

Jerry Barberio
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Village of Mamaroneck
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Date: March 14, 2023
Subject: Annual Sewer Cleaning and Inspection Assistance Proposal

Dear Mr. Barberio,

The Village of Mamaroneck (Village) has developed a Capacity, Management, Operation, and Maintenance (CMOM) document as part of the settlement with Save the Sound (STS). As a part of the CMOM, the Village developed an Annual Sewer Inspection and Repair program, which includes cleaning and inspecting approximately 10% of the Village sewers and manholes each year to identify infrastructure in need of repair, sources of inflow and infiltration (I/I), or maintenance issues that should be addressed. The Village owns and maintains approximately 245,000 linear feet of sanitary sewer. Therefore, approximately 25,000 linear feet of sewer and associated manholes will be inspected each year.

According to *Table 6 – Annual Sewer Inspection Schedule* in the CMOM, year one inspections will be performed in the northern area of the West Basin sewershed as shown in **Figure 1**. This area includes approximately 25,800 linear feet of sewer and 130 manholes. The Village has requested that Arcadis develop this proposal to provide assistance with the first year of this program and for continued as-needed support with their sewer program.

Task 1 – Sewer Cleaning and Inspection Coordination

The Village shared the cost of purchasing a Closed-Circuit Television (CCTV) truck with the Town of Mamaroneck (Town). There is an intermunicipal agreement between the two municipalities and the Village pays Town staff to operate the CCTV truck to inspect Village sewers when requested. Arcadis will assist the Village in coordinating the first year CCTV efforts by providing detailed field maps of the northern West Basin sewershed to the Town and reviewing data as inspections progress to confirm quality and completeness of the videos and CCTV logs. Arcadis will also summarize the process followed for this task in a guidance document for the Village's future use.

Pipes will be cleaned prior to inspection according to the standards listed in Section 6.3.1 of the CMOM. The inspection of gravity sewer segments will be conducted in accordance with the National Association of Sewer Service Companies (NASSCO) Pipe Assessment Certification Program (PACP®) procedure standards and performed from manhole-to-manhole. The PACP® coding will be completed by the Town of Mamaroneck staff. Types of defects that may be observed and recorded during inspections include root intrusions, cracks, fractures, broken pipe, active infiltration, evidential infiltration, deposit and grease buildup, and pipe wall deterioration. Arcadis estimates that it will take the Town approximately 15-20 days to complete the CCTV inspections in the northern West Basin sewershed.

Task 1 Deliverables –

- Complete set of videos and CCTV logs
- Guidance for future planning and coordination of CCTV investigation

Task 2 – Manhole Inspections

The Arcadis field team will perform manhole inspections from the ground surface. Inspection data will be recorded digitally on a tablet while in the field, eliminating the need for post inspection write-ups and inserting photos into reports. The inspections will include collecting photos of the manhole, including a general photo of the interior and of any significant defects or conditions that will require corrective actions. A photo outside the manhole will also be taken to show where the manhole is located.

Arcadis will provide three days of manhole inspection training to DPW staff and a guidance document to prepare them for future inspections. The guidance document will be a brief document that summarizes the parts of the manhole, inspection process, and photos of typical manhole conditions. Arcadis will also provide guidance for the Village to purchase a tablet of their own and an electronic inspection form to use in the future. The electronic form has been developed using the Fulcrum Software.

Typically, Arcadis staff can inspect approximately 15 manholes in one day. Nine 8-hour days with a field team of two has been budgeted for this task, along with time required for management and project coordination.

Task 2 Deliverables –

- Complete set of manhole inspection forms in PDF and Excel formats
- Guidance for future manhole inspections

Task 3 – CCTV and Manhole Review and Recommendations

Arcadis will review the CCTV footage and completed manhole inspection records and provide an assessment of condition for each pipe segment and manhole. The assessment will include a detailed analysis of defects observed and a recommendation for rehabilitation. Arcadis will use the PACP grading system to help prioritize rehabilitation of identified problems. Locations that may be at risk of causing backups, overflows, or failure will be presented to the Village as soon as they are observed. Typically, about 1,500 linear feet of CCTV footage can be reviewed in one day but it depends on the condition of the sewer.

While assessing each sewer segment's condition and identifying the appropriate rehabilitation technique, a holistic approach to the overall condition of adjacent sewers will be taken to determine the most cost-effective rehabilitation technique. Planning level cost estimates will be developed for the rehabilitation and provided in a report to the Village. Arcadis will provide a guidance document that summarizes the steps for this task, but it won't include detailed instruction on how to review CCTV videos and manhole inspection forms. It is recommended that the Village staff who will be reviewing CCTV and manhole inspection results next year take a PACP certification class. This is not required but will help staff quickly become familiar evaluating defects and recommending repairs.

Task 3 Deliverables

- Report summarizing the work completed and the results of the pipe and manhole inspections.
- General guidance on manhole and sewer review process and cost estimates

Jerry Barberio
Village of Mamaroneck
March 14, 2023

Task 4 – As-Needed Services

Arcadis will provide as-needed assistance for ongoing sewer related tasks within the Village. This may include ongoing discussions and negotiations with Save the Sound, assistance with implementation of the CMOM program, the Fats, Oil, Grease (FOG) Source Control Program, and with the coordination of removal of private sources of illicit discharges to the sanitary sewer. For this task, we have budgeted \$20,000. It will be used on a time and materials basis and only as requested by the Village.

Fee

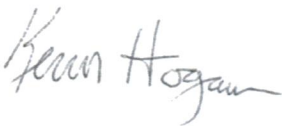
Arcadis will complete the above tasks on a time and materials basis in accordance with Attachment A, Summary of Standard Charges, for a not-to-exceed amount of **\$102,000**. A summary of the anticipated fee for each task is broken down in the table below. Actual fee by task may vary; however, the final project fee will remain within the not-to-exceed total.

Table 1 – Fee Breakdown by Task

Task	Fee
Task 1 – Sewer Cleaning and Inspection Coordination	\$8,000
Task 2 – Manhole Inspections	\$24,000
Task 3 – CCTV and Manhole Review, Recommendations, and Report	\$50,000
Task 4 – As-Needed Services	\$20,000
Total Fee for All Tasks	\$102,000

Arcadis is prepared to initiate activities immediately upon contract execution. It is anticipated it will take four months to complete this work but will depend on when the Town of Mamaroneck is able to complete the CCTV inspections. We appreciate the opportunity to submit this proposal for the requested work. Please do not hesitate to contact me at 518.250.7306 if you have any questions or would like additional information.

Sincerely,
Arcadis of New York, Inc.



Kevin Hogan, PE
Principal Engineer
Email: kevin.hogan@arcadis.com
Direct Line: 518-250-7306

CC. Gino Frabasile, P.E. – Village Engineer

Enclosures: Attachment 1

Jerry Barberio
Village of Mamaroneck
March 14, 2023

ATTACHMENT A
Summary of Standard Charges

SUMMARY OF STANDARD CHARGES

This document describes the basis for compensation and terms of payment. All rates presented apply to services rendered after January 1, 2023 and will be adjusted annually thereafter.

In addition to these fees, clients will also be responsible for any sales or value-added taxes that may apply to engineering services performed.

Hourly Rates: Charges for services provided will be in accordance with the following schedule:

Design Tech II/Field Technician II	71
Drafter I/Field Technician III and IV	85
Drafter II/Field Technician V	97
Document Tech	122
Project Assistant I and II	136
CADD Designer /Field Supervisor	170
Engineer/Scientist	128
Staff Engineer/Scientist/Architect	135
Project Engineer/ Scientist/Architect	154
Senior Engineer/ Scientist/Architect I	161
Senior Engineer/Scientist/Architect II	175
Principal Engineer/Scientist/Architect I	225
Principal Engineer/Scientist/Architect II	239
Engineer/Scientist Director	266

Other Direct Costs: All expenses incurred for a project, except in-house services specified below, from outside vendors will be invoiced at cost plus 10% to cover administrative expenses. These items may include, but are not limited to: shipping charges; printing; supplies; equipment; traveling expenses; special insurance; licenses; permits; or subcontractors.

In-house services consist of:

- Transportation - \$0.655 per mile for vehicles.

Payment: All invoices are due and payable within 30 days of billing date. Any attorney's fees, court costs, or other related expenses incurred in collecting delinquent accounts shall be paid by the client. Delinquent bills are subject to finance charges of 1.5% per month.