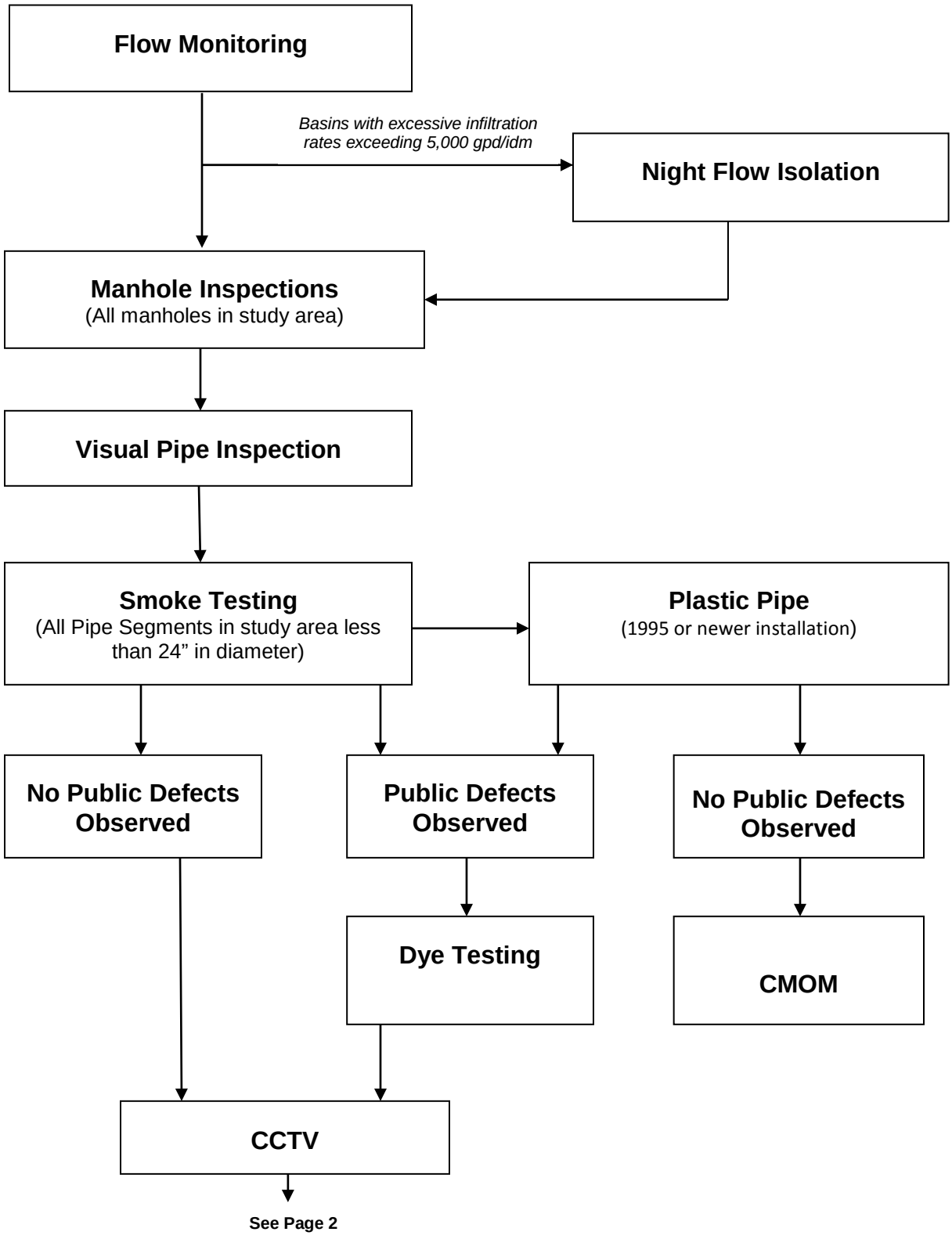
APPENDIX A

Sanitary Sewer Assessment ("SSA") Process



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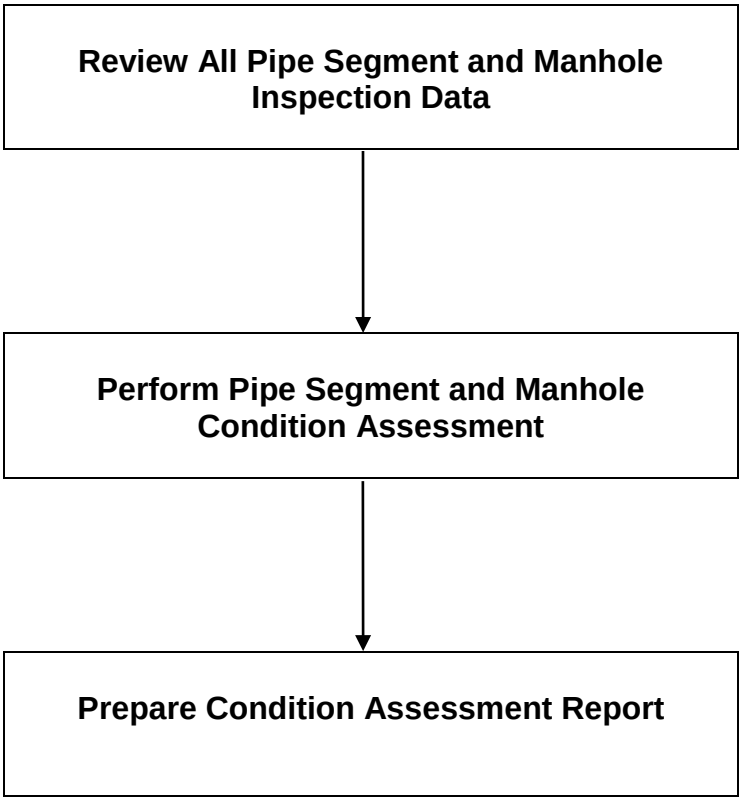
Review All Pipe Segment and Manhole Inspection Data
Perform Pipe Segment and Manhole Condition Assessment
Prepare Condition Assessment Report

Plan, Schedule, and Conduct Sanitary System Assessments

Small Diameter Gravity Sewer Mains (Less than 24" diameter)

Select Inspection Methods

- CCTV (all non-plastic pipe, plastic pipe older than 1995, and newer plastic pipe having defects revealed by other investigations)
- Visual inspection methods may include:
  - Visual Pipe Segment inspection from full descent entry by trained field personnel
- Smoke testing
  - Including concurrent visual inspection of buildings from the public ROW to attempt to ascertain the presence of downspouts and other private property storm drains
- Dye testing
- Other techniques (such as new technologies or methods that become available as preapproved by EPA)
- All other investigations the City deems necessary to locate sources of I/I that could cause or contribute to SSOs and/or condition defects in WCTS

Prioritize pipes for inspection using these criteria:

- The occurrence of dry-weather and wet-weather SSOs;
- The nature and extent of customer complaints;
- Previous and current flow monitoring studies;
- Location of SSOs in low-income census tract areas;
- The causes and applicable methods of eliminating SSOs;
- Remedial Measures already undertaken or scheduled for implementation;
- Field crew work orders; and,
- Other relevant information
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Schedule and conduct inspection activities

- Generally, schedule CCTV after visual Pipe Segment and smoke testing inspection activities are complete.

Large Diameter Gravity Sewer Mains (Equal to or greater than 24" diameter)

Inspection Methods

- CCTV, sonar, 360 degree video, laser imaging, physical entry
- Other techniques (such as new technologies or methods that become available as preapproved by EPA)
- All other investigations the City deems necessary to locate sources of I/I that could cause or contribute SSOs and/or condition defects in WCTS

Select and prioritize pipes for inspection using these criteria:

- The occurrence of dry-weather and wet-weather SSOs;
- The nature and extent of customer complaints;
- Previous and current flow monitoring studies;
- Location of SSOs in low-income census tract areas;
- The causes and applicable methods of eliminating SSOs;
- Remedial Measures already undertaken or scheduled for implementation;
- Field crew work orders; and,
- Other relevant information

Schedule and conduct inspection activities

Manholes

Inspection Methods

- Full descent inspection with visual pipe inspection performed at same time.
- Other techniques (such as new technologies or methods that become available as preapproved by EPA)

Schedule and conduct inspection activities

- Generally manhole inspections are performed throughout the time frame to study a selected basin.

Gravity Sewer Line Condition Assessment

Perform condition assessment based on these guidelines:

- Prioritize the review of inspection data based on the severity of findings.
- Record defects utilizing PACP coding.
- Categorize assets based on the following table:

Category	Example Structural Conditions for Each Category	Likely Outcome
Grade 5	Pipe segment has failed or will likely fail within the next five years. Pipe segment requires immediate attention.	Remedial Design
Grade 4	Pipe segment has severe defects with the risk of failure within the next five to ten years.	Remedial Design
Grade 3	Pipe segment has moderate defects. Deterioration may continue, but not for 10 to 20 years.	Add into CMOM program
Grade 2	Pipe segment has minor defects. Pipe is unlikely to fail for at least 20 years	Add into CMOM program

Grade 1	Pipe segment has minor defects. Failure is unlikely in the foreseeable future.	Add into CMOM program

Perform condition assessment on inspection data and consider appropriate criteria which shall include factors such as the following:

- Type and severity of structural defects
- Historical operation and maintenance data: Overflows, inspections, cleaning findings, cleaning frequency, previous remediation, customer complaints, and other unique circumstances for each individual asset
- Site conditions: Access for maintenance and construction, depth, soil type, environmental sensitivity, surface restoration requirements, and other unique circumstances for each individual asset

Manhole Condition Assessment

Perform condition assessment based on these guidelines:

- Prioritize the review of inspection data based on the severity of findings.
- Record Inflow/Infiltration defects, such as pick hole covers, frame seal leaks, infiltration runners, etc and assign estimated values of I/I for each Manhole. Each Manhole which is observed to have I/I defects are added to a remedial design project.
- Record MACP structural condition ratings for each component of the Manhole (cover and frame, frame adjustment, corbel, wall, bench, and trough) based on scoring conditions of 1 thru 5. Each Manhole component score is added and averaged. Any Manhole which has any component of 4 or 5, or whose average is above 4 is added to remedial list.
- Categorize assets based on the following table:

Category	Example Structural Conditions for Each Category	Likely Outcome
Grade 5	Failure has already occurred or is likely to occur.	Remedial Design
Grade 4	Cracks, deterioration, visible deformities observed.	Remedial Design
Grade 3	Moderate corrosion observed and/or moderate surface damage to material.	Add into CMOM program
Grade 2	Moderate material degradation noticed, however no visible structural defects.	Add into CMOM program
Grade 1	New manhole with no defect observed.	Add into CMOM program

Perform condition assessment on inspection data and consider appropriate criteria which shall include factors such as the following:

- Type and severity of structural defects
- Historical operation and maintenance data: Overflows, inspections, cleaning findings, cleaning frequency, previous remediation, customer complaints, and other unique circumstances for each individual asset
- Site conditions: Access for maintenance and construction, depth, soil type, environmental sensitivity, surface restoration requirements, and other unique circumstances for each individual asset