



**Hudson Valley Office**  
21 Fox St., Poughkeepsie, NY 12601  
P: (845) 454-3980 F: (845) 454-4026  
www.chazencompanies.com

Capital District Office (518) 273-0055  
North Country Office (518) 812-0513

July 7, 2014

Abraham Zambrano  
Village Manager  
Village of Croton-on-Hudson  
1 Van Wyck Street  
Croton-on-Hudson, NY 10509

*Re: Proposal for Corrosion Control System  
Revisions to Water Supply Facilities  
Village of Croton-on-Hudson Well Field*

Dear Mr. Zambrano:

The Chazen Companies (Chazen) is pleased to provide this proposal for professional services to the Village of Croton-on-Hudson (the Village). This proposal is for the work associated with the design and permitting of a corrosion control system for the water supply to address ongoing concerns about lead and copper levels within the water supply.

#### **Project Understanding**

Chazen understands the following:

- The Village operates its own water supply, with the supply wells and treatment facilities located on a low island in the Croton River, just downstream of the NYCDEP New Croton Dam.
- The Village's water distribution system is comprised of a mixture of pipe materials, of varying age, as is typical of older systems that have been expanded over a period of time. The distribution mains within the system are assumed to be unlined cast iron and cement-lined ductile iron pipe. Lesser quantities of water distribution mains in the system are assumed to be galvanized steel. Service connections are generally assumed to be galvanized steel or copper pipe. No asbestos cement piping is believed to be present.
- The Village is already collecting data throughout the distribution system to characterize the water quality and corrosion issues within the distribution system.
- Lead and copper concentrations within the distribution system have become an increasing concern to the Village due to impacts of corrosion. Water sample test results for January to June 2014 revealed copper levels which exceeded the copper action level, in violation of Part 5, Subpart 5-1, Section 5-1.41 (b) of the New York State Sanitary Code (NYSSC).

- The Westchester County Department of Health (WCDOH) requires the Village recommend a corrosion control treatment, complete final design of the corrosion facilities and submit plans and specifications to the State for approval. The corrosion control facilities shall be installed and operational within 24 months of the State designation that the proposed corrosion control treatment is in accordance with of Part 5, Subpart 5-1, Section 5-1.46 (d) of NYSSC.
- For the Village water system, the physical condition of the distribution pipes is most likely the primary cause of the system's water quality issues. The Village is actively replacing and relining aged pipe within the distribution system.
- Ongoing replacement and relining efforts have not provided enough mitigation to address water quality issues.
- Chazen's 2007 Report "Potable Water, Distribution System Analysis" recommended adding zinc orthophosphate to the water supply. The comments received from residents are understood to mean that the recommendation in the 2007 report was not preferred, and another method should be investigated and proposed. This proposal has been prepared with the general intention of researching and proposing a new option, if available, to address the water quality concerns of the Village and WCDOH.

#### Scope of Services

The following represents the tasks that we believe are necessary to accomplish the desired objectives. Please refer to the Fee and Time Schedule Summary table near the end of this proposal for the costs and time schedules associated with each task.

#### **A. DATA REVIEW AND SAMPLING**

##### **Task 01- Historic Data Review, Research, and Recommendations**

Chazen will review and provide feedback on 2013 and 2014 data collected by the Village since Chazen's 2007 Report "Potable Water, Distribution System Analysis." Chazen will review recent sampling water quality data collected by the Village. Upon completion of review of the data available, Chazen will research an alternate method and update the 2007 Report "Potable Water, Distribution System Analysis" to summarize 2013 and 2014 data and include an opinion on corrosion control treatment recommendations. It is assumed that one (1) presentation be made at a public meeting. Meetings are included under Task ME00.

- *Task 01a: Additional Research* – Further research and recommendations will be performed under this sub-task on a Time and Materials Basis.

**Deliverables:** Updated "Potable Water, Distribution System Analysis" Report with an updated table summarizing 2013 and 2014 data and an updated opinion of corrosion control treatment recommendations. The updated Report shall be submitted to the WCDOH to approve the recommended method of corrosion control prior to moving forward with the design of the corrosion control treatment system.

## **B. DESIGN PHASE**

### **Task 02 – Conceptual Design & Engineer’s Report**

**Scope** – Chazen will meet with the village on site to discuss and outline the conceptual design for the corrosion control system. The on-site meeting will encompass walking the site and describing the details of the proposed system installation and operation. Upon acceptance of the conceptual level design, Chazen will draft an Engineer’s Report.

Chazen will utilize the updated “Potable Water, Distribution System Analysis” Report and prepare an Engineer’s Report to describe and support the design of the proposed corrosion control system, associated equipment and appurtenances. The Engineer’s report will be sufficiently detailed and in a form acceptable for submission to the WCDOH.

The Engineer’s Report will include a description of the existing distribution system, summary of water quality sampling conducted, a description of proposed corrosion control equipment, design criteria and supporting calculations.

Chazen will submit the Engineer’s Report prepared under this task and the engineering drawings and technical specifications prepared under Task 03 below along with a completed application form to the WCDOH for their review and approval.

**Deliverables:** Engineer’s Report for submission to WCDOH, with a copy of the engineering report be provided electronically to the Village. Note that WCDOH application fees will be the responsibility of the Village. This task is limited to the submission only. Meetings are included under Task ME00 and addressing comments and revisions are included under Task 05.

### **Task 03 – Design and Construction Documents**

**Scope** – Chazen will prepare detailed engineering plans and technical specifications including relevant details for the installation of corrosion control equipment and appurtenances to create a set of Contract Documents suitable for bidding and construction. It is anticipated that this task and Task 02 (Engineering Report) will take 2 to 4 months, from acceptance of the conceptual design, exclusive of public meetings or regulatory review(s).

The construction documents for this project will consist of the following:

- **Task 03a: Contract Drawings** - The contract drawing set is anticipated to consist of the following drawings:
  - Title Sheet
  - Notes & Legends
  - Existing Conditions Plans
  - Corrosion Control Plans and Sections (2-3 sheets)
  - Relevant Details (2 sheet)
  - Erosion and Sediment Control Details (1 sheet)

- **Task 03b: Contract Front End Specifications-** Contract specifications will include administrative/contractual (front-end) specifications. Front-end specifications will address the general conditions of the contract and provide information relative to bidding requirements, bonds, insurance, contractor's and owner's responsibilities. Front-end specifications shall be provided by the village.
- **Task 03c: Contract Technical Specifications -** Contract specifications will include technical specifications. Technical specifications will be prepared for relevant materials and equipment to be procured, elements to be incorporated into the work including site work, earthwork, piping, and relevant activities associated with the proposed construction.

The Contract drawings and specifications will be technically sufficient for a contractor to perform construction.

**Deliverables:** Chazen will provide copies of the 30 and 90 percent progress drawings to the Village for review and comment. Chazen will provide 2 sets of Contract Documents to the Village for their files and ten (10) sets of Bid Packages for distribution to Contractors. Digital copies of the Contract Documents will be furnished upon request.

#### **Task 04 – Regulatory Agency Coordination and Review**

**Scope –** Chazen will submit the Engineer's report, construction plans and specifications to agencies having review authority over the project. These are anticipated to include the WCDOH.

It is anticipated that the regulatory agencies will provide comments and/or request additional information based on their review of the submitted application material. This task covers Chazen's efforts required to respond to comments, provide additional information, make necessary revisions to documents and re-submit them to the regulatory agencies.

The level of effort required by Chazen to respond to regulatory agency comments and queries cannot be ascertained precisely. Therefore, Chazen proposes to invoice these services on an hourly basis in accordance with current billing rate schedule.

Should additional budget be needed to address further comments and request(s) for information based on the extent of the regulatory agencies review, Chazen will submit a Technical Service Change Order (TSCO) for your review and approval.

**Assumption:** One (1) resubmission to the WCDOH.

**Deliverables:** Copies of revised documents re-submitted to WCDOH and a copy of meeting minutes.

#### **Task 05 – Additional Comments**

Chazen recognizes the Village may have additional comments for Chazen to address beyond the scope outlined above. For purposes of this proposal, Chazen proposes to invoice these services on an hourly basis in accordance with current billing rate schedule.

## **C. CONSTRUCTION SERVICES PHASE**

### **Task 06 – Bidding and Contract Award**

**Scope** –In preparation for bidding, Chazen assumes that the Village will invite Contractor's the opportunity to bid on the project. Chazen can assist the Village with selection of the Contractors to be invited to bid.

During the bid period, Chazen will respond to all Requests for Information (RFIs) from prospective bidders and prepare any necessary addenda to the Contract Documents in a timely manner. Chazen will coordinate and participate in a "pre-bid" meeting with prospective bidders in advance of the bid opening to answer any questions specific to the project.

Upon completion of the bid period, Chazen will attend the official bid opening. Chazen will review, tabulate and evaluate the bids received. The Village will be informed of any informality in the bids and if the bids are unbalanced or non-responsive. Chazen will provide the Village with a written recommendation for the award of a construction contract along with the basis for this recommendation.

Upon the Village's selection of the most responsive and responsible bidder, Chazen will prepare the Notice of Award and Notice to Proceed and assist the Village with the execution of the contractual agreement between the Village and selected contractor. Chazen will also assist the Village and Village's attorney in verifying the adequacy of the contractor submitted agreements, bonds and insurances.

**Assumption:** Chazen will coordinate the distribution of bid documents to the bidders. This task is limited to response to four (4) RFIs and the preparation of two (2) addenda.

**Deliverables:** Bid advertisement, responses to bidder queries, bid tabulation and recommendation, Notice of Award, Notice to Proceed and related documentation.

### **Task 07- System Sampling and Corrosion Control System Calibration**

Upon completion of the construction of the corrosion control system, Chazen recommends the village sample within the distribution system to determine the efficacy of the corrosion control and adjust the corrosion control chemical dosage accordingly. Chazen will review and analyze data samples collected, and provide the Village and WCDOH an update to the results. The purpose of the samples and recommendations will be to optimize the recently installed system as well as obtain an assurance from the WCDOH that they agree the action has satisfied their office.

### **Task 08 - Construction Oversight**

To be provided in the future.

### **Task ME00- Meetings**

This task assumes four (4) meeting with the Village and one (1) meeting with the WCDOH, to discuss and present the project and one (1) public meeting.

Should additional budget be needed for additional meetings with the Village, WCDOH or public, Chazen will submit a Technical Service Change Order (TSCO) for your review and approval.

**Task RE00 – Reimbursable Expenses**

This scope of services include only the cost for the preparation of the work as outlined above and includes our direct expenses, such as mileage, overnight mailings, and photocopying and map reproductions.

### **Other Assumptions and Limitations**

This proposal includes the cost for only those specific services delineated above. Additional items not addressed as part of this proposal include:

- Work falls under Type II action and no EIS or State Environmental Quality Review compliance are required.
- The preparation of supplemental or additional reports or correspondence which may be requested or required by you, your representatives or consultants, or governmental agencies.
- Additional studies or analyses required by the Village not adopted in scope.
- Additional site visits or meetings with you, your representatives, or governmental or approval agencies or their representatives other than what has been specified in this proposal;
- Application, review and permit fees requested by regulatory agencies are to be provided by the Village;
- Laboratory analysis costs for sample collection to be provided by the Village;
- Project and Task Completion dates are estimates and are dependent upon regulatory review, and public input; which cannot be accurately predicted.

This Scope of Services was developed based on known project conditions. Should other work be requested, it will be initiated upon receipt of an executed technical services change order.

### **Owner/Village's Responsibility**

The Village will be responsible for, and Chazen may rely upon, the accuracy and completeness of reports, data and other information furnished to Chazen by the Village, including copies of all relevant data for review, water sampling results, complaint records, maps and description of the water distribution system, water usage summaries, etc.

### **Substantive Revisions**

This Scope of Services was developed based on known conditions of the project corridor as of the date of this proposal and discussions with the Client. Please note that regulatory agencies may request additional technical studies, plans and documentation not outlined herein. Should such work be requested, Chazen will prepare a supplemental work order for the Client's review, and will commence work upon receipt of an approved authorization from the Client.

**Professional Services Fee Schedule**

Chazen proposes to bill each task as indicated in the following Fee and Time Schedule Summary. Invoices will be issued monthly for all services performed during that month, and are payable upon receipt. Lump Sum tasks will be billed commensurately with the percentage of the task that has been completed. Time and Materials tasks will be billed in accordance with Chazen’s Fee Schedule in effect at the time services are rendered; a copy of our 2014 Fee Schedule is attached.

Fees listed for Time and Materials tasks are estimates only. Chazen will make its best effort to complete each of these tasks within the estimated amounts; however it is possible that it will be necessary to exceed these amounts in order to complete the scope of services for each task. We will not exceed any estimated fee mounts without notifying you beforehand.

**Fee and Time Schedule Summary**

Tasks		Fee Estimates			Proposed Schedules
Task No.	Task Description	Lump Sum Fee Bill	Time & Materials Estimate	Sub-Consultant Estimate	Weeks from Task Authorization <sup>(1)</sup>
<b>A. DATA REVIEW AND SAMPLING</b>					
01	Historic Data Review	\$6,000	--	--	Start: Within 1 Week from Authorization Duration: 2 weeks
01a	Additional Research		TBD		
<b>B. DESIGN PHASE</b>					
02	Conceptual Design & Engineer’s Report	\$8,000	--	--	Duration: 4 weeks
03	Design and Construction Documents				Duration: 4 months
03a	Contract Drawings	\$14,000		\$2,000	Duration: 4 months
03b	Contract Front End Specifications	\$1,000			Duration: 4 months
03c	Contract Technical Specifications	\$5,000		\$1,000	Duration: 4 months
04	Regulatory Agency Coordination and Review	--	\$3,750	--	Duration: 4 weeks

Tasks		Fee Estimates			Proposed Schedules
Task No.	Task Description	Lump Sum Fee Bill	Time & Materials Estimate	Sub-Consultant Estimate	Weeks from Task Authorization <sup>(1)</sup>
05	Additional Comments		\$1,000		

C. CONSTRUCTION SERVICES PHASE					
06	Bidding and Contract Award	\$6,500	--	--	Duration: 4 weeks
07	System Sampling and Corrosion Control System Calibration	--	TBD	--	Duration: TBD
08	Construction Oversight	--	TBD	--	Duration: 3 months
ME00	Meetings	\$5,000			
RE00	Reimbursable Expenses	--	\$1,000	--	
<b>Total Estimated Proposal Fee</b>		<b>\$54,250</b>			

<sup>1</sup> Lump Sum tasks will be billed according to milestone completions for each deliverable, or commensurately with the percentage of the task which has been completed. Schedule an estimate only due to approvals need by Agencies outside of Chazen's control.

<sup>2</sup> Fees listed for Time and Materials tasks, Sub-Consultants, and Reimbursable Expenses are estimates only. Chazen will make its best effort to complete each of these tasks within the estimated amounts; however it is possible that it will be necessary to exceed these amounts in order to complete the scope of services for each task. We will not exceed any estimated fee amounts without written authorization from you.

The projected start and end dates are subject to change, but Chazen is available to begin this work in July 2014. As such, the projected start and end dates are based on the July start, provided that written authorization is received in time to not delay start.

**Authorization**

As formal authorization to proceed, please forward written notification in accordance with the Village's standard format.

We look forward to providing the Village with professional services for this project. If you have any questions or require additional information, please do not hesitate to us at (845) 454-3980.

Sincerely,



THE Chazen COMPANIES

Joseph M. Lanaro, P.E., M.ASCE  
Vice President, Engineering Services

cc: Janine King, Assistant Village Manager  
Marco Gennarelli, Superintendent of Public Works  
Daniel O'Connor, P.E., Village Engineer

George Cronk, P.E., Senior Project Manager  
Elizabeth Frederick, Project Engineer/Project Manager

pk (signature) 8/5/14