

APPENDIX D

**OUTLINE OF A
CONTINUOUS SANITARY SEWER
SYSTEM MAINTENANCE PROGRAM**

BOND

100% COTTON FIBER

NOTE: The following outline was prepared by the ICAP Technical Advisory Panel to summarize the components of a continuous sanitary sewer system maintenance program. The ICAP technical Advisory Panel is an inter-agency committee made up of members elected by local officials, sanitary districts and utility companies. The program outline is provided as a reference to be used for scheduling periodic maintenance tasks.

OUTLINE

CONTINUOUS SANITARY SEWER SYSTEM MAINTENANCE PROGRAM

GOAL: Institute a continuous preventive maintenance program for the proper maintenance and operation of the local sanitary sewer system. The program should ensure the proper and satisfactory state of repair and performance level of the local sewer system at all times. The purpose is to prevent basement sewage backups, adverse surcharging and water pollution.

PROGRAM COMPONENTS

1. **Mapping** - A map of the sewer system should be completed and updated on an annual basis. The map should contain the location of all sewer pipes, manholes, lift stations and other structures. Rim, invert and other appropriate elevations should be shown wherever possible.
2. **Inspections** - A continuous inspection program should be implemented where approximately 20% of the system is visually inspected each year. In general, the complete system should be inspected every 5 years.
 - a. **Manholes** - They should be visually inspected for defects and needed repairs.
 - b. **Sewers** - Lamping should be performed on the 5 year cycle. TV inspection should be performed if visual inspection warrants it.
 - c. **Appurtenances** - Any lift stations, junction chambers, siphons, etc., should receive periodic maintenance work as required.
 - d. **Private Sector** - The local agency should inspect the private sector to identify and correct new illegal connections or reconnection of old sources. The following alternatives are suggested:
 1. Spot check subsystems by flow monitoring and inspect structures when excessive flows indicate a private sector I/I problem.
 2. Include inspections as a requirement for certificates of occupancy both for new construction and change of ownership.
 3. Inspect all buildings on a five year cycle except for those subsystems which demonstrate there are no private sector I/I problems.
 - e. **Flow Monitoring** - When visual or other inspections indicate possible excess flow problems in certain subsystems, flow monitoring should be performed at key manholes. Smoke testing, dye testing and excavation may be required in some subsystems where complaints or backup causes are difficult to locate.
3. **Rehabilitation and Maintenance Work** - The rehabilitation work found necessary from the inspection program should be performed as soon as possible. Contemporary methods and materials should be utilized wherever possible when performing such work as: sealing of manhole covers, manhole frame adjustment or

repair, manhole wall repair, sewer pipe and sewer joint grouting or chemical sealing, pipe replacement, routine cleaning, etc.

4. Personnel - Sufficient staffing with own forces or subcontracting of work should be provided to carry out the necessary inspection and rehabilitation work. All personnel should be well trained. Periodic schedules of training for purposes of review and updating should be provided. Joint training and regional meetings with building departments and public works departments should be conducted.
5. Material and Equipment - Proper material and equipment shall be provided and maintained at all times. Periodic inspections should be made to assure an adequate supply in a workable condition.
6. Safety - Of prime importance is a well developed safety program. Training of personnel in all aspects of safety related to rehabilitation work and the furnishing of the necessary equipment cannot be over emphasized. Equipment shall include such items as: man-lifts, safety harnesses, gas detectors, ventilation equipment, traffic cones, hard hats, outer wear, etc.
7. Budgeting - Sufficient funds must be included in the budget each year to adequately carry out the scheduled work for maintaining the sewer system. Costs should not be co-mingled with other public works costs if possible. Separate line items are recommended for sewer maintenance costs. A user charge system could be developed.
8. A resource bibliography for sources of training shall be included.