

March 23, 2005

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

RE: Project Status and Path Forward  
High Street Sewer System Expansion  
Acton, Massachusetts

Dear Mr. Halley:

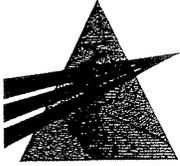
In response to the discussions at the meeting held on March 7, 2005 in Acton Town Hall with the owners of Powdermill Plaza, we have prepared this summary of the project status for the selected scenario for the High Street Sewer System Expansion in Acton. This letter also quantifies those tasks that Woodard & Curran sees as the path forward for the technical issues on the project. As the Town and the owners of Powdermill Plaza create an agreement to govern the risk, payment and capital / betterment charge details, we have prepared this letter to act at the roadmap for the technical and engineering related issues on the project.

Woodard & Curran will prepare technical design, permitting and bidding documents for both the public and private portions of the work. Separate Engineering Agreements will be issued for this work; an Agreement for the public portion of the project and an Agreement for the private work on the Powdermill Plaza and Acton Ford properties. Woodard & Curran will also oversee the construction phases of both

The agreed upon Scenario 4A is to create a new pumping station on High Street near the Powdermill Plaza driveway with gravity service connections to Powdermill Plaza and Acton Ford and a low pressure sewer system for three (3) properties with frontage along the proposed force main in the High street right-of-way. This pumping station will be 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. The proposed pumping station will be designed for the Powdermill Plaza and Acton Ford combined average daily flow of 2,610 gallons per day and current peak daily flow of 5,000 gallons per day. The pumping station will also be designed to accommodate the future flows of 16,100 average daily flow (based upon Title V rates) from the area. The attached Figure 4 Revision A illustrates this selected scenario.

The conceptual cost estimate for this scenario has been revised and subdivided into four segments to align with the cost discussion at all of our meetings. The categories are as follows:

1. Powdermill Plaza property gravity sewer effort (private project effort);
2. Acton Ford gravity service and pump & tank decommissioning effort (private project effort);
3. High Street pumping station and force main effort (public project effort);
4. High Street low pressure sewer and grinder pumps for three (3) abutting properties (private project effort).



Program level costs for the complete scenario, are shown in the attached Table 1A. We have prepared a Conceptual Schedule with critical path activities and a Project Flow Chart. They are attached as Figures 2 and 3.

**Action Items as of March 7, 2005 Meeting**

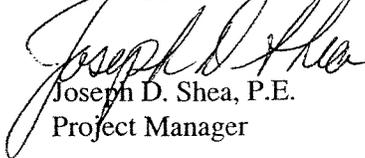
At the March 7, 2005 meeting in Acton Town Hall several of the project 'stakeholders' left with Action Items. The following list is Woodard & Curran's understanding of those Action Items:

1. Atlantic Management will confirm that Acton Ford still wishes to participate in the project.
2. Town Manager, Don Johnson, will present the Agreement to the Selectmen to obtain approval and following Selectmen approval will add an easement warrant article to the June Special Town Meeting.
3. Acton Town Counsel, Anderson & Kreiger, shall prepare an agreement to be executed between the Town of Acton and Atlantic Management / Acton Ford for the financial responsibilities and authorities of each party as the project moves forward. This document will include the capital betterment charges on the project.
4. Woodard & Curran will prepare a Conceptual Schedule with critical path activities to identify those tasks with the longest lead time. The schedule shall start on March 7, 2005 and assume the Acton Selectmen execute an Agreement with Atlantic Management/ Acton Ford by the end of April 2005. (Note: The schedule and an updated flow chart are attached to this letter).

We hope this letter helps define the project status as of March 7, 2005 and we appreciate the opportunity to support the Town, Atlantic Management and Acton Ford as this project moves forward. If you have any questions or comments, please do not hesitate to contact our office.

Very truly yours,

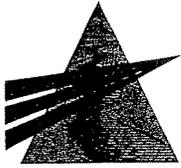
WOODARD & CURRAN, INC.

  
Joseph D. Shea, P.E.  
Project Manager

JDS/lis  
Project 212553

Enclosures

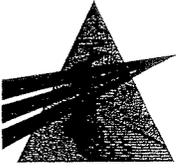
cc: Don Johnson, Acton Town Manager  
Anthony Capobianco, Founder, Atlantic Management  
Don Breda, Consultant for Atlantic Management  
Stephen Anderson, Acton Town Counsel, Anderson & Kreiger  
Helen Priola, Senior Vice President, Woodard & Curran  
James Gagliard, Plant Manager, Woodard & Curran



**Table 1**

Program Level Costs for Scenario 4A  
Low Pressure Sewer System and Force Main off on roadway but within the Right-of-Way.

<u>Direct Costs</u>	Conceptual Unit Cost	Estimated Quantity	Conceptual Extended Cost
Powdermill Plaza Property effort (shown in blue on attached figure)			
Gravity Sewer (LF) <sup>1</sup>	\$60	1,000	\$60,000
Manholes (Ea) <sup>1</sup>	\$3,000	7	\$21,000
Trench Paving (SY)	\$8	900	\$7,000
Decommission Existing WWTF	\$10,000	1	\$10,000
Powdermill Plaza Property		Subtotal:	\$98,000
Acton Ford effort (shown in yellow on attached figure)			
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 Pumping Station and Force Main Effort (shown in green on attached figure)			
Pumping Station (Ea)	\$160,000	1	\$160,000
Force Main (LF)	\$30	1,400	\$42,000
Trench Paving (SY) <sup>2</sup>	\$8	100	\$1,000
Overlay Paving (SY) <sup>2</sup>	\$6	0	\$0
Remove & Relay Watermain (LF)	\$80	0	\$0
Remove & Relay Drain Pipe (LF)	\$30	0	\$0
High Street Station & Force Main Effort		Subtotal:	\$203,000
High Street Low Pressure Sewer Effort <sup>2</sup> (shown in orange on attached figure)			
Low Pressure Sewer in R.O.W. (LF)	\$20	550	\$11,000
Special Manholes (Ea)	\$4,000	1	\$4,000
Purchase of Grinder Pump Units (Ea) <sup>3</sup>	\$4,000	3	\$12,000
Trench Paving (SY) <sup>2</sup>	\$8	50	\$500
Overlay Paving (SY) <sup>2</sup>	\$6	200	\$1,000
Remove & Relay Watermain (LF)	\$80	0	\$0
Remove & Relay Drain Pipe (LF)	\$30	0	\$0
High Street Low Pressure Sewer Effort <sup>3</sup>		Subtotal:	\$28,500
<b>Direct Construction Costs</b>		<b>Subtotal:</b>	<b>\$341,500</b>
<u>Indirect Costs</u>			
Permitting, Design & Construction Engineering (30%)			\$103,000
Administration (Police, Financing, Legal, & Town fees) (5%)			\$17,000
Land Acquisition & Easements (0%)			\$0
Contingency (15%)			\$52,000
<b>Indirect Costs</b>		<b>Subtotal:</b>	<b>\$172,000</b>
<b>Scenario 4A Total Conceptual Project Cost:</b>			<b>\$513,500</b>



Notes on Scenario Conceptual Costs in Table 1

1. The Powdermill Plaza Property effort includes gravity collection system to the pumping station and not a force main extension. Given that gravity sewer must be installed at line and grade with manholes, the cost is more expensive than a shallow, thin trenched force main.
2. The High Street low pressure sewer and the force main from the Pumping Station to Adams Street includes minimal paving since this scenario has a majority of both systems off the paved way but in the right-of-way (R.O.W.). Each roadway trench is assumed to require no overlay sections to smooth over the trench patch. Final trench patch will be permanent.
3. The low pressure sewer system costs account for all piping in the right-of-way and the purchase of a grinder pumping unit for each residential property with frontage on High Street. The connection of the piping on private property and the effort to install and electrically connect the grinder pumps are assumed to be borne by the individual property owners as is the precedent with all sewer work on private property.

Assumptions on Scenario Conceptual Costs in Table 1

- The pumping station \$160,000 cost estimate is based upon bid costs for Town of Acton's Pumping Station #6 and #8 and the stations have future capacity for other properties in the area but a starting peak daily flow of 5,000 gallons per day.
- Pumping station wet well shall be set at a depth to allow both Powdermill Plaza and Acton Ford to be serviced by gravity.
- Buried pipe installation, such as sewers and force mains, assume no ledge shall be encountered on the selected route other than the final 300 LF of effort on High Street at Adams Street.
- On High Street, water main relocation and drainage pipe relocation will not be required since the force main and low pressure sewers are pressure pipes then can be routed around existing utilities.

**Figure 1**  
Scenario 4A

**Figure 2**  
**Conceptual Schedule**

# High Street Sewer Extension, Acton, Massachusetts Conceptual Schedule

Bimonthly Period Ending =	2005																2006							
	3/14	3/28	4/11	4/25	5/9	5/23	6/6	6/20	7/4	7/18	8/1	8/15	8/29	9/12	9/26	10/10	10/24	11/7	11/21	12/5	12/19	1/2	1/16	
<b>Preliminary Design</b>																								
Task 1.0 Feasibility Study & Basis for Design	Done																							
Task 2.0 Prepare Concept & PDR																								
Critical Path Items																								
Site & Roadway survey																								
Wetland delineation																								
Geotechnical investigation	Done																							
Preliminary Design Memo and drawings																								
<b>Design</b>																								
Task 3.0 Stakeholders Agreement																								
Critical Path Items																								
Draft Agreement creation																								
Review by all Parties																								
Selectmen Execution																								
TM Easement Approval																								
Task 4.0 Permit Approval																								
Critical Path Items																								
Conservation Commission Approval																								
DEP approval																								
Task 5.0 Prepare Final Design																								
Critical Path Items																								
Finalize all drawings																								
Finalize technical specifications																								
Finalize Division 0 and 1 of specifications																								
Final Detailed Cost Estimate																								
Task 6.0 Procurement																								
Critical Path Items																								
Advertise Public Portion for Bid																								
Post Public Bid review																								
Award & Execution of Public Contract																								
Private Portion Bidding																								
Award & Execution of Private Contract																								
<b>Construction Services</b>																								
Task 7.0 Construction & Oversight																								
Critical Path Items																								
Submittal review & Approval																								
Contractor Procurement of Pumping Station																								
Force Main & Low Pressure Sewer Installation																								
Clear Water Testing																								
DEP Review and Approval																								
Private Sewer Effort																								
Decommission existing facilities																								
Task 8.0 O&M Manual & Record Drawings																								
O&M Manuals																								
Record Drawings																								

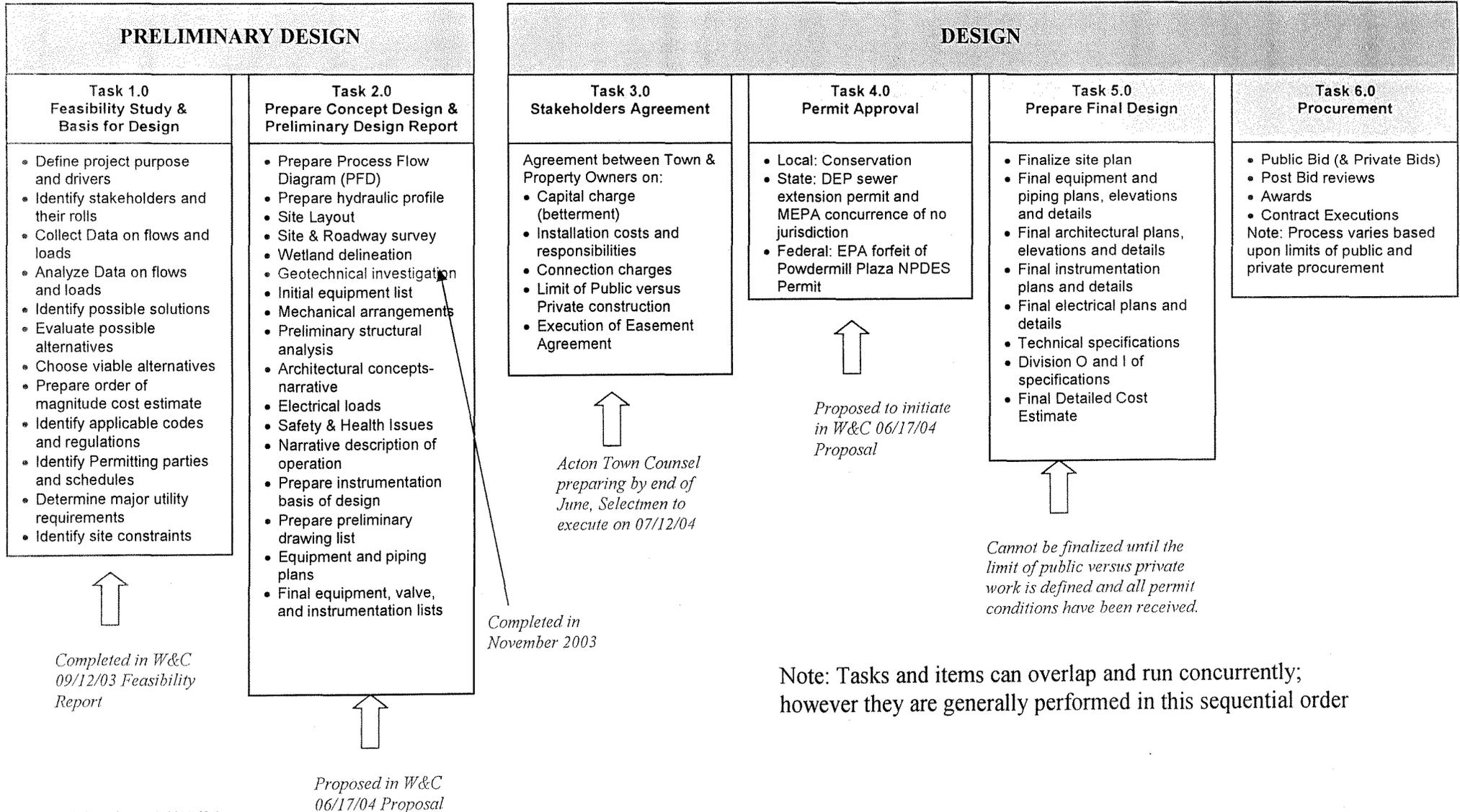
Note: Only Critical Path Items are illustrated. Individual tasks are listed on the attached Flowchart

- Public & Private Permitting and Design Activities
- Public Portion Construction Activities
- Private Portion Construction Activities

**Figure 3**  
Project Flow Chart for Engineering

# HIGH STREET SEWER EXTENSION ACTON, MASSACHUSETTS

## PRELIMINARY DESIGN, DESIGN, AND POST CONSTRUCTION AWARD SERVICES FLOWCHART

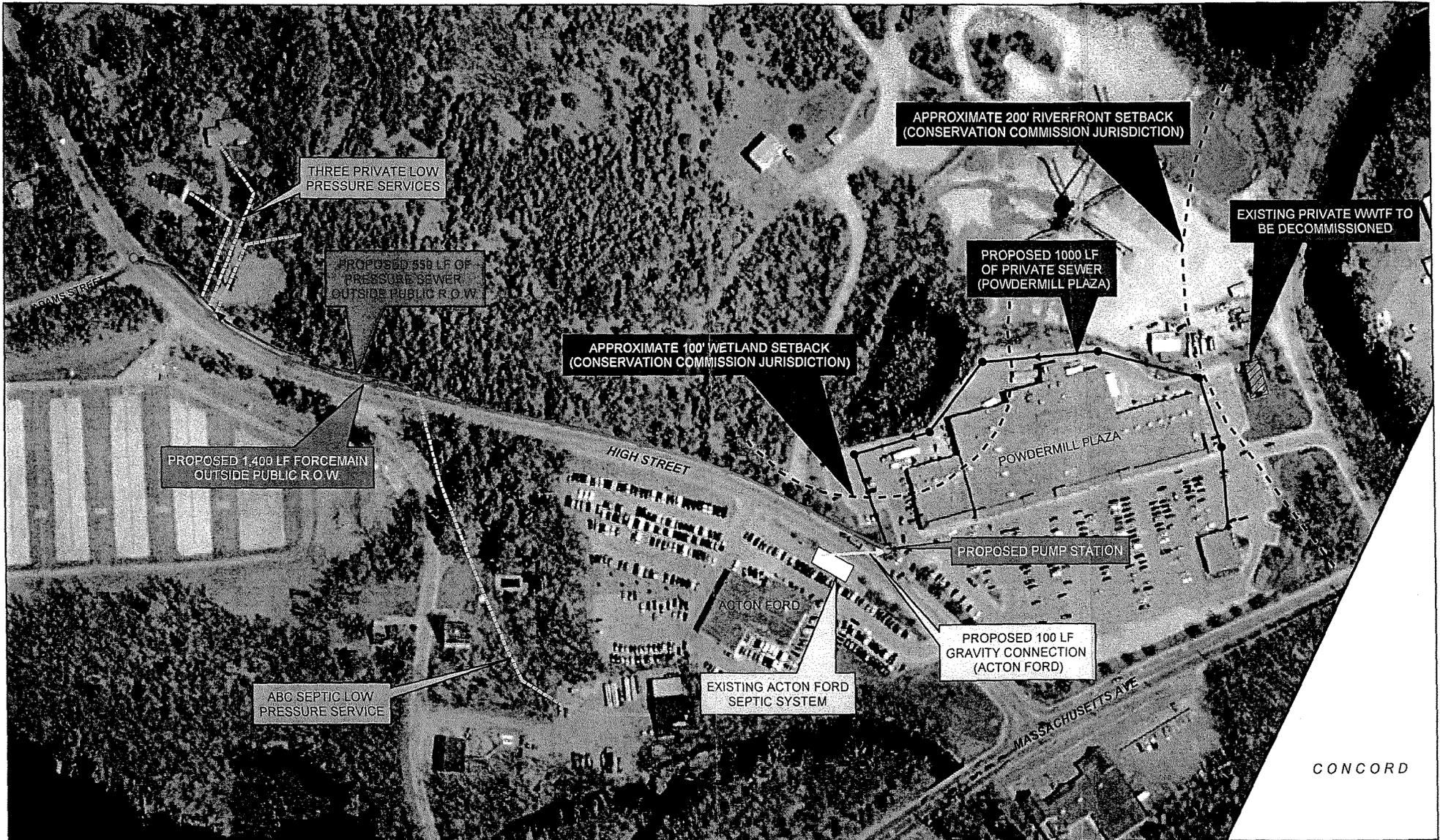


Note: Tasks and items can overlap and run concurrently; however they are generally performed in this sequential order

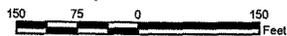
## PRE-ENGINEERING DESIGN, DESIGN, AND POST CONSTRUCTION AWARD SERVICES FLOWCHART

<b>CONSTRUCTION SERVICES</b>		
<b>Task 7.0</b> <b>Field Inspection &amp; Office Administration</b>		<b>Task 8.0</b> <b>O&amp;M Manual &amp; Record Drawings</b>
<ul style="list-style-type: none"> <li>• Establish administrative protocols</li> <li>• Project schedule</li> <li>• Payment requisition schedule</li> <li>• Schedule of valves</li> <li>• Lines of communication</li> <li>• Meeting schedule</li> <li>• Emergency contacts/phone numbers</li> <li>• Site safety supervisor</li> <li>• Daily reports</li> <li>• Weekly reports</li> <li>• Monthly payment requisitions</li> <li>• RFI's (Request for Information)</li> <li>• Change orders</li> <li>• Correspondence titles</li> <li>• Test results</li> <li>• Record drawings</li> <li>• Observation of work</li> <li>• Change order negotiation</li> <li>• Interaction with regulatory agencies</li> <li>• Interaction with designers</li> <li>• Interaction with owner</li> <li>• Develop a list of all required submittals</li> <li>• Log all submittals: In/Out/Status/Comments</li> </ul>	<ul style="list-style-type: none"> <li>• Collect all equipment manuals</li> <li>• Review Basis of Design Memorandum/Report</li> <li>• Collect copy of Record Drawings</li> <li>• Gather appropriate outside source information to include as appendices</li> <li>• Review by Process Engineer</li> <li>• Review by Operators</li> </ul>	<b>Task 9.0</b> <b>Project Start-up/Training</b> <ul style="list-style-type: none"> <li>• Schedule</li> <li>• Meeting with operators (&amp; training)</li> <li>• Initial start-up conditions agreement</li> <li>• Develop sequence of start-up of equipment</li> <li>• Review all safety measures</li> <li>• Confirm staffing</li> <li>• Arrange for contractor workforce specialists as necessary to be available</li> <li>• Establish duration of start-up and definition of completion</li> <li>• Confirm equipment and construction warranty periods</li> <li>• Start-up and test Pumping Station with clear water</li> <li>• Connect over / activate new wastewater services once start-up is approved</li> <li>• Decommission existing facilities (WWTF, septic and old sewer piping)</li> </ul>

# SCENARIO 4A - HIGH STREET LOW PRESSURE SEWER AND FORCEMAIN OFF ROAD



1 inch equals 150 feet

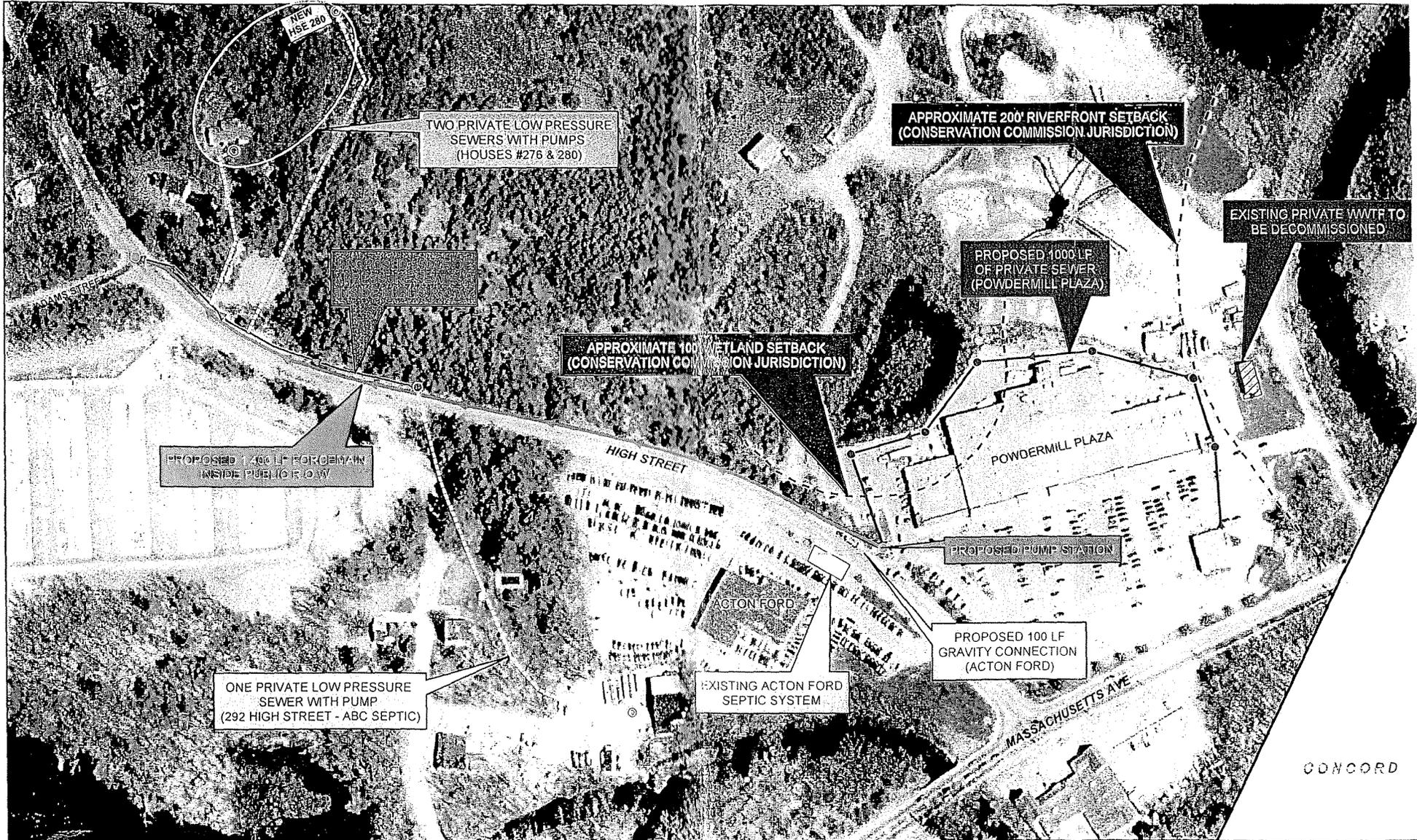


SOURCE OF DATA: MassGIS (Color Ortho Photo Date: April 2001), Woodard & Curran Inc.

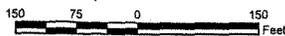


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# SCENARIO 4A - HIGH STREET LOW PRESSURE SEWER AND FORCEMAIN OFF ROAD



1 inch equals 150 feet



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AUGUST 18, 2004



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