

**Comprehensive Water Resources Management
Plan (CWRMP)**

APPENDICES G - J

**Volume 5 of 5
Acton, MA**

**March 2006
Revised June 2006**



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APPENDIX G: POWDERMILL STUDY AND NPDES PERMIT



September 12, 2003

Doug Halley, Director of Health
Board of Health
Town of Acton
472 Main Street
Acton, MA 01720

RE: Final Letter Report
Feasibility Study for Sewer System Expansion
Acton, Massachusetts

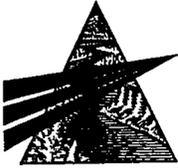
Dear Mr. Halley:

We are pleased that the Acton Selectmen chose to approve the Draft Letter Report on the Feasibility Study for adding the commercial properties located at the intersection of High Street and Massachusetts Avenue (Powdermill Plaza and Acton Ford, but not the Concord Rental Center) to the Acton sewer collection system and are happy to issue the Final Letter Report. This Final Letter Report includes comments on the Draft from the Town of Acton and Powdermill Plaza management. Input was solicited from but not received from Acton Ford, therefore the sections regarding Acton Ford have remained the same from the Draft Report. This report does not detail every required task, nor does it guarantee the commercial properties may join the sewer collection system, but it identifies those issues that Woodard & Curran (W&C) sees as the key concerns and tasks to be considered if the commercial properties are to connect to the sewer collection system. This study entails the preliminary assessment into the technical, regulatory, and construction components required for sewerage these commercial properties.

Technical Issues

W&C has reviewed the expected average daily and peak daily flows from the commercial properties. We have reviewed Powdermill Plaza's wastewater treatment facility (WWTF) flow and waste characteristics data from February 2000 to March 2003 and summarized this information in the table below. We have also reviewed Acton Ford's water meter readings for the past three (3) years and assumed their waste quality is typical for a sanitary sewer collection.

The Powdermill Plaza average daily flow based upon the data is 1,750 gallons per day (gpd) while the existing Powdermill Plaza WWTF has a Massachusetts Department of Environmental Protection (MADEP) discharge permit limit of 12,000 gpd. The actual peak daily flow according to the data is approximately 2,800 gpd while the existing Powdermill Plaza WWTF is permitted for 24,000 gpd peak daily flow. The flows at the WWTF are significantly lower than the permitted limits and we have confirmed with the Powdermill Plaza's management that the existing water use is representative of the maximum future usage since no expansion or use change is anticipated. Due to this fact and the historic peak daily flow of 2,800 gpd, we have assumed a future peak daily flow of 4,000 gpd for the purposes of discussion and conceptual design.



Acton Ford's water consumption, and subsequent assumed wastewater generation, has been averaged between 600 and 700 gpd over the past 3 years based upon water meter records. Assuming the facility does not expand, an estimated peak daily flow of 1,000 gpd is reasonable for the purposes of discussion and conceptual design.

The waste characteristics for Powdermill Plaza, based upon the historic monthly data, are within typical ranges. The waste characteristics from Acton Ford are expected to be typical of standard sanitary waste since the Town of Acton does not allow industrial or process waste, such as oil, solvent, or lubricants, into the Acton sewer system. Therefore, existing oil/water separators and floor drain systems at both Acton Ford and Powdermill Plaza are assumed to be properly maintained to separate out these products.

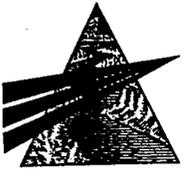
A summary of the influent flows and loadings based upon this analysis at the Powdermill Plaza and at Acton Ford are as follows:

	Powdermill Plaza	Acton Ford
Current Average Daily Flow	1,750 gpd	680 gpd
Historic Peak Daily Flow	2,800 gpd	825 gpd
Estimated Future Peak Daily Flow	4,000 gpd	1,000 gpd
Average Biochemical Oxygen Demand (BOD)	922 mg/l	300 mg/l*
Average Total Suspended Solids (TSS)	244 mg/l	300 mg/l*

*Based upon typical value due to site specific information not being available.

The Acton WWTF is a 250,000 gpd average daily flow Sequence Batch Reactor (SBR) facility, with a 500,000 gpd peak daily flow permit limitation via Groundwater Discharge Permit GW#0-656-T#W003143. The specific discharge limitations of the permit are as follows:

- Biochemical Oxygen Demand (BOD), 5 Day, 20 C = 20 mg/l
- Total Suspended Solids (TSS) = 20 mg/l
- Oil and Grease = 15 mg/l
- Fecal Coliform = 200 org/100 ml
- Total Nitrate-Nitrogen = 10 mg/l
- Total Nitrogen (TKN + NO₃ + NO₂) = 10 mg/l
- Total Phosphorus
 - 0.5 mg/l maximum daily limit until facility reaches 125,000 ADF or March 1, 2004, whichever is sooner;
 - thereafter, 0.2 mg/l average monthly limit with a 0.5 mg/l maximum daily limit.



In order to meet these effluent characteristics the Acton WWTF contains the following process capabilities and equipment:

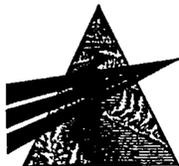
- Influent screening
- Grit removal
- SBRs and associated components
 - Chemical Feed Systems
 - Aeration System
 - Pre and Post -Equalization
- Filtration via cloth media
- Ultraviolet (UV) Disinfection
- Sludge handling and disposal
- Process Instrumentation and Controls via a SCADA system

Effluent from the Acton WWTF is pumped to one of six rapid infiltration basins (RIBs) located adjacent to the facility on Adams Street near High Street (1,000 feet north of Acton Ford). Discharge from the facility is controlled via a flow distribution vault on the RIBs site where the effluent is routed to the "active" basin.

The Acton WWTF has been operating since February 2002. The facility services approximately 15% of the Town of Acton (the Town), which equates to approximately 920 residences. The flow for those 920 residences, based upon Title 5 estimates prepared during the design and permitting of the WWTF and sewer collection system, was 250,000 gpd. It is this 250,000 gpd average daily flow limit that defined the extent of the sewer collection area and the Town was not permitted to add more than the 920 connections due to the potential of allowing more than 250,000 gpd average flow into the facility.

Since the WWTF started-up in February 2002 and the actual flows have been less than the Title 5 estimated flows. In reality, now that approximately 330 services have been connected, it is clear that the Title 5 estimated flows are very conservative. Figure A compares the expected flows based upon the Town's database of users connected as of June 30, 2003 versus the actual average daily flow being received at the facility on a week-by-week basis since February 2002. As illustrated in Figure A, the expected flows, as based upon Title 5 estimates, are conservative and actual flows have been 25 to 40% lower. For example, in the month of June 2003 the estimated Title 5 flow was 162,000 gpd while the actual daily flow from ranged from 74,190 gpd to 115,540 gpd with an average daily flow of 89,200 gpd for the month.

In summary, the limiting factor for the number of connections to the Acton WWTF is the facility capacity of 250,000 gpd which equates to 920 connections based upon conservative Title 5 estimates. However, actual numbers at this time illustrate that approximately 60,000 gpd of capacity exists. This 60,000 gpd or a portion thereof could be utilized by new connections without the potential of allowing more than 250,000 gpd average daily flow into the facility or preventing any of the preexisting 920 approved service connections from flowing into the system.



The combined average daily flow of Powdermill Plaza and Acton Ford, based on current flows, is 2,610 gpd. The estimated combined future peak daily flow is 5,000 gpd. Both of these flows are within the 60,000 gpd available capacity of the facility. Based upon this analysis, sufficient capacity exists at the Acton WWTF to accept average and peak daily flows from Powdermill Plaza and Acton Ford.

Currently the influent loadings and effluent characteristics at the Acton WWTF are within the following ranges:

	Typical Influent Range	Average Influent Concentration	Permitted Effluent Concentration	Average Effluent Concentration
BOD (mg/l)	240 – 310	250	30 or below	Below 5
TSS (mg/l)	70 – 260	200	30 or below	Below 5
Ammonia Nitrogen (mg/l)	15 – 50	40	10 or below	Below 5
Phosphorus (mg/l)	5 – 10	7	0.5 or below	Below 0.2

The potential impact of the Powdermill Plaza and Acton Ford loading on the Acton WWTF are not significant. The facility is operating well within its design parameters and is consistently meeting permit limits for effluent quality. The additional BOD and TSS will not adversely affect the WWTFs ability to meet discharge permit limitations in the future. In fact, the increased BOD load is expected to aid the biological phosphorus removal process.

Conveyance System

Three conveyance system options were conceptually reviewed prior to forming a recommendation for the connection of the two commercial properties. Each of the three options had advantages and challenges, and each had factors that were more beneficial to either commercial property. The alternatives were reviewed for factors making a best fit scenario. The screening criteria for reviewing alternatives include the following:

- Need for land ownership versus easements or land purchase;
- Need to remove and replace existing sewers and to bypass pump wastewater to keep the Powdermill Plaza and Acton Ford open during construction;
- Ease of constructability without impacting business operation (vehicle and pedestrian traffic, etc.) of the plaza or Acton Ford;
- Maximum use of existing infrastructure to reduce possible capital costs;
- Maximum future use by others (ease in other commercial properties in the area connecting)
- Meeting Town and industry standards for pumping and conveyance systems (Figure B is a conceptual sketch of the Town of Acton standard submersible pumping station)



A brief summary of each of the three scenarios for collection and conveyance systems are detailed below.

Scenario 1: Converting the existing Powdermill Plaza WWTF into a Pumping Station

This scenario consist of converting the existing tankage and pumps at the Powdermill Plaza WWTF into a pumping station while adding infrastructure to allow Acton Ford to flow to the existing Powdermill Plaza collection system and a force main to connect the pumping station to the Acton sewer collection system on Adams Street.

One key advantage to converting the existing Powdermill Plaza WWTF into a pumping station is that all of the existing sewers from the plaza already flow to the WWTF therefore no existing sewers would need to be removed and replaced at the plaza. Another key advantage is the existence of 3 phase power and a telephone service connection which may be utilized. However upon review of the existing WWTF equipment and layout it is clear that the existing wetwell outside the facility (in front of the access door) does not have sufficient capacity to store the required volume of incoming waste nor are the existing pumps (Myers WG20 pumps) sufficient to pump the wastewater up to Adams Street. These are both strong disadvantages. Although Powdermill Plaza owns the property and therefore no land acquisition is necessary and easements are assumed to be easily obtained, a majority of the equipment and tankage inside the Powdermill Plaza WWTF is not useable for the purposes of creating a pumping station.

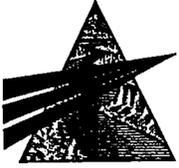
If the Powdermill Plaza WWTF were to be converted into a pumping station, Acton Ford would be required to convey their wastewater flow into the plaza gravity flow system (most likely behind Dunkin' Donuts) or to pump into the proposed force main in High Street. The more appropriate option appears to be for Acton Ford to pump into the plaza gravity flow system because it will allow Acton Ford to utilize lower power pumps and lower discharge pressure pumps. It will also allow Acton Ford the ability to perform this connection to the sewer system after the plaza has completed their conversion as opposed to concurrently.

Due to the inability to reuse the tankage and pumps at the Powdermill Plaza WWTF, this scenario is now recommended and a cost analysis was not performed.

Scenario 2: Create a new pumping station on High Street near the Powdermill Plaza driveway

This scenario consists of building a new submersible type pumping station that meets the Town standards, on the west side of Powdermill Plaza in the grass area adjacent to the plaza driveway on High Street and to have Acton Ford flow across High Street via a gravity collection system. Powdermill Plaza shall maintain their existing influent pumps and wetwell outside their facility (in front of the access door) and pump through a new 2-inch force main into the pumping station. The pumping station would then pump the wastewater up High Street to Adams Street. Figure C illustrates Scenario 2.

The advantages of this scenario include reducing impacts to plaza operation and traffic flow, since it will not need to remove and relay sewer pipes, eliminating the need for the plaza to install a by-pass pump wastewater during construction, allowing Acton Ford to have a gravity



service connection and eliminate the need to pump effluent into the septic field, and the pumping station location is more accessible to future users in the area.

The new pumping station may be located in the grass strip at the plaza driveway just outside the 100 foot (ft.) jurisdiction of the Acton Conservation Commission. It appears that Acton Ford could reach this station via gravity flow by crossing under High Street with an 8-inch service pipe.

A business decision that must be made by Powdermill Plaza is whether to keep the existing influent pumping station at their WWTF and reroute the force main to the new pumping station. The existing Myers WG20 pumps have sufficient capability to pump through 900 feet (ft.) of 2-inch force main and currently have a control and alarm system inside the Powdermill Plaza WWTF which must be maintained or relocated. However, the wetwell does not meet Acton's industry standards for pumping station storage therefore; the Town of Acton may not chose to take over the responsibility and maintenance for these influents pumps. If Powdermill Plaza wanted to flow to the new pumping station by Gravity, approximately 800 ft. of existing sewer collection system at Powdermill Plaza would have to be reinstalled to flow away from the plaza WWTF toward High Street. Most of this construction would be behind the plaza with the exception of the sewer service from the remote building (currently an eye doctors office) which may need to be rerouted across the parking lot to minimize elevation impacts on the rerouted sewers or to have an individual grinder pumping station installed.

Another key advantage to this pumping station location is that it is more accessible to the remaining Town of Acton properties in this section of Town. The town lines with Concord and Maynard limit the number Acton properties in the area and many properties would be required to flow or pump under the Assabet River on Powdermill Road; however the location on High Street is significantly more accessible than behind Powdermill Plaza at the existing WWTF.

Scenario 2 Conceptual Cost Estimate

The Design and Construction component of the project has been subdivided into three segments for the conceptual cost estimate:

1. The Powdermill Plaza property service effort;
2. Acton Ford gravity service and pump & tank decommissioning effort.
3. The pumping station, force main and High Street effort;

Figure C illustrates the Scenario 2 conceptual collection and conveyance system.



Program level costs for this scenario are as follows:

<u>Direct Costs</u>	Conceptual Unit Cost	Estimated Quantity	Conceptual Extended Cost
Powdermill Plaza Property effort			
Force Main (LF)	\$25	900	\$22,500
Special Manholes (Ea)	\$4,000	1	\$4,000
Trench Paving (SY)	\$8	600	\$5,000
Decommission Existing WWTF & Reuse of Influent Pumps & Wetwell	\$10,000	1	\$10,000
Powdermill Plaza Property		Subtotal:	\$41,500
Acton Ford effort			
Gravity Service Connection (LF)	\$60	100	\$6,000
Manholes (Ea)	\$3,000	1	\$3,000
Decommission Existing Septic System	\$3,000	1	\$3,000
Acton Ford Property		Subtotal:	\$12,000
High Street Effort			
Pumping Station (Ea)	\$160,000	1	\$160,000
Force Main (LF)	\$30	1,400	\$42,000
Trench Paving (SY)	\$8	1,200	\$9,500
Overlay Paving (SY)	\$4	7,500	\$30,000
Remove & Relay Watermain (LF)	\$80	50	\$4,000
Remove & Relay Drain Pipe (LF)	\$30	35	\$1,000
High Street Effort		Subtotal:	\$246,500
Direct Construction Costs		Subtotal:	\$300,000
 <u>Indirect Costs</u>			
Permitting, Design & Construction Engineering (30%)			\$90,000
Administration (Police, Financing, Legal, & Town fees) (5%)			\$15,000
Land Acquisition & Easements (0%)			\$0
Contingency (15%)			\$45,000
Indirect Costs		Subtotal:	\$150,000
Scenario 2 Total Conceptual Project Cost:			\$450,000

Assumptions on Scenario 2 conceptual costs

- The pumping station \$160,000 cost estimate is based upon bid costs for Town of Acton's Pumping Station #6 and #8 and the station have future capacity for other properties in the area but a starting peak daily flow of 5,000 gpd. Conceptual costs should be revised once actual equipment is selected. For example, currently undetermined equipment which will impact cost include permanent auxiliary power generator, odor control pumps and manner of installation (public bid with state wages or private installation)



- Pumping station wet well shall be set at a depth to allow Acton Ford to be serviced by gravity, and potential future Powdermill Plaza gravity service.
- Powdermill Plaza shall maintain private operation of their existing influent pumping station at the existing WWTF and only inactive processes at the WWTF shall be decommissioned. If the Town of Acton chooses to take-over ownership of these pumps, system upgrades may be required and those costs are not included herein.
- Buried pipe installation, such as sewers and force mains, assume no ledge shall be encountered on the selected route.
- On High Street 50 LF of water main relocation and 35 LF of drainage pipe relocation have been included in the estimates to account for the possibility of encountering these existing utilities during construction.

Scenario 3: Create a New Pumping Station Adjacent to the Existing Powdermill Plaza WWTF

This scenario consist of building a new submersible type pumping station that meets the Town standards, next to the existing Powdermill Plaza WWTF and to have Acton Ford pump across High Street into the plaza gravity collection system. The pumping station would pump into a 3 or 4-inch force main back across the Powdermill Plaza property and up High Street to Adams Street. Figure D illustrates Scenario 3.

The advantages of this scenario include minimizing impacts to plaza operation and traffic flow, no need to remove and relay existing sewer pipes, eliminating the need for the plaza to install a by-pass pump wastewater during construction, since the new pumping station influent pipe can be connected in less than 1 day, and reusing of the existing power and telephone connections. It will also allow the reuse of a portion of the existing WWTF building for storage of an auxiliary power generator and chemical feed systems for odor control, if required.

The disadvantages of this scenario include the fact that the location may limit other properties in the area from reaching the pumping station via gravity and it may require other properties to obtain easement from Powdermill Plaza for access. Another disadvantage is that Acton Ford must pump their existing wastewater to the Powdermill Plaza gravity system and heavily modify their existing system.

Acton Ford has a relatively new septic system consisting of a 2,500 gallon septic tank, a 1,500 pump chamber containing two Myers SRM4 effluent pumps, and a leaching field that receives the discharge from the Myers pumps. Currently Acton Ford wastewater flows by gravity to the septic tank.

A pumping station behind Powdermill Plaza will require Acton Ford to change the existing pumps to grinder type pumps and modify the tanks. Acton Ford would be required to change their existing Myers SRM 4 pumps with Myers grinder pumps, or equal, because these pumps can grind and pump solids whereas the existing Myers SRM4 pumps pump effluent (liquid) only. For suitable long term storage, the 2,500 gallon septic tank and 1,500 gallon pump chamber may be combined by adding two connection pipes of 12 to 18-inch diameter at the invert (bottom) of



both tanks. This would allow both tanks to act a single 4,000 gallon tank and allow solids to flow toward the proposed grinder pumps located in the sump of the pump chamber (see Figure E for a conceptual sketch).

If the existing Myers SRM4 pumps are replaced with new grinder pumps only the 2-inch discharge piping exiting the effluent chamber may be reused. Grinder pumps that macerate any solids prior to pumping have larger power requirements and typically discharge into 1 to 1 ¼-inch piping (since the solids have been macerated) therefore the discharge piping from the pump will have to increase from 1 or 1 ¼ inch diameter pipe to the 2 inch piping currently existing the effluent tank. Grinder pumps also typically have a different configuration, or “footprint”, than effluent pumps therefore a majority of the existing pump equipment mounted on the floor of the pump chamber would most likely have to be replaced.

The 2-inch force main currently exiting the effluent tank may be rerouted to cross High Street and a portion of the Powdermill Plaza parking lot to an existing manhole behind Dunkin’ Donuts. At this point the 2-inch diameter force main can discharge and the Acton Ford wastewater will flow by gravity to the proposed Powdermill Plaza pumping station.

Scenario 3 Conceptual Cost Estimate

The Design and Construction component of the project has been subdivided into three segments for the conceptual cost estimate:

1. The Powdermill Plaza property service effort;
 2. Acton Ford force main and pump and tank modification effort.
 3. The pumping station, force main and High Street effort;
- Figure D illustrates the Scenario 3 conceptual collection and conveyance system.

Program level costs for this scenario are as follows:

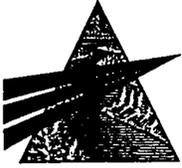
<u>Direct Costs</u>	Conceptual Unit Cost	Estimated Quantity	Conceptual Extended Cost
Powdermill Plaza Property effort			
Gravity Sewer (LF)	\$60	50	\$3,000
Manholes (Ea)	\$3,000	1	\$3,000
Trench Paving (SY)	\$8	60	\$500
Decommission Existing WWTF	\$15,000	1	\$15,000
Powdermill Plaza Property Service		Subtotal:	\$21,500
Acton Ford effort			
New Pumps and Reconfigured Tanks	\$20,000	1	\$20,000
Small diameter force main	\$15	300	\$4,500
		Acton Ford Property Subtotal:	\$24,500



<u>Direct Costs</u>	Conceptual Unit Cost	Estimated Quantity	Conceptual Extended Cost
High Street Effort			
Pumping Station (Ea)	\$160,000	1	\$160,000
Force Main (LF)	\$30	2,200	\$66,000
Trench Paving (SY)	\$8	2,000	\$16,000
Overlay Paving (SY)	\$4	7,000	\$28,000
Remove & Relay Watermain (LF)	\$80	50	\$4,000
Remove & Relay Drain Pipe (LF)	\$30	35	\$1,000
	High Street Effort	Subtotal:	\$275,000
	Direct Construction Costs	Subtotal:	\$321,000
<u>Indirect Costs</u>			
Permitting, Design & Construction Engineering (30%)			\$96,500
Administration (Police, Financing, Legal, & Town fees) (5%)			\$16,000
Land Acquisition & Easements (0%)			\$0
Contingency (15%)			\$48,500
	Indirect Costs	Subtotal:	\$161,000
	Scenario 3 Total Conceptual Project Cost:		\$482,000

Assumptions on Scenario 3 conceptual costs

- The pumping station \$160,000 cost estimate is based upon bid costs for Town of Acton's Pumping Station #6 and #8 and the station have future capacity for other properties in the area but a starting peak daily flow of 5,000 gpd. Conceptual costs should be revised once actual equipment is selected. For example, currently undetermined equipment which will impact cost include permanent auxiliary power generator, odor control pumps and manner of installation (public bid with state wages or private installation)
- The Acton Ford 2-inch diameter force main will be in the same trench from High Street to behind Dunkin' Donuts as the Powdermill Plaza force main and left capped and dry. Acton Ford then will finish the connection at High Street and at an existing manhole behind Powdermill Plaza at some future date.
- Buried pipe installations, such as sewers and fore mains, assume no ledge shall be encountered on the selected route.
- On High Street 50 LF of water main relocation and 35 LF of drainage pipe relocation have been included in the estimates to account for the possibility of encountering these existing utilities.



Recommended Conceptual Collection and Conveyance System: Scenario 2

Scenario 2 is the recommended alternative as a best fit for all stakeholders in the process. The factors that were advantageous and made Scenario 2 the recommendation are:

- Lower conceptual total project cost;
- Minimize impacts to the Powdermill Plaza and Acton Ford operation and traffic flow;
- Eliminates the need for the Powdermill Plaza or Acton Ford to install a by-pass pump wastewater during construction;
- Acton Ford has a gravity service connection and eliminates the need to pump effluent into the septic field;
- Achieved town of Acton and industry standards;
- The pumping station location is more accessible to future users in the area.

The recommended pumping station is a submersible type similar to the existing Town of Acton Pumping Station #6 on Railroad Street. The pumping station would consist of the below listed components and equipment and Figure B is a typical pumping station layout:

- 8 ft. diameter concrete wetwell for storage of wastewater;
- Two (2) submersible pumps within the wetwell; 40-50 gpm for this application;
- Masonry block building to house electrical system and process controls
- Auxiliary generator (internal to building, external on a slab with enclosure or pigtail connection for portable power) with appropriate transfer switch;
- Ultrasonic level controls and secondary mechanical float bypass system for pump operation;
- Process instrumentation and controls via a SCADA system utilizing the Town's I-Net system and a dedicated line connection to the Town WWTF.

The detailed design of the pumping station must factor existing flows from Powdermill Plaza and Acton Ford with future flows to the station. Given the estimated future peak daily flow of 5,000 gpd and the possible peak daily flows from the remaining properties in the area, design considerations such as a partitioned wetwell and two separate sized pumps may have to be considered during the detailed design to ensure proper operation.

Regulatory Components

A key factor in the potential connection of these commercial properties to the Acton WWTF is the required regulatory approvals to authorize the connection, the construction, and the decommissioning of the existing WWTF. The regulatory components have been divided into state/federal and Town of Acton discussions.

State & Federal Permits

A MADEP Bureau of Resource Protection Water Pollution Control Sewer Connection/Extension permit shall be required. The expected permit shall be the MADEP Minor Sewer



Extension/Sewer Connection with Pump Station (MADEP code MADEP WP 14). This permit is applicable for sewer discharges where the extension is under 2,500 ft. and where flows are less than 50,000 gpd, or where there is a connection with a pumping station. This proposed project satisfies all three of these criteria. The permit application consists of a MADEP form to be completed by the Engineer and signed by both of the Owners and Town. In addition, the permit application requires the submittal of 95% complete design drawings for the pumping station and piping system. The permit application fee is currently \$435 and the approval MADEP published schedule is as follows, although in our experience we have found approval typically requires less time:

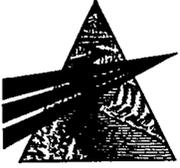
<u>Activity</u>	<u>Max Duration</u>
Administrative Comment Period	30 days
Technical review #1	90 days
Technical review #2 (if necessary)	90 days
Public Comment Period	<u>90 days</u>
Total Duration*	300 days

* In our experience with pumping stations of this size and complexity we have achieved permit approvals in as little as 90 days. 300 days is not a typical approval duration.

The key challenge to the Sewer Connection/Extension Permit shall be giving a clear explanation of the existing capacity at the Acton WWTF and justifying why the commercial properties should be allowed to connect. The Town will have to document that by allowing the commercial properties to connect, they are not precluding residential users who are currently in the sewer collection area but who have yet to connect, from someday connecting. The Town must also establish the available capacity created by the difference between the estimated flows used in the original Sewer Connection/Extension permits filed for the Middle Fort Pond Brook Sewer Project and the actual flows being received. Figure A provides a graphic justification for the Town's use in these discussions with the MADEP.

Another key issue from a State regulatory perspective is whether the project triggers a Notice of Project Change to the original MEPA Certificate issued on the Middle Fort Pond Brook Sewer Project. A Notice of Project Change is required whenever there is a "significant" material change (positive or negative) on a project prior to the taking of all agency action for the project. The definition of "significant" is the key factor and typically includes the following changes:

1. Expansion in the physical dimension of a project 10% or more
2. Increase in the level of impacts previously reviewed of 25% or more
3. Meeting or exceeding any review threshold that was not previously met or exceeded
4. Changing of expected dates of the project
5. Changing project site
6. New application for a permit or new request for financial assistance or land transfer
7. Any change that prevents or materially delays the realization of the intended environmental benefits.



Based upon these definitions of “significant” the addition of Powdermill Plaza and Acton Ford to the Acton sewer system does not appear to trigger a Notice of Project Change. The additional flow to the system is a peak of 5,000 gpd, or about 2% increase on peak days; and the added 2,200 LF of pipe is likewise and insignificant increase. The MEPA office should be contacted to confirm that item 5, change of project site does not apply to the extension of a collection system in a roadway where it already exists, and that the proposed project does not institute a “project change” as defined under MEPA. If additional commercial properties in the area are added to the project, there is a possibility that a “significant” change may be interpreted, but at this time it is our belief that a MEPA Notice of Project Change is not required to service Acton Ford and Powdermill Plaza.

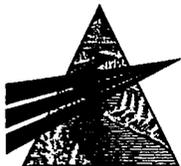
We have confirmed with both the MADEP and the Environmental Protection Agency (EPA) that no state or federal permits are required to decommission an existing WWTF or to surrender an existing discharge permit, however both the MADEP and the EPA request a formal letter from the Owner indicating why and when the facility is being decommissioned and a discussion of where the wastewater is now being treated.

Local Permits

A number of permits will have to be obtained from the Town of Acton during design and prior to construction. These permits are expected to be:

Sewer System Connection Approval – Issued by Board of Health - This permit will be prepared in parallel with the MADEP Sewer Connection/Extension permit described above. The Town will issue the approval prior to signing the MADEP Sewer Connection/Extension permit application. Acton’s current Application and inspection charge is \$150 for commercial establishments.

Notice of Intent Application / Order of Conditions – Issued by Conservation Commission-A Notice of Intent (NOI) application will have to be filed with the Town because approximately 540 ft. of the proposed force main behind the building shall be within 100 ft. of a resource area (wetland) under the protective jurisdiction of the Acton Conservation Commission. An NOI is filed with both the MADEP and the local Conservation Commission, but it is administered, reviewed and approved at the local level. The NOI is a MADEP standard form that requires site layout design drawings with sufficient information to establish the limit of the resource area and illustrate the intended impacts, if any, on that resource area. The NOI application fee can be expected to range from \$500 to \$1,200 and is based upon the magnitude of the impacts on the resource area. A typical NOI approval duration is 2 to 3 months for a project this size and requires a public hearing. The approval of the NOI is called an Order of Conditions. The Order of Condition stipulates the Town standard requirements for work adjacent to a resource area and will include any project specific tasks discussed during the public hearing.



Permit to Work in the right of Way ("Road Opening Permit") – Issued by Acton Highway Department - A permit to work in the High Street right-of-way must be applied for and received prior to the initiation of construction. The permit fee is \$50.00 and a bond, of sufficient value to cover cost of repair(s) to the roadway in case of contractor default, is expected to be required. The bond is to ensure the roadway is returned to preconstruction conditions. If a contractor defaults on the work or does not perform to the Town's standards for roadway repair, the Town collects on the bond to cover their costs of repair. The Road Opening Permit is easily acquired through the Town Engineer and the bond is typically the responsibility of the selected contractor..

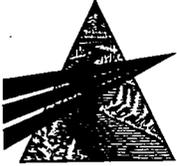
Acton Water District Notification - A formal permit from the Acton Water District is not required for the work; however the Water District has a 12-inch water transmission main from the Assabet Well in High Street. The proposed force main will be separated by a minimum of 10 ft. from the existing water main but it will be buried in the ground parallel to the water main for approximately 500 ft. If the Assabet Well water main had to be taken off line, or the pipes were accidentally broken, the Acton Water District will be challenged to provide sufficient water to service the Town and damage from the water lost during the break could be significant. Due to these concerns we recommend that the Acton Water District be notified of the project.

Town of Acton Easement for Pumping Station and Force Main - It is Town of Acton policy that all wastewater infrastructures under their ownership and control be located on and inside permanent easements which allow the Town access for operation, maintenance and monitoring of their infrastructure. If the Town is to own and operate the Powdermill Plaza pumping station easements must be granted to the Town. Typically the easements have been of sufficient size for pumping stations and buildings and 20 ft. wide over the length of piping, in this case force main, in the ground. The owners of Powdermill Plaza must arrange an easement agreement with the Town of Acton.

Conclusions & Recommendations

Sufficient capacity exists at the Acton WWTF to handle the Powdermill Plaza and Acton Ford existing average daily flow of 2,610 gpd, future peak daily flow of 5,000 gpd, and the associated waste load characteristics. The additional BOD and TSS waste load will not adversely affect the WWTF's ability to meet discharge permit limitations in the future.

Several feasible scenarios exist to provide a collection and conveyance system from lower High Street area up to Adams Street and the Town of Acton sewer collection system. W&C recommend what is detailed herein as Scenario 2, which involves building a new submersible type pumping station on the west side of Powdermill Plaza, in the grass area adjacent to the plaza driveway on High Street, and to have Powdermill Plaza pump into the station via their existing influent pumps at their WWTF and to have Acton Ford flow across High Street via a gravity collection system into the station. Figure C illustrates Scenario 2.



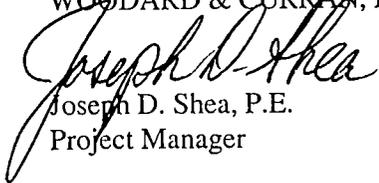
Recommendations:

- The Town of Acton to meet with state regulators to present the justification to expand the Acton sewer collection system without exceeding the permitted average daily flow or limiting any of the preexisting 920 approved connections.
- The Town of Acton, Powdermill Plaza and Acton Ford meet to discuss the conclusions from this report and determine a plan and schedule to move forward. Included in that plan should be cost sharing amongst the commercial properties and fees to be collected by the Town. The limits of private versus public sewer infrastructure and expected easements should also be discussed.
- Town of Acton to formally contact the other commercial properties in the area to determine the probability of their future connection into the pumping station. This data will be used in the pumping station design as well as financial models for capital outlay on behalf of the Acton Ford and Powdermill Plaza.
- All partners discuss schedule and timing of the project in order to determine when any design work should initiate. For one example, one key factor is season sensitive work, such as identifying wetlands, which should be initiated prior to winter.

We appreciate the opportunity to support the Town with this Final Letter Report and are available to assist with the next set of task moving forward. If you have any questions or comments, please do not hesitate to contact our office.

Very truly yours,

WOODARD & CURRAN, INC.


Joseph D. Shea, P.E.
Project Manager

JDS/lis
Project 212553

Enclosures

cc: Anthony Capobianco, Founder, Atlantic Management
David Abatsis, Vice President, Acton Ford
Helen Priola, Senior Vice President, Woodard & Curran
Frank Cavaleri, Vice President, Woodard & Curran
James Gagliard, Plant Manager, Woodard & Curran

FIGURE A

Town of Acton, MA
T5 Estimated Flows vs Actual Flows
Compared with Number of Weekly Connections to the Sewer System

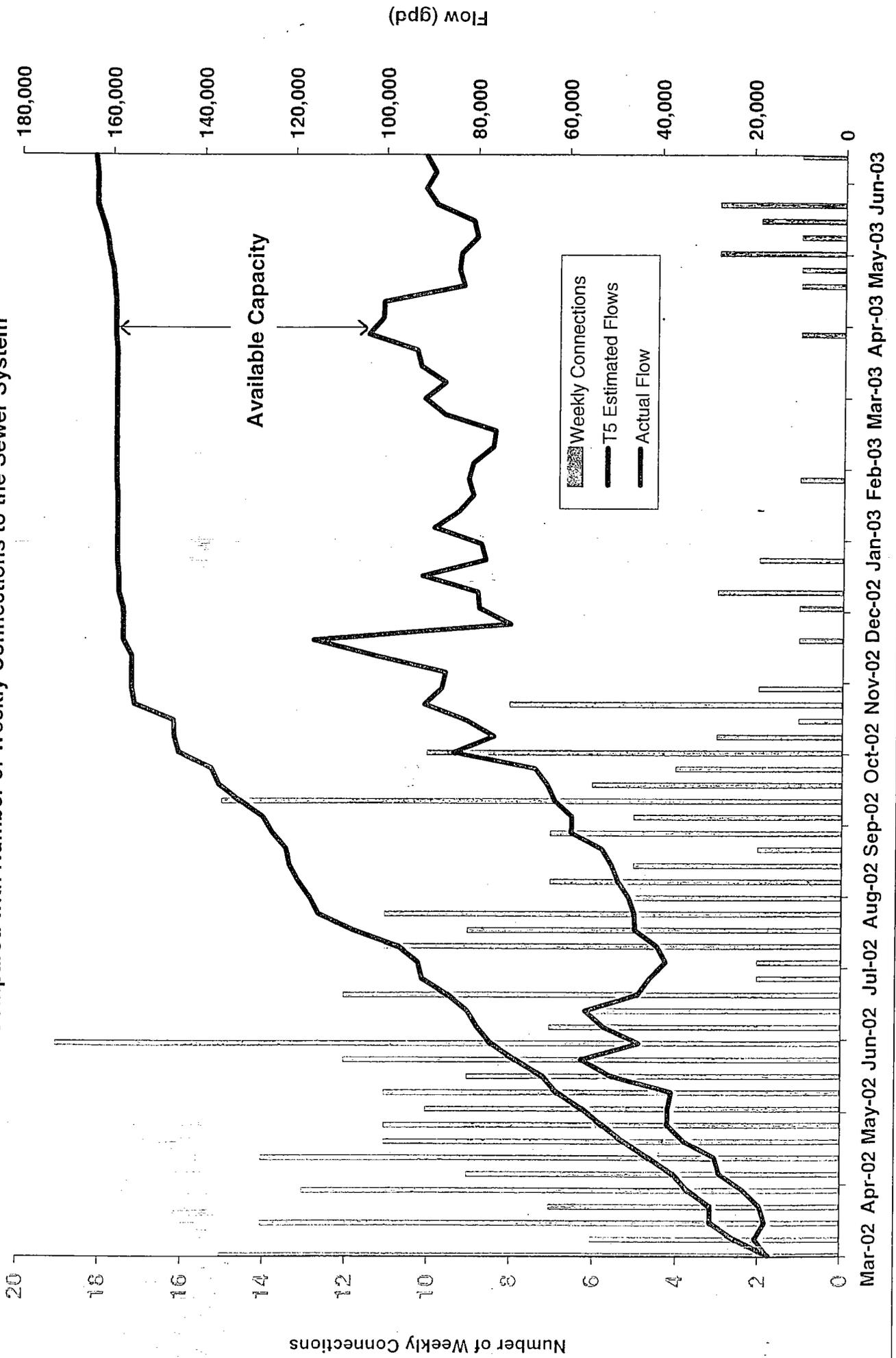
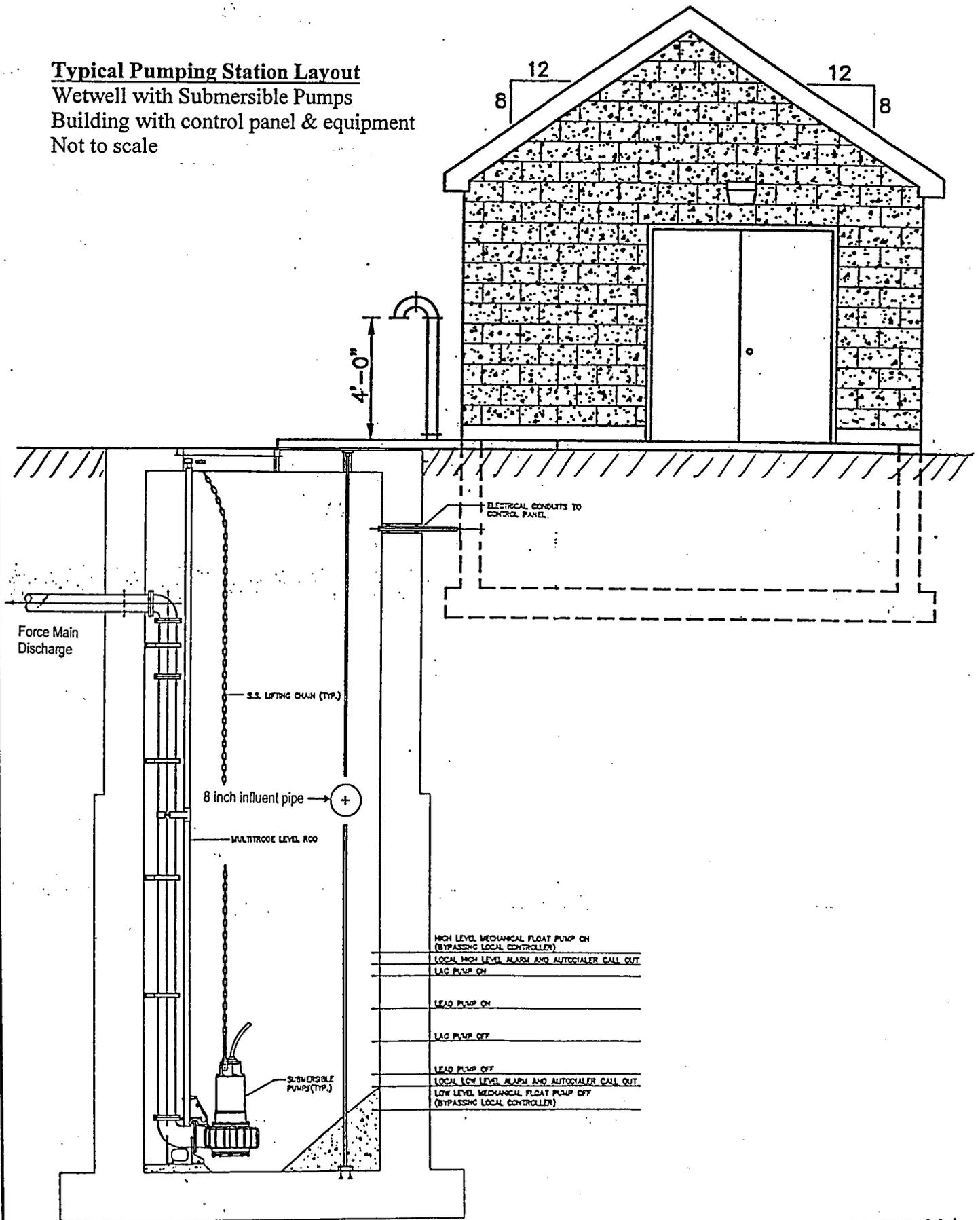
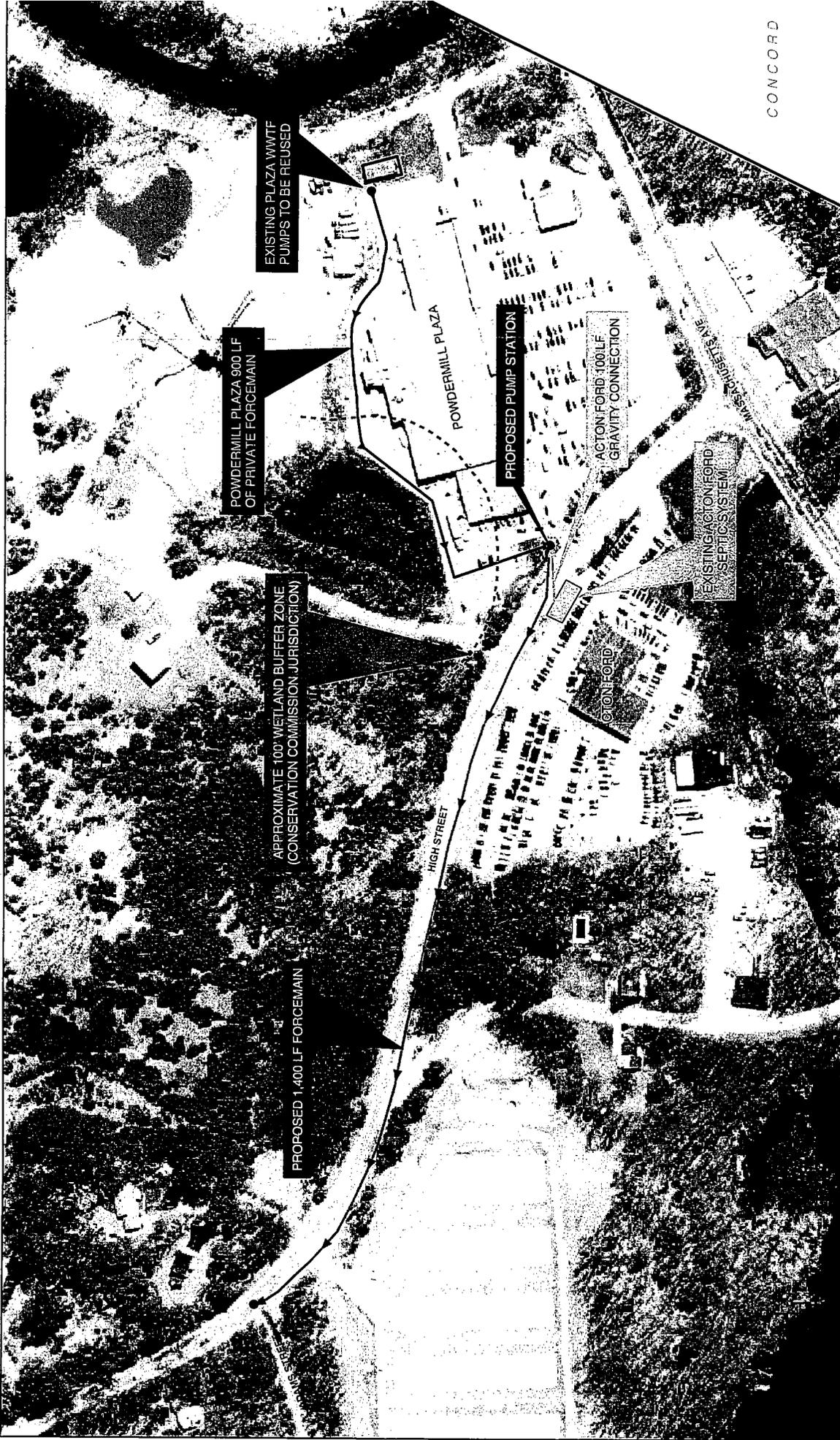


FIGURE B

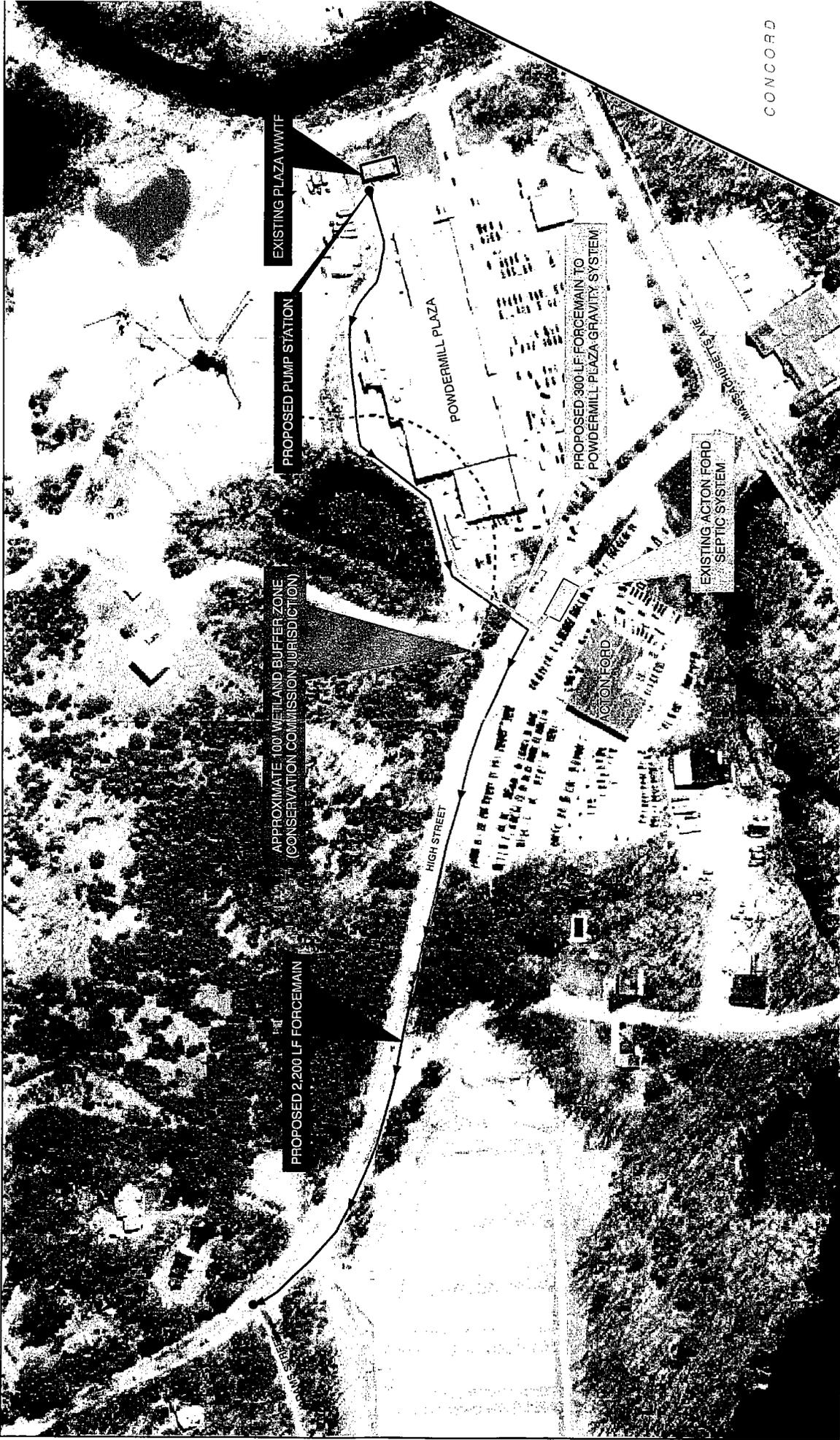
Typical Pumping Station Layout
Wetwell with Submersible Pumps
Building with control panel & equipment
Not to scale



SCENARIO 2 - FIGURE C



SCENARIO 3 - FIGURE D



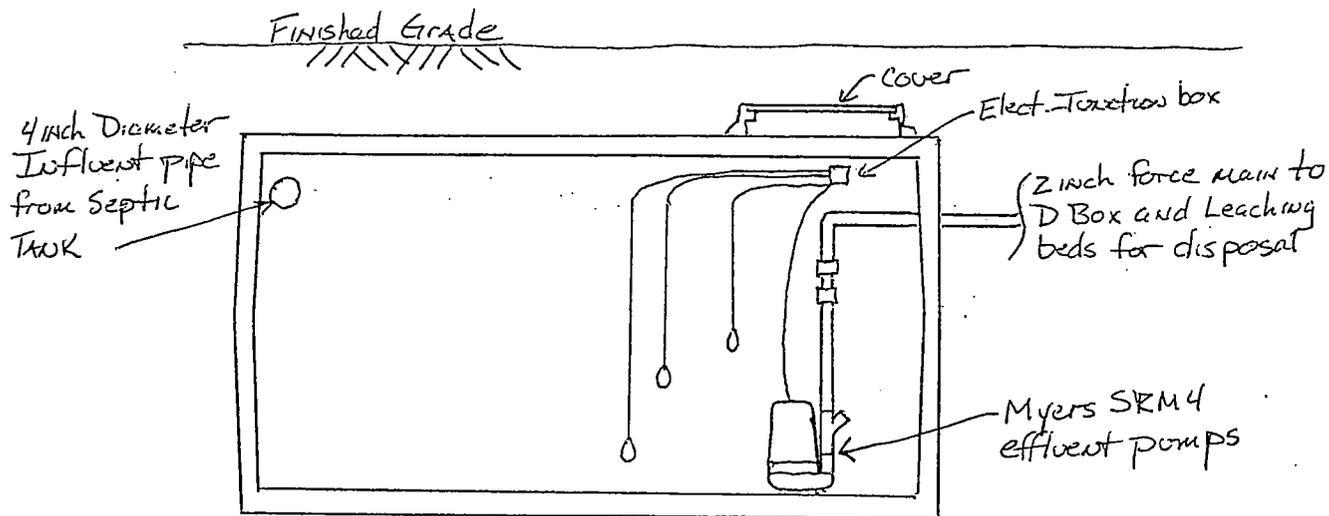
CONCORD



SOURCE OF DATA: MassGIS (Color Ortho Photo Date: April 2001), Woodard & Curran Inc.

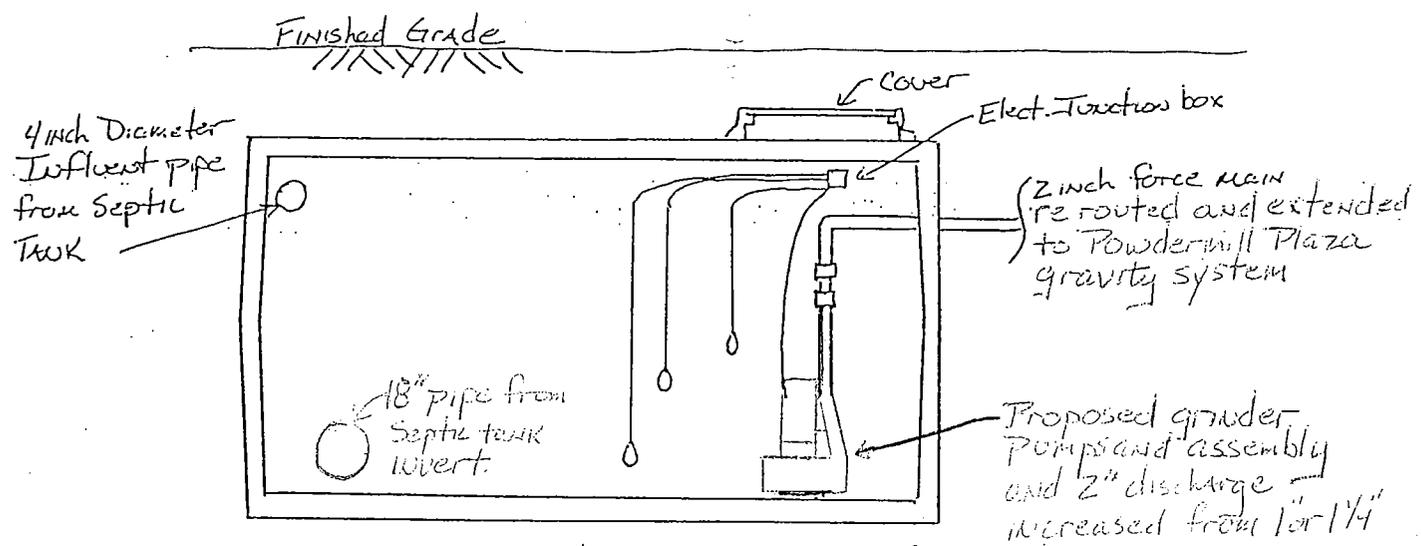


WOODARD & CURRAN
Engineering • Science • Operations



Existing 1500 gallon Pump Chamber
N.T.S.

Taken from Records on file at Board of Health.



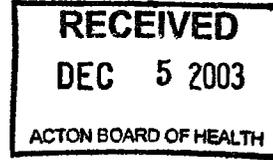
Combined Septic/Grinder Pump Chamber
N.T.S.

FIGURE E



December 3, 2003

Mr. Douglas Halley
Acton Board of Health
472 Main Street
Acton, MA 01720



Re: Powdermill Plaza WWTP Sewer Connection

Dear Mr. Halley:

In accordance with our agreement we have evaluated the costs for continued use of the Powdermill Plaza WWTP vs. connection to the Acton WWTP.

1. Sewage Strength and Treatment Performance

The Powdermill Plaza WWTP was constructed in the early 1980's and treats an average of 1,750 gpd to a maximum of 2,800 gpd from the shopping center. The plant discharges effluent to the Assabet River under its NPDES Permit. The Powdermill Plaza WWTP routinely has met the conditions of the discharge permit. There are no outstanding actions by DEP or EPA regarding treatment or operations. Issuance of a new discharge permit is on hold. In September 2003 Woodard and Curran, Inc. evaluated the means and impacts of connecting the sewage from Powdermill Plaza and Acton Ford into the Acton WWTP and found that these businesses would use only 5,000 gpd of the 65,000 gpd available remaining capacity (i.e. unreserved capacity) of the Acton WWTP. We have summarized the existing and future flows which will be treated and the results are shown in Table 1.

Table 1 – Acton WWTP Existing and Future Average Flows

A. Existing Flows with schools in session	
• Residential	74,000 gpd
• Commercial	10,000 gpd
• Schools	16,000 gpd
Average Existing Flow	100,000 gpd
B. Future Reserved Flows	
• Reserved for 368 users (almost all residential)	85,000 gpd
Average Existing & Future Reserved Flows	185,000 gpd
C. New Connections & Unreserved Capacity	
• WWTP Design Capacity	250,000 gpd
• Total Unreserved Capacity	65,000 gpd
• Powdermill Plaza & Acton Ford Connections	5,000 gpd
Remaining Unreserved Capacity	60,000 gpd

2. Treatment Limits for Continued Discharge to Assabet River

The existing and anticipated NPDES discharge permits for the continued discharge to the Assabet River from the Powdermill Plaza WWTP were discussed with Bryant Firman at DEP. It is anticipated that any future plant discharge will remain small compared with large discharges upstream and the location of the discharge is into the Assabet River in a segment of a rapid flow below the Prescott Dam. DEP accordingly felt that less stringent limits would likely be imposed for a new permit. The existing and anticipated limits are shown below in Table 2:

Table 2 – Existing and Future Discharge Limits for Powdermill Plaza WWTP

	Existing NPDES Permit	Anticipated NPDES Permit
Flow	12,000 gpd	5,000 gpd
BOD	30 mg/L	30 mg/L
Suspended Solids	30 mg/L	30 mg/L
Ammonia	No limit	No limit
Total Phosphorus	No limit	0.5 mg/L
Total Chlorine Residual	1.5 mg/L	1.5 mg/L
Copper	No limit	No limit

3. Process Upgrade

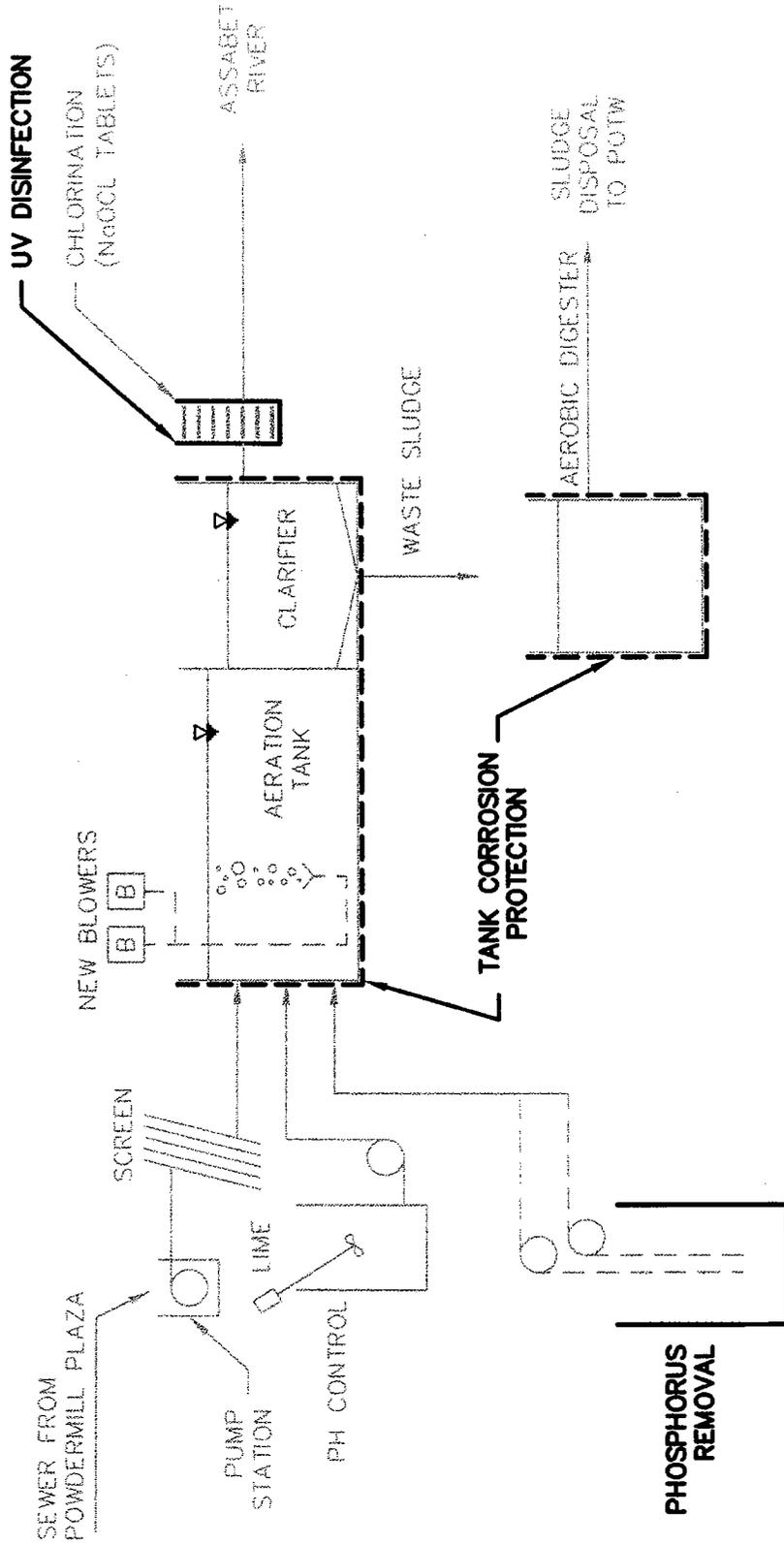
In order to meet the anticipated limits and to provide for continued reliable operation, and to provide for another 20 year design life, the process, tankage and structure will require upgrading. The existing Powdermill Plaza WWTP uses the activated sludge process to treat sewage to the existing limits and includes the following unit processes:

- Sewage pumping with submersible pumps
- Screening
- pH adjustment with lime slurry
- Aeration with fine bubble diffusers
- Secondary clarification
- Effluent disinfection with sodium hypochlorite tablets
- Aerobic sludge digestion

A schematic process diagram is shown on Figure 1.

The existing process is a steel package plant constructed in 1984± and designed for an average flow of 12,000 gpd. From a process standpoint and to comply with the anticipated permit only, phosphorous removal would need to be added. This is a relatively simple process in small plants and would be achieved by metering a metal salt solution of alum or ferrous sulfate into the aeration tank where the reaction to precipitate phosphorus from solution would occur. The precipitated phosphorus would then settle with suspended solids in the clarifier for removal as waste sludge. The chemical process would include two 55 gallon drums of metal salt solution, two metering pumps, piping and controls.

The existing chlorination process uses dissolution of sodium hypochlorite tablets to achieve disinfection of the effluent before discharge. The process is simple and would likely continue meeting the existing and anticipated total chlorine residual limit of 1.5 mg/L. We have seen a long term tightening of these limits for all plants discharging into surface water and for small plants discharging to groundwater. In these cases chlorination has been abandoned as a process choice in favor of ultraviolet light (UV) disinfection



NOTE: UPGRADES ARE SHOWN BOLD

 Westford, Massachusetts Tel. (978) 692-1913 www.dufresne-henry.com	POWDERMILL PLAZA WWTP FIGURE 1 PROCESS SCHEMATIC		Project No. 9130038.01
	ACTON	MASSACHUSETTS	Proj. Mgr. W.W.T.
			Scale NOT TO SCALE
			Date NOVEMBER 2003
			A SK1

used as there are no chemicals to handle and no chlorine residual toxicity occurs in the receiving waters. Considering that discharge permits have a history of becoming increasingly stringent and are issued every 5 years, we recommend substituting UV light disinfection for chlorination in the plant upgrade. The package UV system would include 2 – UV lights housed in a stainless steel channel structure and retrofitted into the outlet piping of the existing clarifier.

The treatment process does not have standby power for operation during outages. This is now normally required by DEP regulations and has been added in the process upgrade.

4. *Corrosion Protection for Steel Tank*

The existing steel package plant is approximately 20 years old and was installed so that about 3/4s of the tank is buried leaving the top area above grade. The plant is housed in a concrete block building. Depth to groundwater is not known but based on observed standing water in adjacent drainage ditches and the relative closeness to the Assabet River we believe that the lower half of the tank lies below the groundwater table. Buried steel tanks in groundwater are subject to corrosion and sacrificial magnesium anodes were typically installed at construction to mitigate corrosion of the steel. The tanks are believed to be in sound condition but inspection is needed to confirm the soundness of the tank. If after inspection of both the interior and exterior surfaces little to no corrosion is evident, then one could presume that the steel tank could serve for treatment well into the future. However, the tank has not been dewatered for internal inspection since the mid 1980s when US Filter Corp. was retained to operate the plant and there is no space within the concrete block building to permit excavation of the tank to check for exterior corrosion. A corrosion specialist firm (Corr-Tech Inc. of Hopkinton, MA 508-435-0090) was contacted for advise on how to determine if corrosion has occurred in the tank in order to determine if, with proper corrosion protection, the tank could be used of another 20 years. The investigation would be done from inside a dewatered tank (possibly only the aerobic digester or clarifier) to avoid taking the aeration tank out of service. The measurements would include ultrasonic thickness measurements, visual inspection and cathodic protection testing and would be used to decide if corrosion protection would be appropriate. If the testing showed exterior corrosion then a cathodic protection system could be designed and installed but this would be problematic because of the building limiting access by excavation. If testing showed internal corrosion then coating or relining the tank would be used. It is not thought that corrosion would be so severe as to require outright abandonment of the tank.

5. *Structure Upgrade*

The existing masonry block structure appears to be in fair condition. For the next 20 year design life we recommend that the roof shingles would need replacement.

We recommend constructing an addition to the north side of the building to house the process upgrade for phosphorus precipitation and provide a clean laboratory area by relocating the lime tank. See Figure 2.

6. *Treatment Upgrade Cost Estimates*

Two options have been considered for upgrading the Powdermill Plaza WWTP to permit its continued operation. Woodard & Curran, Inc., in an earlier report evaluated the costs of options to connect the plaza and Acton Ford into the Acton WWTP. The options are for a 20 year design life using continued discharge into the Assabet River (Option 1) and a new plant with new leaching bed for groundwater discharge. The costs are summarized below and presented in Tables 3 and 4.

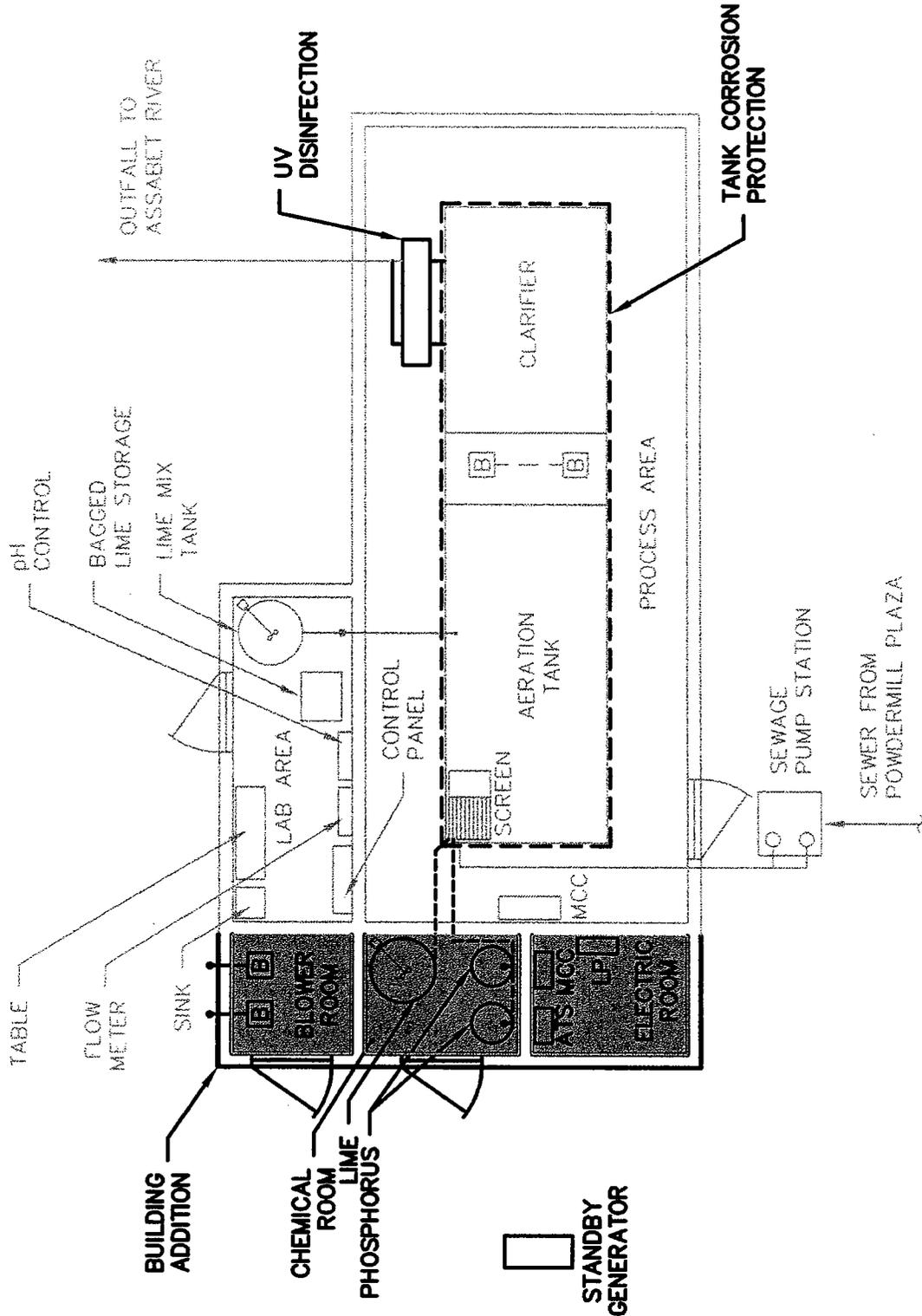
- Option 1 – WWTP upgrade with continued discharge to Assabet River. Estimated cost \$123,000
- Option 2 – New WWTP with groundwater discharge. Estimated cost \$475,000.

Table 3 – Option 1 – WWTP Upgrade Cost Estimate

<u>Building</u>	
• Chemical room addition 8' x 16' = 128 ft ² @ \$150/ft ²	\$ 19,200
• Replace roof shingles on existing building 18' x 40' = 720 ft ² @ \$10/ft ²	7,200
• Upgrade ventilation & lighting in process area Inlet & outlet louvers ≈ 1500 cfm	4,000
Lighting improvements	2,000
<u>Laboratory Area</u>	
• Relocate lime feed tank & pump to new addition	2,000
<u>Process Upgrade</u>	
• Phosphorus chemical feed tank & pumps	5,000
• New blowers & relocate	10,000
• Corrosion protection for tanks	15,000
• Ultraviolet light disinfection	8,000
• Standby power & auto-transfer switch	20,000
Sub-Total	\$ 92,400
Engineering and Contingency	30,600
Option 1 – Upgrade Project Cost Estimate	\$123,000

Table 4 – Option 2 – New WWTP with Groundwater Discharge

Process based on 2 stage FAST system for denitrification, phosphorus removal and buried infiltration beds.	
• Septic Tank 48 hour detention – 10,000 gal.	\$ 20,000
• Flow equalization 24 hour detention – 5,000 gal dosing pumps	20,000
• First stage FAST system and tank	50,000
• Flow equalization 24 hour detention	20,000
• Second stage FAST system and tank	30,000
• UV disinfection & flow meter	12,000
• Leach trenches & dosing pumps (Area = 10,000 ft ²)	100,000
• Precast process building	25,000
• Site work & piping	40,000
• Site electrical	40,000
Sub-Total	357,000
Engineering and Contingency	118,000
Option 2 – New WWTP Project Cost Estimate	\$475,000



NOTE: UPGRADES ARE SHOWN BOLD



Westford, Massachusetts
Tel. (978) 692-1913
www.dufresne-henry.com

POWDERMILL PLAZA WWTP

**FIGURE 2
PROCESS UPGRADE FOR
SURFACE DISCHARGE**

ACTON

MASSACHUSETTS

Project No. 9130038.01

Proj. Mgr. W.W.T.

Scale NOT TO SCALE

Date NOVEMBER 2003

A

SK1

7. Betterments & User Charges

The project cost of the entire sewer system (collection, pump stations and WWTP) is \$25.1 million and of this \$8.1 million was the cost of the WWTP. This cost and cost of the sewers and pump stations (\$17.0 million) is to be recovered by betterments assessed to residential and commercial properties. While the final average betterment for residences has not yet been established, the Town has estimated the average betterment to be \$15,000/single family residence. While single family residences contribute or will contribute approximately 64% of the sewage flows residences account for 91.4% of the betterments. Commercial properties using 4% of the flow capacity account for 5.7% of the betterments. The reason for this non-equivalency is that municipal users, mostly schools, contribute 6% of the flow but are not assessed as betterments and these costs are paid as a tax levy. Hence, residences and commercial interests pay 100% of the costs associated with their flows.

Table 5 presents a proposed method of betterment allocation to recover the WWTP cost should Powdermill Plaza and Acton Ford connect to the plant. The allocation assumes that the future unreserved flow capacity of 60,000 gpd remains unused over the next 10 years and that only existing and known future properties would tie in and be assessed betterments. Should other unknown residential or commercial interests seek connections their betterment could be estimated in a similar manner.

Table 5 – Betterments Allocation for Known Existing & Future Connections

Allocations based on WWTP project cost to property owners = \$8,100,000.				
	FLOW (GPD)	FLOW (%)	ALLOCATED BETTERMENT (%)	BETTERMENT (\$MILLION)
Existing Residential	74,000	30	42.5	\$ 3.46
Existing Commercial	10,000	4	5.7	0.41
Existing Schools	16,000	6	0	0
Future Residential	58,000	34	48.9	3.98
Future Powdermill Plaza	4,000	0.16	2.3	0.20
Future Acton Ford	1,000	0.40	0.6	0.05
Future Schools	0	0	0	0
Future Unreserved	60,000	24	0	0
	250,000	100	100	\$ 8.10

Using this cost model the recommended tie in fees for Powdermill Plaza and Acton Ford would be \$200,000 and \$50,000, respectively.

The annual sewer user charges were estimated from the water meter readings and the operating annual business days. See Table 6 below.

Table 6 – Annual Sewer User Charges

	AVERAGE FLOW	DAYS OF OPERATION	USER CHARGE*
Powdermill Plaza	1750 gpd	365 days	\$9,580/yr.
Acton Ford	650 gpd	300 days	\$2,920/yr.

* Based on unit charge of \$0.015/gallon.

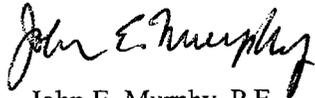
*Mr. Douglas Halley
Acton Board of Health
December 3, 2003
Page 8*

The above presents one method of assessing the tie-in charges for Powdermill Plaza and Acton Ford. Do not hesitate to contact me to discuss the above or other approaches at your convenience.

Thank you for giving us the opportunity to serve the Town in this matter.

Sincerely,

DUFRESNE-HENRY, INC.



John E. Murphy, P.E.
Associate



WOODARD & CURRAN
Engineering • Science • Operations

CORPORATE OFFICES: Maine, Massachusetts,
New Hampshire, Connecticut, Illinois, Florida
Operational offices throughout the U.S.

January 27, 2006

Ms. Margo Webber
Massachusetts Department of Environmental Protection
Central Region
627 Main Street
Worcester, MA 01608

RE: BRPWP-14 Application
High Street Sewer Extension Project
Acton, Massachusetts

Dear Ms. Webber:

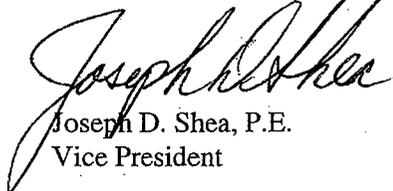
Enclosed is the Sewer System Connection with Pumping Station application (BRP WP 14) for the High Street Sewer Extension Project in Acton, Massachusetts. The application includes attachments illustrating the layout of the project, a detailed drawing on the pumping station, and a written description of the design elements.

We wish to initiate your review and the public notice period as soon as possible. Once the application is deemed sufficient, we are prepared to send the 30-day public comment period advertisement to the local Acton newspaper, *The Beacon*.

As you are aware the Town of Acton, the ownership of Powdermill Plaza, and Acton Ford are all enthusiastic about completing this long awaited project. If there are any issues requiring attention please contact me immediately.

Very truly yours,

WOODARD & CURRAN INC.



Joseph D. Shea, P.E.
Vice President

JDS/ljs
Project # 212553.04

Attachments

cc: Mr. Doug Halley, Director of Health, Town of Acton
Mr. David Capobianco, Atlantic Management
Mr. Justin deMello, Woodard & Curran



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Groundwater Discharge Permits
 Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
 or Connection**

Permit Number _____

Town _____

The original of the transmittal form and this application, signed by the appropriate municipal official, should be submitted along with one copy to the appropriate Regional Office. The signature of the design engineer or other agent will be accepted only if accompanied by a letter of authorization. A copy of the transmittal form and fee (if applicable) should be submitted to the Boston Office.

Important:
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



If connection is to be made to the MWRA sewerage system, indicate "MWRA" in item 11.

If the project includes sewers, pumping stations, force mains, or siphons, construction plans must be submitted with the application.

If additional space is required to properly answer any questions, please attach additional sheets and refer to the attachments in the space provided.

A. Applicant Information

1. Name and Address of Applicant:

Town of Acton
 Name

472 Main St
 Street address

Acton
 City/Town

978-264-9634
 Telephone Number (include area code and extension)

01720
 Zip Code

E-mail address (optional)

2. Name of Sewer System Owner:

Town of Acton, MA
 Name

Acton, MA
 Municipality or Sewer District

Dept. of Health
 Department

B. Project Information

1. Type of Project: Sewer Extension Sewer Connection

2. Number of Residences to be served:

2

3. Number of Bedrooms:

6



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Groundwater Discharge Permits
 Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
 or Connection**

Permit Number _____

Town _____

B. Project Information (Continued)

4. Other establishments to be served:

- a. Powdermill Plaza
 Name
100 powdermill Rd, Acton, MA 01720
 Address
commercial space
 Type of Establishment
1750 gpd average, 4000 gpd peak
 Design Flow
- b. Acton Ford
 Name
76 Powdermill Rd. Acton, MA 01720
 Address
car Dealership
 Type of Establishment
680 gpd average, 1000 gpd peak
 Design Flow
- c. ABC septic 292 old High St.
storage yard 50gpd avg. 100gpd peak

- 5. Design Flow: for pumping station*
 Sewage 2430 avg / 5000 peak
 Gallons per day
 Industrial Wastes 0
 Gallons per day
 Total 2430 avg / 5000 peak
 Gallons per day

6. Location, Length, Size and Capacity of Sewers to be Connected to the existing system (attach sketch):

- a. High Street
 Name of Street
1400 Forcemain 4" DI 150 gpm
 Length of Sewer Size of Sewer Flow Full Capacity
- b. High Street
 Name of Street
550 low pressure 1.5" SDR21 PVC 33 gpm
 Length of Sewer Size of Sewer Flow Full Capacity
- c. Powdermill Plaza
 Name of Street
1000 8" SDR35 PVC 347 gpm (0.5 MGD)
 Length of Sewer Size of Sewer Flow Full Capacity



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Groundwater Discharge Permits
 Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
 or Connection**

Permit Number _____

Town _____

B. Project Information (Continued)

7. Location, Length, Size and Capacity of Pumping Stations to be Connected to the existing system:

- a. High St - see attachment + drawings for Details
 Pump Station Location
- | | | |
|-----------------------------|-----------------------------|--------------------------------------|
| <u>2</u>
Number of Pumps | <u>5-7.5HP</u>
Pump Size | <u>150 gpm each</u>
Pump Capacity |
|-----------------------------|-----------------------------|--------------------------------------|
- b. _____
 Pump Station Location
- | | | |
|--------------------------|--------------------|------------------------|
| _____
Number of Pumps | _____
Pump Size | _____
Pump Capacity |
|--------------------------|--------------------|------------------------|

8. General Description of Sewers and Pump Stations within the existing sewer system which will transport the flow from the proposed sewer extension of connection to the receiving Wastewater Treatment Facility:

The new sewer will discharge into the existing 8" sewer on Adams St; flow to PS#7 on Adams St. where it will be pumped directly to the Municipal POTW. Sufficient capacity for this flow exists in the 8" gravity sewer and in PS#7. See attachments for further detail.

9. Receiving Wastewater Treatment Facility:

Name Middle Fort Pond Brook Treatment Fac.

Average Daily Flow 110,000 gpd average
Million gallons per day

Design Flow 299,000 gpd average
Million gallons per day

10. Does the discharge contain any industrial waste? Yes No

If yes, list any pollutants which you know or have reason to believe are discharged or may be discharged. For every pollutant you list, please indicate its approximate concentration in the discharge and any analytical data in your possession which will support your statement. Additional wastewater analysis may be required as part of this application.

Pollutant	Concentration	Analytical Data
<u>N/A</u>	_____	_____
_____	_____	_____
_____	_____	_____



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Groundwater Discharge Permits
 Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
 or Connection**

Permit Number _____

Town _____

B. Project Information (Continued)

11. Does the discharge contain any industrial waste containing substances or materials which could harm the sewers, wastewater treatment process, or equipment; have an adverse effect on the receiving water; or could otherwise endanger life, limb, public property, or constitute a nuisance?

Yes No

12. Do the wastewaters receive any pretreatment prior to discharge?

Yes No

13. List, in descending order of significance, the four (4) digit standard industrial classification (SIC) Codes which best describe the facility producing the discharge in terms of the principal products for services provided. Also, specify each classification in words.

SIC Code

Specify

A. NA _____

B. _____

C. _____

D. _____

14. Is the Proposed Discharge Consistent with Existing Sewer Use Regulations?

Yes No

15. Is there a site of historic or archeological significance, as defined in regulations of the Massachusetts Historical Commission, 950 CMR 71.00, which is in the area affected by the proposed extension or connection?

Yes No

16. Does this project require a filing under 301 CMR 11.00, the Massachusetts Environmental Policy Act?

Yes No

If yes, has a Filing been made?

Yes No



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Groundwater Discharge Permits
 Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
 or Connection**

Permit Number _____

Town _____

B. Project Information (Continued)

17. Name and Address of Mass. Registered Professional Engineer Designing Proposed System:

Joseph D. Shea, P.E.
 Name
Woodard & Curran 980 Washington St.
 Street
Dedham MA 02026
 City/Town Zip Code
781-251-0200 41467
 Telephone Number Mass. P.E. Number

C. Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations."

(I will be responsible for publication of public notice of the applicable permit proceedings identified under 314 CMR 2.06(1)(a) through (d).)

Town of Acton - See Page 7.
 Printed Name of Applicant

Title _____

Signature of Applicant _____

Date Signed _____

Joseph D. Shea P.E. Woodard & Curran
 Name of Preparer
Project Manager
 Title
781-251-0200
 Phone Number

D. General Conditions

1. General Conditions

- a. All discharge authorized herein shall be consistent with the terms and conditions of this permit and the approved plans and specifications. The discharge of any wastewater at a level in excess of that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties as provided for in Section 42 of the State Act.
- b. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - (1) Violation of any terms or conditions of the permit;



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Groundwater Discharge Permits
Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
or Connection**

Permit Number _____

Town _____

D. General Conditions (Continued)

- (2) Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; and
 - (3) A change in conditions or the existence of a condition which requires either a temporary or permanent reduction or elimination of the authorized discharge.
- c. In the event of any change in control or ownership of facilities from which the authorized discharges originate, the permittee shall notify the succeeding owner or operator of the existence of this permit by letter, a copy of which shall be forwarded to the Director. Succeeding owners or operators shall be bound by all the conditions of this permit, unless and until a new or modified permit is obtained.
 - d. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges; nor does it authorize or relieve the permittee of any liability for any injury to private property or any invasion of personal rights; nor any infringement of Federal, State, or local laws or regulations; nor does it waive the necessity of obtaining any local assent required by law for the discharge authorized herein.
 - e. The provisions of this permit are severable, and the invalidity of any condition or subdivision thereof shall not make void any other condition or subdivision thereof.
 - f. All information and data provided by an applicant or a permittee identifying the nature and frequency of a discharge shall be available to the public without restriction. All other information (other than effluent data) which may be submitted by an applicant in connection with a permit application shall also be available to the public unless the applicant or permittee is able to demonstrate that the disclosure of such information or particular part thereof to the general public would divulge methods or processes entitled to protection as trade secrets in accordance with the provisions of M.G.L. c.21, s.27(7). Where the applicant or permittee is able to so demonstrate, the Director shall treat the information or the particular part (other than effluent data) as confidential and not release it to any unauthorized person. Such information may be divulged to other officers, employees, or authorized representatives of the Commonwealth or the United States Government concerned with the protection of public water or water supplies.
 - g. Transfer of Permits
 - (1) Any sewer system extension or connection permit authorizing an industrial discharge to a sewer system is only valid for the person to whom it is issued, unless transferred pursuant to 314 CMR 7.13. Such permits shall be automatically transferred to a new permittee if:
 - A. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date; and
 - B. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them.
 - (2) Any sewer system extension or connection permit not subject to 314 CMR 7.13(1) automatically transfers to a subsequent owner, operator, or occupant.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Groundwater Discharge Permits
 Sewer Connections/Extensions

DEP Use Only:

BRP WP 13, 14, 17, 18, 55

**Application for Permit for Sewer System Extension
 or Connection**

Permit Number _____

Town _____

D. General Conditions (continued)

2. Special Conditions

E. Approval Recommended

Signature and Title of appropriate Municipal Official:

Doug Halley

Printed Name of Official

Director of Health, Acton MA

Title

Signature

[Handwritten Signature]

978-264-9634

Phone Number

1/26/06

Date Signed

DEP Use Only

Date Issued _____

Regional Sewer Permits Coordinator _____

Effective Date of Permit _____

Extension and Connection Technical Description
High Street Sewer Extension Project, Acton, Massachusetts

The Town of Acton is constructing a new submersible style pumping station located in the grass area on the west side of the Powdermill Plaza, adjacent to the entrance on High Street. The proposed pumping station, titled Pumping Station 11, will align with the design standards used in Acton's previous stations. Pumping Station 11 will be similar in size and scope to Pumping station 6 on Railroad Street. The Pumping Station will feed a public 1,400 LF, four inch, ductile iron force main within the High Street right-of-way but outside the paved road (highlighted in green on the attached plan) and discharge into the existing eight inch sewer on Adams Street. The influent elevation of the pumping station is 131± feet and the force main discharge elevation is 195± feet.

Also within the public right-of-way on High Street will be a 550 LF, one-and-a-half inch, low-pressure sewer pipe (highlighted in orange on the attached plan) for three properties with frontage on High Street that will have individual grinder pumping units. The flow from these three grinder units discharges directly into the eight inch sewer on Adams Street, it does not flow through the pumping station.

The initial connections into Pumping Station 11 will be Powdermill Plaza and Acton Ford, who have a combined average daily flow of 2,610 gallons per day (based upon water consumption records) and the current peak daily flow of 5,000 gallons per day. The station is designed for this initial flow plus an estimated future flow from the build-out of the tributary area. The private Powdermill Plaza connection (highlighted in blue on the attached plan) is a 1000 LF, eight inch gravity sewer line that will service the Powdermill Plaza and adjoining office after the existing private WWTF is decommissioned. There will be a 100 LF of eight inch, gravity connection from the Acton Ford Dealership (highlighted in yellow on the attached plan) located on High Street.

Some of the specific design notes and features for Pumping Station 11 are as follows:

1. The Pumping Station will have an outlet for a portable generator. The Town's operation and maintenance contractor has a 480 V, 3 phase portable generator for use in case of an area wide extended power outage.
2. Pump station #11 shall have run time meters for the pumps as part of the controls & instrumentation system.
3. Buoyancy calculations will be prepared once the final survey information is received. Soil borings have been completed. The antifoatation slab design shall be submitted under separate cover.
4. The flow from this project is routed thru Pumping Station #7 on Adams Street. Pumping Station #7 was originally designed to include capacity for the Pumping Station #11 flow. Since the start-up of pumping station 7 it has been underutilized and the flow from Pumping Station 11 is fully expected to enhance the operation of Pumping Station 7.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

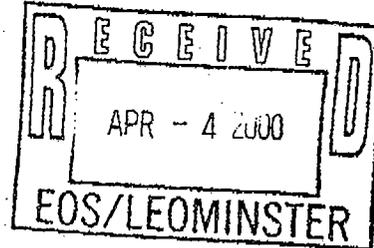
REGION 1

1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 23, 2000

Mr. Daniel J. Dennehy
Atlantic Management
205 Newbury Street
Framingham, MA 01701



RE: NPDES No. MA0028835 - Transfer of Ownership

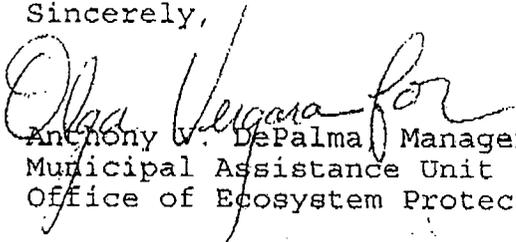
Dear Mr. Dennehy:

Enclosed is a copy of the National Pollutant Discharge Elimination System (NPDES) permit originally issued to S/P Acton Realty Trust for its facility located in Powdermill Plaza, Acton, Massachusetts.

The cover page has been changed to reflect the transfer of ownership which took place on September 28, 1993 and operational responsibilities to Atlantic-Acton Realty Limited Partnership. The permit was issued on June 29, 1984 and the conditions of this permit will continue in force.

We look forward to working with you in the future. Should you have any questions concerning this permit, feel free to contact Olga Vergara of my staff at (617) 918-1519.

Sincerely,


Anthony W. DePalma, Manager
Municipal Assistance Unit
Office of Ecosystem Protection

Enclosure

cc: MA Department of Environmental Protection

Toll Free • 1-888-372-7341

Internet Address (URL) • <http://www.epa.gov/region1>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Atlantic-Acton Realty Limited Partnership

is authorized to discharge from the facility located at

Powdermill Plaza
Route 62
Acton, MA 01720

to receiving waters named

Assabet River

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the date of signature.

This permit and the authorization to discharge expire at midnight, five years from the date of issuance.

This permit consists of 5 pages in Part I including effluent limitations, monitoring requirements, etc., and 19 pages in Part II including General Conditions and Definitions.

Signed this 29th day of June, 1984



David A. Fierra
Director
Water Management Division
Environmental Protection Agency
Region I
Boston, MA



Thomas P. McKeown
Director, Division of Water
Pollution Control
Department of Environmental
Quality Engineering
Commonwealth of Massachusetts
Boston, MA

This Permit is transferred to Atlantic-Acton Realty Limited partnership

Signed this 20 day of March, 2000

Linda M. Murphy
Linda M. Murphy, Director
Office of Ecosystem Protection

Glen Haas
Glen Haas, Director
MA Department of Environmental Protection

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date the permittee is authorized to discharge from outfall serial number 001.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>
	Avg. Monthly	Max. Daily	
Flow MGD	.012 MGD	.045 MGD	Continuous Report Daily Ave., Max. Grab
Oil and Grease	-	15.0 mg/l	2/Month
Total Suspended Solids	30 mg/l	50 mg/l	2/Month 24-hour composite
BOD5	30 mg/l	50 mg/l	2/Month 24-hour composite
Fecal Coliform	200/100 ml	400/100 ml	2/Month Grab

The pH shall not be less than 6.5 standard units nor greater than 8.0 standard units and shall be monitored weekly, report range of 4 grab samples.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: 001 - secondary treated sanitary wastewater.

The residual chlorine concentration shall not be less than 0.5 mg/l nor greater than 1.5 mg/l and shall be monitored daily, by grab sample.

2. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application or
 - (4) Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).
- b. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

C. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the completed reporting period. The first report is due on the 15th day of the month following the effective date of the permit.

Signed copies of these, and all other reports required herein, shall be submitted to the Director at the following address:

Permit Compliance Section (WR/CB-2103)
Compliance Branch
Water Management Division
Environmental Protection Agency
JFK Federal Building
Boston, MA 02203

Duplicate signed copies of all monitoring reports shall be submitted to the State at:

Massachusetts Department of Environmental Quality Engineering
Massachusetts Division of Water Pollution Control
Central Regional Office
75 B Grove Street
Worcester, MA 01605

Signed copies of all other notifications and reports required by this permit shall be submitted to the State at:

Massachusetts Department of Environmental Quality Engineering
Massachusetts Division of Water Pollution Control
Regulatory Branch
1 Winter Street
Boston, Massachusetts 02108

D. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency and the Division of Water Pollution Control under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Director of the Massachusetts Division of Water Pollution Control pursuant to M.G.L. Chap. 21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U. S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.



APPENDIX H: CAC CRITERIA AND SOLUTIONS MATRIX

Table 2-7: Needs Criteria and Solutions Matrix
CAC Preferences

Needs Planning Area	Needs Evaluation			Solutions Evaluation					
	Description	Predominant Technical Needs Criteria	Predominant Non-technical Needs Criteria	Ranking	Potential Offsite Solution	Negative Offsite Solutions Criteria	Positive Offsite Solutions Criteria	Implementation Comments	Preferred Solution
1	Marshall Crossing Robbins Brook North Acton Village	Wetlands and wetland buffers Zone 1 and Zone II area Floodplains	Senior Housing (Robbins Brook)	Medium	Disposal at former seepage lagoons	Former seepage lagoons NARA - sensitive receptor Secondary growth impacts - many empty lots	Proximity to needs area Availability of land	Robbins Brook WWTF has available capacity	Cluster / Neighborhood shared systems and wastewater management district
2	Nagog Woods Acorn Park North Acton Condos Handley Woods	Private facilities in noncompliance Wetlands and wetland buffers Proximity to private wells Inadequate lot sizes	North Acton Village Plan may be developed	Low	Combine with Area 1	Former seepage lagoons NARA - sensitive receptor		Acorn Park WWTF has available capacity	Cluster / Neighborhood shared systems Wastewater management district for residential lots on Henley Road

Table 2-7: Needs Criteria and Solutions Matrix
CAC Preferences

Needs Planning Area	Needs Evaluation				Solutions Evaluation				
	Description	Predominant Technical Needs Criteria	Predominant Non-technical Needs Criteria	Ranking	Potential Offsite Solution	Negative Offsite Solutions Criteria	Positive Offsite Solutions Criteria	Implementation Comments	Preferred Solution
3	East Acton Village Route 2A	Inadequate lot sizes High groundwater - mounded systems needed Wetlands and wetland buffers Floodplains	Economic growth center Aesthetics of mounded systems Village center	High	Decentralized system with subsurface discharge near Route 2	Perception of wastewater treatment restriction on very visible conservation land Decided conservation restriction on available parcel May conflict with village image	Link to rail trail construction May be consistent with Master Plan and East Acton Village Plan if growth controlled Possible reuse of effluent Subsurface conditions appear excellent	Timeline may not work for rail trail Greatest possibility of economic growth Crossing of Nashoba Brook	
4	Concord Road Robbins Park	Wetlands and wetland buffers High groundwater - mounded systems needed	Aesthetics of mounded systems	Low	Cluster or shared systems privately financed		Consistent with Master Plan and East Acton Village Plan Possible reuse of effluent	Land acquisition Farmbrook and Suburban Manor WWTF's have available capacity	Cluster / Neighborhood shared private systems Wastewater management district

Table 2-7: Needs Criteria and Solutions Matrix
CAC Preferences

Needs Planning Area	Needs Evaluation			Solutions Evaluation				
	Predominant Technical Needs Criteria	Predominant Non-technical Needs Criteria	Ranking	Potential Offsite Solution	Negative Offsite Solutions Criteria	Positive Offsite Solutions Criteria	Implementation Comments	Preferred Solution
5	Brucewood Estates High groundwater - mounded systems needed Wetlands and wetland buffers Flood plain	Aesthetics of mounded systems	Medium	Cluster system discharging to Zone II Cluster system on currently private land	Perception of discharge in drinking well protection area Permitting effort and cost	Recharge of aquifer	Zone II discharge	Wastewater management district
6	Brookside Apartments Brookside Circle Wetlands and wetland buffers Flood plain	Economic growth in commercial area Aesthetic impact of mounded systems	Low	Connection to sewer		Removes a groundwater discharge permit	Sewer infrastructure improvements needed	Continued use of cluster system with wastewater management district
7	Powdermill Plaza Partially in a Zone II High groundwater - mounded systems needed Wetlands and wetland buffers WWTF outfall to Assabet Floodplains		High	Connection to sewer		Removes old WWTF with outfall to Assabet	Capacity now available at Town WWTF	Connection to Acton sewer

Table 2-7: Needs Criteria and Solutions Matrix
CAC Preferences

Needs Planning Area	Needs Evaluation				Solutions Evaluation				
	Description	Predominant Technical Needs Criteria	Predominant Non-technical Needs Criteria	Ranking	Potential Offsite Solution	Negative Offsite Solutions Criteria	Positive Offsite Solutions Criteria	Implementation Comments	Preferred Solution
8	Maynard Border	Wetlands and wetland buffers		Medium	Gravity connection to Maynard	Distance from Acton sewer		Small number of impacted lots Inter-municipal agreement needed	Connect to municipal sewer (Acton or Maynard) if capacity available, otherwise wastewater management district
9	Heath Hen Meadow, Liberty and Stow Streets	High groundwater - mounded systems needed Wetlands and wetland buffers	Aesthetic impact of mounded systems	Low	N/A		Isolated area with no local disposal options		Wastewater management district
10	Spencer Road Area Turtle / Flint / Mallard	Wetlands and wetland buffers Poorly drained soils - large drainfields on small lots High groundwater	Aesthetic impact of mounded systems	High	Connection to sewer		Possible link of residential area to Dover Heights solution	Permitted capacity limits at Town WWTF	Connection to Acton sewer if capacity available, otherwise wastewater management district

Table 2-7: Needs Criteria and Solutions Matrix
CAC Preferences

Needs Planning Area	Needs Evaluation			Solutions Evaluation				
	Description	Predominant Technical Needs Criteria	Predominant Non-technical Needs Criteria	Ranking	Potential Offsite Solution	Negative Offsite Solutions Criteria	Positive Offsite Solutions Criteria	Implementation Comments
11	Nash and Downey Roads Dover Heights	Wetlands and wetland buffers	Medium	Connection to sewer	Permitted capacity limits at Town WWTF	Isolated area with no local disposal option	Multiple pumping stations needed	Connection to Acton sewer if capacity available, otherwise
		Sensitive receptor - Adjacent to Estimated Rare Wildlife Habitat						
12	West Acton Center	Large private system will need a new WWTF or sewer connection per DEP	High	Connection to sewer	Permitted capacity limits at Town WWTF	Promotes economic development	May require 2 pump stations	Connection to Acton sewer if capacity available, otherwise
		Small lots						
12	West Acton Center	Dense development	High	Connection to sewer	Permitted capacity limits at Town WWTF	Consistent with Master Plan and West Acton Village plan	Sewer along Mass Ave may be politically difficult	Connection to Acton sewer if capacity available, otherwise
		Wetlands and wetland buffers - Middle Fort Pond Brook						
12	West Acton Center	Floodplains	High	Connection to sewer	Permitted capacity limits at Town WWTF	Avoids sewer in Mass Ave	Sewer along Mass Ave may be politically difficult	Connection to Acton sewer if capacity available, otherwise
		Large school wastewater system						
12	West Acton Center	Sensitive receptors - Schools	High	Connection to sewer	Permitted capacity limits at Town WWTF	Disposal location on private land needed	Sewer along Mass Ave may be politically difficult	Connection to Acton sewer if capacity available, otherwise
		Historic district						
12	West Acton Center	Village center	High	Connection to sewer	Permitted capacity limits at Town WWTF	Limited capacity at disposal site	Sewer along Mass Ave may be politically difficult	Connection to Acton sewer if capacity available, otherwise
		Schools						

Table 2-7: Needs Criteria and Solutions Matrix
CAC Preferences

Needs Planning Area	Needs Evaluation				Solutions Evaluation				
	Description	Predominant Technical Needs Criteria	Predominant Non-technical Needs Criteria	Ranking	Potential Offsite Solution	Negative Offsite Solutions Criteria	Positive Offsite Solutions Criteria	Implementation Comments	Preferred Solution
13	Indian Village	High groundwater - mounded systems needed Wetlands and wetland buffers Poorly drained soils - large drainfields on small lots	Aesthetic impact of mounded systems	High	Connection to sewer		Return neighborhood character by avoiding tree cuts for disposal fields	Fully built residential area - no secondary growth impacts Connection through West Acton Center Permitted capacity limits at Town WWTF	Connection to Acton Sewer if capacity available, otherwise wastewater management district and other alternatives
14	Flags Hill	High groundwater - mounded systems needed Poorly drained soils - large drainfields on small lots Partially abuts AWD Zone II	Aesthetic impact of mounded systems	Medium	N/A			Isolated from sewer system with no local disposal location for entire area	Wastewater management district
15	Acton Center Hill	High groundwater - mounded systems needed Poorly drained soils - large drainfields on small lots	Aesthetic impact of mounded systems Historic district	Low	N/A	If off-site available, large number of empty lots may be developed.		Maintain rural character of center	Wastewater management district



APPENDIX I: WASTEWATER MANAGEMENT PLAN

DRAFT

TOWN OF ACTON

WASTEWATER

MANAGEMENT

PLAN

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7. **DEVELOPMENT OF A COMPUTER DATA BASE**
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MANAGEMENT**

Town of Acton
Wastewater Management Plan

Doug Halley
Health Director
Acton Board of Health
Town of Acton

Introduction

The Town of Acton is a suburban community of 20 square miles, located northwest of Boston, with a population of approximately 19,000 people. For its drinking water supply the Town relies upon nine gravel packed wells. The wells are operated by the Acton Water District with an average daily yield of 3,000,000 gallons. Each of these wells draw upon the surficial soil groundwater reserves of the Town.

In recent years these water sources have been contaminated by industrial uses, most notably the W. R. Grace Superfund Site. However, at the present time the water from the wells that were contaminated are being treated through aeration towers and charcoal filtration. In response to the presence of these contaminants the Water District has passed drinking water standards which allow no more than one part per billion of any one volatile organic compound and no more than five parts per billion of total volatile organic compounds. Presently the water quality delivered to Acton's residents is well within Federal, State & Town drinking water requirements.

Due to these past experiences with water contamination, the Town, in 1989, contracted Goldberg Zoino Associates (GZA) to analyze and map its water resources fully. Based on this work, and its concern for its water sources, the Town has passed many regulations designed to protect its drinking water supply. Among the regulations adopted by the Town have been an Aquifer Zoning Bylaw, a Hazardous Materials Control Bylaw and a Board of Health Aquifer Regulation, each designed to protect the Town from any type of contamination of its drinking water supply. It is the Town's goal to continue to protect its water resources by identifying potential concerns and creating regulations or management systems to address those concerns.

In addition to identifying chemical contamination as a concern the Town also is concerned that nitrate contamination of its drinking water supply could be a potential problem. With the exception of one small private wastewater treatment plant (16,000 gpd), which discharges into the Assabet River, all wastewater generated by the Town is discharged into the subsurface. It should be noted that along with that sole surface discharge there are also a total of nine private treatment plants, with an approximate Title 5 capacity of 390,000 gpd. The remainder of the town (approximately 7,000 homes) relies upon on-site septic systems, which have an approximate Title 5 capacity of 2,600,000 gpd.

Town of Acton Wastewater Management Plan

Given these facts, the Town of Acton recognizes that it is important to manage all private on-site systems in a manner that is protective of its water resources. Presently, the Town has regulations more restrictive than Title 5; it samples its two major streams (Nashoba Brook & Fort Pond Brook) on a quarterly basis for fecal coliform contamination, it samples a dozen monitoring wells on a quarterly basis for nitrate loadings and groundwater levels, and it informs homeowners every two years to pump their septic tank. The beginnings of a wastewater management system have been implemented and Acton is ready to define and advance this system, so that, along with greater life spans, the existing septic systems can be more protective of the environment.

Throughout Massachusetts wastewater management is usually handled by either municipal sewers or with on-site, passive subsurface discharge systems. Municipal sewer systems are generally managed by Departments of Public Works, Sewer Authorities or Sewer Districts and their operations are overseen by D.E.P. In non-sewered areas on-site systems are managed by the homeowner and their ongoing operation are only indirectly overseen by the D. E. P. and the Boards of Health.

Treatment plants by their design are managed daily, with close oversight by D.E.P. and Local Boards of Health, regarding their effluent input and output. However, on-site septic systems have traditionally not been managed closely, nor do they receive close oversight, especially after their initial construction. In response to that knowledge Acton is adopting the premise that on-site wastewater systems, whether for individual homes or clusters of homes, need to be managed from the moment of their technological selection.

Wastewater management should continue through the following elements; the design, siting and installation of a septic system; the maintenance, pumping and inspection of the septic system; and the removal and/ or replacement of the septic system. In this way the Town can ensure longer life spans for each systems, as well as ensure that surface waters and groundwater remain protected and safe.

Acton takes this approach because of the number of on-site septic systems currently operating (7000) in Town and because of the advanced age that many septic systems have reached (66% are older than 20 years). In addition, two areas of the Town have been identified as needing sewers (South Acton Center & Kelly's Comer) based on environmental concerns. The Town has also formed a Sewer Action Committee to consider more areas of Town which may be needed to be sewerred in the future. However, even with the past studies and the current interest in sewers the Town has been unable to achieve this goal due to the unavailability of both financial resources and discharge locations.

In addition to the pre-existing known problems the rest of the town's septic systems are under more scrutiny with the implementation of the newly revised Title 5. In 1984 a total of 80 systems were replaced or repaired. After the implementation of Title 5, in March 1986, more than 160 systems were replaced or repaired prior to December 31st of that year. The Town anticipates that this number will continue increase over the next five years.

Town of Acton Wastewater Management Plan

In order to address these concerns the Town believes it must continue to develop its rudimentary pumping notification program into a comprehensive wastewater management program. This document is written to define a process for choosing an appropriate program and develop a geographic data base for managing the chosen program. Specifically the Town is seeking grant money which could be placed towards the development of a such a program and in return assist other communities to use the model that Acton develops. The following is the outline of the proposed wastewater management program.

Objective

The objective of Acton's Wastewater Management Program is to manage all wastewater discharges comprehensively, with the goal of prolonging the life span of all systems and ensuring that environmental impacts are minimized, if not eliminated. These goals will be achieved through educating and advising homeowners regarding the operation of their system, promulgating and enforcing appropriately protective bylaws, monitoring environmentally sensitive areas and potentially converting privately owned septic systems to municipally owned common systems.

The key to any wastewater management system is the operation and maintenance of all wastewater facilities. For individual on-site systems that would primarily mean periodic pumping and inspections. In order to achieve that goal a systematic computer data base would have to be developed for all operating septic systems. The location, size, pumping dates and status of each system are some of the data areas that would be required. Ideally the size of the house or building, the size of the property and their relative location to environmentally sensitive areas would also be part of the data base system.

In addition, the dimensional relationship between each septic system with adjacent water resources (both surface & subsurface) is extremely important. Mapping of all wastewater discharge locations, wetlands and high groundwater elevations will be a key objective in any maintenance program. This type of information will allow the town to monitor coliform and nitrate levels and take appropriate action when levels exceed statutory limits. The ability to monitor the Town's resources is a key goal of this grant proposal.

The Town assumes that well maintained septic systems will also be environmentally protective. However, environmental protection can not be ensured without a mechanism for monitoring. Sampling of streams and groundwater wells is essential in monitoring any degradation of the Town's water resources. As part of any monitoring system, standards would have to be established to determine when water sources are at risk from either surface or subsurface pollution. Mapping of groundwater contours and the horizontal and vertical relationship between sampling points will be a key objective in a monitoring program.

Prolonging Septic System Life Spans

A key element to the management program is to increase the life-span of existing and proposed systems. Whether wastewater is discharged to the subsurface from on-site septic systems or from treatment plants it is beneficial to delay additional capital costs by prolonging their functional life. This is particularly true with on-site systems which are scheduled to be replaced by sewers.

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Therefore it is essential that the Town define the necessary steps that must be taken to ensure the proper maintenance and management of each system. The following sections seek to address those issues.

Maintenance

There are four primary reasons which could lead to the premature failure of a septic system. They are the insufficient design, the improper installation, the inappropriate use and the inadequate maintenance of a septic system. Each one of these reasons can significantly reduce the life-span of a septic system. As such they each must be addressed directly by the wastewater management plan if the goal of longer life-spans for septic systems is to be achieved.

Insufficient design is one of the prime reasons for the latest revisions of Title 5, promulgated by D.E.P. However, Acton has long recognized the importance of correct design criteria and has had a more restrictive standard since the Acton Board of Health regulations passed its Article I 1 in 1978 & Article 16 in 1988 (See Attachment A). The minimum size for a leaching field, the encouragement of leaching trenches and increased setbacks to both surface water bodies and groundwater are some of the additional protections that have been provided by those regulations.

It is the goal of Acton to further supplement the revisions of Title 5 by requiring an additional increase in the separation from groundwater and to wetlands, decreasing the loading per acre in environmentally sensitive zones and encouraging alternative technology which will treat wastewater. The Town will examine the possibility of replacing existing systems through the utilization of municipally owned common systems, municipally owned treatment plants or if necessary on-site septic systems.

In order to reduce the possibility of improper installation of a septic system, it is incumbent that the Town require that each installer be experienced and knowledgeable of the requirements of Title 5 and local regulations. Currently the Town requires each installer to either pass a septic system installation test or provide references from three towns where they currently have licenses. In addition, periodic inspections of all critical construction elements of a septic system are performed by the Town.

With the present staffing the Town is able to inspect septic systems for the initial excavation, fill placement, bottom of system, pipe installation, septic tank placement and final grading. It is important for the Town to increase these inspections to ensure good workmanship and properly built septic systems. Requiring that all systems be certified by the design engineer is an additional check which would also help towards guaranteeing the proper construction performance of each installer.

Inappropriate uses, or discharges, speaks to the need to educate homeowners regarding the capabilities of their septic systems. The types of materials discharged and the manner in which they are discharged can have a detrimental impact on a system. Grease, solid objects or chemicals can have immediate and long term negative impacts on how their system functions. The use of garbage grinders or pumps prior to the septic tank can also be harmful to a septic system.

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Educational mailings should be periodically sent, through the Town's quarterly newsletter, to homeowners addressing these issues. Articles in the local newspapers can be written explaining the dangers of improper use and maintenance of a septic system. An educational program for Acton students based on Rhode Island's Department of Environmental Management's "Oscar's Options" could also be developed to help the next generation of septic system users understand the importance of using a system properly.

Nothing has more negative impact on a septic system than the inadequate maintenance of it. Historically systems which are not pumped periodically have a shorter life-span and encounter more problems than systems which do. In addition, periodic inspections can discover any problems prior to the need of a full replacement of the septic system. Title 5 recommends pumping every three years and requires inspections at the time of any property transfer.

Acton has required that residential septic tanks be pumped every other year and non-residential tanks every year since 1978. Since 1990 the Board of Health has been able to send letters to property owners who haven't pumped their septic tank in accordance with that schedule. Currently the Town averages 2,200 pumps per year for its existing 7,000 septic tanks. Pumpings from each septic tank are taken to the Upper Blackstone Facility in Millis (In accordance with a current three year contract. The current septic pumping notification program that is utilized by the Health Department is enclosed with this report (See Attachment B), along with the contract with Upper Blackstone.

The goal of the wastewater management program is to increase the maintenance of septic tanks so that pumpings would occur at least every other year. Also periodic inspections indicating the status of each septic tank and/ or the "D" box of the septic system would be additional goals. The following is a list of action goals that the Town will examine and place before town meeting for its approval:

1. Mandatory pumping

Every other year for Residential
Every year for Non-Residential

2. Performance Inspections

Septic Tank

Every other year for Residential
Every year for Non-Residential

Leaching Field

Every ten years for Residential
Every five years for Non-Residential

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3. Educational Program
 - Develop a series of educational brochures for
 - Water usage
 - Septic System Maintenance
 - Dangers of Chemical or Biological Treatments
 - Garbage Grinders
 - Mail brochures in quarterly newsletters
 - Develop an educational program for schools
 - Based on the "Oscar's Options" Program
4. Increase the number of inspections required for the construction of systems
5. Require design engineer certification for all systems being constructed

Management

The question regarding management of individual septic systems must be addressed if a town-wide wastewater management program is to be successful. The choices can range to the continued private management of each system to the conversion of each system to a public utility. Each option must be examined in detail and the final management structure will be dependent on decisions made by Town Meeting.

If septic systems are to remain as privately managed entities stringent regulations along with financial enticements will be necessary to guarantee each system is built and maintained properly. Required pumping of septic tanks is one option but it could be enhanced through education and relaxation of Title 5's inspection program if pumping occur at a prescribed rate. The Town will need the State's assistance as it develops an inspection and pumping program.

However, there may be financial advantages if the town takes possession of all septic systems and treat them as a single wastewater utility. The town could then advertise and award a pumping contract to the lowest bidder. With the assurance of 3,500,000 gallons pumped each year the Town would be in a good position to reduce the current price of pumping. The contract could also be awarded to several contractors if it was broken down into percentage of total pumpings.

In addition, the replacement of systems could also be placed out to bid as yearly contracts which could help reduce those expenditures. The Town would also be in a better position to determine the need for shared septic systems or sewers, as well as, find appropriate construction locations and building the shared systems as needed. As individual homes encounter problems they can be tied directly to a pre-existing shared system or an adjacent sewer line or if necessary replaced within the bounds of their property.

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As stated previously the Town has an existing contract for septage disposal at the Upper Blackstone Facility in Millis. By creating a wastewater utility it may give the Town more leverage in contract negotiations with Upper Blackstone or other similar facilities. Eventually the existence of a wastewater utility in Acton may allow considering construction of a septage treatment facility in Town, or assisting in creating a regional facility.

However the Town decides to manage a wastewater management program it is important that it be defined clearly so that it can be user friendly. In addition, the relationship between the Town's drinking water supply and all wastewater discharges has to be understood in order that the proper protective actions can be taken. The following are some of the action items the Town must consider regarding the management of the wastewater program:

1. Adoption of wastewater districts
Based on watersheds of the Nashoba & Fort Pond Brooks. Each watershed would be broken down in regards to the confluence of streams, the vicinity of environmentally sensitive zones and the location of major subdivisions or business complexes.
2. Adoption of a Wastewater Bylaw with the following options:
Continued private ownership & maintenance of septic systems
Private ownership but public maintenance of septic systems
Public ownership & maintenance of septic systems
3. Identification of areas of concern where the following could be done:
Common septic areas for 23 homes or less (10,000 gpd or less)
Treatment facilities for homes in excess of 23 (over 10,000 gpd)
4. Adoption of betterment bylaws for the following:
Operation of a public maintenance program
Funding for a public replacement program
Capital & Operation costs for a treatment system
5. Contract negotiations and bids
Request for Proposals regarding pumping of septic tanks
Request for Proposals regarding replacement of systems
Request for Proposals regarding septage disposal
6. Examine and identify the following:
The need for an in town Septage Facility
The potential and feasibility of alternative technology

Development of a Computer Data Base

The present septic pumping notification program is operated on a Digital VAX system with programming developed by Pamet Inc., of Acton. It was originally established for the Board of Assessors and its data fields are based on information important to the Assessors. In 1989 the program was modified so that the last septic tank pumping at each address could be entered. In addition, data could be chosen by pumping dates and reports could be requested based on that information (see Attachment B).

The Town has recently converted to a P.C. wide area network system from the existing Digital VAX system. It is anticipated that the Digital VAX system will be abandoned within the next 12 months. There is currently no data base system established in the network system and it is unlikely that the Town will have the resources to re-establish a data base for septic tank pumping within the next three years.

In order to have a comprehensive wastewater management program the Town recognizes that all data related to septic systems is extremely important. The location and size of each system, the maintenance history for each system, all witnessed deep test holes and percolation tests, surface and subsurface monitoring locations and results are some or all of that data is needed to operate and manage a wastewater management program.

The best way to manage all necessary information regarding septic systems would be to establish a GIS (Geographic Information System) data base. This type of system would not only allow the Town to relate information from one data field to another but it would also allow the Town to relate information geographically. Some of the ways this information could be useful are as follows:

Background Information

Town Boundaries, Street Locations and property lines will be necessary for any base map system. In addition, Wetland Maps, Flood Plain Maps, Soil Conservation Maps and Aquifer Maps would be important overlays to determine environmentally sensitive zones. Locations of all structures on each property would also be important.

Historical Soil Records

Since 1978 the Board of Health has required that all soil tests be recorded on a USGS elevation base. These records can be converted to coordinates within the GIS system. Maps can be made which would show the historical groundwater levels, as well as, types of soil and their infiltration rates.

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Septic System Locations

The Town has as built plans for septic systems dating as far back to 1955. Approximately 75% of all existing septic systems have as built plans, however, many of those plans are poorly drawn or do not have the required level of detail. By placing all available information on coordinates and updating it as new systems are built the relationship between septic systems and environmentally sensitive areas (surface waters, groundwater and aquifer zones) can be mapped. In this way the Town can identify areas where septic systems are impacting sensitive zones and should be replaced or receive additional treatment.

Surface Stream Monitoring

The Board of Health has been conducting quarterly sampling for fecal contamination of 44 locations on the Nashoba & Fort Pond Brooks since 1985. The past relationship between those results and failing septic systems could give the Town a better understanding regarding the impact of septic systems on surface water bodies. Future readings can help identify problem areas before they impact sensitive zones. Ideally this type of monitoring would occur on a monthly basis.

Subsurface Stream Monitoring

In the past year the Town has installed 12 monitoring wells near ma or subdivisions. As part of this grant request additional monitoring wells will be established throughout the Town. The Town has begun to sample its existing wells on a quarterly basis for both nitrate levels and groundwater levels. The results of these samples can be mapped in relationship to the Zone 1 & 2 locations of each water supply well and adjacent clusters of septic systems.

Utilize Data Base for Notification or Tracking

The initial use of the data base will be either for septic tank pumping notification or septic tank pumping tracking. If septic systems are left in private ownership than the Town will continue to rely on a notification process which would take shape in a form similar to Attachment C. This program was created by the Board of Health in the mid 80's but was never put into action. Implementation of that program would require significant alteration of the present notification program.

Essentially this proposed notification system would operate through a series of form letters which would be triggered by the data base system. The Town would notify and receive information from property owners regarding the maintenance of their septic system, based on the requirements of the data base system. Each of these letters would have a suspension date and would require additional action if a response is not received. In addition excessive water use can be tracked through Water District Records and property owners can be notified when they exceed or come near to design performances.

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It is probable that regulations would have to be developed by the Board of Health and passed by the Town to ensure responses from each letter category. However, it should be noted with the current non-enforced regulation approximately 75% of the homeowners, who are notified that its time to pump their septic tank, respond positively within 30 days. Regulations may be required for only the most non-compliant and resistant property owners.

Should the Town take on the responsibility of maintaining all septic systems than the data base can serve to assist the Town in scheduling pumpings. Contracted Pumpers could be given a list of properties to pump on a monthly basis and the amount of pumps could be distributed equally over the seasons when septic tanks are easily accessible.

The data base which will interact with the GIS will either be the SepTrack system shown in Attachment "D" or a similar data base system which can work in a GIS environment. Records which have been computerized by the Assessors Department will be transfer-red into this data base system. Additional information will be added by the Engineering, Planning, Building, Conservation, Fire and Health Departments.

Monitor Surface Environmental Impacts

In 1985 the Board of Health began a program of monitoring the two major brooks (Nashoba & Fort Pond) in town for Fecal & Total Coliform contamination. By initiating this program the Board hoped to identify problem areas and in particular to identify septic systems which were polluting either of those brooks. Initially samples were taken to a private lab for analysis but beginning in 1988 the Town established its own water analysis lab where samples could be analyzed. By analyzing its own samples the Town was able to effect cost savings which allowed the Town to increase the number of samples taken. (See Attachment E for Water Analysis Manual)

In order to manage this system better and to correlate the results of the samples the Town established 11 watershed districts based on the two major brooks (7 districts for the Fort Pond Brook Watershed & 4 districts for Nashoba Brook Watershed). Sampling locations were based in accordance with those districts. Working from the furthest down gradient location of each brook in a district, sampling points were distributed wherever brook branches occurred or major drainage systems discharged into the brooks. Each sampling location is labeled with the prefix of its wastewater district and a suffix of its location down gradient in that district. (See Attachment F)

The current sampling program has 44 sampling locations which are sampled four times a year (once each season). Historically the Town has found that exceedence of fecal coliform levels (200 PPM) occur approximately in 15% of the samples. However, many of these exceedences occur in the summer when dryer conditions create less dilution regarding wildlife contribution to contamination levels. Notably high levels occur where a large geese population congregates at Concord Road Ice House Pond, on Nashoba Brook.

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In the past several years this program has allowed the Town to discover direct discharges into the brook systems on an average of once or twice a year. In each case systems were collected in situations where the Town might have taken much longer to discover the problem. The goal of this program is to increase sampling from a quarterly basis to a monthly basis. In this way the Town can monitor more closely for any direct discharges, discovering and collecting them more responsively.

It should also be noted that the Town uses its lab to follow up on any break out complaints that occur at private homes. The existence of the lab has helped the Town to be more responsive to these complaints and to discover problems at a relatively inexpensive price. Statistically the Town tests between 20 to 30 locations each year for potential break out problems.

Monitor Subsurface Environmental Impacts

Although significant groundwater monitoring has occurred throughout the Town it has been primarily in relation to industrial chemical contamination. With the recent revisions to Title 5 the Town recognizes that monitoring of the groundwater for nitrate levels should no longer be postponed. To address this concern the Town, during the spring of 1995, determined potential locations for groundwater monitoring wells. During the summer of 1995 a well driller was contracted and the Town was successful in installing 12 monitoring wells (See Attachment "G").

As in the surface monitoring program the placement of the subsurface monitoring wells were based on the wastewater districts which were previously established. An attempt was made at placing wells down gradient of major subdivisions in accordance with a town wide hydrology study done by GZA in 1984. However, this was not always possible as it was also important to place the wells on Town owned property.

It is the Town's goal to supplement these initial wells with additional monitoring wells over the next five years. Ideally the Town's goal would be to have 4 subsurface monitoring wells in each wastewater district. The primary monitoring well would be located at the furthest down gradient point in each district and three secondary wells would be placed adjacent to and down gradient to the areas with the largest congestion of septic systems.

Each of these wells would have its water level and nitrate level sampled on a monthly basis. The Town is seeking to upgrade its water lab so that nitrate determinations could be done in house. Due to this additional testing requirement and the formalization of the wastewater program the Town will also seek to have its water lab certified appropriately. See Attachment H for information regarding nitrate testing and installation of additional monitoring wells.

ATTACHMENT “A”

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ARTICLE 11. MINIMUM REQUIREMENTS FOR THE DISPOSAL OF SANITARY SEWAGE IN UNSEWERED AREAS.

Regulation 11-1. Authority

The Board of Health of the Town of Acton, Commonwealth of Massachusetts, acting under the authority of Chapter 111, Section 31, of the General Laws and amendments and additions thereto, and by any other power thereto enabling and acting thereunder and in accordance therewith, has, in the interest of and for the preservation of the public health, duly rescinded all previous Rules and Regulations pertaining to the construction or installation of cesspools or septic tank systems adopted by the Board of Health, Town of Acton, and has duly made and adopted the following rules and regulations pertaining to the construction or installation of on-lot sewerage disposal works.

Regulation 11-2.

The provisions of the Department of Environmental Protection, Commonwealth of Massachusetts, 310 CMR 15.000, The State Environmental Code, Title 5: Standard Requirements for the siting, construction, inspection, upgrade and expansion of on site sewage treatment & disposal-systems & for the treatment & disposal of septage plus any and all amendments and additions thereto, apply to all permits issued by the Board of Health, Town of Acton. Where the following rules and regulations of the Town are more stringent, they shall prevail. All work done by permit shall conform to the specifications, workmanship and requirements of the State and town rules and regulations. Any variance, additional clarification or unusual conditions not covered herein shall be noted in writing on the original Disposal Works Installation Permit Application, any variance approved, shall become a part of the permit.

Regulations 11-3 Permits

11-3.1 All sewerage work permits issued by the Board of Health shall expire two (2) years from date of issue. (amended 12/18/84)
Permits may be renewed for one year after an expiration but no more than two renewals can be granted.

11-3.2 All Disposal Works Installers shall obtain a Disposal Works Installer's permit from the Board of Health. Such permit shall expire at the end of each calendar year. (Refer to fee schedule.)
Applicants for such permits shall submit in writing a list of three (3) references (preferably State and local health inspectors) who can attest to the experience of the applicant in construction or repair of sewage disposal Works. For good and sufficient reason, the Board of Health may waive this regulation.

Regulation 11-4 Fees

11-4.1 The fee for a permit for sewage disposal installation shall be recommended by the Acton Board of Health and approved by the Acton Board of Selectmen.

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- 11-4.2 There shall be a fee recommended by the Acton Board of Health and approved by the Acton Board of Selectmen for the witnessing of percolation tests and deep observation holes based upon the maximum number of percolation tests and deep test holes to be conducted at a site. A percolation testing and deep observation hole testing permit will be good for one year from date of issue.

Regulation 11-5 Soil Classification

- 11-5.1 Deep test holes may be dug in all months except June, July, August, September, and October.
- 11-5.2 Depending on the soil conditions it may be necessary to increase the number of deep test holes.
- 11-5.3 The Acton Board of Health shall schedule the time and place that such tests are to made in conjunction with the owner, developer or agent of the land.

Regulation 11.6

Deep test holes witnessed by the Board of Health for the purpose of determining maximum groundwater elevation during the wettest season of the year may be excavated beginning November 1st of a calendar year and extending to May 31st of the next calendar year. The Board of Health will be the sole determinant as to whether or not maximum groundwater levels are in effect for the referenced months, or to utilize historical data pertinent to each site tested. (amended 10/7/86)

Regulation 11-7 Minimum Distances

- 11-7.1 Disposal facilities shall be constructed not less than the minimum distances away from items listed in (15.211) of Title 5, State Environmental Code with the following additions.
- 11-7.2 No sewage disposal system with a capacity of less than 2,000 gallons per day shall be constructed within seventy-five (75) feet of any wetland (Any land area or surface area so defined by the Massachusetts Wetlands Protection Act, M.G.L. C. 131,40).
- 11-7.3 No sewage disposal system with a capacity of 2,000 gallons/day or over shall be constructed within one hundred (100) feet of any wetland (Any land area or surface area so defined by the Massachusetts Wetlands Protection Act, M.G.L. C..131, 40).

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- 11-7.4 In the area designated as the Flood Plain District by 'Flood Insurance Rate Map of the Town of Acton, Massachusetts, Map No. 2, plus the map index and street index' and the associated data provided in-the 'Flood Insurance Study, Town of Acton, January 6, 1988', published by the U.S. Department of Housing and Urban Development, Federal Insurance Administration ('HUD Flood Insurance Study'), on-site waste disposal systems shall be located or designed so as to avoid impairment or contamination during flooding, and must comply with the Town of Acton Zoning Bylaw 4.1.
- 11-7.5 A sewage disposal system shall be located on the same lot as the structure it serves.
- 11-7.6 The Board of Health may grant variances to Regulation 11-7.5 if an applicant is able to document their ability to control the area where the septic system is located and if the applicant submits a financial plan detailing how the system will be maintained and replaced when necessary.

Regulation 11-8. Residential Septic Tanks - Minimum Requirements

- 11-8.1 Schedule 40 p.v.c. requires an approved sleeve where the pipe goes through the building foundation.
- 11-8.2 All residential septic tanks, cesspools, or other structures shall have their contents pumped out at least once every two years by a septage hauler licensed by the Town of Acton.
- 11-8.2.1 Septage Haulers shall be licensed by the Board of Health. A fee set by the Board of Health shall be required for said license. Septage Haulers licenses shall be valid for a period of one year, unless revoked for cause by the Board of Health, to run with the calendar year in accordance with 310 CMR 15.02 (3) Septage Handlers Permit. (amended date 3/24/87).
- 11-8.3 Business, industrial or any other type use of septic tank and/or grease traps shall have their contents pumped out by a septage hauler licensed by the Town of Acton as follows:
- Septic tank 1,000 gal & under - once/ 2yrs. minimum
Septic tank over 1,000 gal - once/ yr. minimum
- 11-8.4 Septic tanks and grease traps may be required to be pumped at more frequent intervals if directed by the Board of Health.

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Regulation 11-9 Leaching facilities - Minimum requirements

11-9.1 Leaching facilities for any use shall have a minimum of 800 square feet of leaching area for trenches, pits or chambers, 900 square feet for leaching fields or beds, or shall be constructed to meet the requirements given in Table 2.

TABLE 2
Town of Acton Leaching Requirements
(Classifications shall be as defined in Title 5)

Perc. Rate	M.P.I.	Sidewall Area Gallons/ Sq. Ft.			Bottom Area Gallons/ Sq. Ft.		
		Class 1	Class 2	Class 3	Class 1	Class 2	Class 3
	2 mpi	0.74	0.6	xxxx	0.5	0.5	xxxx
	4 mpi	0.74	0.6	xxxx	0.53	0.53	xxxx
	6 mpi	0.7	0.6	xxxx	0.56	0.56	xxxx
	8 mpi	0.66	0.6	xxxx	0.53	0.53	xxxx
	10 mpi	0.66	0.6	xxxx	0.5	0.5	xxxx
	15 mpi	0.57	0.56	0.37	0.37	0.37	0.37
	20 mpi	0.5	0.5	0.34	0.33	0.33	0.33
	21 mpi	0.36	0.36	0.3	xxxx	0.30	0.30
	25 mpi	0.3	0.3	0.3	xxxx	0.27	0.25
	30 mpi	0.25	0.25	0.25	xxxx	0.22	0.20
	40 mpi	xxxx	xxxx	0.2	xxxx	xxxx	0.15
	60 mpi	xxxx	xxxx	0.15	xxxx	xxxx	0.10

- 11-9.2 The Board of Health may request that certain trees or foliage be removed if in their estimation they feel said trees may develop root growth that may interfere with proper operation of the system.
- 11-9.3 Leaching works constructed in areas where the underlying natural soil material is not sharp coarse sand or sharp gravel shall have a minimum of 6" of clean bank run gravel placed beneath the stone.
- 11-9.4 The Board of Health or its agents may require this minimum 6" of gravel at its discretion, regardless of the type of underlying soil material.
- 11-9.5 The 4'-0" minimum requirement of naturally occurring pervious soil material may not be lessened in order to provide room for this requirement.
- 11-9.6 The minimum depth of clean washed stone 3/4"- 1 1/2" in size shall be 12 inches measured below the invert of the distribution pipes.
- 11-9.7 The minimum distance between sidewalls of leaching trenches must be twelve (12) feet when the area between trenches is used for a reserve -area. (amended 8/17/@2)

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Regulation 11-10 Subdivision Requirements

- 11-10.1 Extreme care shall be practiced on the layout of a subdivision in unsewered areas. The number of lots to be tested in a subdivision shall be determined by the Board of Health based on the site examination. Such tests shall include deep observation holes and percolation tests for each area selected. A permit shall be required for each individual house lot per Regulation 11-3 but information from prior testing for subdivision approval can be used providing the leaching area falls within the area previously tested.

Regulation 11-11. Backfill

- 11-11.1 All lines in leaching facilities shall be left uncovered until after inspection. Contractors shall leave the cover off the distribution box and have ten (10) gallons of water on site for use of the inspector to test the level of the distribution box and outlet water flow.
- 11-11.2 The owner shall take the necessary precautions to see that the works are not damaged by surface waters, animals or other agents while awaiting inspection.
- 11-11.3 All leaching facilities, except for those under pavement, shall have a final cover of sufficient loam to support a dense vegetative cover, preferably grass. Those leaching facilities and other parts of the subsurface sewage disposal system in paved areas shall be insulated when necessary to prevent freezing.

Regulation 11-12 Occupancy Permits

- 11-12.1 A Certificate of Occupancy shall not be issued until a Certificate of compliance shall have been issued first indicating that the sewage disposal has been located and constructed in compliance with the terms of the permits and the requirements of this code and Title 5 of the State Environmental Code. All applications for occupancy of houses without town water must be accompanied by a report from an approved private laboratory, certifying that the quality of the potable water meets the requirements of the U.S. Public Health Service recommendations for drinking water. The quantity of water should be 5 gallons per minute for 4 hours continuous pumping to meet F.H.A. and V.A. requirements.

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- 11-12.2 An application for an occupancy permit shall constitute a permit when signed by the Building Inspector, Gas and Plumbing Inspector and the Board of Health.

Regulation 11-13 Nuisance

- 11-13.1 Every owner or occupant of a premises in which there is a local sewage disposal works shall keep the same in a sanitary condition and shall have the same emptied and cleaned when necessary. The Board of Health can determine the necessity for emptying and cleaning a sewage disposal works. No septic- tank, cesspool or leaching pit shall be emptied except by persons licensed by the Board of Health. If the owner or occupant fails to comply with such order, the Board may cause the nuisance, source of filth or cause of sickness to be removed and all expenses incurred thereby shall be paid by the person who caused or permitted same, if he has had actual notice from the Board of Health of the existence thereof.

Regulation 11-15 Variances

- 11-15.1 Variances may be granted as follows:

The Board of Health may vary the application of any provisions of this Article with respect to any particular case when, in its opinion (1) the enforcement therefore would do manifest injustice; and (2) the applicant has proved that the same degree of environmental protection required under this article can be achieved without strict application of the particular provision.

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ARTICLE 16. MINIMUM REQUIREMENTS FOR ACTIVITIES WITHIN THE
GROUNDWATER PROTECTION ZONES

Regulation 16-1. Purpose

16-1.1 The purpose of this regulation is to protect the public health by protecting and improving the quality of the groundwater upon which the Town of Acton relies for its water supply, public and private.

16-1.2 Protecting and improving the groundwater shall include, but not be limited to the following actions:

16-1.2.1 preventing degradation of, and improving the quantity and quality of surface water, underground aquifers, public water supply, and groundwater within the Permit Area,

16-1.2.2 maintaining, improving, and preventing reduction of groundwater recharge,

16-1.2.3 preventing discharge, or potential discharge, onto or into the ground of any hazardous substance, or any other substance which may degrade the quality of groundwater,

16-1.2.4 preventing any other activity which may degrade, reduce, interfere with, or otherwise adversely affect Regulated Waters,

16-1.2.5 preventing any activity within the Permit Area that will alter quality of the Regulated Waters in such a way as to pose a threat to public health, safety or welfare.

Regulation 16.2. Definitions

16.2.1 Regulated Activities shall include, but not be limited to the following:

16.2.1.1 excavation, disposal, filling, construction, reconstruction, use, change or expansion of use, storage, or other activity involving any risk of discharge of any substance, including septic system leachate, directly, or indirectly, into the groundwater within the Permit Area,

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- 16-2.1.2 any change of the recharge characteristics of any property within the Permit Area,
- 16-2.2 Regulated Entity (Entities) shall include any individual(s), agent(s), corporation(s), or other entity (entities).
- 16.2.3 Action(s) shall include, but not be limited to any or all listed above in Section 16-1.2(1-5) - Purpose.
- 16.2.4 Regulated Waters shall mean the surface water, underground aquifers, public water supply, and/or groundwater within the Permit Area.
- 16.2.5 The Permit Area shall be the Well Protection Area (Zone 1), the Recharge Protection Area (Zone 2) and the Aquifer Protection Area (Zone 3) as defined in the "Groundwater Protection District Map of the Town of Acton, January 1989," contained in the Goldberg, Zoino Associates' "Final Report - Aquifer Protection/Areas, Town of Acton, Massachusetts," January 1989. (Copies of these may be obtained at the Acton Engineering and Planning Departments.)
- 16-2.6 Permit shall be a "Permit for Work in a Permit Area" which shall be granted by the Issuing Authority. The Permit shall specify in writing which of the Regulated Activity (Activities) may be undertaken by the Permit applicant.
- 16-2.7 The Issuing Authority shall be the Board of Health, or the Health Department of the Town of Acton, as delineated in Section 16-6., PERMITS GRANTED BY THE HEALTH DIRECTOR, and Section 16-5, Issuing Authority.
- 16-2.8 Information shall include, but not be limited to information supplied by the applicant, the Health Department, or any other information before the Board.
- 16-2.9 Risk(s) shall include, but not be limited to the reduction of quantity and/or quality of, or the discharge of any substance to, or any other risk to the Regulated Waters, which may in turn cause any threat to the public health or safety by contact with or ingestion of the Regulated Waters.

Regulation 16-3. Permit Required

- 16-3.1 No Regulated Entity (Entities) shall undertake, perform, or cause to be performed any Regulated Activity within the Permit Area without a Permit from the Issuing Authority.

Town of Acton
Wastewater Management Plan

Regulation 16-4. Issuance of Permits

- 16-4.1 Standards for Issuance. The Issuing Authority shall grant a Permit if it finds, based upon the Information, that the proposed activity poses no significant risk of reducing, interfering with, or degrading the groundwater or causing any threat to the public health and safety.
- 16-4.1.1 The Issuing Authority shall deny the permit if the Information does not demonstrate that the Regulated Activity, poses no significant risk to the Regulated Waters.
- 16-4.2 Conditions. The Board of Health, may take any Action(s) or impose such conditions and limitations on the Permit as may be required to prevent Risk to the Regulated Waters.
- 16.4.2.1 Such conditions and limitations may include substance containment requirements, depth to groundwater requirements, run-off containment requirements, requirements to preserve groundwater recharge, limits on density of use, limits on the extent of impervious cover, treatment of water run-off, or other condition or limitation necessary to further the purposes of this regulation. All construction, use, or other activity shall be conducted in strict compliance with any conditions or limitations imposed in the Permit.
- 16-4.2.2 The Board may require the applicant to provide, at its own expense, such studies, test results, analyses or other data as may be necessary in order to determine whether granting the Permit would be consistent with the standards in this regulation.
- 16-4.2.3 Prior to the Board recommending approval of any subdivision to the Planning Board, an evaluation of the site and a design by competent soil scientists and qualified personnel, shall be submitted by the applicant to the Board.
- 16-4.2.4 A nitrate loading assessment for any project or subdivision which will have a total effluent discharge over 2,000 gallons per day shall be submitted by the applicant to the Board.
- 16-4.2.5 Within the Well Buffer area, monitoring wells, down-gradient of all septic systems with a capacity of 550 gallons per day, or any commercial or industrial use, shall be provided.

Town of Acton
Wastewater Management Plan

- 16-4.2.6 Within the Recharge Protection area, monitoring wells, down-gradient of all septic systems with a capacity of 2,000 gallons per day, or any commercial or industrial use, shall be provided.
 - 16-4.2.7 Within the Well Buffer area, septic systems shall be set back 300' from any public, semi-public or private well supply system.
 - 16-4.2.8 Within the Recharge Protection area, septic systems shall be set back 150' from any public, semi-public or private well supply system.
 - 16-4.2.9 On site Sewer Treatment Plants, with advanced capabilities, shall be required for all projects in excess of 10,000 gallons per day within any aquifer protection zone.
 - 16-4.2.10 All leaching areas within an aquifer zone shall be set back 100' from any recharge, retention, detention or surface drainage area.
 - 16-4.2.11 Hydrogeological studies shall be submitted to the Board for any proposed effluent flow exceeding 5,000 gallons on any one property.
- 16-4.3 Issuance and Renewal. Permits shall be issued by the Issuing Authority, and shall remain in force so long as no significant change occurs in the extent or nature of the activity conducted by the applicant. If there has been any significant change in the extent or nature of the use or activity if new information suggests that the current use or active y poses a Risk to the groundwater or to public health or safety, a new Permit shall be required from the Issuing Authority.
- 16-4.3.1 Every applicant for a Permit shall complete and file a written application in a form prescribed by the Health Director and appear in person or by an authorized representative before the Issuing Authority at the hearing on the issuance of the Permit, unless the Issuing Authority waives the requirement for a personal appearance. The Board may also require the attendance of such other agents or employees of the applicant as may be necessary to provide Information relative to the application.

Town of Acton
Wastewater Management Plan

16-4.4 Revocation. The Board may revoke a Permit at any time if it concludes that the Regulated Activity or the manner in which the Regulated Activity is being conducted poses a significant Risk to the Regulated Waters or any, other public health or safety risk. Except in an emergency, no Permit shall be revoked without a hearing before the Issuing Authority prior to the revocation. If a Regulated Activity presents an immediate and significant Risk to the Regulated Waters or any other immediate and public health or safety risk, the Health Director may revoke a Permit without a prior hearing. In the event that a Permit is revoked by the Health Director, the permittee shall be entitled, upon request, to a hearing before the Issuing Authority within ten days after the revocation.

Regulation 16.5 Issuing Authority

16-5.1 The Board of Health shall be the Issuing Authority for all permits for all lands, properties, and realty trusts, regardless of ownership within the Permit Area except for those which meet the criteria given in Section VI, PERMITS GRANTED BY THE HEALTH DIRECTOR. The Board has delegated to the Health Director the authority to grant permits for the Health Director the authority to grant permits for the Health Director the authority to grant permits for properties that meet the criteria of Section 16-6.

Regulation 16-6. Permits Granted by the Health Director

- 16-6.1 Notwithstanding the provision of Section 16-3, Permits for installation of septic systems for single family homes may be granted by the Health Director, without conditions if all of the following criteria are met:
- 16-6.1.1 The total flow from the system, calculated in accordance with Title 5 of the Massachusetts Code of Regulations, will not exceed 1000 gallons per day.
 - 16-6.1.2 The percolation rates observed in accordance with required testing procedure exceeds six minutes per inch, or the depth from the bottom of the septic system to groundwater is at least six feet, or the system is at least 1.5 miles from any current or reasonably likely Well Protection Area.
 - 16-6.1.3 The proposed system is not located within any Well Protection Area (Zone 1).
 - 16-6.1.4 All other requirements of Title 5 of the Massachusetts Code of Regulations and the Acton Health Department are met.

Town of Acton
Wastewater Management Plan

16-6.1.5 There are no special circumstances which, in the opinion of the Health Director, could pose a risk of degradation of the groundwater or other public health or safety threat.

16-6.2 Notwithstanding the provisions of Section 16-3, permits for installation of septic systems for single family Homes in areas with percolation rates of less than 6 mpi may be granted by the Health Director, with conditions if all of the following criteria is met:

16-6.2.1 No underground fuel storage tanks shall be permitted on the site.

16-6.2.2 The septic tank shall be pumped a minimum of once every one/two years.

16-6.2.3 The site shall fully conform to the Town of Acton Hazardous Materials Control Bylaw.

16-6.2.4 The sewage disposal system for the proposed buildings at this site shall be approved by Acton Board of Health staff.

16-6.2.5 The leaching facility is designed and installed with pressure dosing of the system, said pressure dosing designed in accordance with the State Environmental Code, or it shall be in compliance with

16-6 Figure I.

ATTACHMENT “B”

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Main Menu

August 20, 1993

1992 by Pamet Systems, Inc.

Friday 09:25

Department Options		Office Applications	
PARC	Parcel Data Maintenance	LIST	Create Word-11 List
BYID	Parcel Detail Report	WORD	Word- I 1 Word Processing
PUMP	Septic Pumping Report	SPRD	Graphic Outlook Spreadsheet
INSP	Inspections	MAIL	Electronic Mail
PERM	Permits/Licensed	DTC	DeskTop Calendar
HAZM	Hazardous Materials	OFF	Misc. Office Options
CODE	Maintain Code Files		
PERS	Personnel and Payroll		System Manager
DEPT	Department Information		
OPT	Optional Software	MGR	System Management

Select an option, then press Next Screen or Return

The Town of Acton has a Digital Vax Computer System with programming provided by Pamet Systems, Inc. The information listed above are the options available when first entering the system. Parcel Data Maintenance is a data base program which all parcels of land in Acton are recorded within.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Data Maintenance

August 20, 1993

1992 by Pamet Systems, Inc.

Friday 09:27

Search by

Parcel ID:

Class:

Owner Name:

Location:

98 Arlington Street

Parcel ID	Property Location	Owner	Class
-----------	-------------------	-------	-------

Enter Parcel, Name or Address to search for or press Insert to add a parcel.

No default for this item

Upon entering Parcel Data Maintenance the above screen would appear. To access a parcel you would need to enter Parcel ID, Owner Name or Location.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Data Maintenance

August 20, 1993

1992 by Pamet Systems, Inc.

Friday 09:27

Search by Parcel ID: Class:
 Owner Name:
 Location: *98 Arlington Street*

Parcel ID	Property Location	Owner	Class
-E2-221	98 Arlington Street	Weier, Donald A	101

Press Select or Next Screen for Parcel Data; Gold-Next for Notes;
Find to search again; Insert Here to add a parcel; Gold Remove to delete one.

Move the Pointer to the desired parcel.

In the above screen a parcel has been chosen by location and is ready to be selected.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Data Maintenance

August 20, 1993

1992 by Pamet Systems, Inc.

Friday 09:30

Parcel ID: E2-221

Location: 98 Arlington Street

■ Owner 1:	WEIER DONALD A	Lot Area:	33,225.00 sf
■ Owner 2:	WEIER ANNE M	Frontage:	sf
■ Addr 1:	98 ARLINGTON STREET	Wetland	%
■ Addr 2:		G. Floor Area:	1,954 sf
■ City/St.:	ACTON MA 01720	F.A. Ratio	0.05
■		Land Value	132,900
■ Class:	101 Single Family Residence	Bldg Value	111,900
■ Lot:	OOOB Last Pumped. 09/18/92	Credits	
■ Desc:	IA Dist:	Total Value:	244,800

Dated Added: 03/16/1988

Updated: 11/03/92

PL Only No Notes No

Press Next Screen for Zoning/Soil; Gold-Next for Notes;
Gold-Find to repeat last search, Find to start a new search.

No default for this item

This screen shows the selected parcel with the applicable information for this parcel note the data base for last

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Data Maintenance

August 20, 1993

1992 by Pamet Systems, Inc.

Friday 09:30

Zoning/Soil Inf.

Parcel ID: E2-221

Location: 98 Arlington Street

Zoning Districts

Code	Description	-Code-	Description
R2	Residential 20,000 SF		_____
	_____		_____
	_____		_____

Soil Types

Code	Description	-Code-	Description
	_____		_____
	_____		_____
	_____		_____

Previous Screen: Parcel Data; Next Screen; Environmental; Gold-Next: Notes;

Gold-Find to repeat last search; Find to start a new search.

Press List Choices for the choices

No Default for this item.

This screen is available for any Zoning District Information and soil types information.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Data Maintenance

August 20, 1993

1992 by Pamet Systems, Inc.

Friday

Zoning/Soil Information

Parcel ID: E2-221

Location: 98 Arlington Street

Business Name

Code

Generator Class

No records

Miscellaneous Comments

Point to desired Site and press Next Screen to view additional data.
Press Insert to add a Site; Gold-Remove to delete a Site.

Move the Pointer to the desired Site.

This screen is available for any Environmental Site Data Information.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Detail Report

August 20, 1993

1992 By Pamet Systems, Inc.

Friday 09:33

Report Parameters

For this report, please supply the following:

Starting Parcel to print: E2-221

Ending Parcel to print: E2-221

Number of copies to print: 1 (1-9)

Report Subtitle Report on 98 Arlington Street

No Default for this item.

This screen is for a parcel detail report which can be accessed from the screen on Page 1.
Parcels can be segregated by the Town's Map & parcel designations only at this time.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Parcel Detail Report

August 20, 1993

1992 By Pamet Systems, Inc.

Friday 09:34

Preparing the List of Parcels by Parcel ID.

1 Page has been placed in line to print on the LN03 printer

called LNLETTER under the form name NORMAL.

Press any key to continue.

The program will prepared a list of parcels in accordance with their Parcel ID.

Town of Acton
Wastewater Management Plan

Planning Department of the Town of Acton,
List of Parcels by Parcel ID

August 20, 1993

Friday 09:34

Report on 98 Arlington Street

Parcel ID	Property Location	Owner Name	Class
E2-221	98 ARLINGTON ST	WEIER DONALD	101

*****Grand Totals*****

Taxable Parcels = 1

Exempt Parcels = 0

Total Parcels = 1

This is the information generated from a parcel ID data base. Future programming will allow the collation of information by septic tank size, leaching area, of bedrooms, aquifer district, Sewer district, age of septic system or an combination thereof.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Septic Pumping Report

August 20, 1993

1992 By Pamet Systems, Inc.

Friday 09:36

Report Parameters

For this report, please supply the following:

Earliest pumping date 1 1/0 1/91 (Press Return for First)

Latest pumping date 12/31/91 (Press Return for Last)

Number of copies to print: 1 (1-9)

Exit or Previous: Return to the menu without running the report

Press Return to generate the report

This screen is for a septic pumping report which can be accessed from the screen on Page 1.

Town of Acton
Wastewater Management Plan

Planning Department - Town of Acton,

October 5, 1995

Parcel ID List of Septic Pumping

Thursday 14:46

Pumping dates: 11/01/1991 to 12/31/1991

Parcel ID	Property Location	Owner Name	Class	I	Pump Date
D2-41	1 HURON RD	THOMAS DANIEL R &		101	11/14/1991
D2-52	5 LITTLEFIELD ROAD	SMALL MICHAEL C		101	11/08/1991
D2-171	404 CENTRAL ST	WOOD STANLEY C		101	11/12/1991
D2-178	19 ONEIDA RD	MCPHERSON RALPH D		101	12/17/1991
D4-13	217 NAGOG HILL ROAD	MCCONNON THOMAS B		104	11/08/1991
D4-37	191 NAGOG HILL RD	GROENER E JOHN		016	11/25/1991
E2-84	382 CENTRAL ST	MCHUGH IRENE		101	12/27/1991
E2-85	385 CENTRAL ST	KAY JOSEPH		101	12/04/1991
E2-102	25 MOHAWK DRIVE	ELLIS STEWART K		101	12/12/1991
E2-165	23 AGAWAM RD	MISKIN MICHAEL		101	11/27/1991
E3-95-41	10 COWDREY LN	PALIZZOLO EDWARD M		101	12/30/1991
E3-119	41 MINUTEMAN RD	SAWYER JOYCE M		101	11/12/1991
E5-20-1	4 STRAWBERRY HILL	B & D REALTY TRUST		340	11/14/1991
F2-128-24	16 MALLARD RD	FITZPATRICK JOHN		101	12/27/1991
F2-129	139 PROSPECT ST	SPENCER CHARLES W JR		101	11/19/1991
F2.A-11-3	1 GREGORY LANE	FEYNMAN, CARL		101	11/14/1991
F2.A-42	303 CENTRAL ST	FRIEDRICHS NANCY L		101	11/04/1991
F2.B-36	46 WINDSOR AV	COOLIDGE MILDRED R		101	11/13/1991
F3-11-7	7 FIFE & DRUM RD	CROUSE BETTY JANE		101	12/18/1991
F3-24-24	1 JOHN SWIFT RD	FISHER, EDWARD		101	12/23/1991
F5-2	2 SIMON HAPGOOD	LONORATO, MICHAEL		101	12/17/1991
F5-12-21	49 STONEYMEADE WAY	BAKER, JOHN		101	11/22/1991
F5-12-37	17 STONEYMEADE WAY	GREGORITCH WILLIAM		101	12/10/1991
F5-12-39	13 STONEYMEADE WAY	SYIEK, JOSEPH		101	11/22/1991
G1-16	6 POWDER HORN LN	PUFF, CHRISTOPHER		101	11/16/1991
G1-34	4 FLINTLOCK DR	CLAPP DONALD E		101	12/06/1991
G1-41	416 ARLINGTON ST	WARFIELD WILLIAM A		101	11/11/1991
G1-156	3 TOWNSEND RD	ANNIS GEORGE S		101	12/09/1991
G2-57	11 TUTTLE DRIVE	NG, KING		101	11/05/1991
G2-101	226 MAIN ST	LUONGO JOSEPH E		101	11/06/1991
G3-19	83 TAYLOR ROAD	DOWNES RICHARD C		101	12/02/1991
G3-21	244 MAIN ST	VALLEY PROPERTIES INC		101	12/18/1991
G3-22	245 MAIN ST	POITRAS, BARRY		101	12/18/1991
G3-134	4 ASHWOOD RD	KAALSTAD TROND H		101	11/13/1991
G4-24	6 ALCOTT ST	LYONS, JAMES		101	11/06/1991
G4-119	4 HAWTHORNE ST	DEARBORN LEE H		101	11/04/1991
G4-202	94 HOSMER ST	MURPHY GEORGE H		101	11/08/1991
G5-88	2 GREAT RD	KELLEHER PAUL C		101	12/31/1991
H2-14	72 ROBBINS STREET	MACGREGOR MALCOLM S		101	11/09/1991
H2-79	21 LIBERTY ST	RUDY JEFFREY H		101	12/02/1991
H3-58	1 LILAC CT	SAWYER HERBERT F		013	11/13/1991
H3-121	19 OLDE SURREY DR	GOLEMESKI RICHARD M		101	11/19/1991
H3-250-2	10 BROOKSIDE CL	FRANCIS, RICHARD		101	11/26/1991

Town of Acton
Wastewater Management Plan

Planning Department - Town of Acton

October 5, 1995

Parcel ID List of Septic Pumping

Thursday 14:46

Pumping dates: 11/01/1991 to 12/31/1991

Parcel ID	Property Location	Owner Name	Class	Pump Date
H3.B-86	52 MAIN ST	PION, ROBERT	101	12/31/1991
H3.B-88-2	5 CONANT ST	FABER PAUL W	101	11/01/1991
H4-17-9	21ROBINWOOD RD	PANTON, GEORGE	101	11/11/1991
H4-105-4	36 HERITAGE RD	GALLAND PETER M	101	11/04/1991
H4-105-31	16 HERITAGE RD	MOORE JAMES E	101	11/04/1991
H4-111-7	5 AYER RD	GOKHALE, SUSHAMA	101	12/13/1991
H4-122	11 LAWSBROOK RD	BURKE, JAMES	101	12/16/1991
H4-146	54 LAWSBROOK RD	SHUTTLE JAMES C	101	11/01/1991
I2-39	4 FAIRWAY ROAD	BARNARD, JOHN	101	11/26/1991
I3-48-J5	130 PARKER ST	EPSTEIN SARA B	102	11/07/1991
I3-64-14	3 SILVER HILL RD	CATO, WILLIAM	101	11/15/1991

There were 54 Parcels listed.

This is a listing of all parcels pumped between November 1, 1991
and December 31, 1991

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Create WORD - 11 List

August 20, 1993

1992 By Pamet Systems, Inc.

Friday 09:41

These parameters define the parcels to be included.

Starting Class to include	(Default is First)
Ending Class to include	(Default is Last)
Starting Parcel to include	(Default is First)
Ending Parcel to include	(Default is Last)
Starting pumping date 11/01/91	(Default is First)
Ending pumping date 12/31/91	(Default is Last)

View/Modify field selection? No

Document name Pumping List November 1, 1991 to December 31, 1991

Return for Land Parcel List

This screen is for creating a Word-11 list (word processing) which can be accessed from the screen on Page 1.

Town of Acton
Wastewater Management Plan

TownServer - Board of Health

TownServer - Board of Health

Create Word- II List

August 20, 1993

1992 By Pamet Systems, Inc.

Friday 09:47

Creating Document: Pumping List November 1, 1991 to December 31, 1991

54 Parcels will be placed in document

Pumping List November 1, 1991 to December 31, 1991

%ASC2WOR-1, Creating WORD- I 1 document: (94) Pumping List
November 1, 1991 to December 31, 1991

Press any key to see the menu:

A list of parcels, owners and pump dates can be generated from the
Create Word-11 List.

Town of Acton
Wastewater Management Plan

WORD- I 1 Main Menu

August 20, 1993 9:48 AM

C	Create a document	L	List processing utility
E	Edit a document	M	Electronic mail
P	Print a document	S	Spelling maintenance
D	Delete a document	DK	UDK menu
V	View a document	OP	Option menu
I	List an index	CS	Change user settings
U	Enter printer utility	CD	Change document device
T	Document & transfer utility	RE	Recover changes from journal
F	Finished -- Exit WORD- 11	XU	Execute a UDK
WOW Words of Wisdom		ABOUT	About Word- 11

Type the option and press RETURN

This screen is for WORD-11 Word Processing which can be accessed from the screen on Page 1.

Town of Acton
Wastewater Management Plan

Index of (TOWDISK) [DOUG.WL 1]
1993 9:49 AM

August 20,

Doc#	Document Name	Last Edit	Creation
94	Pumping List November 1, 1991 to December 31, 1991	20-Aug-93	20-Aug-93
92	Beland Septic	20-Aug-93	20-Aug-93
91	Letter to Peter Vaillancourt	19-Aug-93	19-Aug-93
90	Time off	19-Aug-93	19-Aug-93
89	Aquifer Foster Street	18-Aug-93	18-Aug-93
88	Septic Foster Street	18-Aug-93	18-Aug-93
87	A/B High School	17-Aug-93	17-Aug-93

--More--

Use RETURN, NEXT or PREV SCREEN, GOLD-TOP, or GOLD-BOTTOM to move

This list is an index which shows all documents that are available. Note pumping list.

Town of Acton
Wastewater Management Plan

Index of (TOWDISK) [DOUG.WL 1]

August 20, 1993 9:49 AM

Doc#	Document Name	Last Edit	Creation
43	Nursing School Emergency Plan	3-May-93	3-May-93
24	Nursing Administrator Advertisement	7-May-93	7-May-93
54	SEPTIC NOTIFICATION MAILING	18-Jun-93	31-Mar-92
45	septic pumpers	5-Aug-92	17-Mar-92
53	SEPTIC PUMEPING NOTIFICATION	27-jul-93	31-Mar-92
14	Septic Review Form	1-Jun-93	18-Aug-92

--More--

Use RETURN, NEXT or PREV SCREEN, GOLD-TOP, or GOLD-BOTTOM to move

This list is an index showing septic documents, which can be merged with the pumping list.

Town of Acton
Wastewater Management Plan

List Processing Menu

August 20, 1993 09:51 AM

- P Merge a List with a Form and print the result
- D Merge a List with a Form and write the result to a document
- T Test a Selection Specification
- S Sort a List Document

Type the option and RETURN; use GOLD-MENU to return to the Main Menu.

This screen is a list processing utility located in Word-11 Main Menu (see page 15). The list of pumping must be merged with the proper form letter.

Town of Acton
Wastewater Management Plan

List Processing Menu (Merge)

August 20, 1993 09:52 AM

LD List Document

(94) Pumping List November 1, 1991 to December 31, 1991

FD Form Document

(53) SEPTIC PUMPING NOTIFICATION

Ss	Select Specification document	*None*
FR	First record to process	I
TO	Last record to process	*None*
AN	Automatic new page	YES
CO	Include commas in numbers	YES
NE	Negative value representation	LEADING

Make changes, then type GO or ACCEPT to process; use CANCEL to exit.

The form document is the Septic Pumping notification seen in the index on page 17. The list document is the pumping list seen on page 16.

Town of Acton
Wastewater Management Plan

List Processing Menu (Merge)

List Processing Status

Record 79 selected

79 Records were selected out of a total of 79 records processed.

Press RETURN to proceed to the Print Menu

The 79 list documents (pumping records) are merged with the form
document.

Town of Acton
Wastewater Management Plan

July 28, 1993

Laine Realty Trust
17 Bennett Road
Wayland, MA 01778

To Laine Realty Trust:

The Acton Board of Health is contacting homeowners in Acton who have no record of having their septic system pumped in the last two years. Our records indicate that your property at 920 MAIN STREET has not been pumped. Current Board of Health regulations require that each septic system be pumped at a minimum of once every two years. Immediate action should be taken to ensure the continued proper operation of your septic system.

Enclosed with this letter is a pamphlet on maintaining septic systems. The Board of Health requires periodic pumping in order to prevent the intrusion of solids into the leaching portion of the septic system. Solids within that portion of the system will cause it to fail prematurely by clogging the surrounding soils.

Should you have a record of having your septic system pumped in the last two years, please contact the Board of Health immediately. If you are in need of more information regarding the frequency of pumping, licensed pumpers or any other information please contact Doug Halley at 264-9634.

Sincerely,

Doug Halley
Health Director

This is the form document that is sent out to each parcel owner along with the attached pamphlet.

ON-SITE SEWAGE DISPOSAL SYSTEMS INFORMATION

On site wastewater disposal systems (Septic systems), or cesspools in older homes, provide for the treatment and disposal of wastewater. Cesspools and septic systems have been known, with PROPER MAINTENANCE, to perform effectively for many years. Your on site disposal system is just as important to you as your furnace. A new system of any type, or repairs to the existing one, can be very costly. Cost variation is due to the type of failure, soil conditions, water table and lot size. Proper maintenance is a cost effective way of prolonging the life of the system.

Cesspools are not allowed in new construction, however, there are a significant number of existing older homes that are still using them. From these homes the building sewer (pipe) goes directly to the cesspool. The cesspool is a large pit, with sides consisting of either concrete blocks or fieldstone and the bottom is earth. The lighter solids and grease (scum) float at the top and the heavier solids (sludge) settle to the bottom. The liquid seeps through the perforated blocks or the irregular stones. Life span is limited, although with PROPER MAINTENANCE, they could function effectively for many years. Should the cesspool overflow, it is usually because the ports in the sidewall and the surrounding soil have been clogged with solids. Normally this occurs from lack of periodic inspections and infrequent pumping out of the scum and sludge. It is recommended that there should be an annual inspection.

HOW TO LOCATE YOUR SEPTIC

TANK OR CESSPOOL

Locating and performing inspections on your disposal system, to determine the need for pumping, can cut costs, providing you follow the correct procedure. The recommended procedure to follow is:

- A. Contact the Board of Health to see if they have a plan on file
- B. If your plan is not on file, follow as recommended
 1. See if you can find a concrete or metal manhole cover, usually located in an area of tall green grass; or where there is a depression on the premises where the grass does not grow; or where there is rapidly melting snow.
 2. If a ground surface inspection is of no help; locate the building sewer (main house drain) in the cellar. Measure 10' (it may be more) from the foundation by following the direction of the pipe. Probe the soil with a thin metal rod. The septic tank or cesspool cover should be 12" or less below the surface.
 3. Record the location and give a copy to the Board of Health.

INDICATIONS OF A FAILING SYSTEM

- Mushy soil above or near the septic tank, cesspool or leaching field, or liquids surfacing in these areas
- Foul odor from sewage area, nearby streams, wetlands, etc...
- Any backup of sinks, toilets, not caused by blockage or internal pipes within the home
- Tall green grass above or near the leaching area, septic tank or cesspool.

HOW YOU CAN INSPECT YOUR SEPTIC TANK OR CESSPOOL

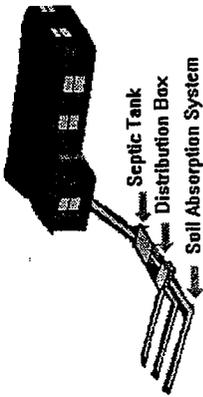
1. Remove cover or covers.
2. With a stick or rod, measure the scum and sludge layers. If they are more than 1/3 the volume of the septic tank or cesspool, it should be pumped out. Care should be taken to insure that sludge is removed from the bottom.
3. Be sure that both inlet and outlet tees are in place and free of any solids.
4. For assistance on any cesspool or septic tank problem, call the Acton Board of Health (264-9634). We are here to help you.

SOME REASONS WHY YOUR SYSTEM CAN FAIL

- POOR LOCATION for leaching area. Soil is impervious, water table is high, or inadequate perc. Rate of liquids through the soil.
- EXCESSIVE SOLIDS in the cesspool, or there is a septic tank, there could be an overflow of solids into the leaching areas.
- POOR INSTALLATION. Drain pipes & distribution pipes not properly graded, or septic tank not level.
- DESIGNED too small for the present demand.
- DRAIN PIPES may be clogged with solids, or roots may grow into the leaching area.

WHAT YOU SHOULD KNOW IN

ORDER TO IDENTIFY & MAINTAIN YOUR SEPTIC SYSTEM



This brochure was designed for Home Owners, Builders, Septage Pumpers, Realtors and Lending Institutes. An on-site Sewage Disposal System can provide trouble-free service for many years if maintained properly. This brochure addresses the following topics:

- ⇒ On Site Sewage Disposal System Information

- ⇒ How to locate your septic tank or cesspool
- ⇒ Indications of a failing system
- ⇒ How you can inspect your septic tank or cesspool
- ⇒ Some reasons why your system can fail
- ⇒ Reasonable steps to take to prevent system failure
- ⇒ Maintenance Information

SEPTIC TANK CROSS-SECTION



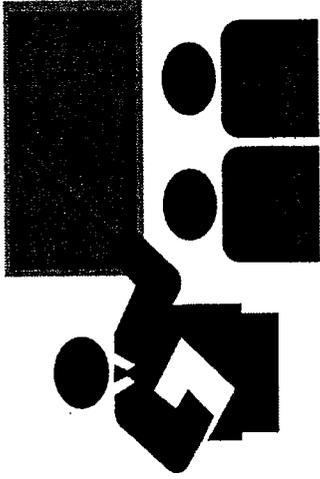
REASONABLE STEPS TO TAKE TO PREVENT SYSTEM FAILURE

1. Don't install garbage disposals, as they are a leading factor of clogged systems.
2. Don't put solids like sanitary napkins, paper towels, grease, hair, oil or coffee grounds down the drain.
3. Inspect or pump out on-site systems annually. Do not wait until you have a problem.
4. Conserve on water: Excess water can create problems. Install water saving devices whenever possible.
5. Don't put additives into your system. Medicines, paint thinner, disinfectants, pesticides and acids will only kill the bacteria which is needed to decompose the organic matter.
6. Don't use enzymes or volatile organic degreasers for treating your septic tank or cesspool.
7. Don't plant shrubs or trees with deep roots near your leaching area.
8. Don't allow heavy equipment to drive over your leaching area.
9. Don't build permanent structures (shed, garage, above ground pool) over the leaching area of your disposal system.
10. Don't drain cooling water, roof drains, swimming pools, special purpose pools, into your septic system

MAINTENANCE INFORMATION

Did you know.....it is reported...it is reported to us by the licensed septage pumper? Yes, we keep this information in a database, and also in a file for the specific property. We can track the routine maintenance of your system, and remind you when you have not serviced you system in the regulated time.

Annual inspection and pumping of your septic tank every other year is your maintenance program. Immediately investigate any signs of failure, and contact the Health Department at 508-264-9634.



Town of Acton
Wastewater Management Plan

HEALTH DEPARTMENT FILE SUMMARY SHEET

Property Address: 98 Arlington Street Owner: Donald A. Weier

Owner's Address, if different: N/A

Assessor Date: Map: E2 Parcel: 221

Septic System: _____ Cesspool _____ Field _____ Trenches _____ Pit _____ Gallery
_____ Treatment Plant _____ Tight Tank

Leaching Area: 900 sq. Ft. Tank Size: 1,000 Variances: Title 5 Acton Code

Last Five Dates Pumped: (1) 3-17-83 (2) (3) (4) (5)

Grease Trap: Gasoline Trap:

Problems indicated on slips: (1) (2) (3) (4) (5)

Water supply: Public -x- Private _____

File completeness: As-built plan -x- Proposed Plan _____ Permits -x-
Certificate of Compliance -x-

Date system constructed: 11-14-71 Date most recent repair: N/A

Underground Storage Tank: N/A Date Installed: N/A Size: N/A Contents: N/A

Prescribed pumping interval: 2 Years

Use: Residential -x- Commercial Industrial Number of dwelling units: -I-

Remarks: Waste Water District FP-7 Aquifer District 4

This is a file summary for each parcel.

Town of Acton
Wastewater Management Plan

SEPTAGE PERMIT

TOWN OF ACTON
SEPTAGE MAINTENANCE PROGRAM
472 MAIN STREET
ACTON, MA 01720
TEL (978) 264-9634

DISPOSAL COMPANY:

NAME: _____

DATE: _____

DRIVER: _____

TEL NO: _____

DISCHARGE LOCATION: _____

PERMIT EXPIRES _____
DATE

SEPTAGE FROM:

NAME: _____

ADDRESS: _____

TEL NO: _____

TRUCK CAPACITY: _____

GALLONS DISCHARGED: _____

This document is a septage permit which is required for any septage disposal other than Upper Blackstone.

Town of Acton
Wastewater Management Plan

AC 5201

SEPTAGE PERMIT

UPPER BLACKSTONE
Water Pollution Abatement District
Route 20
Millbury, Mass. 01527
Tel. (508) 755-1286

Disposal Company:

Name: _____ Date: _____

Driver: _____

Tel. No: _____ Permit No: _____

Permit Expires: _____ Date Permit Issued By: _____
City or Town

Septage From:

Name: _____ City or Town: _____

Address: _____
Street & No.

Tel. No: _____

Truck Capacity: _____ Gallons Discharged: _____

Received By: _____

UPPER BLACKSTONE

This is a septage permit required by Upper Blackstone

**Town of Acton
Wastewater Management Plan**

Acton Board of Health Pumping Report

SEPTAGE HAULER: _____

DATE: _____

ADDRESS: _____

OWNER: _____

GALLONS PUMPED: _____

GREASE TRAP: _____ SEPTIC TANK: _____

ROUTINE: _____ Y _____ N

BLOCKAGE: _____ Y _____ N

ACTION TAKEN:

PEROX TREATMENT: _____ Y _____ N

Acton Board of Health Pumping Report

SEPTAGE HAULER: _____

DATE: _____

ADDRESS: _____

OWNER: _____

GALLONS PUMPED: _____

GREASE TRAP: _____ SEPTIC TANK: _____

ROUTINE: _____ Y _____ N

BLOCKAGE: _____ Y _____ N

ACTION TAKEN:

PEROX TREATMENT: _____ Y _____ N

These are pumping records that must be submitted by each pumper on a monthly basis.

**Town of Acton
Wastewater Management Plan**

The following Pages are application forms each hauler must submit on an annual basis.

TO: Applicants for Licensed Septage Hauler
FROM: Acton Board of Health
SUBJECT: Application Procedures

All parties who wish to become a licensed septage hauler in the Town of Acton must complete the information requested below and forward it to this office with an executed copy of the attached statement. Once these documents have been received, an inspection of the vehicle may be scheduled.

Name of Business: _____

Name of Owner: _____

Business Address: _____

Type/Capacity of Vehicles: _____

Number of Vehicles: _____

Please provide a statement from any treatment plant that will accept septage from your company. This must be provided on the treatment plant's letterhead. Otherwise, all waste must be taken to Upper Blackstone in Millbury, MA.

Fee for License: \$ 75.00 per year

Town of Acton
Wastewater Management Plan

APPLICATION FOR SEPTAGE HAULER'S PERMIT

1. Applicant

Name: _____

Proprietor - if corporation, officer(s): _____

Business Address: _____

Phone: _____

Driver(s) Name(s): _____

2. Vehicle

Make: _____ Year: _____

Registration Number: _____

Capacity in Gallons: _____ Last Inspected: _____

3. Other Towns in which Applicant is Licensed

_____ License #: _____

_____ License #: _____

For Office Use

Fee Paid: _____ Condition of Truck: _____

Applicant in Receipt of Appropriate Acton Regulations? _____

Approved: _____ License Number: _____

Pursuant to Massachusetts General Law Chapter 62C, Section 49A, I certify under the pains and penalties for perjury that I, to the best of my knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

Social Security Number or
Federal Identification Number

Signature of Individual or
Corporate Name

Corporate Officer (if applicable)

Town of Acton
Wastewater Management Plan

This is a current list of Licensed Haulers in Acton

95-01SH	Dracut Sewer 344 Aiken Avenue Lowell, MA 01850 508-452-4851
95-02SH	Action King Ent., Inc. 26 Livingston St. Lowell, MA 01850 508-452-7750
95-03SH	ABC Cesspool 292 High Street, Acton, MA 01720 508-263-5802
95-04SH	Colonial Septic 2 Eastern Road Acton, MA 01720 508-486-4589
95-05SH	Raggs Septic Service d/b/a E.A. Comeau P.O. Box 1027 Concord, MA 01742 508-369-1100
95-06SH	Lakeside Sewerage 780 Bigelow Street Marlboro, MA 01752 508-485-1063
95-07SH	Acton-Concord Septic P.O. Box 1142 Concord, MA 01742 508-897-6414
95-08SH	Mid-State Sewerage 42 Burbank Street Millbury, MA 01527 508-865-6989
95-09SH	Sears & Schofield 80 Union Avenue Sudbury, MA 01776 508-443-8985

Town of Acton
Wastewater Management Plan

95-10SH	Dufours Pumping 210 Whitcomb Avenue Littleton, MA 01460 508-486-3322
95-11SH	Middlesex Sewer Svs. 3 Gauthier Lane Westford, MA 01886 508-264-0440
95-12SH	Beland Septic 2 Cherry Street Hudson, MA 01749 508-562-1643
95-13SH	Casaceli Trucking 5 Coolidge Street Hudson, MA 01749 508-562-6477
95-14SH	Sewer Man PO Box 290 N. Billerica, MA 01862 508-667-1144
95-15SH	F.J. Ratta 19 Westford Road Acton, MA 01720 508-263-4010
95-16SH	BEST Sanitation 453 Brokelman Road Lancaster, MA
95-17SH	G.A. Nichols P.O. Box 758 Acton, MA 01720 508-263-0996

Town of Acton
Wastewater Management Plan

UPPERBLACKSTONEWATERPOLLUTIONABATEMENTDISTRICT

Route 20, Millbury, Massachusetts 01527

Telephone: (508) 755-1286

Chairman: Charles S. Woodbury

Vice-Chairman: G. Henry Utter

Secretary: F. Worth Landers

Engineer-Director-Treasurer: A. Arthur Levesque

January 30, 1991

Mr. Doug Halley
Health Director
Office of The Board of Health
Town Hall
472 Main Street
Acton, Massachusetts 01720

Dear Mr. Halley:

I have enclosed two (2) copies of the Septage Renewal Agreement between the District and the Town of Acton.

You have requested a five (5) year term. Due to our NPDES Permit being up for renewal and the uncertainty of what the new permit will entail, our Board of Directors, upon the recommendation of the Engineer-Director-Treasurer, has allowed a three (3) year renewal.

Also, the current Department of Environmental Protection Certification Letter expires in 1992. Please obtain a certification to cover the full term of this renewal agreement and have a copy forwarded to the District.

Upon obtaining signatures from the Board of Health of the Town of Acton, please return both copies to me. At that time, our Board will act upon this agreement and upon signature, I will forward one (1) duly executed copy to you for your files.

Should you have any further questions, please contact my office.

Thank you.

Very truly yours,
UPPER BLACKSTONE WATER POLLUTION
ABATEMENT DISTRICT

Karen A. Grubber
Administrative Assistant

/kag
enclosure

Town of Acton
Wastewater Management Plan

AGREEMENT to become effective on this _____ day
of _____ 198 , between the UPPER BLACKSTONE WATER POLLUTION ABATEMENT
DISTRICT, a Massachusetts corporation, established under Chapter 752 of the Acts of 1968, as most
recently amended by the General Court of the Commonwealth of Massachusetts, by and through its Board
(herinafter called the "District"), and the Town of ACTON _____ by and through the ACTON
Board of Health (hereinafter called the "Town");

WHEREAS the District, under the provisions of Chapter 222 of the Acts of 1972, as most
recently amended, and of Chapter 99 of the Acts of 1977 of the General Court of the Commonwealth of
Massachusetts, is authorized to enter into agreements to accept, collect, treat and dispose of sewage, with
political subdivisions of the Commonwealth; and

WHEREAS the Town of ACTON _____ has requested the District to assist the Town in
the disposal of septage from domestic sanitary sewage (hereinafter referred to as "septage"), as that term
is defined in the State Environmental Code - Title V of the Department of Environmental Protection
(D.E.P.); and

WHEREAS the District has constructed the necessary facilities at its new regional
wastewater treatment plant to handle septage; and

WHEREAS the Department of Environmental Protection has approved the plan for the
Town to dispose of said septage; and

WHEREAS the District, under the provisions of the aforesaid Chapter 752, as amended, is
authorized to consider and undertake solutions to regional sewage problems;

Town of Acton
Wastewater Management Plan

NOW, THEREFORE, in consideration of the promises between the District and the Town, and in further consideration of certain payments by the Town to the District, as hereinafter set forth, it is agreed as follows:

A. The Town shall submit to the District a Plan or adopt Exhibit A, whereby its septage shall be contained and delivered to the District's plant in specially equipped motor vehicles that shall comply with the requirements of the Boards of Health of the Town and of the City of Worcester, as provided in the Plan of Procedure (a copy of which is attached and marked Exhibit A); The Town shall also annually submit a list of septage haulers licensed by the Town (Exhibit D);

B. The Town shall comply with the Regulations of the District pertaining to the pumping, transportation and dumping of the Town's septage;

C. The Town shall authorize the proper officials of the District to inspect in a reasonable manner the equipment, motor vehicles and operations thereof used in the transporting, storing, pumping, dumping, delivering and disposing of the Town's septage in -the District's plant;

D. The Town shall pay to the District monthly the charges which shall be computed in accordance with a formula attached hereto, incorporated herein and marked Exhibit B; the District shall submit bills to the Town monthly and the Town shall pay within 29 days of receipt of said bills;

E. The District agrees:

1. to allow the Town to dispose of its septage in the District plant;
2. to accept, treat and dispose of all of the Town's septage delivered by the licensed truckers to the District plant;

Town of Acton
Wastewater Management Plan

F. The Town and the District agree that this Agreement shall terminate upon the happening of any one of the following events,.

1. A change in the political status of either the District or the Town;
2. If the Town or District fails to comply with any of the provisions of this Agreement;
3. If the Town and the District agree in writing to terminate;

G. The Town shall neither be a member of the District nor acquire any rights of membership in the District by virtue of this Agreement;

H. The Town and the District agree that this Agreement shall be renegotiated after three (3) years from the date of this Agreement, but during said period of renegotiations the terms of this Agreement shall remain operative, binding and effective; the renegotiation shall commence six (6) months prior to the expiration of said three (3) years; the District at that time shall submit to the Town a proposed new agreement, and the District and the Town agree to negotiate quickly and in good faith until said new agreement is executed. If no agreement is reached within six months of the expiration date, the contract is automatically terminated.

I. The Town and the District agree that the formula as discussed above and as contained in Exhibit B may be recalculated annually, dependent upon the strength of the District's sewage and the average strength of septage, and costs will be based upon the District's budgeted cost for the fiscal year during which the service is provided including O & M replacement cost and depreciation.

J. In order to allow for budgetary planning by the Town, the District will submit its anticipated costs for the next fiscal year as early as possible after the close of the current year, (i.e. recalculated Exhibit B).

K. It is understood by all parties to this Agreement that the District reserves the right to temporarily, indefinitely, or permanently impose a reduction or discontinuation of the acceptance of the material covered by this Agreement if deemed necessary by the District Board. The causes of such actions may include but not be limited to the following:

1. Either process or equipment problems at the District Plant;
2. Odor complaints;
3. Directives by the Department of Environmental Engineering;
4. Changes in the District's NPDES discharge permit or other US EPA and MA DEP regulations.

Town of Acton
Wastewater Management Plan

APPROVED as to Legal form
and execution:

Legal Counsel, UBWPAD

UPPER BLACKSTONE WATER
POLLUTION ABATEMENT DISTRICT

BY: _____
Chairman

BY: _____
Vice Chairman

BY: _____
Secretary

DATE: _____

TOWN OF: ACTON

BY: _____
Title

BY: _____
Title

BY: _____
Title

BY: _____
Title

Sewer Commissioners/or
Board of Health

EXHIBIT A

PLAN OF PROCEDURE

1. A separate numbered septage permit must be obtained from the Board of Health by the trucker before he opens and empties a cesspool or septic tank. Five (5) copies of such permit to be issued as follows:

1. Board of Health;
2. Trucker;
3. Sewer Department;
4. District plant;
5. Miscellaneous.

Trucker will not be allowed to dump until presenting the permit slips, (i.e. ACTON Sewer Department copy and District copy) to the District.

2. The contents of each truck shall be transported in a manner that will not create a nuisance or health hazard.

3. Mobile tanks shall be securely mounted on trucks. They shall be watertight, and provided with a leak-proof cover and tight discharge valves.

4. Mobile tanks shall be provided with a vent constructed in a manner that will permit the escape of gas, but not the liquid contents.

5. Suction or pressure hose shall be in good repair.

6. Pumps shall be maintained in a condition that will prevent the leakage of septage.

7. Only domestic sanitary septage may be dumped; no industrial waste is to be allowed.

8. Each trucker must have a proper septage license, issued by the Board of Health on January 1 of each year, to empty septage.

Town of Acton
Wastewater Management Plan

EXHIBIT C

The Department of Public Health of the City of Worcester has revised its regulations relative to the transportation of offensive substances to prohibit all vehicles carrying offensive substances from traveling northbound or southbound on Greenwood Street and Massasoit Road.

M.G.L. Chapter III provides the statutory authority to local Boards of Health, and Section 31, as most recently amended, has increased the fine for a violation from \$200.00 to \$500.00.

The provisions of Section 31 of Chapter III of M.G.L. as most recently amended reads as follows:

"Boards of health may make reasonable health regulations. All regulations made by boards of health under this chapter shall be published once in a newspaper published in the town, and such publication shall be notice to all persons. Whoever, himself or by his servant or agent or as the servant or agent of any other person or any firm or corporation, violates any reasonable health regulation, made under authority of this section, for which no penalty by way of fine or imprisonment, or both, is provided by law, shall be punished by a fine of not more than five hundred dollars".

Section 31 A reads in part as follows:

"Notwithstanding the foregoing provisions, any person may, without such a permit, transport garbage, offal or other offensive substances through the streets of a city or town in which said substances were not collected; provided, that he registers with the board of health of such city or town; and, provided further, that he transports said substances in accordance with such reasonable rules and regulations as may be established by such board of health. Motor vehicles owned by the commonwealth of any of its political subdivisions and motor vehicles engaged under contract with the commonwealth in the transportation of garbage or refuse shall be exempt from the provisions of this section: provided, however, that a city or town may recommend to the department of public works, in writing, an alternative route of travel for such motor vehicles whereby the noise or nuisance incident to such travel shall be minimized or abated and said department shall consider such alterations or changes in the travel routes of such motor vehicles as will result in the minimization of such noise or nuisance".

Town of Acton
Wastewater Management Plan

TOWN OF ACTON

EXHIBIT D

Company Name/Address

Telephone No.

Permit No. Expiration Date Capacity/gals. State Reg. No.

0

IT

ATTACHMENT “C”

Town of Acton
Wastewater Management Plan

**SUBJECT: Information and Contact Management Program
for On-site Wastewater Disposal**

BACKGROUND

The Town of Acton presently uses on-site disposal of domestic sanitary waste for most private dwellings. Although evaluation of the installation of a system of sewers and treatment facilities continues, full realization is unlikely for many years. Therefore a program of active, continuing monitoring of individual systems is a necessity, to assure the maintenance of ground water quality.

COMPUTER USAGE

For a number of reasons the core of such a monitoring program should be computer based. To be confident that the status of all seven thousand (more or less) individual systems is up to date a sequence of letters, inspections and status updates should be initiated. A record of each activity should be easily accessible. Certain conditions at any one system may require immediate attention even though that system is not scheduled for action. Periodic reports for the use of the staff and presentation to Town and State authorities must be generated. Summary reports for quick on-screen access should be available, so that telephone or personal visit questions can be answered. Updating of data should be easy, with input screens which are efficient and friendly to the user. Access should be limited by a series of passwords to allow various levels of interaction, for example some users might only view the data while others might initiate letters and still others might actually edit the contents of the databases. A "fool resistant" system of data back-up should be in use constantly

COMPUTER RESOURCES

The Town Assessor's office presently keeps records on a DEC mini-computer. I understand that a network link to access the data from individual PC's in the Health Department is either in place or can be established easily. Such an access would facilitate the keeping of basic data such as addresses and lot locations.

The Health Department's PC's are connected by a network, which also includes a high-speed laser printer.

The databases would reside on one "server" PC while the program would reside on the individual PC's. File and record locking would prevent conflicting changes.

For a medium sized database system like this, speed is essential. The hardware and operating systems should be as quick as possible, particularly for the server.

SOFTWARE RESOURCES

Most of the functions of *ACTNOW!* will be programmed through a commercial data base management program such as dbase or Alpha5. Under normal use the underlying program will be invisible to the user and all screens and menus would be custom designed.

THE PROPOSED PROGRAM SYSTEM.

As delivered, *ACTNOW!* will include the following capabilities:

- I. A scheduling agent, which can be set up to precipitate any schedulable events.
 2. A reviewing agent, to scan the history of events and assign priorities for action based on aging of previous actions.
 3. A document writing agent to enable users to write single documents or prepare templates for multiple documents. Once prepared, a template can be easily accessed manually or as a part of the scheduling and reviewing agents.
 4. An importing agent to permit direct input of data from other departments.
 5. A quick access agent to provide rapid on-screen display of data.
 6. An editing agent to manually change or add data.
 7. A help agent to assist the user during input and reporting.
 8. A reporting agent to
 - a. Print template-based letters.
 - b. Print reports for internal or municipal/state distribution.
 - c. Print system statistics and status.
 9. A backup agent to automatically or manually back up the data.
 10. A security agent to permit or deny various levels of access based on passwords. (Usually only users at a higher level of access may change passwords for a given level and below.)

Town of Acton
Wastewater Management Plan

INCLUDED SERVICES

As detailed later, under AGREEMENT, ACTNOW! will include the compiled computer program system, user manuals and technical data sheets, installation and regularly scheduled visits to instruct the users and review the system. The program as delivered will be as bug-free as I can make it, and if bugs emerge during usage I will remove them and upgrade the installation. I will remain on-call and retain responsibility for bugs for a period of two years following acceptance of this proposal.

DISCLAIMER

The program *ACTNOW!* and all accessories and amenities will be delivered as bug-free and accurate as possible. Because *ACTNOW!* is specialty designed for your use the final testing will be in actual use at your office. Neither I nor the manufacturers of the hardware and software which are included with *ACTNOW!* can guarantee or indemnify the accuracy of the data or the proper operation of all parts of the program, beyond the services specifically mentioned herein.

USER ACTIVITIES

The Health Department ("TOWN") will perform all activities which have to do with practical use of the program, such as composing letters, inputting data and setting up schedules. It will be the TOWN'S responsibility to designate personnel to operate the program. I suggest the following operator descriptions:

Executive in Charge (EIC): Has access to all functions and is responsible for all personnel assignments. Approves proposed schedules, letters and data. Needs not to be expert in the use of the program but relies on the Lead Operator for advice.

Lead Operator: Has access to all functions. Is responsible for teaching the program and answering questions. Is authorized to call for technical support. Acts as substitute for EIC in assigning personnel tasks. Maintains the physical system and is responsible for maintaining backups of the program and data.

Operator(s): Has access to functions as determined by EIC. Inputs data and letter formats, produces letters and reports. Assists Lead Operator and refers technical questions to her/him.

Reader: Can view data at the console and print specific records, for service to the public.

During the preparation and debugging periods the Town will assist by inputting specimen data and letter forms, and by reviewing formatting and user environment.

AGREEMENT

A. This Agreement

1. Is between The Town of Acton, Massachusetts, Health Department ("TOWN") and The Civil Engineers, Inc., 790 Elm Street, Manchester, NH ("TCE").
2. Robert Shiffman, Principal officer of TCE, shall be primarily responsible for all aspects of the work.

B. Description of work:

1. TCE shall design a computer-based system for the use of the TOWN which shall be an information and contact management system to facilitate the management of residential on-site septic waste disposal systems.
2. The computer system shall be identified herein as "*ACTNOW!*" or "The Program."
3. *ACTNOW!* shall consist of software and documentation but shall not include hardware or replaceable supplies.
4. TCE's services shall be as described herein and in the letter of proposal of which this Agreement is a part.
5. TCE shall also purchase and provide to the TOWN certain commercial software and licenses as component parts of the Program.
6. TCE shall also prepare an operator's manual which shall include complete instructions for the use of the Program.
7. TCE shall also work continuously with representatives of the TOWN during preparation of the Program to assure that it is suitable for the TOWN's use. A maximum of six personal visits to the TO" during Program development is included.
8. TCE shall also assist in installing the Program on the TOWN's computers.
9. TCE shall also instruct the operators in the use of the program. Two days of instruction are included.
10. TCE shall also make adjustments to the Program after installation to correct errors in operation ("bugs") but shall not change the Program's interface or operation after it is installed. TCE shall accept responsibility for bugs which appear within a two-year period following the initial installation.

Town of Acton
Wastewater Management Plan

11. TCE shall also make periodic visits to the TOWN, either scheduled or as requested, to answer questions or assist in troubleshooting. There may be a maximum of two visits in a month or a maximum of twelve visits for a period of two years following the initial installation.

C. Responsibilities of the TOWN

1. The TOWN shall provide and set up all hardware required for use of the Program, including computers, networking, backup devices, interface with other computer systems, and all peripheral devices.
2. The TOWN shall also provide and install all software which is needed but tangential to the Program, including the Windows 95 operating system and any networking or other system software.
3. The TOWN shall also cooperate with TCE in development of the Program by promptly reviewing submittals and questions.
4. The TOWN shall also provide sample data and forms on disk for use during development.

D. Payment

1. Invoices will be rendered monthly based on the pro-rata portion of the work accomplished to date plus any extra costs. Payment will be due immediately.
2. A retainer in the amount of twenty percent of the total lump sum price will be due upon execution of this Agreement and shall be a part of the Authorization to Proceed. This retainer will be retired as a percentage of each monthly invoice, so that no retainer remains after the final invoice.

E. Extra Costs

1. Included in the lump sum price herein are all foreseeable expenses and costs such as personnel time, travel and meals, correspondence and overhead.
2. Not included and identified as Extra Costs are:
 - a. Overnight accommodations if they become necessary.

Town of Acton
Wastewater Management Plan

- b. Software purchased for inclusion in *A CTNOW!* A budget of three thousand dollars is suggested. TCE must have cash in advance for software or the TO" may purchase it directly. The software must be available for use promptly after authorization to proceed is given.
- c. Travel expenses to sites other than Acton, if requested by the *TOWN*.
- d. Site visits beyond those specified herein.

F. Schedule

1. The work shall be done within the following schedule:
 - a. Begin the work: Upon execution of this Agreement and payment of the retainer.
 - b. Deliver and install the Program: Five months after the work begins.
 - c. Deliver the program manual and train the operators: One week after installation.
 - d. Continue to support and debug as herein described. Two years after installation.

G. Authorization to Proceed.

1. Execution of this agreement and payment of the specified retainer shall constitute Authorization to Proceed.

H. Liability

1. TCE shall not be liable for programming errors, data or commercial software included with the Program, except as specifically mentioned herein.
2. TCE shall not be liable for damages consequent to the use of the Program.
3. TCE shall not provide analyses or testimony about the data or the Program.

I. Grant of License

1. TCE hereby grants to the TOWN and the TOWN hereby accepts a permanent non-exclusive license to use the Program, subject to the terms and conditions of this agreement. Use of the Program by the TOWN shall be limited to employees of the TOWN processing data relating to septic systems physically located within the *TOWN*.

Town of Acton
Wastewater Management Plan

2. Any news releases or publicity including the Program shall include the logo "ACTNOW!" and acknowledgment of The Civil Engineers, Inc. as its author.

J. Price

1. The total lump sum price for all the work herein described exclusive of Extra Cost items will be Thirty-Nine Thousand Dollars (\$39,000).
2. The amount of the retainer shall be Seven Thousand Eight Hundred Dollars (\$7,800).
3. The suggested budget amount for commercial programs is \$3,000.

Execution of this Agreement

1. For the Town of Acton, Massachusetts Health Department:

2. _____(Date) _____
Douglas Halley, Health Director

For The Civil Engineers, Inc.

_____(Date) _____
Robert Shiffman, Principal

ATTACHMENT “D”

Town of Acton
Wastewater Management Plan

A. To get into program:

1. STMS (double click)
2. Acton, Massachusetts (double click)
3. Make sure "Parcels" is checked and highlighted (on left border)
4. Standard Queries (click)
5. Find address with search (click)
6. Type in address
7. Click Thumbtack (Select Property for Data Entry)
8. Click area that is yellow
9. "Create a new summary " yes

Health Department Summary Sheet screen will appear (*Sample Pg. 1*)

B. To enter data

1. Click Update (bottom of screen)
2. Click Septic Construction Repair
3. Click Add Construction (or Repair)
4. If number appears: Click to left of number (will highlight blue)
5. Click View

C. Entering data

- Use TAB button to move from field
- Do not use delete (backspace instead)
- Only enter information that is there
- Update saves data
- OK saves and closes down screen

LOCATION (*Sample Page 2*)

1. Enter No (Year, permit # NR(new) or RR(repair) ex. 63-64NR
2. Fee (usually on permit or application)
3. Lot no. (Usually on application or permit)
4. Street: Type in address (make sure address matches)

TYPE OF BUILDING

Lot size, no. Of bedrooms, type of building (Residential or Commercial)

OWNER (Click)

1. Name and address on application

INSTALLER (Click)

1. On Certificate of Compliance

DISPOSAL SYSTEM (Click) (*Sample Page 4*)

Most often entries will be in Liquid Capacity (Septic Tank) and Leaching (Disposal Trench) Information is on application form permit, or microfiche

For repairs - fill in Nature of Repairs if information is available

PERCOLATION TEST RESULTS (Click) (*Sample Page 5*)
Information for this is often found on proposed plan (microfiche)

AGREEMENT (*Sample Page 6*)
For "Applicant" use signature on application permit

Click OK when done (goes back to Health Department Summary Sheet)

HEALTH DEPARTMENT SUMMARY SHEET (*Sample Page 1*)

Septic System: Check appropriate system

Public Water or Private Water (Check well list on Sharon's desk - if on list = private water)

File Completeness: Check what is in folder or on microfiche and check what is available

Leaching Area: Often found on back of application (older forms) or on microfiche.

Tank Size: Often found on back of application (older forms) or on microfiche.

Date constructed: Use date on Certificate of Compliance or As Built

Most Recent Repair: Use date on Certificate of Compliance (of repair) or As Built

Pumping Interval: Always "2" (residential) (Commercial = 1)

FORMS:

Pumpout (Click) Add (Click): (*Sample Page 7*)

Type information from pump slips

Pump Hauler Name, System Owner, Type (septic),

Pumpout date, Gallons pumped

Type OK and Add (to add more slips)

*once you type in this field, information cannot be deleted

Title V Inspection (*Sample Page 8*)

If in system, Click View. If not in system, Click Add

Type in information from Title V Inspection Report.

*Date signed will be before date of inspection - hopefully this will be corrected. (For files already in the system)

Aquifer Protection Area

(Paper may be stapled with Building Permit)

Type in information from Aquifer Application, License (if available)

To end: Update

OK

Town of Acton
Wastewater Management Plan

Sewerage Disposal System Construction Permit
 Disposal Wastewater Construction Permit
 Certificate of Compliance
 Construction of Sewerage Disposal System
 Construction of Sewerage Disposal System

BOARD OF HEALTH
 Town of Acton

Application for Disposal Wastewater Construction Permit

Construction of Sewerage Disposal System
 an Individual Sewerage Disposal System at

Sewerage Disposal System
 Disposal Wastewater

Design Flow: gallons per person per day
 Total daily flow: gallons

Capacity: gallons per day
 Capacity: gallons

Capacity (gallons per day)	No.	Diameter	Depth Below Grade	Capacity (gallons per day)	No.	Diameter	Depth Below Grade
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Capacity (gallons per day)	No.	Diameter	Depth Below Grade	Capacity (gallons per day)	No.	Diameter	Depth Below Grade
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Capacity Distribution Box
 Number of Repairs or Alterations:
 Assessor when applicable:

Doing Work
 See Plan

Town of Acton
Wastewater Management Plan

Board of Health
Town of Acton

Individual Sewer Disposal System

Depth of ground water

Depth of ground water

Date

Date

Print

Exit

Town of Acton
Wastewater Management Plan

Pumper/Hauler			
Name:	<input type="text" value="Sears"/>		
System			
Owner:	<input type="text" value=""/>		
Address:	<input type="text" value="381 MAIN ST"/>		
Map/lot:	<input type="text" value="F3-95"/>		
<input checked="" type="checkbox"/> Septic Tank	<input type="checkbox"/> Cesspool	<input type="checkbox"/> Grease Trap	
Pumping			
Date:	<input type="text" value="6/12/97"/>	Gals. Pumped:	<input type="text" value="1000"/>
<input type="checkbox"/> Routine	<input type="checkbox"/> Overflow		
<input type="checkbox"/> Blockage	<input type="checkbox"/> Perox Treatment		
Action Taken:	<input type="text" value=""/>		
<input type="button" value="Print"/>	<input type="button" value="OK"/>	<input type="button" value="Cancel"/>	

Acton Board of Health

Application for Special Permit

Aquifer Protection Areas

Applicant:

Name:

Mailing Address:

Application Date:

Phone:

System:

Address:

301 MAIN ST

Aquifer Zone:

Proposed Flow:

Site Acreage:

Dist to Town Well:

Proposed Use:

File Completeness:

Permit

Location Plan

Construction Plan

License Issued

License Number:

Date Issued:

Fee:

Signed By:

Print

Ok

Cancel

ATTACHMENT “E”

Acton Board of Health

Water Analysis Laboratory

MANUAL

prepared by Sharon Walker Mastenbrook, Sanitarian

March 23, 1995

I. Introduction

A. Purpose of Laboratory

The purpose of the Water Analysis Laboratory is to test natural surface waters and chlorinated recreational waters of Acton for bacterial contamination. Such contamination renders waters capable of transmitting disease to humans. The Water Analysis Laboratory has the capability to evaluate these waters in a short period of time with numerical results.

Water samples are tested for the presence of total coliform and fecal coliform bacteria. The coliform group includes "all of the aerobic and facultative anaerobic, gram-negative, non-sporeforming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 350C on an Endo-type medium containing lactose" (*Standard Methods*, p. 9-83). These usually non-pathogenic bacteria are well-studied indicators of the suitability of water for domestic, industrial, recreational, or other uses.

Fecal coliforms are a subgroup of the total coliform group of bacteria. The most common fecal coliform is *Escherichia coli* (*E. Coli*). One distinguishing characteristic of *E. coli* is its ability to incubate at 44.50C, rather than the 350C temperature required to incubate the total coliform group. The higher incubation temperature allows for the testing of water exclusively for fecal coli (because the other coliforms die at 44.50C).

Positive fecal coliform readings indicate the presence of warm-blooded animal waste (agricultural runoff, animal activity, human waste from failed septic systems or sewers). Positive total coliform readings indicate the presence of warm-blooded animal waste as well as the presence of bacteria from non-fecal sources (soil, plants). The significance of these bacteria is that they indicate the potential presence of other disease-causing organisms. These other organisms can be a public health threat.

B. Analysis Method

There are two basic methods for analysis of coliform bacteria: 1) the multiple-tube fermentation procedure and 2) the membrane filter technique. The Laboratory utilizes the membrane filter (MF) technique, a popular, standard method of analysis which allows the direct count of bacteria. The W technique ". . . is highly reproducible, can be used to test relatively large volumes of sample, and yields numerical results more rapidly than the multiple-tube procedure" (*Standard Methods*, p. 9-82).

The MF technique ". . . has limitations, particularly in testing waters with high turbidity and noncoliform (background) bacteria" (p. 9-82).

The MF Technique uses a vacuum procedure to filter coliform bacteria from a measured water sample onto filter paper. The filter is placed in a petri dish with growth medium and incubated for 24 hours. Equipment and supplies for the MF technique come from Millipore of Bedford, Massachusetts.

Town of Acton
Wastewater Management Plan

C. Results

The successful analysis of a water sample yields meaningful results. During incubation any coliform bacteria present on the sample will grow on the filter paper in the petri dish. At the end of 24 hours, the filter is examined. Any colonies growing on the filter are counted. The colonies are visible by the naked eye or by magnification. One assumption behind the counting of the colonies is that each coliform organism will grow one colony. Another assumption is that there is a direct correlation between the number of colonies present and the amount of pollutants in the sample. The count is reported in colony forming units/100 milliliter (CFU/100 ml). Action levels are stated in this unit as well.

Analysis of results for one sampling may indicate the presence of a pollutant. Analysis of results over time and over a large geographic area may also indicate natural seasonal fluctuations in water quality as well as any problem area.

II. Procedures

A. Sample Collection

1. Method of Collection

Samples are collected by the grab or catch method. The sample is placed in a sterile 200 ml (8 oz) polypropylene container with a lid. Samples are taken by placing the container in the hand and scooping out water from the source or by placing the container in a device for holding the container and scooping water from the source.

2. Procedure

Label each container with the location of the sampling site. Record the date and location of each sampling in a Field Log Book. Record any details of each sampling site which seem unusual (odor, very high or low water levels, etc.)

- Plunge container (with opening pointing downward) below the water surface
- Turn container underwater into the current
- Remove container and immediately place lid on container
- Do not place fingers or collection tool into container
- Do not sample from the surface because surface film may contain greater numbers of coliform bacteria than is representative of the water source
- Do not sample sediments because sediments may contain greater numbers of coliform bacteria than is representative of the water source

3. Safety Concerns

Care should be taken to be safe when collecting a sample. Do not collect a sample if conditions are dangerous (too much ice or snow, heavy rain, etc.). Wear rubber gloves, and wash hands after sampling.

Town of Acton
Wastewater Management Plan

B. Sample Storage

In the field, filled sample containers are placed in a wire rack. The rack should be placed inside a cooler with ice or an ice substitute when ambient air temperature exceeds 130C (approximately 560F), but especially in hot weather. Cooling the samples minimizes biodegradation of the samples during transportation.

Samples are brought back to the Board of Health. They are refrigerated until processed. Samples should be processed as soon as possible: within 1 - 6 hours.

C. Steps of the Sample Analysis

1. Steps for Testing for Total and Fecal Coliforms in Natural and Chlorinated Waters:

- *Put on lab coat* (to prevent media from staining clothes) and disposable plastic gloves (to prevent staining the fingers with media, to prevent touching the sterile petri dishes, and to protect personal health).
- *Turn on both incubators:* The Millipore Desk Top Programmable Incubator (beige) should be set to 44.50C for fecal coliform incubation. The Millipore Laboratory Incubator (blue) should be set to achieve a temperature of 350C for total coliform incubation (setting # 2 on the dial: each number of the dial changes the temperature 50C).
- *Assemble incubation supplies:* media (m-Endo Broth [in petri dish becomes pink] and m-FC-medium [in petri dish becomes purple]), petri dishes, ampoule opener. Have one ampoule of each type of media and two petri dishes per water sample to be analyzed. Place these supplies on the aluminum tray. The tray serves as a work area.
- *Prepare the sterile petri dishes with media:* Label each petri dish by means of a blue grease pencil. Place the contents of one ampoule in one petri dish. Replace the cover to keep dish clean and to keep media from evaporating.
- *Prepare the filtering equipment.* Have alcohol swab and stainless steel forceps available to use when moving filters. Have one filter available for each petri dish to be used. *Always wipe the forceps with alcohol before using them to touch any filter.*

Place neoprene stopper (with glass base inserted) into the filter holder manifold.

Place one Teflon gasket in the recess in the glass base and place stainless steel filter support screen (with the screen surface up) on top of the gasket.

Using forceps (first wiped with alcohol) place one filter centered on each support screen.

Place one glass 300 ml funnel on top of each glass base with filter. Use aluminum spring clamp to hold funnel to base. Make sure the control on the manifold for each filter unit is turned so that the handle is parallel to the floor.

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Wastewater Management Plan

- *Prepare the samples:* Take samples from refrigerator. The samples are in 200 ml containers. Each sample to be tested should consist of 10 ml of sample and 90 ml of distilled water.
Place 10 ml of sample in the glass funnel. Add 90 ml of distilled water.
Repeat this procedure for as many samples needing testing.
- *Test the samples:*

Turn on vacuum pump. Check that collection flask is empty and connected to vacuum pump.

Pour one sample into one funnel (10 ml of sample plus 90 ml of distilled water). Turn manifold control to be perpendicular to the floor.

Allow sample to drain through unit. Pour distilled water into the funnel to rinse sides of funnel to dislodge any remaining bacteria. When funnel is empty, return manifold control to closed position (parallel to the floor).

Repeat this process until each filter has had one 100 ml sample pulled through it.

Turn off vacuum pump. Empty collection flask and pour contents into sink.

Open all the petri dishes containing the m-Endo media. Remove the glass funnel from one filtering unit. Using forceps cleaned with alcohol, carefully remove one filter and place grid side up in one petri dish. Close the petri dish and turn over.

Wipe forceps again with alcohol. Place a new filter on the filter support screen. Reassemble the filter unit to be used again.

Repeat the process for all petri dishes with m-Endo.

Pour the remaining diluted samples through the filter units. Place the second group of filters in the petri dishes with m-FC medium.

Place all petri dishes with m-Endo in the beige incubator. Place dishes upside down. Place all petri dishes with m-FC-medium in the blue incubator. Place dishes upside down.

Incubate samples for 18-24 hours.

2. Additional Steps for Testing Chlorinated Waters

When testing chlorinated water for total and fecal coliforms, it is necessary to deactivate the chlorine when the sample is taken. Failure to deactivate the chlorine will result in the possible alteration of the sample so that the sample will not reflect water quality at the time the sample was taken.

Use sterile containers with sodium thiosulfate to deactivate the chlorine. When collecting the sample from a swimming pool, take care to retain the sodium thiosulfate in the container. Plunge the container in the pool water at a depth of at least one meter (approximately 3.5 feet).
Follow sampling procedure and transport as stated above.

D. Reading Petri Dishes and Recording Observed Results

- Put on gloves.
- After the incubation period ends, remove all petri dishes from the incubators.
- Turn off the incubators.
- Turn on fluorescent light with magnification lens in place.
- Record the label of the sample being read
- Remove the top of the petri dish, if necessary.
- Count the number of distinct colonies seen:
Use the grid on the filter paper to help in counting. Count from top to bottom and right to left. Fecal coliform colonies are blue. Count all distinct blue colonies. Total coliform colonies are red with a metallic (gold)-green sheen. Count all distinct colonies with appropriate sheen. To observe sheen, hold petri dish approximately perpendicular to light.
- In Field Log Book, record the number of colonies observed for each sample. Make any other notes. Because the results are reported in CFU/100 ml, the counted results must be in this unit. Use the following formula to calculate results in the reporting unit:

$$\frac{\text{CFUs counted} \times 100}{\text{\# of ml in sample}}$$

E. Cleanup

1. Cleanup after Sample Preparation:

1. Disassemble all sampling glassware, and gather all other equipment (forceps, ampoule breaker, tray, graduated cylinders, etc.).
2. Put on rubber gloves.
3. Wash everything in hot, soapy water.
4. Rinse.
5. Place all membrane filter equipment on a large piece of aluminum foil and place in tray of autoclave. Cover equipment loosely with foil.
6. Place tray in autoclave.
7. Add approximately three cups of distilled water to autoclave.
8. Close autoclave door.
9. Turn on autoclave. The setting should be as follows: 1200C at 15 psi for 15 minutes.
10. After autoclave is cool, open door.
11. Remove tray.
12. Seal glassware with foil.
13. Remove glassware from autoclave.
14. Drain autoclave by inserting baster into autoclave and removing water.

Town of Acton
Wastewater Management Plan

2. Cleanup after Sample Reading:
 1. Place petri dishes in biohazard bag.
 2. Add one pint (2 cups) of distilled water to bag.
 3. Place rubber band loosely around top of bag.
 4. Place bag on autoclave tray.
 5. Place tray in autoclave.
 6. Add approximately three cups of distilled water to autoclave.
 7. Close autoclave door.
 8. Turn on autoclave. The setting should be as follows: 1200C at 15 psi for 15 minutes.
 9. After autoclave is cool, open door.
 10. Remove tray.
 11. Tighten rubber band.
 12. Place bag in trash.
 13. Drain autoclave by inserting baster into autoclave and removing water.

III. Quality Control Program

There is no quality control program possible in the water lab. Any quality control program would require sending a sample to a laboratory using the membrane filter technique and simultaneously testing part of the same sample in the Acton Water Lab. Then the results of the two tests on the same sample should be compared.

IV. Data Analysis

The water testing laboratory provides information about total and fecal coliform levels in natural and chlorinated waters. The natural waters are brooks and streams flowing through Acton. Fecal coliform levels indicate contamination from fecal material of animals or septic systems with breakout of sewage from the systems. Testing for fecal coliform levels is important in determining if there are septic problems in various parts of Acton. Total coliform testing of the natural waters is not necessarily indicative of failed septic systems because total coliforms can be found in non-fecal sources (plants and soil). Since brooks and streams flow over soil and plants, it is natural for some total coliforms to be present. Therefore, if the goal is information about septage flowing out of septic systems and into natural waters, fecal Coliform testing is appropriate because the only source of fecal coliforms are the intestines of warm-blooded animals, including humans.

Swimming pools, on the other hand, contain chlorinated water. The purpose of the chlorination of swimming pool waters is to disinfect the water so that no microbiological activity exists in the waters. Therefore, drinking water standards are appropriate for chlorinated swimming pools. Drinking water standards require testing for total coliforms.

Data analysis consists of recording test results in the log book. Studying results of testing at one location over time can reveal microbiological activity in the water at a particular location. Such historical records can show the health of particular bodies of water and their watersheds.

Town of Acton
Wastewater Management Plan

Results of testing on one particular occasion can reveal if tested waters are so polluted that immediate action is necessary to prevent a public health threat. The following table contains the action levels for natural and chlorinated swimming waters.

	Total Coliform Count	Fecal Coliform Count
Natural Waters		200 CFU/100 ml*
Swimming Pools	0 CFU/100 ml**	

*From *Massachusetts Surface Water Quality Standards*, 1990, p. 10, 80.

**From *Acton Rules and Regulations*, Article 9 (Minimum Sanitation Standards for Private and semipublic Water Supply), Section 9-3.2.2.

V. Bibliography

Standard Methods for the Examination of Water and Wastewater, 17th edition, 1989.

Massachusetts Surface Water Quality Standards, 1990

Acton Rules and Regulations, Article 9

105 CNM 435.000 Minimum Standards for Swimming Pools (State Sanitary Code: Chapter V)

Water Quality Parameters, National Environmental Health Association

Health and Safety Hazards at Recreation Areas, National Environmental Health Association.

Prevention of Injury and Disease at Swimming Areas, National Environmental Health Association.

Town of Acton
Wastewater Management Plan

9-21-95

To: Doug Halley
From: Sharon Mastenbrook
Re: nitrate testing

It is possible to test groundwater samples with a Hach kit. The range of the kit is 0-50 mg/l. The EPA drinking water upper limit is 10 mg/l. Personal safety supplies to support testing would probably include nitric acid to wash test kit test tubes, pan for holding nitric acid solution (1: 1) for washing, goggles or glasses, mask (?paper), and gloves. Demineralized water is also needed (approximately \$25.00).

In addition, a bailer is needed to collect samples. Ben Meadows sells PVC bailers for \$27 each. 600 ft of cord costs \$29.25. If aeration of sample is a problem, then a bottom emptying device is necessary for each bailer (\$15 each).

Cole-Parmer sells PVC bailers for \$22.50 each. Cord is \$23.25 for 100 ft. A bottom emptying device \$17.25 each.

If only one bailer is purchased, then it is necessary to have a procedure to clean the bailer after each use. Special soap costs approximately \$30.00 (at least a year's supply).

Therefore, it seems possible to start a nitrate-testing program with an approximate cost as outlined below.

Equipment	Individual Cost	Cost for One Year
Hach test kit	42.50/100 tests	42.50
Support equipment (nitric acid, pan, goggles or glasses, mask, gloves)	?200.00	200.00
bailer (PVC)	22.50	450.00 (for 20 wells)
cord	29.25 (600 ft)	29.25
demineralized water	?25.00/5 gal	?50.00

Town of Acton
Wastewater Management Plan

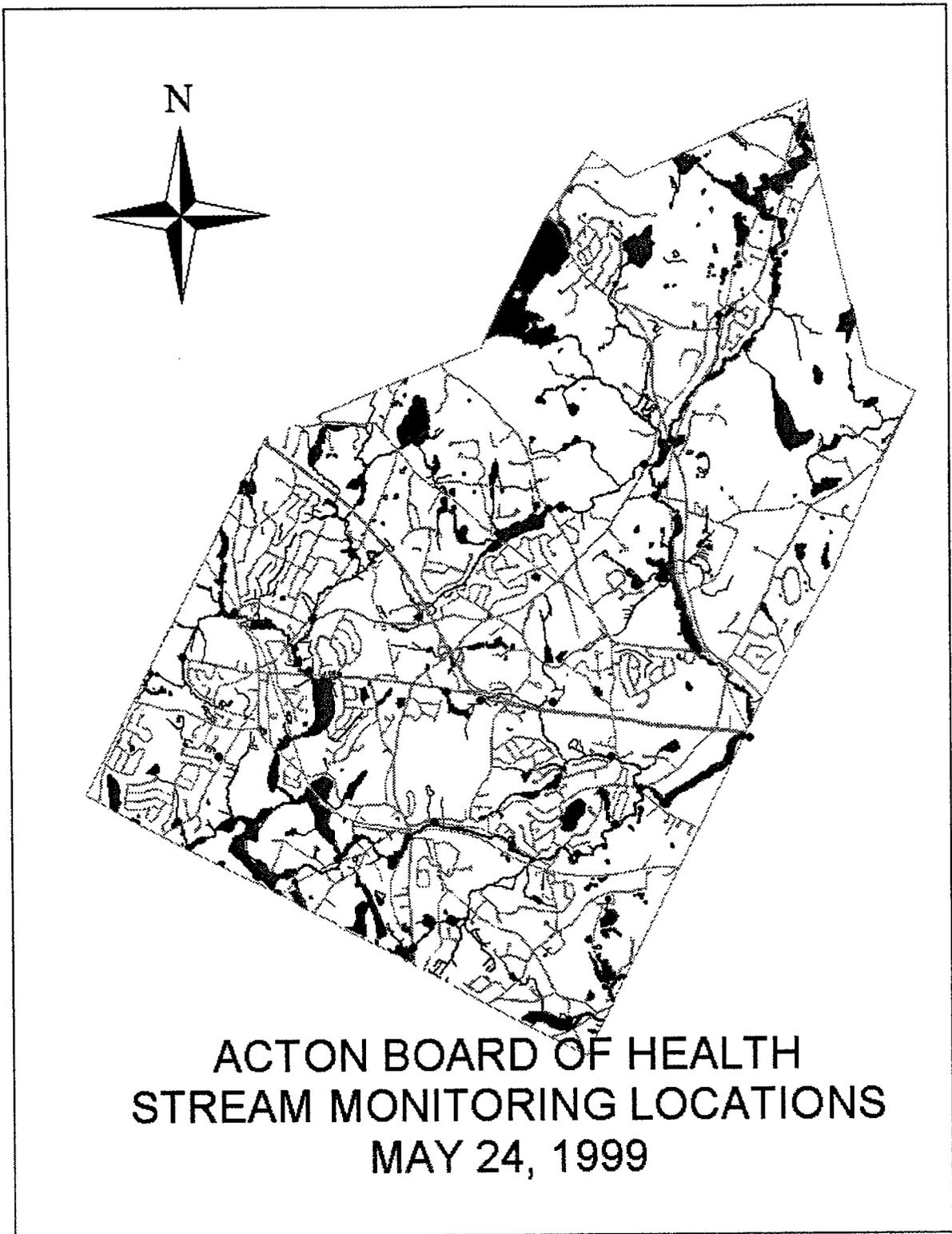
It is possible to buy one bailer and wash it after each sample collection. Washing would include taking two buckets into the field. One would have a special soap (approximately \$30.00 for at least a year's use) and the other would have demineralized water. After each sample taking, the bailer would have to be washed in the soap and then rinsed in the water. The bailer is three feet long so the washing process needs to include a bucket big enough to wash at least half of the bailer so that after washing one end the bailer could be turned over and washed again from the other end.

In addition, there is labor required to do the testing and monitor the equipment. Each test takes about around 5 minutes once the sample is in the sample bottle. The test tubes used to test for nitrates need to be cleaned with nitric acid between use.

Water samples can be taken and tested up to 24 hours later if they are refrigerated.

ATTACHMENT “F”

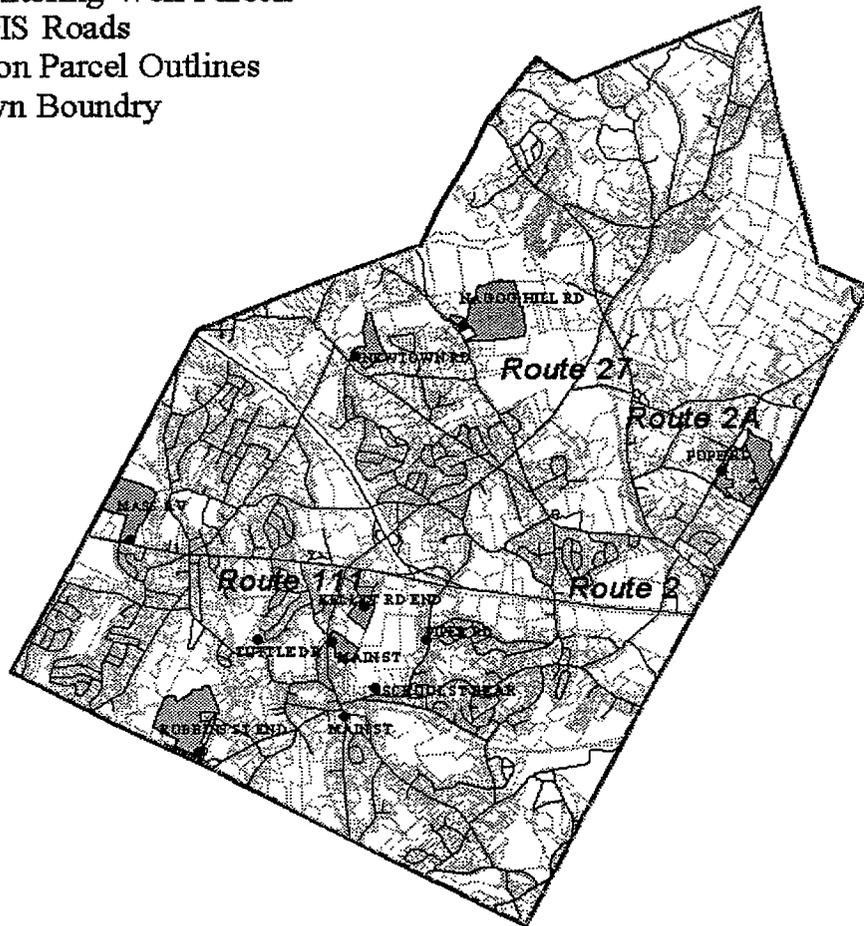
Town of Acton
Wastewater Management Plan



ATTACHMENT “G”

Monitoring Wells 1998

- Monitoring Well Points
- Monitoring Well Parcels
- △ MGIS Roads
- Acton Parcel Outlines
- Town Boundry



ATTACHMENT “H”

Town of Acton
Wastewater Management Plan

9-21-95

To: Doug Halley
From: Sharon Mastenbrook
Re: nitrate testing

It is possible to test groundwater samples with a Hach kit. The range of the kit is 0-50 mg/l. The EPA drinking water upper limit is 10 mg/l. Personal safety supplies to support testing would probably include nitric acid to wash test kit test tubes, pan for holding nitric acid solution (1: 1) for washing, goggles or glasses, mask (?paper), and gloves. Demineralized water is also needed (approximately \$25.00).

In addition, a bailer is needed to collect samples. Ben Meadows sells PVC bailers for \$27 each. 600 ft of cord costs \$29.25. If aeration of sample is a problem, then a bottom emptying device is necessary for each bailer (\$15 each).

Cole-Parmer sells PVC bailers for \$22.50 each. Cord is \$23.25 for 100 ft. A bottom emptying device \$17.25 each.

If only one bailer is purchased, then it is necessary to have a procedure to clean the bailer after each use. Special soap costs approximately \$30.00 (at least a year's supply).

Therefore, it seems possible to start a nitrate-testing program with an approximate cost as outlined below.

Equipment	Individual Cost	Cost for One Year
Hach test kit	42.50/100 tests	42.50
Support equipment (nitric acid, pan, goggles or glasses, mask, gloves)	?200.00	200.00
bailer (PVC)	22.50	450.00 (for 20 wells)
cord	29.25 (600 ft)	29.25
demineralized water	?25.00/5 gal	?50.00

Town of Acton
Wastewater Management Plan

It is possible to buy one bailer and wash it after each sample collection. Washing would include taking two buckets into the field. One would have a special soap (approximately \$30.00 for at least a year's use) and the other would have demineralized water. After each sample taking, the bailer would have to be washed in the soap and then rinsed in the water. The bailer is three feet long so the washing process needs to include a bucket big enough to wash at least half of the bailer so that after washing one end the bailer could be turned over and washed again from the other end.

In addition, there is labor required to do the testing and monitor the equipment. Each test takes about around 5 minutes once the sample is in the sample bottle. The test tubes used to test for nitrates need to be cleaned with nitric acid between use.

Water samples can be taken and tested up to 24 hours later if they are refrigerated.

American Drilling Services, Inc.

- Environmental Drilling
- Groundwater Monitor Wells
- Structural Borings Logs

Geo-technical Drilling
Irrigation Wells
40 Hr. OSHA Approved Training

April 12, 1995

Acton Board of Health
Acton, MA

ATTN: Heather Marceau

American Drilling Services, Inc.
Bob Francis

RE: Professional drilling services in Acton, MA

JOB DESCRIPTION: The installation of Twenty (20) 2" wells to 15' Estimate based on normal auger drilling.

Mobilization/Demobilization		\$250.00
CME Drill rig w/crew	4.5 @ \$ 875.00/day	\$3937.50
day rate based on 8 hr maximum on site time		
Steam Cleaner charge	4.5 @ \$ 50.00/day	\$ N/C
2" PVC screen	200' @ \$ 6.00/ft	\$1200.00
2" PVC riser	1001 @ \$ 3.50/ft	\$350.00
2" PVC bottom plug	20 @ \$ 5.00/ea	\$100.00
Locking grippers	20 @ \$ 16.00/ea	\$320.00
7" x 10" Boltdown road box	20 @ \$ 45.00/ea	\$900.00
Filter sand 1001b bags	60 @ \$ 12.00/bag....	\$720.00
Redi-mix concrete 801b bags	10 @ \$ 10.00/bag	\$100.00
Bentonite chips 501b pail	10 @ \$ 40.00/pail	\$400.00
ESTIMATE TOTAL		\$8277.50

Massachusetts sales tax of 5% will be charged to materials sold, estimated at (4090.00) = \$
204.50

Town of Acton
Wastewater Management Plan

*SKILLINGS & SONS
ARTESIAN WELLS, PUMPS AND FILTERS
269 PROCTOR HILL ROAD HOLLIS, NH 03049
PHONE (603) 889-5009 1 (800) 441-6281
FAX (603) 465-3512*

TOWN OF ACTON
BOARD OF HEALTH
472 MAIN STREET
ACTON, MA 01720

This is the pricing for drilling of approximately 20 borings to 20 feet each. Each boring will be constructed by drilling of a 4.25" HSA hole, sampling as required, setting of a 2" PVC FJ monitor well, each with 10 feet of slotted screen and 10 feet of 2" PVC riser to grade, and a curb box installed at grade. Annular space surrounding the screen face plus one foot will be with #0 Morie sorted silica sand, then bentonite chips to grade less two feet, then a curb box concreted in at grade.

Cuttings will be contained and disposed of as directed. I have figured that some time will be spent dealing with this. Sites are scattered throughout the town, so some time is needed for moves, site locating, etc. I have assumed adequate access/regress, dig safe by others, traffic control if needed by others, and all work is level "D" or less, Any applicable sales taxes, permit fees, etc. if applicable are additional,

Based on above, the costs are estimated to be:

Mob/demob	\$205.00
Three days.....AD-11 HSA drill and crew of two @ \$900,00/8hr. day (O/T @\$112.50/hr,)	\$2,700.00
Materials:	

20 pcs. 2" x 10' PVC Sch 40 FJ riser @ \$29.99/pc	\$ 580.00
20 pcs. 2" x 10' x .010" slotted screen, P@IC FJ @ \$57,50/pc	\$1,150.00
20 ea. 2" FJ cap x xplug w/lock @ \$19.00/ set	\$ 380.00
20 ea. 6" skirted road boxes (load type) @ \$71.00 ea.	\$1,420.00
5,000 lbs. sorted silica sant @ \$.15/ bag	\$ 750.00
50 bags bentonite chips @ \$15.00/bag.....	\$ 750.00
20 bags Sakret mix @ \$10.00/bag.....	\$ 200.00
5 each cases sample jars @ \$19.00/case.....	\$ 95.00
Total materials	\$5,325.00
Total job Estimate	\$8,230.00

If you have any questions, please call at you



**APPENDIX J: FINAL PUBLIC MEETING COMMENTS AND
RESPONSES**

CWRMP COMMENTS AND RESPONSES

Carol Holley – Pope Road

Ms. Holley requested that additional Phase II copies be made available in the Library, including Phase I report copies which include a lot of important information. She also asked whether irrigation wells were included in the groundwater protection areas.

R. Phase I and Phase II are available at the Acton Memorial Library and the Acton Health Department. At the time of this meeting, Phase I was available at the Town of Acton's website, and Phase II was available soon after the public meeting. Irrigation wells were not included in the groundwater protection zones.

She also requested that further public education become a priority, not just that which was included in the Appendix. She indicated that this is a necessity.

R. Education will be a key component in the implementation of any part of the recommended solutions, although this component was not described in great detail within the report.

Don Barren – 7 Mallard Road

Mr. Barren stated that he looks forward to his neighborhood connecting to sewers, and is concerned about mounding created by new septic systems going up in his neighborhood. He stated that he wants very much to connect to the sewer that is in such close proximity to this area.

R. Understood.

Terra Freidrichs – Massachusetts Avenue

Ms. Freidrichs stated that she supports the study. She questioned the statistical basis for the findings (% of systems impacted, and % of town land area that is unsuitable). She also questioned the statement that 97% of the systems would be fine? Lauren has said 67%.

R. Tables 6-8 and 6-9 in the Phase 1 report are part of the sensitivity analysis, and are NOT intended to provide the definitive result of the overall analysis. Therefore, they cannot be applied beyond their intended use - to evaluate the sensitivity of the GIS data.

Table 6-8 presents the sensitivity analysis on the data for separation to groundwater analysis only. Table 6-9 presents an analysis related to the impact of I/A systems on setbacks to wetlands buffers and floodplains and lot sizes. The tables are not mutually exclusive.

Neither table includes the other criteria evaluated by the CAC, nor do they reflect the further information gathered in Phase 2 or the anecdotal evidence provided by the CAC. Both tables evaluate Needs Parcels, not areas; therefore, they do not reflect parcels grouped with Needs Parcels to form contiguous areas. Therefore, the number of lots in the Needs Planning Areas in Phase 2 will be greater than the number of Needs Parcels identified in these two tables.

She also asked whether the Selectmen had requested a waiver from DEP to construct the Spencer/ Tuttle area sewers prior to finalizing the CWRMP.

R. The Selectmen have not requested a waiver from DEP to construct sewers for the Spencer/ Tuttle Area. The current Middle Fort Pond Brook Sewer System was constructed through a waiver

process on the condition that a CWRMP be completed that defined the wastewater needs of the community.

Ms. Friedrichs disagreed, said she had talked to DEP and they said that they had not been asked about a waiver, and would entertain a waiver request.

R. The waiver process is difficult and lengthy. Submittal of a completed CWRMP is the best avenue to ensure expansion of sewers to the Spencer/ Flint neighborhood.

Ms. Friedrichs asked about the Douglas and Gates Schools, and why, if actual flows are below the 10,000gpd, the requirement to construct a treatment system is not waived.

R. Further clarification has been received from DEP regarding this issue. Based on current policies utilized by DEP, the Douglas and Gates Schools have a combined water usage representative of 12,000 gallons per day. The schools can seek a waiver from the requirements of treatment, but their actual water usage does not support that request.

Ms. Friedrich's concern is why is West Acton otherwise a priority, if not for Douglas and Gates School?

R. A portion of West Acton Center is an independent needs area (Area 12) that needs to be addressed.

Charlie Kadlec, Paul Revere Road

Mr. Kaldec questioned why this report was being put before Town Meeting?

R. The report has been submitted to Town Meeting for three reasons; to have as much public input as possible, to gain surety that the plan has broad public acceptance and to provide a legal mechanism for the Board of Health to grant waivers to properties within a proposed sewer expansion area.

He questioned the financial analysis, and costs for alternatives for each solution. He said financial data in the report was minimal, with no backup, and that it was therefore incomplete.

R. The report is an environmental plan developed within the required State format. The financial data provided is within that format. As recommendations of the CWRMP are examined appropriate financial analysis will be provided for each particular proposal.

Mr. Kadlec stated that the report does not meet the requirements for this Study. He questioned the presentation's use of the term "most cost-effective solution" when only the sewer connection (i.e., for West Acton) was evaluated.

R. Understood.

Mr. Kadlec questioned the betterment charge, and what it would be in the future? On page 3-13, the average cost per property is \$34,000, so who is going to pay the difference for properties that cost less?

R. The Town's Sewer Assessment Bylaw does not equally distribute betterments to each property. Properties receive assessments based on their highest potential zoning use or their "avoided cost". Properties with multi-family units or that are zoned at high floor area ratio are generally assessed at higher rates than a single family home. The original sewer area had 760 properties with a construction cost of \$25,100,000 (\$33,026 cost per property), while achieving a single family

betterment of \$12,311.52.

Mr. Kadlec stated that he had reviewed data at Town Hall. He questioned what "scientific analysis" has been done to determine Needs Areas? How did they get from the data to the Needs Areas definition?

R. The following criteria were used: screening process, public meetings, consensus of the CAC, groundwater protection zones based upon mapping (GIS) for risks, etc. The planning process was to look at the management of an entire Needs Area, even if specific parcels did not show a need.

The specific criteria for needs - soil maps, groundwater maps, septic failures, mounding requirements, areas where soils were poor, high groundwater, septic problems, etc. created the actual Needs Areas.

Mr. Kadlec stated that he still had a problem with no full evaluation of, or proposed solution options for, each Needs Area.

R. Solution options are detailed in the Phase 2 report. Solutions for each wastewater management district should only be implemented with the input of the neighborhoods impacted.

Mr. Kadlec then asked, "Why will it cost \$11 million?"

R. Page 3-17 table delineates the present worth of costs over a 20 year period, including capital expenses, management, software, consulting, etc. This is a method of comparing alternatives. The system evaluated is one alternative for wastewater management districts.

There are over 100 new systems being installed or replaced per year, and the additional wastewater management will have costs associated with them. The centralization of wastewater management will save homeowners costs by bundling services to serve the entire community.

Mr. Kadlec stated that he hoped that the impacted community members were aware of this Plan.

R. Understood.

Andy Munroe - Spencer Road area.

Mr. Munroe requested that the West Acton area receive a letter at Town Meeting that indicates there are other options versus sewer to address groundwater risk issues.

R. Additional information will be provided to the entire community letting property owners know where the report can be accessed and when comments can be made.

Andy indicated that his area has problems with high groundwater, and supports the sewer within his Needs Area.

R. Understood.

Jim O'Neil - Flint Road.

Mr. O'Neil stated that his backyard has a real problem with high groundwater which he feels could create health issues. He questioned the waiver process, the discrepancy with whether Town Meeting approval is needed or required, and whether DEP could issue a waiver without the Town Meeting approval.

R. As noted previously the Town is currently within a waiver process that will be complete when the CWRMP is finished. Until MEPA requirements are met, through the completion of the

CWRMP, sewer connection permits cannot be issued by the DEP. Once Town Meeting accepts the plan, it can then be submitted to MEPA, ensuring progress of the sewer expansion.

Allen Nitschelm - Marian Road

Mr. Nitschelm asked why it was important to bring the Plan to Town Meeting?

R. It would be inappropriate to proceed with this significant plan without agreement by the Town.

Eric Hilfer followed up by asking whether the Phase 2 report could be separated to meet the MEPA process? By Needs Area perhaps?

R. The MEPA Special Certificate requires a town-wide assessment which is appropriate under their planning requirements.

Mr. Nitschelm asked whether Flint Road was included in the initial assessment of Middle Fort Pond Brook treatment plant?

R. Flint Road was included in the sewer service area prior to the reduction in capacity of the Sewer Treatment Plant by DEP. The Special Certificate requires that the entire Town, including areas deleted from the original sewer service area, be analyzed by their need.

Mr. Nitschelm questioned the formation of Needs Areas, concerned that his portion of Flagg Hill was included in a wastewater management district by proximity with Ethan Allen Road for a common solution?

R. Throughout the report Area 14 is described as Colonial Acres/ Flagg Hill. In Figure 2-2 "Needs Planning Areas", Area 14 is shown as Ethan Allen Road and the side streets that access it. However, in Appendix H Table 7 Forest Glen is listed as part of Area 14. Reviewing the data and the full report it is clear that Forest Glen is not in the Area 14 needs area. It was improperly listed in the Appendix. The CAC regrets that this error in the report was not caught prior to the public presentation. The Area 14 Needs Planning Area, as shown on Figure 2-2, includes Ethan Allen Drive, Betsy Ross Circle, Paul Revere Road, Patrick Henry Circle, Black Horse Drive, Flintlock Drive, Powder Horn Lane, Ticonderoga Road and 154 & 158 Summer Street.

Mr. Nitschelm stated that he did not want to be included in an area that will cost him money unnecessarily.

R. Understood.

Mr. Nitschelm questioned the Title V requirements that fail a system?

R. The criteria for pass/fail is based on whether a system is protective of the environment, even if there are no apparent problems for the homeowner. The most common failure is high liquid levels within the system.

Mr. Nitschelm questioned the timeline and the need to complete the study within a timeline?

R. The CWRMP needs to be in place before sewer expansion can occur. Planning for the sewer expansion may take some time, while properties in the expansion area are sold and systems are replaced. Action at Town Meeting will allow homeowners to seek a waiver from replacing their septic system until sewers are available.

Carol Holley (again)

Ms. Holley asked what happens if Town Meeting does not approve? She stated that she had called Marty Suuberg (DEP), and asked whether or not the worst case scenario will allow for some relief? DEP's verbal response was that there is potential for a waiver of requirements.

R. Understood.

Dore Hunter

Mr. Hunter applauded the efforts of the Committee. His comment: pending question of school hookups, he supports this in order to protect the town's groundwater resources, so that money can be used for the schools. The schools should be on sewer if at all practical.

R. Understood.

Bob Evans – Old Meadow Lane

Mr. Evans was curious as to costs to taxpayers, the costs to homeowners for the school sewer hookups.

R. The Sewer Assessment Bylaw requires that owners of public land pay a fee based on the avoided cost of construction of sewage disposal facilities.

Mr. Evans also questioned the approval process of the report, and is concerned that the approval will bind the community to all of the recommendations in the report over 20 years.

R. The CWRMP is similar to the Town's Master Plan, in that it is a framework to move forward. Town Meeting votes will be required to implement the recommendations. The need for future approval has been clarified by the wording of the warrant article that was passed at Town Meeting.

Terra Freidrichs – (again)

Ms. Freidrichs is concerned that individuals within a Needs Area will be required to abide by the recommendations, and that Needs Areas people must speak up during the Public Comment period.

R. Understood. The CWRMP is a plan with recommendations for moving forward to address the need for solutions in order to protect the environment, not a final requirement for specific solutions.

Allen Nitschelm (again)

Mr. Nitschelm questioned the analogy of the Master Plan, which was also approved at Town meeting. Mr. Nitschelm asked whether the Master Plan was approved by the state?

R. Yes, since in order to access grant funds, the Master Plan had to be approved and updated every five years. The Master Plan is used in reference to future proposals for planning, and for consistency. The Phase 2 Study can be used in the same way. Ann Chang indicated that for funding requests related to implementing recommendations of this Study, they would have to go back to Town Meeting for 2/3 vote each time a project was proposed.

Mary Michelman

Ms. Michelman pointed out that the Study was trying to not exclude any potential solution in the future, while protecting the groundwater resource. Specifically the indirect potable re-use option for future wastewater treatment plant effluent disposal is of concern, as this part of a "solution" could itself potentially pose a risk to human health, especially due to "emerging contaminants" such as viruses,

household cleaning chemicals, personal care products, pharmaceuticals, hormonal and endocrine disrupting chemicals, etc. that may not be detected or removed in current testing and treatment processes. She recommended that this be only a last-resort option, and requested clarification of the language in the Phase 2 regarding any potential disposal near a wellfield, either within a zone II area or within close proximity to it, to include the need to be protective (better testing, etc. and the need for information about contaminant persistence, mobility, concentration, hazardous breakdown products, sampling protocols, treatment options, and potential health effects), if this option is even being considered. It should be clarified that the primary motivation for considering disposal near the Assabet wells is due to a need for disposal capacity, and not recharge of these highly productive wells.

R. Understood. The Citizen Advisory Committee agrees with the concerns expressed by ACES regarding emergent contaminants and therefore made sure to include a representative of the group as both a member of the Citizens Advisory Committee and the Indirect Potable Reuse Working Group. While Indirect Potable Reuse is still considered an option within the 20 year planning period, it is considered, by the CAC, to be the lowest on the list of priorities for options.

Ms. Michelman asked about the best time to comment?

R. During and after the public meeting process. An additional comment period will be available after submittal of the CWRMP to MEPA.

Andy Munroe (again)

Mr. Monroe asked for clarification in the report of consideration of other logical alternatives that may not have been included.

R. Agreed, consideration of all alternatives will be relevant, including options not necessarily in the report.

Mr. Monroe also wanted clarification that the Plan is a general direction, and that changes can occur in the 20 year future.

R. Agreed.

Mr. Monroe asked if the Town Meeting approval is for the Plan, but not for the financial obligation within it?

R. Agreed. High-priority items would be addressed very soon afterwards in near-future Town Meetings.

David Stone - Liberty Road

Expressed appreciation for 5 years of effort by the Committee. Mr. Stone asked whether 25% of Town Area was within a Needs Area?

R. Yes. The incorporation of proximity parcels increases the Needs Planning Areas to about 40%.

Mr. Stone asked how did half the town escape from being in a Needs Area?

R. The proximity inclusion was driven by the anticipated septic replacement need of a particular area, combined with water resource protection. The application of future solutions could reduce the planning areas.

Andy Magee (again)

Mr. Magee addressed the cost issues raised by others: He stated that this is a planning document, and recognized that it does not have to be a financial management plan. DEP will accept this, because it is a very good wastewater management study. If a waiver was approved by DEP now, DEP would require a wastewater management approval some day. He has experience with this. He felt that the plan was open enough to be able to unbind areas and people if needed. He supports the plan, and it should go forward. He has a problem using the Wetherbee Conservation Land for effluent disposal, but overall wants to see that this gets approved.

R. Understood.

Susan Mitchell-Hardt – Pope Road

Ms. Mitchell-Hardt stated that she was disappointed that the Wetherbee Conservation Land was included as a disposal area in the Plan. She'd like to preserve this area as a gateway to Acton and does not want it to be put at risk through this possible use.

R. The CAC stated that there were 4 possible solutions. One of the choices included the construction of a sewer. There were only 2 sites identified as available for subsurface disposal in the whole town – Wetherbee is great for disposal, but the deed restrictions on the conservation land are being taken very seriously and will be considered only under last, possible solutions.

Terra Freidrichs (again)

Ms. Freidrichs, indicating Tables 6-8, and 6-9 of the Phase I report, questioned the statistics used in this report.

R. See previous response on issue.

Jim O'Neil (again)

Mr. O'Neil recognized that MEPA process must happen, but was concerned about the consequences if there was not the Town Meeting support?

R. If the report is not approved at Town Meeting, then it sends a strong signal that there is not support for the Plan overall.

David Trudeau- Mallard Road

Mr. Trudeau stated that this Plan must be a priority, but he wanted the Committee to consider the possibility of taking off the Flint/Spencer/Mallard area from the plan, and initiating a waiver process for it.

R. Without a town-wide plan in place, low-interest loans are unavailable to the Town and they are open to commercial loan options only (more expensive).

Mr. Trudeau wanted to know how to avoid the risk of failure at Town Meeting.

R. It is necessary that people come out and approve it.

David Stone (again)

Mr. Stone indicated concerned that the Plan is all or nothing. What if Town Meeting votes No Action?

R. If it doesn't get approved at this Town Meeting, the CAC would raise it again (at more

incremental cost) at a future meeting. This was a comprehensive effort that would be a waste of time and money if it did not get approved.

Andy Magee (again)

Mr. Magee's opinion is that DEP will not allow for segmentation of the Plan. They will not issue Sewer Connection Permits before the MEPA Certificate is issued and complete. His experience with MEPA is that it needs to be addressed as a complete project, and that it will be longer and harder to piece it together instead.

R. Understood.

Dore Hunter (again)

Mr. Hunter commented regarding project financing: If Acton's bylaw requires self-supporting wastewater funding, the Committee needs to consider how the projects will be funded in upfront costs, about \$500K.

R. Understood.

Carol Holley (again)

Ms. Holley asked how 40B projects (proposed or future) would tap into the gallons per day of excess WWTP capacity available?

R. 40B projects would be limited by the available capacity of the treatment plant. Capacity for users not connected must be set aside before additional allocations can be made.

Terra Freidrichs (again)

Ms. Freidrichs stated that she'd like to reduce high priority (West Acton) areas to medium priority.

R. Understood.

ACES  Acton Citizens for Environmental Safety

March 26, 2006

To: Mr. Brent Reagor, Acton Health Department
From: Mary Michelman, ACES
Re: ACES Comment for inclusion in CWRMP Phase II Report, March 2006

Please consider adding the following statement to the main text of the CWRMP report, especially where reference is made to IPR (Indirect Potable Reuse). At a minimum please include this statement in the public comment section of the report, before it is submitted to DEP and MEPA.

The Town should fully explore all other wastewater management options and only consider wastewater discharge within close proximity to public wells as a very last resort in any wastewater option; only to be considered if there is an imminent critical threat to public health or the environment that cannot be mitigated in any other way.

If the Town were ever to consider disposing of treated sewage near one of Acton's public drinking water supplies, either within the Zone II or within close proximity to it--the Town should do everything possible to detect and remove all "emerging contaminants" and other pollutants from the treated effluent, before disposal. Disposal should be done as far away from the Town wells as possible, and should maximize travel time to the wells, if possible beyond the currently mandated minimum two year travel time.

"Emerging contaminants" include, but are not limited to: viruses, household cleaning chemicals, personal care products, pharmaceutical waste, and hormonal and endocrine disrupting chemicals. These contaminants, which are not included in current standard detection or treatment programs, and may be part of a complex chemical cocktail in wastewater, have the potential to cause serious health effects. The "Precautionary Principle" should be applied.

For each of these emerging contaminants, full knowledge is needed of their:

- Persistence
- Mobility
- Concentration
- Hazardous breakdown products
- Synergistic effects
- Sampling protocols
- Treatment options
- Potential health effects

Comments by Terra Friedrichs

CAC Responses in italics

I was told that the Mass Ave/Spruce St extension would just be along Mass Ave and Spruce St. But in the CWRMP, Figure 3-1 West Acton Conceptual Sewer Layout dated February; it shows a sewer line going up Arlington (towards the High School). Is this Arlington extension included in the \$8.0 to \$10.6 million estimate for design and construction? I know that the figures are preliminary, but it's important to know the scope that was used to develop the estimates. Financial estimates are key in determining the level of need for something. In other words, if something is inexpensive, then you might want to do it anyway, regardless of need.

R. The proposed gravity sewer line shown in Arlington Street in Figure 3-1, is approximately 600' from the railroad line to the intersection with West Road. This design is proposed to fully address the needs parcels within West Acton Center, which include parcels along the West Road cul-de-sac (7 out of 10 total lots). The proposed construction would end prior to Fort Pond Brook, and also allows for the optimal pump station configuration for minimization of required pump stations. This proposed design also fully addresses the entire eastern section of the West Acton Needs Planning Area.

The costs estimated in Table 3-3, which are the 8 - 10.6 million that you reference, do include that 600' length.

I have heard that the folks on West Road have serious septic issues. Is there any way to go along the stream and up to West Road without going along Spruce St? The residents at the corner of Mass Ave and Spruce tell me that they have no need for sewers.

R. Cross-country construction, especially through flood plain and wetlands, can be quite expensive, even more so if it is on private land (as easements must be obtained). These expenses can quickly outpace the equivalent length of construction under a paved road. The construction costs in wetlands/flood plain have to take into account the increased permitting and regulatory filings necessary (ConsCom, DEP, Board of Appeals, MEPA, etc...) along with additional design features that must be included to insure a watertight project that does not negatively impact the wetland area.

If a sewer expansion project were to receive approval from a future Town Meeting for design and construction costs, the design process, per the recommended plan in the CWRMP, would take into account the needs areas to be addressed, the available capacity within the current collection and treatment system, and the potential costs/benefits of providing sewer to individual sections of the needs areas. As a potential design process would progress, all feasible alternatives for placement of sewer lines will be evaluated. This process would include input from the residents of potential areas to be sewered. There would be many opportunities both prior to a potential Town Meeting vote, and during the design process for input from those citizens in a proposed sewer area.

It appears as though the CWRMP recommends sewerage cross-country. In Figure 3-13 of the document it looks like there is a link going directly from Mass Ave to West Rd along the stream. Perhaps it's just a "possible" route, rather than a "recommended" route?

Also...how many failed systems are there along Mass Ave/Spruce St/Arlington/West Rd? I count 67 properties (outside of Spencer/Tuttle) that would connect to the sewer along the proposed route. I am wondering how many of them currently have failed systems. I know only of the one at the corner of West Rd and Arlington.

R. To answer your first question:

Yes, figure 3-1 does show construction connecting Mass Ave. with West Road. Please keep in mind that this schematic is, at best, a 10% design. This work was done using nothing more than the 10' topographic contours available from MassGIS to show potential service areas for the recommended solution in the CWRMP Phase II Report. Actual design work for a full 100% design, which would be a significant portion of the 1.4 - 1.8 million dollar engineering line item (Table 3-3) includes instrument survey of the area, borings and test pits to determine the depths to groundwater and ledge, and an examination of structure placement relative to the road surface elevation. These factors together influence any final design. Of course, all of this cannot occur without a future Town Meeting vote authorizing the Town to seek funding for a potential project. The agreed upon scope between MEPA, DEP, and Acton required a conceptual layout for any recommended sewer expansions as part of the final report, and that is what Figure 3-1 is meant to address.

As far as your second question:

As this is a 20-year planning document, development of needs parcels does not just take into account currently "failed" systems only. It takes into account all of the necessary environmental (structural) and other factors (non-structural) that were discussed at length during the CAC process. Some of the factors that influenced the decision in West Acton were: small lot sizes that do not allow for installation of regulatory-compliant systems, wetlands, and high groundwater elevations. In the area east of the RR tracks, greater than 50% of the developed parcels are classified as needs parcels. This is the 2nd largest percentage of all of the 15 needs planning areas.

I am not suggesting that it isn't a 20-year planning document. I am just asking a simple question. On the proposed route, how many failed systems are there?

R. The report did not identify nor did it try to identify currently failing systems anywhere in town. No information was generated nor were there resources available to identify failed systems. There are two ways to define a "failed" system under the regulations, one requires that the owner conduct an Official Title 5 Inspection, and submit those results to the Board of Health, this is only done in the case of a property transfer. Normally, if a system is determined to be in "failure" at the time of a Title 5 Inspection, the system replacement process is commenced. In any event, a "failed" Title 5 Inspection must be corrected within two (2) years. The second means of determining failure is the investigation of a situation injurious to the public health ". This is

accomplished through the official complaint investigation process in the Board of Health office, which is set forth in M.G.L. Ch. 111, Sect 122. This process necessitates a legal enforcement order to the owner of the property, requiring the abatement of the injurious situation within a set period of time.

The report assumes that sewers are the solution for West Acton. It is a report that starts with the conclusion. It does not start with the need, show the options and then analyze the options for each area, and then show why sewers are actually needed.

R. Phase I of the CWRMP identified West Acton as a needs area through the criteria mentioned in above (small lot sizes that do not allow for installation of regulatory-compliant systems, wetlands, and high groundwater elevations) Four options were considered for each needs area, including extension of the existing sewers. Due to its location, its wastewater capacity and density, the eastern portion of West Acton Center was prioritized as a viable area for the sewer extension.

If you really, truly feel that this is a planning document rather than a concrete plan, then your language should reflect so.

R. Noted.

We do not know yet, whether the plans recommended in the report are viable.

R. Viability of each recommendation will be tested as they are further analyzed prior to finalization.

We do not see that there is an actual need along the Mass Ave Extension (beyond Spencer/Tuttle).

R. West Acton Center has been identified as a needs area.

We do not see that the schools have an actual need.

R. Existing state regulations have been identified that show the schools as a need. Further investigation will be done with DEP to confirm the options available to the schools.

We do not know if the majority of the properties along the Mass Ave extension have a need. We know that a few places are in need in West Acton Center. But is it more fiscally sound to buy those properties from the owners? Or it is more fiscally sound to spend millions of dollars to sewer them? We don't know yet. As a result, we need to amend this report to truly reflect the state of the analysis, and make it clear to the reader that the recommendations are recommendations for further study, and not suggest that the recommendations are firm.

R. In keeping with the financial analysis completed for past projects proposed by the Town a financial analysis will be done for each recommendation as they are brought forth to Town Meeting.

Lauren Rosenzweig has stated in a recent email:

"Many of the "plans" in the report are conceptual they represent a best guess of how things might proceed, but do not necessarily reflect what might happen in real life. Committees will be developed to make decisions on how best to proceed once the planning and implementation stages are begun. "

R. Noted

Here are my detailed comments:

If this is truly a planning document, then it should use words like, "potential needs area", and, "recommended areas of study" and it should use phrases which do not indicate that the analysis is done and the recommendations and plans are firm. It should indicate that the recommendations and plans are preliminary and subject to change once the analysis is complete. Until the technical and fiscal analysis is complete and presented to the public and the public has an opportunity to challenge that analysis, then the designation of "high priority" should really be considered to be "high priority areas of study".

R. Noted.

By saying that the Committee recommends sewerage is to suggest that the actual needs of the entire area have been studied and alternatives have been analyzed from a technical and a financial perspective. If this has been done, why can't we get the information? It seems that the analysis has been done, but only a very cursory level. And primarily during meetings around a table, rather than analysis which is technical in nature and is backed up by numbers, and committed to paper.

R. Noted.

Either you, as a committee, have the analysis and can show justifications for your recommendations. Or the report should be re-worded to reflect the reality of the situation...that these are "suggestions" for further study.

R. Noted.

The report assumes that sewers are the solution. It is a report that starts with the conclusion. It does not start with the need, show the options and then analyze the options for each area, and then show why sewers are actually needed.

R. The report has identified expansion of the existing sewer system as one of four solutions. The solutions were not discussed nor explored until Phase II began. Phase I documented the needs areas, Phase II analyzed the options.

If you really, truly feel that this is a planning document rather than a concrete plan, then your language should reflect so.

These are examples of statements in the report that indicate the analysis is complete and sewers are the solution.

* "The Middle Fort Pond Brook sewer system *should* be extended to serve the following areas:

- High Street to Powdermill Plaza (Area 7),
- Spencer/Tuttle/Flint neighborhood (Area 10), and
- West Acton Center (Area 12) including the Gates and Douglas Schools."

This statement implies that the analysis is complete, when the analysis is just beginning. As a result, the statement might be more appropriate if it said something like, "potentially could be extended".

R. The Massachusetts Department of Environmental Protection's Guide to Comprehensive Wastewater Management Planning (which is part of the required scope of this project) requires that a "Reccomended Plan" be developed. The analysis of needs related to the protection of Acton's water resources was completed in Phase I of the CWRMP and was accepted by MEPA on August 26, 2004.

* "Recommendations; Expansion of the Middle Fort Pond Brook sewer system with treatment and disposal at the Adams Street treatment facility to address high priority areas and optimize the operation of system;

This statement clearly recommends sewerage to what are called "high priority" areas. The reader should be reminded that the areas that have been designated "high priority" have not been shown to actually *be* high priority. So references to areas being high priority and repeated reference to a recommended plan to sewer these areas because they are high priority is very misleading.

R. The determination of priority status for the 15 needs planning areas was made by the Citizens Advisory Committee during a number of meetings in 2004-2005. These determinations can be followed by reviewing the minutes and associated figures in Appendix B. In determining the priority status for each needs planning area, the CAC took into account the results of the environmental analysis from Phase I, along with many other factors, including implementability, and relationship to the Master Plan/Village Plans.

* "As the Town makes the decisions on the menu of recommendations of the Comprehensive Water Resources Management Plan it will be well served by the unique flexibility of the Septage Management Enterprise Fund."

There is only one recommendation for West Acton Center. It's to sewer it. There is no menu of options. As a result, we the residents of West Acton Center are not very well served by this implied flexibility. If the report was not so strongly committed to West Acton Center being sewerred, and did not suggest that the work has already been done to analyze both its needs and the fiscal viability of the options, then this comment could clearly be taken to mean that at the town level the plan has flexibility. But given the many, many places in the report that imply that sewerding is the only recommended solution for West Acton Center, and given that the analysis is so very preliminary regarding the needs for West Acton Center, the quoted statement seems in appropriate.

R. On page 2-32, a chart (Table 2-8), prepared by the CAC ranks each of the four (4) solutions: 1) Connect to Existing Sewers, 2) Construct New Sewers, 3) Cluster System, 4) Wastewater Management District; for each of the 15 needs planning areas. This chart was developed as "the" menu to guide the Town through the next 20 years of water resources decision making. In the chart, the solution ranked first is the "preferred" solution, while the additional solutions are ranked for each area from 2-4. In the section for West Acton Village (Area 12), "Connect to Existing Sewers" is ranked first, followed by "Cluster/Neighborhood System", then by "Wastewater Management District. Section 2 of the CWRMP Phase II report is titled "Assessment of Alternatives", as such, that is where this information is presented. Section 3 of the report is entitled "Development of the Recommended Plan" and takes into account the preferred solutions from Table 2-8 and implementability issues to develop the recommended plan, which is required by the scope of this report.

* "The Phase 2 report scope of work is to:
Assess potential disposal site locations
Evaluate wastewater techniques and technologies
Pair candidate technologies/solutions with Needs Areas to create a recommended plan
Prepare conceptual-level designs and program outlines for the recommended plan"

The scope of work assumes that off-site solutions/sewers are THE solution by using the phrase, "assess potential disposal site locations." Again, I state that starting with a conclusion is a dangerous proposition.

R. One of the priorities of this plan was to not discount any option for any area as this is a 20 year planning document upon which to build future water resources decisions. This includes the evaluation both on paper, and in person, of the potential of property within the Town to receive large quantities of treated wastewater. This evaluation identified four parcels for which further investigation was warranted. That investigation, which was performed as part of Phase II, demonstrated the immediate unavailability of any of those four parcels. Therefore, construct of new sewers (which would require a disposal location) was not part of the Recommended Plan in Section 3.

This statement clearly references "the recommended plan". This **is** the Phase 2 document. Because the document will not change, according to the first paragraph of this memo, then we can only assume that the recommended plan is that which is included **in** the report. I refer back to my original comment, that there is no analysis which shows that there is an actual need in West Acton Center. And until there is analysis which shows this and which examines the technical and financial alternatives, then there **should be no plan**. There should only be recommended courses of study.

R. As stated previously, the needs analysis was completed as part of the Phase I Report, which was approved by MEPA on August 26, 2004.

** "The CWRMP continues the Town's proactive efforts throughout the development of the recommended plan..."*

This statement also seems to indicate that there is a single plan already..."the recommended plan".

R. The Recommended Plan charts a course for the Town, while still leaving other options available (Table 2-8). Again, as stated previously, the development of a Recommended Plan is required as part of the scope of this project by the MADEP Guidance for the Development of Comprehensive Wastewater Management Plans.

** "The CAC concluded that implementability meant the ability to convince Town Meeting that the recommended plan is the correct plan, especially considering that residents who were included in the initial plans for an expanded sewer district may not be served under the CWRMPs framework."*

This statement implies that the committee will decide ahead of time that there is only one option. Democracy is best served when TM is brought a series of good, reasonable options. Not a single option, which the committee then tries to "sell" us. The nature of committing to a single option sets the committee up to have to tell us the benefits, while not necessarily tell us about all of the drawbacks. We, as voters seem to get better information about proposals when the committees come to us with several options, and are not so invested in one single option.

This statement quoted above implies that the committee can not possibly make any mistakes. It implies that the committee will have the "correct plan", which does not leave any room for movement.

R. As the Town moves forward with the implementation of projects to protect Acton's water resources, using the CWRMP as a guide, it is imperative the citizens get involved in those areas where solutions are proposed to ensure that the plan brought to Town Meeting truly benefits the targeted area while still protecting water resources.

* "A final recommended solution for each Area was developed and coupled with a menu of other feasible solutions to give the Town flexibility over the 20-year planning period."

This statement clearly suggests that there *is* a solution, and that it *was* developed. This also does not leave much room for movement based on the analysis which is yet to be done. The "menu of other feasible options" does not appear to be offered for West Acton. The committee, as suggested in the statement about "convincing" us of the "correct plan", the committee is pretty invested in a single solution...sewering.

R. As stated previously, Table 2-8 presents the menu of options available for each of the 15 Needs Planning Areas.

* "Acton has used and will continue to use a variety of mechanisms to finance the recommendations of the Comprehensive Water Resources Management Plan."

This statement clearly states that Acton "will" finance the recommendations laid out in this report. If one believes that the voters actually have a say in this, it seems very preliminary to be so certain that Acton will do anything with the recommendations in the subject report.

R. Noted

* "Therefore, as the CAC discussed and evaluated the needs criteria and potential solutions, the table underwent several revisions. Table 2-7 represents the final version."

Again, much analysis remains to be done. These statements should indicate that the evaluation was done as a preliminary indication of where further study is warranted. The evaluation has been done before the technical analysis of the actual need in the specific areas of question. And before a detailed fiscal analysis of alternatives has been completed. It should be noted that the recommended solutions are "suggested" areas for further study, rather than the results of the analysis. Unless the analysis can be presented, in writing, which leads the reader to see why these solutions are appropriate, the tables and references to all recommendations in the tables should be labeled as "preliminary" and a note indicating that the work, while valuable thinking, has been concluded before the analysis was been presented.

R. Detailed financial analyses are required when the Town selects an option for each Needs Planning Area. At that time, the proper costs can be calculated based upon actual numbers, not predicted results utilizing inflation calculations.

* "An additional example of the Enterprise Funds flexibility will be shown in 2006 when Acton *will* commit its first betterments to onsite wastewater system reconstruction."

This statement does not indicate that the sewer extension is an option. It does not indicate that the report is a suggested plan of action where the voters get to decide.

R. This statement references the Town of Acton Community Septic Loan Program, which was approved by the voters (Article 21, 1997 Annual Town Meeting). This program, funded by \$200,000 of state money, in a revolving account, allows the Town to make loans to homeowners to replace/repair "failed" septic systems.

* "Figure 3-4 presents the visual guide to the final recommendations. It includes West Acton Center in the recommendations for sewer extension."

Again, the analysis has not been presented to show that West Acton Center has a need at all. And the fiscal analysis comparing viable options has not been shown. As a result, it is preliminary to be "presenting" "final recommendations" regarding West Acton Center.

R. See above responses in regards to the analyses.

* "Short Term Recommendations; Submit an application for State Revolving Funds for construction of the West Acton sewer extension."

Because the West Acton Center needs analysis has not been presented to the public, this statement of action is very inappropriate.

R. This analysis was presented as part of the Phase I Report, which was accepted by MEPA on August 26, 2004.

* "The five high priority areas are all addressed through viable and implementable plans. The Project Team and CAC recommend extension of the Middle Fort Pond Brook sewer along High Street to Powdermill Plaza (Area 7), Spencer Road/Tuttle/Flint neighborhood (Area 10), and West Acton Center (Area 12)."

Just because a plan is viable and implementable, does not mean that it is appropriate, affordable, or needed. Again, the reader should be reminded that the designation of high priority is preliminary in nature and has not been fully justified yet. We do not know yet, whether the plans are viable at all. We do not see that there is an actual need along the Mass Ave Extension. We do not see that the schools have an actual need. We do not know if the majority of the properties along the extension have a need.

We know that a few places are in dire need in West Acton Center. But is it more fiscally sound to buy those properties from the owners? Or it is more fiscally sound to spend millions of dollars to sewer them? We don't know yet. As a result, we need to amend this report to truly reflect the state of the analysis, and make it clear to the reader that the recommendations are recommendations for further study, and not suggest that the recommendations are firm.

R. Noted.

Comments by David Stone

CAC Responses in italics

I am concerned that Figure 1-2, Maximum Needs Areas Delineation, may be misinterpreted in ways that could harm the interests of property owners and unnecessarily alarm the public. Numerous parcels throughout the Town are coded red, "Off Site Solution Required", leading the reader to believe that either the current system is failing, or that a replacement on-site system cannot be legally constructed in the future. Yet, for the majority of these code-red parcels, an off-site solution is unlikely to be available. Indeed, the CAC recommends continued use of on-site systems as the preferred solution (Wastewater Management Districts) for 6 of the 15 Needs Planning Areas, and some of the code-red parcels are not even included in a Needs Planning Area.

What should a reader of this document conclude about the re-sale value of a house located on a parcel that "requires" an off-site solution, but for which no off-site solution is available? Will this also affect the value of neighboring properties? And what should citizens assume about the protection of Acton's groundwater if numerous parcels throughout the Town "require" an off-site solution that will never be provided? I respectfully request that the CAC modify the report to more clearly explain the purpose and limitations of Figure 1-2.

As you explained during a meeting with the Finance Committee, this figure was prepared by merging several different data sets, many of which are not parcel-specific. These data were extrapolated (or perhaps interpolated), by a process not described in the report, to yield the parcel-specific color coding in Figure 1-2. The purpose of this analysis was to enable the CAC to see clusters of potential needs that would lend themselves to the creation of Needs Planning Areas. In response to my questions, you explained that the actual requirements for any particular solution on a specific parcel could not be determined without an on-site investigation, including digging test holes, marking wetlands boundaries, etc. When a system actually requires replacement, these activities enable the Town staff, the Board of Health and the Conservation Commission to work with the property owner to design the best available solution, which may involve numerous variances from the preferred specifications embodied in our by-laws. Thus, while a septic system replacement may be complicated and expensive, an off-site solution is rarely, if ever, "required".

To address these concerns, the CAC should make two changes to the report. First, the text of Section 1.2.2 should acknowledge that while the analysis of needs was performed on a parcel-by-parcel basis, some of the underlying data are not parcel specific, the conclusions are only intended to assist in identifying potential needs areas, and an actual determination of the needs for a specific parcel would require an on-site investigation. Second, the text and the legend for Figure 1-2 should use the phrase "Off-Site Solution Preferred" rather than "Off Site Solution Required". If something like this change is not made, the report must explain what is meant by "required". What I think it means is that a

mound higher than 3.25 feet, and/or one or more variances may be needed to build an on-site system, but this is not the same as actually “requiring” an off-site solution.

The Citizen’s Advisory Committee has reviewed the concern expressed regarding the text for Section 1.2.2 and agrees the text should be changed with a note that states “Although the analysis of needs was performed on a parcel-by-parcel basis, some of the underlying data is not parcel specific. The conclusions are only intended to assist in identifying potential needs areas.”

The Citizen’s Advisory Committee has also reviewed the concern expressed regarding the legend for Figure 1-2 and agrees the legend should be changed from “Off Site Solution Required” to “Alternative Solution Required”. This change would be consistent with the language used in Phase I of the CWRMP.

Brent Reagor

From: David Stone
Sent: Sunday, April 23, 2006 7:02 AM
To: Doug Halley
Cc: Brent Reagor; Cable Advisory Committee
Subject: Suggested Changes to CWRMP Draft

Doug,

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Regards,

David

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4/24/2006