

# TECH TIPS

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## THE MUNICIPAL PERSPECTIVE: PATH TO A SUCCESSFUL SEWER CLEANING AND CCTV PROJECT

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For municipalities, engineers, and system owners, CCTV generally goes hand-in-hand with sewer cleaning. NASSCO's Pipeline Assessment and Certification Program (PACP) states "Where practical, the TV inspection will be conducted in a manner that provides an unobstructed view of the entire pipe". In order to improve the success rate of these projects, the system owner (or agent) and the contractor must work together as one team; without this cohesion, the best-specified project can be doomed from the inception. Through effective planning and well communicated goals, the system owner can measure success by meeting the project goals on budget and on time.

### EFFECTIVE PLANNING STARTS WITH WELL-DEFINED GOALS.

For the CCTV, the first PACP objective is to fully document structural deficiencies and construction features, since those deficiencies and features will have the most long-term influence on pipe integrity and pipe management. To meet this objective, the goal of cleaning is to achieve an unobstructed view of the entire pipeline. NASSCO sewer line cleaning standards state that the pipe must be 95% clear of debris at any location in the pipe segment (this is not an average). Reducing this percentage will result in a lower cost, but reducing it too low may be futile in producing meaningful data. Increasing this percentage would result in a cleaner pipe, but may not be cost-effective or practical. The end result will need to be defined before a successful project can be achieved.

Once the goal is defined, the scope of the services can then be developed, within the allowable budget. The amount of work to be completed, in a specific time frame, will need to be realistic for the amount of money budgeted.

After the goals and project scope are defined, the specifications can be tailored to fit a specific budget. Some examples of criteria that will affect the budget are as follows:

- What type of cleaning is needed? Standard grit removal is less costly than specialty cleaning such as tap milling, calcium removal and heavy root cutting.
- Who is performing the cleaning to support the inspection—the owner or the contractor performing the cleaning?
- What is the method of pre-cleaning inspection?
- How will the pipe be inspected/verified (post cleaning)?
- How will subsequent data submittals be formatted? These techniques will be directly in line with the project goals. CCTV using NASSCO PACP coding is the standard.
- Do some locations require sonar, laser profiling and/or multi-sensor/advanced inspection techniques? These are available at increased costs.
- Is high definition video required?
- What is the terrain for access? Street side is normally the most cost-effective, depending on traffic patterns. Additional equipment and restoration may be needed for accessing backyard easements and off-road areas. In some cases access roads may need to be constructed.

Project specifications should include maps that provide location, access requirements, pipe size,

segment length and material composition, at a minimum. Previous CCTV inspections of the pipelines can be helpful for contractors to better understand the type of cleaning that will be required. The more data that can be provided to the potential bidders, the lower the potential overall project cost. This approach encourages bidders to minimize the number of assumptions and potential risk when estimating the project costs. Bid items should be specific as to size of pipe and type and level of cleaning required. This keeps the cost down by only paying for the specific level of work required. Bidding specifications that are complete and detailed will result in a more complete and competitive bid and reduce the number of unforeseen change orders.

A mandatory pre-bid meeting should be scheduled to interview the potential bidders and convey project goals. The purpose of this mandatory pre-bid meeting is to ensure that all bidders on the project fully understand the scope of work, definitions, and interpretation of all items in the bid documents. The meeting notes are typically documented in an addendum to the project bid documents. If the project has challenging access requirements, bidders can be required to perform site inspections before submitting a bid.

Many municipalities require bidders to be prequalified. Prequalification requirements can require bidder documentation of the following:

- Experience with similar projects;
- Experience utilizing the same equipment and crews;
- History of successful projects; and
- Specific project references that include contact information, identification of difficulties in similar projects, and the solution used by contractor while maintaining project budget.

When verifying references, it is often helpful to determine if they have familiarity with the other bidders. References who are system owners or engineers can also provide suggestions for improving the specifications or bidding process to help prevent unbalanced bids. Often, speaking with one reference may lead you to other references that were not submitted, but who can be very useful sources of information.

A successful sewer cleaning and CCTV project supports NASSCO's mission to set industry standards for the assessment and rehabilitation of underground utilities. Additional information and tips are available in the newly updated Small Diameter Sewer Cleaning and Inspection Specification which can be found at [nassco.org](http://nassco.org).