DRAFT Environmental Impact Evaluation
November 2007

A. Project Identification

Water Pollution Control Facility Abandonment
City of Middletown, Connecticut
Project No: CWF-487

B. Summary of Environmental Review

In 1998 the City of Middletown conducted a study for the feasibility of increasing the service area of the Mattabassett District to include three new communities, namely the City of Middletown, the Town of Plainville, and the Town of Portland. For each of these three communities, a local alternative of maintaining and upgrading the existing local treatment facility was evaluated and compared to an inter-municipal alternative. That report concluded that it would be cost-effective for the City of Middletown to pursue an inter-municipal alternative of conveying its wastewaters to the Mattabassett District and abandoning its existing treatment facility.

As a result of the previous work, the City commissioned a second report, which was completed in 2004, to look at this option further. The engineering report entitled "Water Pollution Control Facility Abandonment Project, Facilities Plan" was prepared to evaluate the alternatives for conveying wastewater from the City of Middletown, Connecticut to the Mattabassett District for treatment and discharge.

In accordance with the regulations of the Connecticut Environmental Policy Act sections 22a-1a-1 to 22a-1a-12, the findings of the environmental review of the 2004 report are summarized below.

The agency contact for this project is:

Dennis J. Greci, Supervising Sanitary Engineer
DEP Water Management Bureau
79 Elm Street, Hartford, CT 06106-5127
860-424-3751
dennis.greci@po.state.ct.us

1. Project Description

The City of Middletown conducted a feasibility study in 1998 to evaluate various means of collecting, conveying and treating wastewater for Middletown. The study focused on either upgrading the existing treatment plant or abandoning the facility through a connection to another treatment plant in an adjoining community. The most cost-effective plan identified was abandonment of the existing treatment facilities in Middletown on River Road and conveyance of wastewater to the Mattabassett District Water Pollution Control Facility (WPCF) in Cromwell, Connecticut.

The follow-on study, completed in 2004, evaluated the various methods of abandoning the existing Middletown WPCF, the siting of a new wastewater pumping station, and the routing of conveyance lines from the new pumping station to the Mattabassett District WPCF. The recommendation was to construct a new pumping station on the site of a pump station that collects most of the town's wastewater and feeds it to the existing WPCF. This is also the site of the previous WPCF, and is therefore a consistent usage. The only flows that will have to be redirected to this point are those from a recently built sewer extension that serves the Pratt & Whitney complex, the Connecticut Valley Hospital facility, and the NRG Energy power plant. As part of a recent consolidation of treatment, each of these facilities abandoned their own WPCF and connected their flows into the Middletown sewer system. An additional gravity interceptor will be needed to convey this flow from the existing WPCF to the proposed pumping station.

The most environmentally sound, cost-effective routing for conveyance of the wastewater was found to be following DeKoven Drive north to the CT Route 9 transportation corridor, and then north to the southern boundary of the Mattabassett District WPCF. This transportation corridor also includes a rail line operated by the Providence and Worcester Railroad. The optimum location within

this corridor was determined to be along its western boundary, thus minimizing the interaction with either the highway or the rail line.

The complete project consists of approx 2,900 lf of gravity sewers (30" to 48" dia.) to convey flow to the new pumping station, approximately 13,100 lf of 24" ductile iron force main to convey flow from the new pumping station to the Mattabassett WPCF, and the pumping station itself, with a design average daily flow capacity of 6.9 mgd, and a design peak hourly flow of 26.0 mgd. In general, the force main begins in DeKoven Drive, and then follows the west edge of the railroad corridor to a point just south of the Mattabassett WPCF. It then enters the WPCF site and discharges its flow into the preliminary treatment process for the facility (see maps on page 9).

Three aerial bridge crossings are anticipated during construction. The first is a crossing along DeKoven Drive over Sumner Brook. The second crossing is parallel to the rail line where is crosses over Route 9, in an area known as St. John Square. The final crossing is also parallel to the railroad line where it crosses the Mattabessett River.

The final phase of the project is the demolition of the Middletown WPCF, the existing pump station on the River Road site, and sections of gravity sewer leading to the current WPCF. In all cases, site restoration will be performed to the same standards that DEP uses for remediation of other industrial sites.

1. Existing Conditions

The Middletown WPCF was last upgraded in 1976. Most of the original equipment at the facility has exceeded its design life, and is in need of upgrade or replacement. The Middletown WPCF operates under an NPDES permit that allows the discharge of an average daily flow of 6.75 MGD of treated effluent to the Connecticut River.

The Middletown WPCF currently serves the majority of the population of Middletown (approx 28,000 out of a total of 43,000) and a corner of the adjoining town of Middlefield. The wastewaters from the Westfield section of Middletown are already conveyed to the Mattabassett WPCF for treatment. Portions of the sewer system tributary to the existing Middletown WPCF are still considered combined sewers, carrying both sanitary sewage and storm water. Middletown has made substantial progress in eliminating combined sewer overflows through a program of separating the flows into two different pipe systems, one for sanitary sewage and one for storm flows. What remains at this point is considered primarily infiltration and inflow, which will be the focus of Middletown's efforts over the next decade.

Average daily flows over the past six years at the Middletown WPCF have been as follows:

Year	mgd
2002	3.50
2003	5.49
2004	4.00
2005	4.63
2006	4.54
2007	3.98 (thru Sept)

Average monthly flows vary as much as 200% in a given year, due to combined sanitary and storm sewers and infiltration / inflow impacts. Dry weather months average approximately 2.50 mgd.

Future flows are expected to be reduced by between 1.0 and 2.0 mgd due to combined sewer separation and infiltration /inflow reduction projects. Additional flow from infilling and development within the approved sewer service area is expected to total approx 1.5 mgd over the 20 year planning period.

Average daily flows over the past six years at the Mattabassett WPCF have been as follows:

Year	mgd
2002	15.60
2003	20.40
2004	17.98
2005	19.57
2006	20.24
2008	17.73 (thru Sept)

Average monthly flows vary by as much as 100% due to infiltration and inflow in sections of the District's member communities. Dry weather months average approximately 13.5 mgd.

The Mattabassett District WPCF is currently permitted to discharge 20.0 mgd of secondary treated effluent to the Connecticut River. Modifications have been constructed which would allow this permitted capacity to be increased to 25.0 mgd.

2. Purpose and Need

The existing facilities are reaching, or have exceeded, the end of their design life. Numerous components of the existing facility are in need of rehabilitation in order to continue to adequately process wastewater, and upgrades are needed to some components to meet current standards (such as nitrogen reduction) or to bring processes up to current technical standards.

3. Discussion of Alternatives

a. No Action

The City of Middletown is under a pollution abatement order from DEP (Order No. WC-0005353) to correct wastewater treatment deficiencies identified at the existing Middletown WPCF. Numerous components of the existing facility are in need of rehabilitation in order to continue to adequately process wastewater, and upgrades are needed to some components to meet current standards (such as nitrogen reduction) or to bring processes up to current technical standards. For these reasons, "No Action" is not a viable alternative.

b. Upgrade Existing Facilities

The evaluation of the costs that would be incurred in the construction, operation and maintenance of needed upgrades to the existing Town of Middletown treatment plant facilities indicated that in the long run, it would be more cost-effective to abandon the existing treatment facilities and convey the wastewater to the Mattabassett WPCF for treatment and discharge. A secondary benefit of this would be the elimination of a wastewater treatment facility that was subject to periodic flooding due to its low elevation and proximity to the Connecticut River.

c. Abandon Existing Facilities

This alternative envisions abandonment of the existing wastewater treatment processes in Middletown and conveyance of the wastewater to another facility for treatment and discharge. In the immediate vicinity, there are a limited number of other facilities currently handling wastewater; of those, only the Mattabassett District facility in Cromwell is capable of handling the volume of flow without substantial modification.

4. Impact of Proposed Project on the Environment

a. Direct Impacts

i. Air Quality

As a result of the construction of the conveyance pipes and pump station, and the demolition of the Middletown WPCF, the proposed project will have negative air quality impacts due to construction equipment and dust. Both of these impacts will be of short term, and will be mitigated to the maximum extent available by inclusion of dust control measures in the construction contracts. Noise impacts from construction equipment will be mitigated by limiting working hours. Due to the proximity of CT Route 9, the impacts of the additional construction equipment on overall air quality compared to that caused by daily traffic is expected to be minimal.

ii. Water Quality

The elimination of the existing Middletown WPCF will remove a treated effluent discharge from the surface waters of the state; however, the redirected flow will be added to another existing discharge three miles upstream. This will allow for additional assimilative time in the river before the incremental discharge reaches the original discharge point, thus providing a limited improvement in local water quality. The effluent discharge across the river from the existing Portland WPCF, as well as the East Hampton WPCF located just downstream from that, will continue to discharge their treated effluent into the Connecticut River, so no drastic modification of

localized surface water quality is anticipated. Subsequent to this project, additional efforts to reduce discharges to the Mattabassett District via combined sewer overflow reduction projects and infiltration / inflow reduction projects may also have more significant positive effects on local water quality.

iii. a. Environmentally Sensitive Areas: Floodplains

The existing WPCF is partially within the 100 year flood boundary. However, as the proposed work is to remove manmade objects which currently act as obstructions to flow during high water events, the net impact of the demolition is seen as a positive effect. The construction of portions of the force main may be within the flood boundaries; however, original contours will be restored at the completion of construction. The new pumping station will also be within the 100 year floodplain, although the actual site is separated from the Connecticut River by CT Route 9 and the railroad lines. The pumping station will be designed to current standard engineering practice; that is, all access openings in the structure will be located at least one foot above the identified 100 year flood elevation. Construction of the proposed project will not increase flood hazards or flood elevations, nor will it adversely impact flood storage capability.

b. Environmentally Sensitive Areas: Wetlands

The proposed project will interact with wetlands in two ways. Riparian areas at two stream crossings (Sumner Brook and Mattabessett River) will require adequate protection while the bridge crossings are being constructed to carry the force main across these water bodies.

The force main is proposed to be installed along the western side of the transportation corridor containing CT Route 9 and the railroad. Once north of the Arrigoni Bridge, this corridor is bounded on the west by the Cromwell Meadows State Wildlife Area, a large wetlands complex. Based on preliminary layout of the project, it is not anticipated that any construction will occur within the wetlands, although construction site drainage has the potential for impacting the wetlands if not properly controlled.

Best management practices will be used to minimize or eliminate impacts to the wetlands adjacent to the proposed project. Erosion and sedimentation controls will be used in all areas adjoining wetlands. Filter fabric fencing and hay bales will be used to isolate the construction area from the adjoining wetland areas. No construction equipment or materials 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.

iv. Socio-Economic Impacts

The estimated cost of the project is shown below:

Technical Services: Design	$ 1,270,000
Technical Services: Construction	$ 840,000
Construction	$ 12,390,000
Legal & Fiscal	$ 100,000
Easements	$ 100,000
Contingencies	$ 1,300,000
TOTAL ($ 2005)	$ 16,000,000
Inflation to $ 2008 (assume 8% / year)	$ 4,155,000
TOTAL ($ 2008)	**$ 20,155,000**

Note that the costs shown above do not include Middletown's costs of buying capacity in the Mattabassett system, as this is still under negotiation. If this project is funded by DEP's Clean Water Fund (CWF), it is expected to be eligible for a grant of at least 20%, and a 2% loan for the balance of the cost.

Estimated CWF Grant:	$ 4,031,000
Estimated CWF Loan	$ 16,124,000
Annual loan repayment	$ 967,000

Note that these numbers may vary slightly due to actual bids and billings, revised eligibility determinations, and availability of funding.

v. Historical/Archeological and National Landmarks

The State Historic Preservation Office has indicated that there exists a moderate to high sensitivity for archaeological resources along the project route, in areas where there is no previous ground disturbance, especially in the vicinity of Round Meadow, Boggy Meadow, and the

confluence of the Connecticut and Mattabessett Rivers. Archaeological investigation will be necessary in such undisturbed areas.

vi. Endangered Species

A number of populations of State or Federal Endangered, Threatened, or Special Concern Species have extant populations within or adjoining the proposed project. However, no impacts to these species are expected if the project remains within its currently proposed transportation corridors. If this route should be altered during design, DEP program staff should be consulted for additional measures that may be necessary to provide the required protection for these species.

vii. Coastal Zone Management

The project area is not within the coastal management boundary.

viii. Wild and Scenic Rivers

There are no wild and scenic rivers in the project area.

ix. Prime Farmland

The majority of open space surrounding the project area is unsuitable for agricultural uses. Furthermore, no prime farmlands exist in the construction areas of the project.

b. 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. There is no developable land within areas characterized as wetlands or floodplains which will be impacted by this project. This project will not result in any displacement of homes or businesses.

c. Irreversible and Irretrievable Commitment of Resources

Resources being committed to the implementation of the project include all fuel, labor and materials necessary to construct the sanitary sewers, force mains and pumping station. 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.

The project will also result in the return of significant land resources. The riverfront land currently occupied by the wastewater treatment facility will be returned to general municipal use. No specific plans have been identified for the reuse of this property at this time.

d. Relationship of Project to Approved Land Use Plans

This project is consistent with the Connecticut Conservation and Development Policies Plan 2006-2010 as prepared by the Connecticut Office of Policy and Management. The project is also consistent with the Middletown Plan of Conservation and Development adopted in 2000. The Midstate Regional Planning Agency has also indicated that this project is consistent with the goals and objectives of the Regional Development Guide for the Midstate Region.

e. Unavoidable Adverse Impacts

Unavoidable adverse impacts are limited to short-term impacts directly related to construction operations. Dust and noise will be present during construction operations. Temporary traffic restrictions or detours may be necessary to accommodate construction in local streets. Erosion of sedimentation may occur in or adjacent to areas where the sewer lines or pumping stations are adjacent to wetlands or surface waters. Excavation may be necessary in or adjacent to designated wetlands, if no feasible routing alternatives exist. All these adverse impacts can be minimized, as shown below.

f. 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 haybale barriers and silt fences shall be used in wetlands areas. Construction easements through wetlands should 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. All streams crossings should be made perpendicular to the stream and within the existing rights-of-ways to avoid disturbing pristine areas. These crossings should be made at low flow conditions and the streambed should be returned to its normal grade. Last, to prevent disturbance of existing wetlands, no fill should be placed above existing contours in these areas.

g. Energy Considerations

Energy expenditure for this project falls into two categories: construction and operation. 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 new pumping station A slight increase in energy expenditure will be experienced at the Mattabassett District WPCF in handling and processing the additional waste stream. This will be offset by a reduced energy expenditure due to the elimination of the process, operation and maintenance tasks that currently occur at the Middletown WPCF, which due to the age of that facility, are much less energy efficient than the equivalent facilities at the Mattabassett WPCF.

5. Licenses, Permits, & Certifications Needed

The proposed activity will occur along the Connecticut and Mattabessett Rivers. This area contains coastal wetlands, therefore permits may be required at the state and local level from Connecticut Department of Environmental Protection, Office of Long Island Sound Program and Inland Wetlands Programs, Army Corps of Engineers, the Middletown Inland Wetlands and Watercourse Commission and the Cromwell Inland Wetlands Commission.

Construction work proposed along CT Route 9 will require permission from the Connecticut Department of Transportation. Any newly constructed structures will need approval from the Middletown Planning and Zoning Commission.

6. Summary of Agency and Public Consultations

Two public forums were held at the City of Middletown's City Hall. The first was held on October 7, 2003 and the second on April 29, 2004. Concerns were voiced at these meetings over the following issues:

Q. Will there be new odor impacts at Mattabassett? Will additional ash be generated?

A. No new odor impacts are expected, and no additional ash will be generated. The processing of solids (sludge) is the source of most odors, and Mattabassett already processes all of Middletown's sludge.

Q. What are the economic impacts for Cromwell?

A. A larger revenue stream will provide the District with more resources to address environmental needs, and act as a rate stabilizer, thus reducing long-term costs for Cromwell and other towns served by the Mattabassett District.

Q. Will businesses along the proposed force main be impacted?

A. No permanent impacts will occur. Temporary impacts during construction will be mitigated by good construction management practices.

Q. Why is concentrating all the wastewater in one outfall a more environmentally acceptable alternative?

A. In addition to the larger revenue stream making environmental improvements more affordable, the combination of all flows into one process will serve to further stabilize the level of treatment. The effects of variations in discharge in or from one community will be dampened

by the larger overall flow from the combined service areas.

Q. Will this allow for additional flows from Middlefield into the Middletown system?

A. No. The contractual amount of flows allowed from Middlefield into Middletown will not change.

Q. Will accommodating this flow at the Mattabassett site remove additional land from the town of Cromwell's tax ledger?

A. No. The Mattabassett WPCF site has sufficient land to accommodate expansion, when and if they are needed.

Q. Why can't the outfall for the Mattabassett WPCF be moved further south, to allow less impact on the Town of Cromwell?

A. This issue was addressed in a separate project by the Matttabassett District. A detailed engineering report determined that a modified outfall diffuser was a preferable alternative to relocating the outfall further south. The construction of this diffuser was completed in 2006.

7. Reference Maps

(See attached)

Distribution List:
Environmental Impact Evaluation
City of Middletown, Abandonment Project Facilities Plan

REVIEW AGENCIES: ***STATE***

Department of Environmental Protection, 79 Elm Street, Hartford, CT 01606

Office of Policy and Management, 450 Capital Avenue, MS#52ASP, Hartford, CT 06106

Council on Environmental Quality, 79 Elm Street, 6th Floor, Hartford, CT 06106

Connecticut Historical Commission, 59 South Prospect Street, Hartford, CT 06106

Department of Public Health, Water Supply, 450 Capital Avenue, Hartford, CT 06106

Department of Public Health, Environmental Health, 450 Capital Avenue, Hartford, CT 06106

Department of Transportation, Berlin Turnpike, Newington, CT 06111

REVIEW AGENCIES: ***MUNICIPAL***

Middletown Town Hall, Middletown, CT
- Town Clerk
- First Selectman
- Director of Public Health
- Inland Wetlands Regulation
- Planning & Zoning
- Water Pollution Control Authority

Cromwell Town Hall, Cromwell, CT
- Town Clerk
- Planning & Zoning
- Inland Wetlands
- Water Pollution Control Authority

REGIONAL PLANNING AGENCIES:

Midstate Regional Planning Agency, P.O. Box 139, Middletown, CT 06457


Arrigoni Bridge
Bridge Street
Airline Avenue
17
66
Middletown
Force Main
Court Street
Main Street
Broad Street
William Street
Metro Square
Harbor Drive
Middletown WPCF
9
Gravity Lines
Proposed Pumping Station
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Mattabassett WPCF
99
River Road
Wilcox Island
9
Atlas