increases. Wastewater flow and pollutant loads are expected to increase 35% by 2035. This projection is based on wastewater treatment commitments made through inter-municipal agreements with the towns of Avon, Canton and Burlington as well as projections for future sewer growth within the Town of Farmington, including residential, commercial, industrial and institutional flow increases such as for the University of Connecticut Medical Center. It can be expected that implementing upgrades will allow for greater nitrogen removal which will result in the purchasing fewer nitrogen credits. The upgraded facility will also allow for meeting the new effluent phosphorus limits included in the renewed NPDES permit. The more energy efficient and reliable equipment would allow for funds currently designated for operation and maintenance to be allocated to address long term needs or stabilize sewer rates. Wastewater will be treated to a higher degree and help the state to meet its goals for nitrogen removal to Long Island Sound.

Upgrading and expanding Farmington WPCF is the most cost effective and environmentally responsible approach to treat wastewater, not only within Farmington but also from the adjacent towns that currently discharge their wastewater to Farmington. As outlined below in the socio-economic impacts section, this project is in line with other similar treatment facility improvement projects within the state.

Several options for upgrading this facility were considered and are outlined below:

Modified Ludzack-Ettinger (MLE) Process

The MLE process is generally considered a baseline alternative for nitrogen removal in wastewater treatment plants. In some circumstances, modification of the MLE process to an A2O process can achieve both biological nitrogen and biological phosphorus removal. A review of the existing conditions indicates insufficient aeration tank volume for either of these processes. Even with additional aeration tank volume, neither process has the potential to meet the 2014 TN limit without the purchase of equivalent nitrogen credits. An option to use chemical phosphorus precipitation would provide flexibility to maximize the biological nitrogen removal process. Implementing the MLE process would require the construction of one additional aeration tank and one additional secondary clarifier to accommodate projected future flows and loads.

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MLE process utilizing Integrated Fixed Film Activated Sludge (IFAS) technology

The IFAS technology combines suspended growth and attached growth to effectively increase the capacity of an activated sludge system. Media is added to the mixed liquor to provide the surface for biofilm growth. The main benefit of the IFAS technology is its ability to provide effective treatment with considerably less aeration tank volume than competing conventional technologies. The IFAS process can be configured as a MLE, A2O or Bardenpho process. Preliminary analysis would indicate that utilizing the IFAS media in combination with the MLE process would be more cost-effective than a Bardenpho configuration.

MLE process followed by post-denitrification Moving Bed Biofilm Reactor (MBBR)/Actiflo process

MBBRs are continuous flow-through, non-clogging bio-film reactors containing media with a high specific surface area that does not require backwashing or cleaning. The biomass that treats the wastewater is attached to the surfaces of the media in an aerobic environment or anoxic environment. Unlike activated sludge and IFAS processes, there is no return sludge in MBBR systems and all the sludge that settles in the final clarifiers is blown down to the sludge handling facilities. At the Farmington facility, this technology would be best suited as a post-denitrification step following secondary clarification. Effluent from the MBBR would require clarification prior to discharge to the outfall to remove solids that grow and slough off the media. It is assumed that a modest nutrient removal upgrade within the activated sludge process (i.e.,

conventional MLE process) combined with the post MBBR would be the most cost-effective MBBR alternative.

MLE process followed by effluent filtration denite process (Dynasand)

Commercially available denitrification filters are usually downflow and upflow continuous backwash filters. Downflow denitrification filters operate in a conventional filtration mode and upflow continuous-backwash filters differ in that influent wastewater flows upward through the filter, countercurrent to the movement of the sand bed. Backwashing is required at regular intervals. During the process, nitrate is metabolized to nitrogen gas. Potentially, Farmington could elect to install a denitrification filter downstream of the secondary clarifiers to achieve compliance with the 2014 limit. Similar to the MBBR alternative, it is assumed that a conventional nutrient removal upgrade of the activated sludge process combined with an effluent filter would likely be the most cost-effective filter option. The filter could also provide an opportunity to remove phosphorus.

The net present worth costs for the various nutrient removal alternatives considered are presented in the table below. The costs below represent the capital costs and associated operation and maintenance costs for work required to meet the nutrient removal technologies discussed herein (including annualized costs associated with sludge processing) and are not indicative of the total costs associated with upgrading all components of the Farmington.

Process Configuration	Nitrogen Removal	Nitrogen and Phosphorus Removal
Nitrification Only (Do Nothing) Alternative	\$18.2 M	\$24.4 M
Modified Ludzack-Ettinger Process (3 Aeration Tanks - 3 Clarifiers)	\$16.7 M	\$22.9 M
Four-Stage Bardenpho Process	\$22.0 M	\$28.1 M
Modified Ludzack-Ettinger Process Utilizing IFAS Technology	\$17.9 M	\$24.1 M
Modified Ludzack-Ettinger Process Followed by Post-Denitrification MBBR/Actiflo Process	\$31.2 M	\$31.2 M
Modified Ludzack-Ettinger Process Followed by Effluent Filtration Denitrification Process	\$26.7 M	\$34.8 M

1.2.4.3 Recommended Alternative

The MLE process alternative is recommended for implementation because it will provide for some level of nitrogen removal under current and future flow and loading conditions. In addition, it will allow for improved energy efficiency through the use of a fine bubble diffused aeration system and improved process efficiency for nitrogen removal through the use internal recycle pumps. Should it be necessary to meet more stringent nitrogen limits in the future without the ability to purchase credits, a post-denitrification process could be constructed downstream of the MLE process. The implementation of the MLE process would require the construction of a third aeration tank and a third final settling tank to meet future flow and loading

conditions. The existing trickling filter process would be eliminated. The anoxic zone of the MLE process would be configured to allow for a portion to operate in an anaerobic mode (A2O process) for biological phosphorus removal.

Other improvements included would provide support to the new treatment system and provide increased plant reliability and energy efficiency. These include the addition of a raw sewage screening system, improved grit removal, replacement of the existing raw sewage pump station and primary clarifiers with new facilities, separate handling of primary and secondary sludge to reduce nutrient recycle loads to the treatment process and reduce the odor generation potential of the solids handling facilities, replacement of aging sludge dewatering equipment and improvements to various plant support systems and buildings such as electrical improvements, plant-wide instrumentation and control systems, building systems, site improvements and other miscellaneous improvements.

This alternative would add needed treatment capacity and allow for meeting effluent phosphorus limits and provide for increased nitrogen removal. This alternative would rely on the purchase of nitrogen credits to meet the WPCF's obligation under the General Permit for Nitrogen Discharges, however, the facilities plan allows for future capital improvements to be incorporated into the treatment process to meet these nitrogen limits without purchasing credits, if necessary. A copy of figure 10-3 from the 2012 Facility Plan shows the layout of the upgrade of the treatment plant.

1.3 IMPACT OF PROPOSED PROJECT ON THE ENVIRONMENT

1.3.1 Direct Impact

1.3.1.1 Air Quality

As a result of the construction, the proposed project will have negative air quality impacts from construction equipment and dust. Both impacts are short term and will be mitigated by inclusion of dust control measures in the construction contracts. The project also includes the construction of additional odor control systems which will help to reduce off-site odors following completion of the construction project.

1.3.1.2 Aesthetics, Traffic and Noise

As a result of the construction, the proposed project will have no negative impact on aesthetics as the construction will not be outside the project area. During construction, there may be hauling of excess excavated material or backfill material, concrete deliveries or equipment deliveries, however, this will be limited in working hours from 7:00 am to 4:00pm. The Contractor will be alerted to existing traffic conditions in the area near the entrance to the WPCF and may utilize traffic control flaggers or police officers during periods of heavy truck traffic such as concrete pours for new structures. Noise impacts from construction and demolition will be mitigated by requiring the Contractor to comply with the Town of Farmington noise ordinance which includes limiting work hours from 7:00 am to 6:00pm except when cause can be shown to allow work outside of these hours.

1.3.1.3 Water Quality

The construction of the treatment facilities will have limited negative impact on water quality. Continued operation of the existing facilities during construction is anticipated and the upgraded facilities will enhance nitrogen removal and phosphorus removal while providing more reliable equipment. During construction, some temporary impact on water quality may occur due to erosion and sedimentation. However, mitigation procedures for erosion control will be implemented, along with proper handling of discharges from groundwater dewatering systems, utilizing Best Management Practices (BMPs). After construction is complete the increased capacity will improve the quality of the effluent discharged to the Farmington River.

1.3.1.4 Environmentally Sensitive Areas

Floodplains: The demolition and construction are within the confines of the existing facility. Original contours will be restored upon completion of the construction. The Federal Emergency Management Agency (FEMA) flood map for the Town of Farmington (Panel 477, map number 09003C0477F) shows that the existing treatment facility is located in Zone AE, adjacent to the Farmington River with a large Floodway Area. The 100-year flood plain (Zone AE) floodway is located adjacent to existing structures, across the road; no structures at the treatment plant are in this specific floodway area. Upgrade construction will not allow any structures to be built in this floodway. However, several structures in the facility are located in Zone AE, where the floodplain elevation is about 171 feet.

The proposed third final settling tank and third aeration tank are planned to be located in Zone AE; the tank walls of these structures will be constructed at least one foot above the 100-year flood plain elevation and will be designed to mirror the existing final settling tank and aeration tank elevations to ensure that they are above the floodplain elevation. The Headworks Building and Administration Building are all located in Zone X, the 500-year floodplain. The proposed new Raw Sewage Pump Station will also be within Zone X. To allow for construction of some of the new facilities, it may be necessary to provide compensatory storage somewhere else on site. During the last plant upgrade, a flood control dike was added around the western portion of the site. New facilities will likely be constructed within the protected area to minimize the need for compensatory storage. This project will be subject to a flood management certificate issued by the DEEP. The certificate will require the implementation of a plan to mitigate any temporary negative impacts.

Wetlands: Specific wetlands boundaries for the site are currently not available and mapping will be delineated by a soil scientist to locate any wetlands near the project site during the design phase. Local wetlands approval will be needed because construction will impact the upland review area (URA) based on the likely proximity of wetlands adjacent to the flood control dike. Other impacts to any wetlands would be temporary due to construction activities. As described above, the contractor will be required to implement and maintain proper erosion and sediment control procedures during construction as required by Best Management Practices (BMPs). Erosion and sedimentation control will be used in all areas adjoining the wetlands by installing filter fabric fencing and hay bales to isolate the construction area from the adjoining wetland areas. Inspection of all erosion measures after each rainfall and at least daily during prolonged

rainfall will occur: No construction equipment will be operated, located, or stored in the wetlands areas. All exposed soils will be restored to their former condition, either with appropriate foliage or with erosion-resistant stone cover.

1.3.4.5 Socio-Economic Impacts

The opinion of the overall program costs for the Town of Farmington WPCF upgrade is presented in the table below.

	COST
Pretreatment & Primary Treatment	\$ 7,920,000.00
Aeration System Modifications / Nitrogen Removal	\$ 4,380,000.00
Secondary Clarifier Improvements	\$ 2,930,000.00
Disinfection System Modifications	\$ 1,470,000.00
Solids handling Facilities	\$ 2,710,000.00
Miscellaneous Building and Structures	\$ 2,340,000.00
Subtotal	\$21,750,000.00
Instrumentation & Control & SCADA	\$ 600,000.00
Site work & Specials	\$ 2,870,000.00
HVAC / Plumbing	\$ 2,010,000.00
Electrical	\$ 5,210,000.00
General Contractor's OH&P, Bonds, General Conditions	\$ 5,890,000.00
Subtotal	\$38,330,000.00
Design Contingency (15%)	\$ 5,825,000.00
Inflation to mid-point of construction (3%/yr for 2.5 yrs)	\$ 3,386,000.00
Construction Total	\$47,541,000.00
Technical Services (Design, Bidding, Const. Admin)	\$ 6,330,000.00
Construction Contingency (5%)	\$ 2,377,000.00
Materials Testing, Lead Paint & Asbestos Abatement	\$ 290,000.00
Legal, Administration & Financing	\$ 950,000.00
Project Total (based on bidding in 2014)	\$57,488,000.00

It is anticipated that the overall local share of the project costs will be reduced through a grant from the CT DEEP Clean Water Fund. Revenue will be generated through sewer user fees as well as revenue generated from the towns of Avon, Canton and Burlington, based on the capacity allocated to these towns as defined within the specific inter-municipal agreements. It should be noted that the WPCF's annual operating budget is based on sewer user fees including residential users that are charged a flat rate and commercial users that are charged based on water usage. The debt retirement for Farmington's portion of the capital improvements will be through the Town's General Fund under the current Town ordinance. As described in Chapter 156, Article V, Section §156-50, the cost for the upgrade of the wastewater treatment plan is the Town's responsibility with the funding source for this being general obligation bonds paid by general taxpayers. This same section defines the cost responsibility for studies and engineer work to fall on the Water Pollution Control Authority with the funding source being Sewer use fees paid by all users of the system. The approximate annual debt retirement cost won't impact the current Farmington sewer user fees.

Treatment Plant Funding Approximation:

CWF Grant (22%):	\$12,650,000
Loan at 2% fixed annual rate for 20 years (78%):	\$ 44,850,000
Approximate Annual Cost:	\$ 2,745,000

1.3.1.6 Historical/Archeological and National Landmarks

Many portions of the Town of Farmington are designated as an historical or archeological area; however, the construction activities at the treatment plant are within the confines of the existing site boundaries and will not impact historical or archeological resources.

1.3.1.7 Endangered Species

A number of populations of State or Federal Endangered, Threatened, or Special Concern Species have extant populations adjoining the proposed project area. The attached State Natural Diversity Data Base (NDDB) map shows the project area. However, no impacts to these species are expected if the project remains within the confines of the currently proposed area. If the impacted area is altered during design, DEEP program staff should be consulted for additional measures that may be necessary to provide the required protection for these species.

1.3.1.8 Coastal Zone Management

The project area is not within the costal management boundary.

1.3.1.9 Wild and Scenic Rivers (Water Courses)

A portion of the Farmington River is designated as Wild and Scenic River and this section is located upstream of the treatment plant. The section of the river that flows around the WPCF and is downstream of the discharge from the Farmington WPCF outfall has not been designated as Wild and Scenic.

1.3.1.10 Prime Farmland

The project will not be impacting prime farmland areas that are not already within the confines of the treatment plant site.

1.3.1.11 Existing Houses and Property Values

The project will not be impacting any existing houses or values of existing properties that are not already within the confines of the treatment plant site.

1.3.2 Indirect Impacts

There will be no long-term adverse environmental impacts on air or water quality due to this project. There will be no change in flood elevations or long-term erosion patterns. This project will not result in displacement of homes or businesses.

1.3.3 Irreversible and Irretrievable Commitment of Resources

Resources being committed to the implementation of the project include all fuel, labor, and materials necessary for work involving the waste water treatment facility. This project also requires a long-term commitment on the part of the town to provide labor and management resources to properly operate and maintain the wastewater collection and conveyance system as well as the wastewater treatment facility.

1.3.4 Relationship of Project to Approved Land Use Plans

At the time the Farmington Wastewater Facilities Plan was completed in April 2012, the state's 2005 to 2010 Plan of Conservation and Development Policies Plan map was being utilized. Since that time, the state has adopted a revised Plan of Conservation and Development for 2013 to 2018. The attached map shown in Figure 2 identifies the Farmington Sewer Service Area as well as the sewer service area boundaries for the areas within the adjacent towns of Avon, Burlington, Canton, New Britain and Plainville. Consistency with the revised state plan is discussed below. The Connecticut General Assembly recently adopted the Conservation and Development Policies Plan for 2013 to 2018 on June 5, 2013.

1.3.4.1 Farmington Sewer Service Area

As discussed in the 2012 Wastewater Facilities Plan, there are several areas within the Town of Farmington's sewer service area that appeared to be inconsistent with the State's 2005 to 2010 Plan of Conservation and Development (C&D). Many of these areas are local schools, parks and other recreation areas that are shown as Existing Preserved Open Space on the State's C&D map. These facilities have existing bath houses or other sanitary facilities that are connected to the sanitary sewer system. Other areas that appeared to be inconsistent included a residential neighborhood with potential septic disposal issues, areas with existing sewers that are shown as open space or rural land on the State's C&D map and areas for proposed sewer growth where the State's C&D map is not consistent with the town's Plan of Conservation and Development. Discussions were held with the DEEP and the State's Office of Policy and Management (OPM) regarding these apparent inconsistencies. During development of the 2012 Wastewater Facilities Plan, OPM indicated that these areas are consistent with the State's Plan of Conservation and Development. A copy of Figure 2-7 from the 2012 Wastewater Facilities Plan is included showing the Farmington Sewer Service Area.

Based on the information presented in Figure 2, the majority of the Town of Farmington is within one of the Priority Funding Areas (PFAs) shown on the 2013 to 2018 OPM map. The only area not included in one of the PFAs is in the northeast portion of Farmington that is part of the town's Sewer Avoidance Area. The areas of town that are either within the sewer service area or within Protected Lands appear to be consistent with what was previously discussed with OPM as part of the development of the 2012 Wastewater Facilities Plan.

1.3.4.2 Adjacent Towns with Sewer Connections to the Farmington Collection System

Portions of the sanitary sewer systems in Avon, Burlington, Canton, New Britain and Plainville discharge into the Town of Farmington's sanitary sewer collection system for treatment at the

WPCF. A brief description of each town's consistency with the State's Plan of Conservation and Development is given below.

Based on the current plan, the sponsoring state agency (in this case the DEEP) needs to determine if the upgrade to the Farmington WPCF is consistent with the Growth Management Principles included in the latest plan and needs to determine if the growth-related project is located in a Priority Funding Area (PFA) on the most recent Locational Guide Map (LGM).

Growth Management Principles

Based on Attachment A of the 2013 to 2018 C&D Plan update, Clean Water Fund projects must be consistent with Growth Management Principle (GMP) Nos. 1 and 5. Growth Management Principle No. 1 is to Redevelop and Revitalize Regional Centers and Areas with Existing or Currently Planned Physical Infrastructure. The upgrade of the Farmington WPCF is consistent with GMP No. 1 because it provides for repairs and upgrades of existing, aging infrastructure and ensures the safety and integrity of this infrastructure over the 20-year planning period. Areas of planned sewer extensions within the Sewer Service Area have been identified since the 1992 Sewer Master Plan was developed for Farmington.

Growth Management Principle No. 5 is to Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety. The proper collection and treatment of sanitary wastes is an important part of protecting public health. The upgrade of the Farmington WPCF will help to maintain the integrity of the treatment facilities while providing additional levels of treatment for the protection of local water quality and to help meet state-wide goals for the reduction of nitrogen discharged to Long Island Sound.

Determination of Priority Funding Areas

As discussed above, as part of the development of the 2012 Facilities Plan, discussions were held with DEEP and OPM regarding the consistency of the Farmington Sewer Service Area (SSA) with the state's C&D plan. The revised SSA map included in the facilities plan was deemed to be consistent with the C&D plan. However, DEEP has indicated that each of the surrounding communities that have any connection to the Farmington sanitary sewer collection system must be checked to verify that their Sewer Service Areas that discharge to the Farmington WPCF are consistent with the state's C&D plan. To check this consistency, we utilized the updated Locational Guide Map (LGM) on OPM's web site. Mapping for each adjacent Town showing the Priority Funding Areas were developed along with maps showing Protected Land, Aquifer Protection Areas and Prime Farmland Soils. Available information on each Town's Sewer Service Area maps were also shown on this map (see Figure 2) to determine consistency with the recently adopted C&D Plan.

Avon: The boundary of the Avon sewershed that drains to the town of Farmington is shown in Figure 2. Almost the entire portion of the Town of Avon within this sewershed is considered to be within either a Priority Funding Area or within a Protected Land area. The Avon LGM showing Protected Land areas was then compared with the Future Land Use Plan taken from Avon's most recent update to their Plan of Conservation and Development (see attached future land use plan - Avon). Based on a comparison of the Protected Land Map and the Future Land

Use map shows that the Protected Land areas appear to be consistent with parcels indicated to be either “Open Space” or “Proposed Open Space” on the Town’s map. Based on a review of this information, it appears that the portion of the Town of Avon’s SSA that discharges to the Farmington WPCF is consistent with the state’s Priority Funding Areas. It is also noted that Avon’s SSA was recently developed as part of their Wastewater Facilities Plan developed in 2006 and approved by the DEEP.

Burlington: A portion of the Town of Burlington located adjacent to the area surrounding Lake Garda has been sewerred and discharges to the Farmington WPCF. This area was sewerred previously as part of a state-funded project. The proposed sewer service area boundary for the portion of Burlington that flows into the Farmington collection system is shown in Figure 2. The boundary of the Burlington Sewer Service Area in this location is based on the map prepared by Fuss & O’Neill, Inc. dated 12/27/94 entitled Attachment C – Burlington/Farmington Waste Water Management District. As can be seen in Figure 2, the proposed sewer service area is within a Priority Funding Area on Burlington’s LGM and does not have any Protected Lands shown within the boundary.

Canton: Secret Lake Rd., Forest Lane Rd., Elizabeth Rd. and parts of Old Albany Rd. and Colonial Road are sewer areas that generate flow from the Town of Canton that are discharged through the Avon collection system and into the Farmington collection system for treatment at the Farmington WPCF. The area served by these sewers is currently designated as a Priority Funding Area and is generally consistent with the State’s C&D map. The boundary of the Secret Lake Sewer Shed is shown in Figure 2. There are some parcels located north of Washburn Road on Juniper Circle that are shown to be within the boundary of the Canton Sewer Service Area that discharges to Avon but that are not within the Priority Funding Area. While the sewer maps obtained from Canton do not show public sewers extending to this area, the Sewer Service Area boundary included on the Interactive Locational Guide Map on OPM’s web site includes these parcels and therefore it was included in Figure 2. These parcels have existing houses and may be connected to the Canton collection system through a private sewer connection.

New Britain: The Branford Walk Condominiums are located partly in Farmington and partly in New Britain. Wastewater generated in the condominium complex flows into the Town of Farmington collection system. These condominiums are existing and are located in an area that is currently classified as a Priority Funding Area which is consistent with the State’s Plan of Conservation and Development. This area is shown on Figure 2.

Plainville: Two to four industrial parcels on Spring Lane in Plainville discharge into the Town of Farmington collection system. This area is currently classified as a Priority Funding Area is consistent with the State’s Plan of Conservation and Development.

1.3.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts are limited to short-term impacts directly related to construction. Dust and noise will be present during construction operations. Erosion and sedimentation may occur on the site. All these adverse impacts can be minimized, as shown below.

1.3.6 Mitigation of Adverse Environmental Impacts

In terms of air quality, dust pollution resulting from construction activities can be controlled by dust control measures such as calcium chloride or sprinkler trucks that minimize dust dispersion. Disruption due to noise can be minimized by restraining construction to normal working hours only.

To avoid any adverse water quality impacts, sediment and erosion control measures such as hay bale barriers and silt fences will be used to protect wetland areas. Construction easements through wetlands will be minimized as much as possible while still maintaining sufficient width for safe and efficient operations. No equipment or material storage will be allowed in the wetlands area. If any vegetative clearing is necessary, it should be minimized and should be immediately replaced after the end of construction. Last, to prevent disturbance of existing wetlands, no fill should be placed above existing contours in these areas.

1.3.7 Energy Considerations

Energy expenditure for this project falls into two categories: construction and operations. In terms of construction, energy consumption will be primarily that needed to power construction vehicles and produce construction materials. These expenditures are considered relatively minor. In terms of operation, the energy expenditures will be those needed to power the conveyance pumps at the pumping stations, and that energy used to operate the wastewater treatment facility. There is no foreseen substantial operational energy expenditure increase from previous conditions. The newer facility will have an increased efficiency in energy and operation expenditure.

1.4 LICENSES, PERMITS, & CERTIFICATIONS NEEDED

1.4.1 NPDES Permit

The plant's current NPDES permit CT0100218 is based upon the plant Design Flow Rate of 5.65 MGD and was recently reissued in June 2012. Given the proposed increase in plant design capacity as result of the upgrade to 6.30 MGD, the plants permit will need to be modified. This may occur with the next permit renewal application which must be submitted 180 days prior to the current permit's expiration in June 2017.

1.4.2 Flood Management Certificates

As part of the upgrade, a Flood Management Certification is required and the WPCF will apply for this certification prior to bidding the project.

1.4.3 Stormwater Construction General Permit

As part of the upgrade, a stormwater construction general permit may be required and the Contractor will apply for any necessary permit prior to initiating construction.

1.4.4 Other Local Permits

A preliminary list of the local permits and approvals that would likely be required for this project

is presented below.

- Local Inland Wetland Approval (upland review area is a 150' buffer from wetlands)
- Planning & Zoning Commission Approval
- Local Building Permits (by the Contractor)
- Fire Marshall Approval

1.5 COMMENTS ON SCOPING NOTICE

A scoping notice was issued by the CT DEEP in the Environmental Monitor on January 21, 2014. In response to this scoping notice, the CT DEEP received one comment letter from the Office of Policy and Management, Intergovernmental Policy Division dated February 21, 2014. This letter contained three separate questions/comments on the scoping notice. A summary of these questions/comments is presented below and reference is given to where in the Environmental Impact Evaluation these issues are addressed.

Item 1 – There were questions as to whether the project anticipated an expansion of any of the sewer service areas for either Farmington or its contract communities.

This issue is addressed in Section 1.3.4 of the EIE. Section 1.3.4.1 discusses the Farmington Sewer Service Area. The Town had a previous sewer master plan that identified areas where future sewer extensions were anticipated. The consistency of these areas with the State's C&D plan was discussed with DEEP and OPM during the facilities planning process. The final Sewer Service Area map was presented as Figure 2-7 of the 2012 Wastewater Facilities Plan and is included as an attachment to this EIE.

Based on discussions with the contract communities, there were no identified extensions of their Sewer Service Areas. It is noted that portions of the existing Sewer Service Areas in some contract communities include areas where sewer extensions have been planned in the past but have not necessarily been installed at this time.

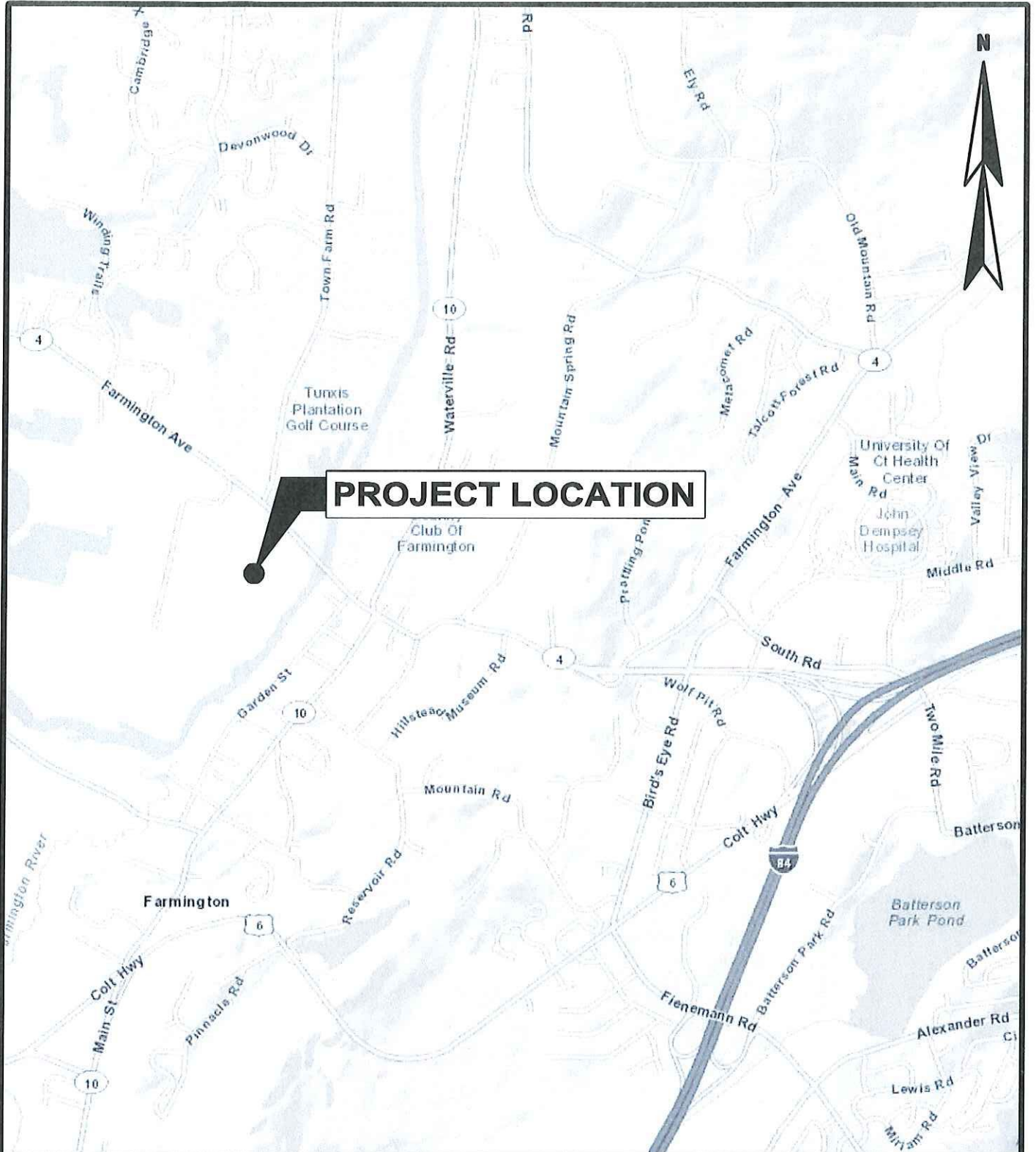
Item 2 – It was noted that the flow projections included additional I/I from proposed sewer extensions as well as continued deterioration of the existing collection system.

It is standard practice to account for potential future I/I flows and is recommended in *TR-16, Guides for the Design of Wastewater Treatment Works*. As noted in Section 1.2.1, the Town has undertaken a separate infiltration and inflow (I/I) analysis and is currently rehabilitating some of the sources of I/I identified separately from the WPCF upgrade project that is the subject of this EIE.


Item 3 – The comment expressed concern that the WPCF operations budget and debt retirement costs could have a significant impact on current users if user rates are based on water consumption and, as is currently a trend, water consumption continues to decline due to conservation and low-flow fixtures. The comment also expresses the concern that this could put

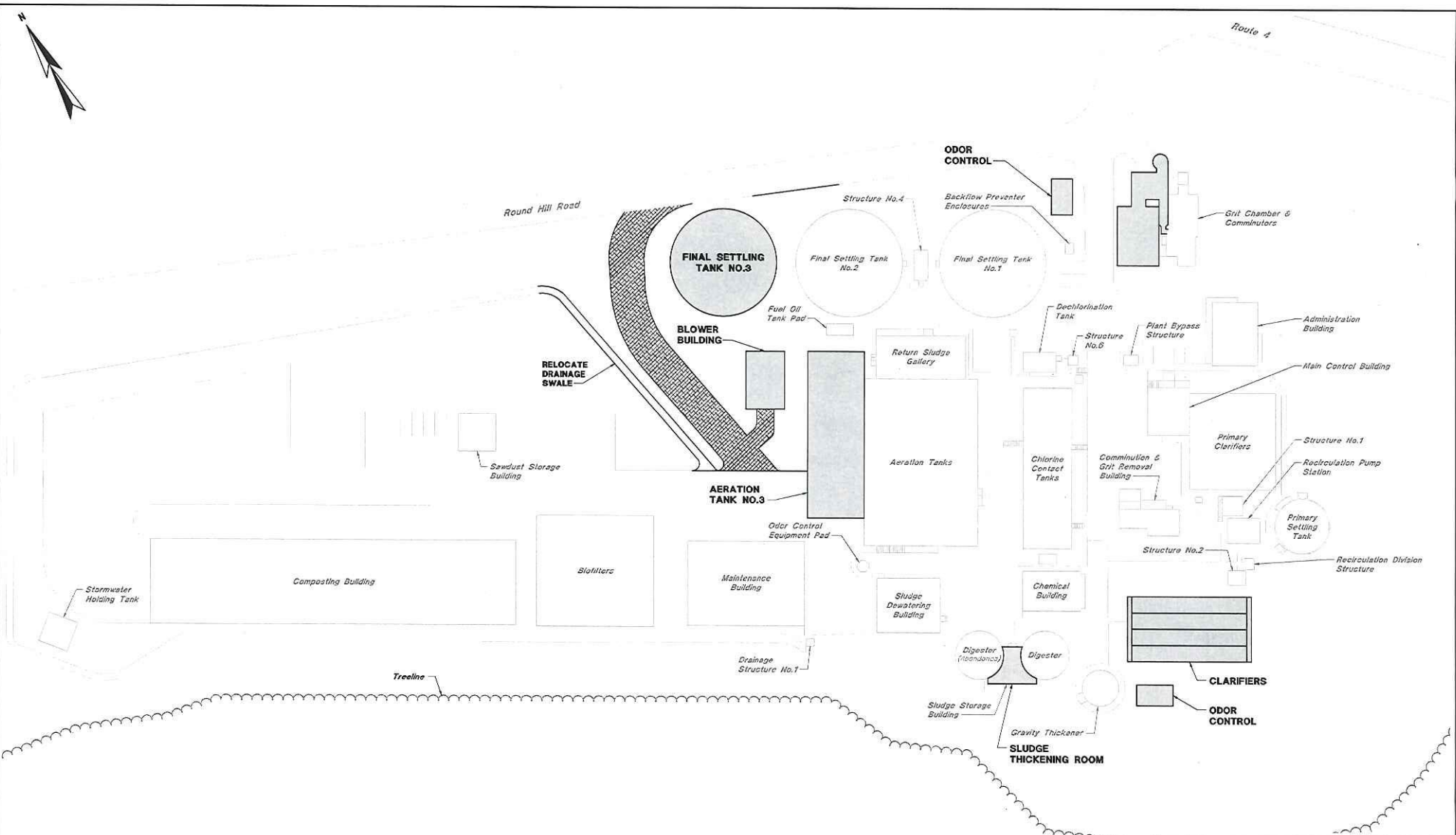
pressure on the community to extend sewers beyond the existing Sewer Service Area to provide the necessary revenue.

As noted in Section 1.3.1.5, Farmington's share of the debt retirement costs will be paid from the Town's General Fund in accordance with Town ordinance. Additionally, the Town has the ability to adjust their rates annually, if necessary, to account for changes in their operations and maintenance budget. Residential rates are based on a flat annual rate and not on water consumption so continued water conservation efforts will have only a limited impact on sewer user fee revenue. It is also noted that the Town of Farmington has approximately eighty-five percent (85%) sewerred and the concern over pressures to obtain additional users through sewer extensions does not appear to be a significant issue in this case.



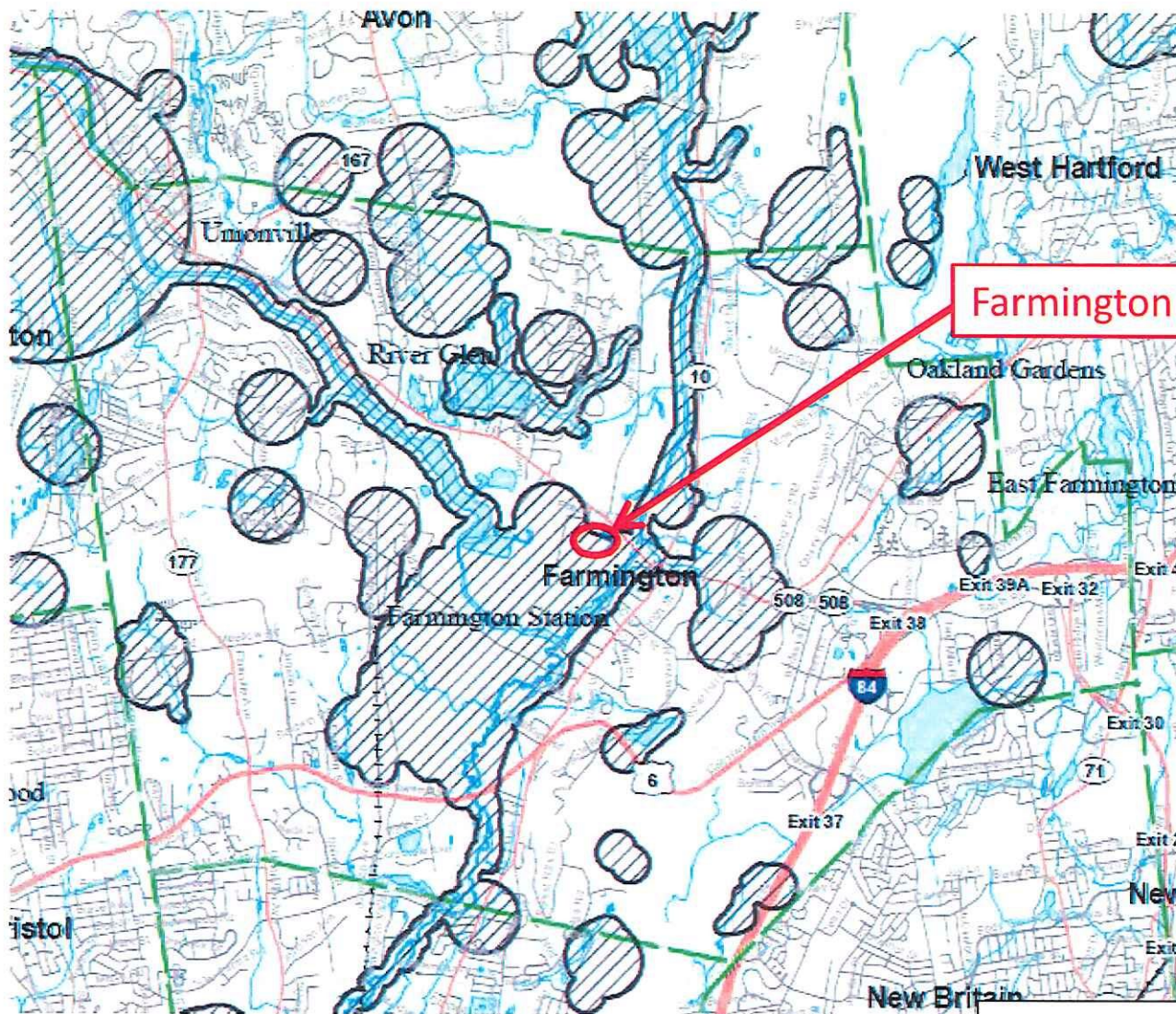
PROJECT LOCATION



TOWN OF FARMINGTON, CT WATER POLLUTION CONTROL FACILITY UPGRADE		NO.	REVISIONS	APP'D
		①		
		②		
PROJ NO: 12785A	DATE: OCTOBER 2014	③		
WRIGHT-PIERCE  Engineering a Better Environment			LOCATION PLAN	FIGURE: 1



TOWN OF FARMINGTON, CONNECTICUT
 FARMINGTON WPCF
 PROPOSED SITE PLAN

PROJ NO: 11208A	DATE: APRIL 2012	FIGURE:
WRIGHT-PIERCE		10-3
Engineering a Better Environment		



 State and Federal Listed Species & Significant Natural Communities
 Town Boundary

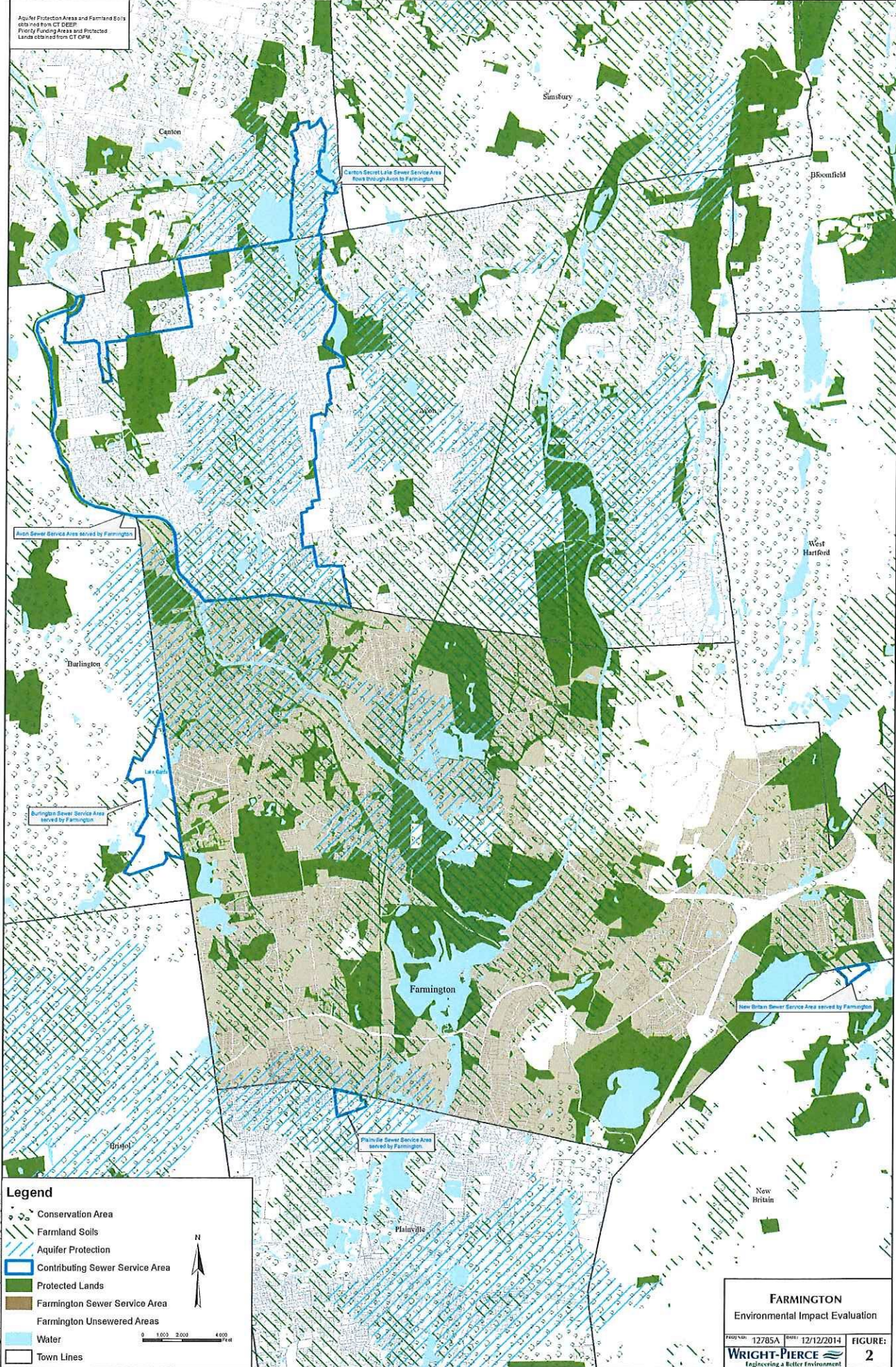


Connecticut Department of
 Energy & Environmental Protection
 Bureau of Natural Resources
 Wildlife Division

CT DEEP Natural Diversity
 Database Map for
 Farmington Area – June 2013

PROJ NO:	T9993	DATE:	06/27/13	FIGURE: NDDB
				

Aquifer Protection Area and Farmland Soils
 obtained from CT DEP
 Priority Funding Areas and Protected
 Lands obtained from CT DEP



Legend

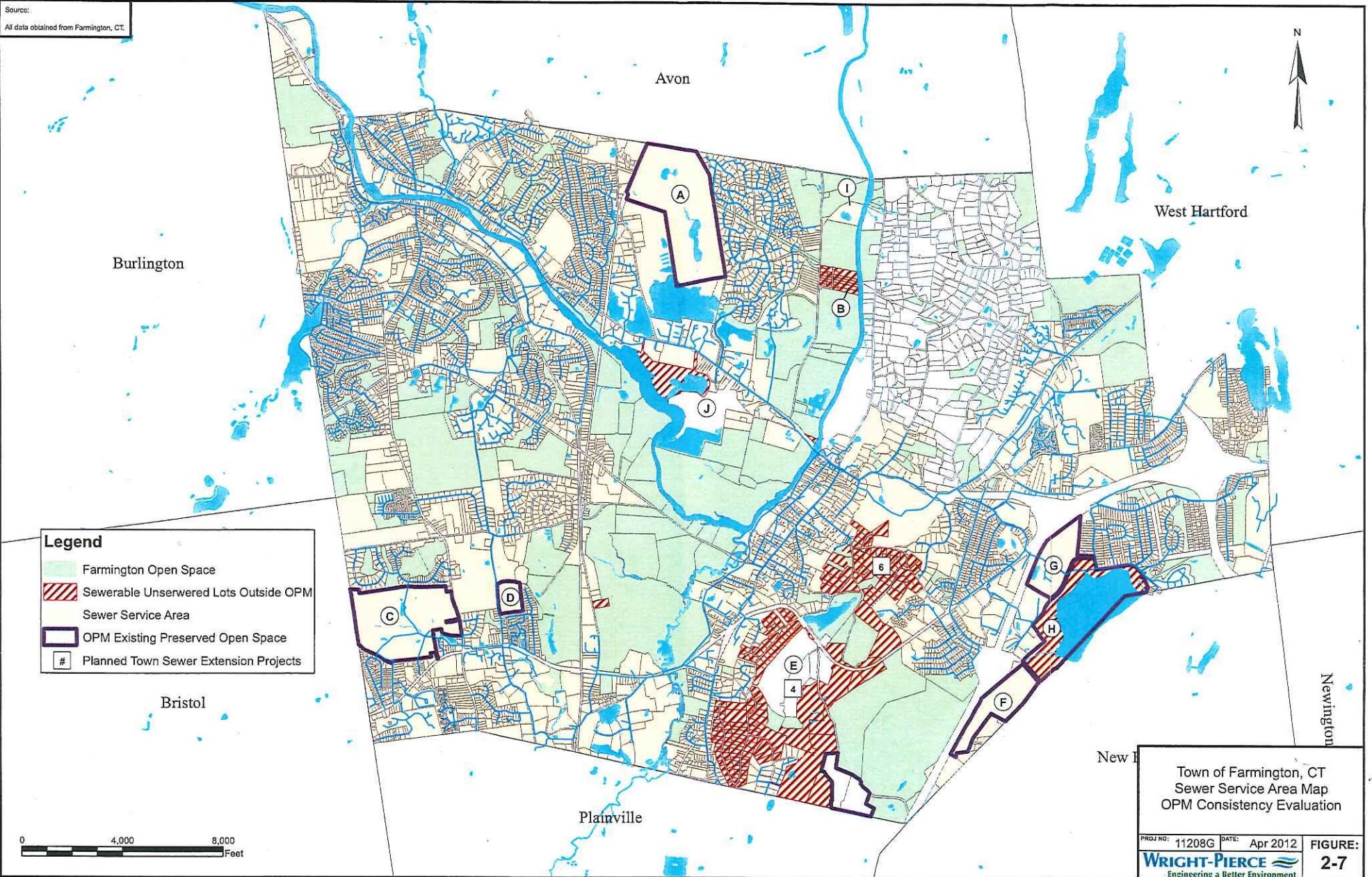
- Conservation Area
- Farmland Soils
- Aquifer Protection
- Contributing Sewer Service Area
- Protected Lands
- Farmington Sewer Service Area
- Farmington Unsewered Areas
- Water
- Town Lines

0 1000 2000 4000
 Feet

FARMINGTON
 Environmental Impact Evaluation

PROJECT: 12785A DATE: 12/12/2014 FIGURE: 2
WRIGHT-PIERCE
 Engineering a Better Environment

Source:
All data obtained from Farmington, CT.



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Future Land Use Plan

Avon, Connecticut

