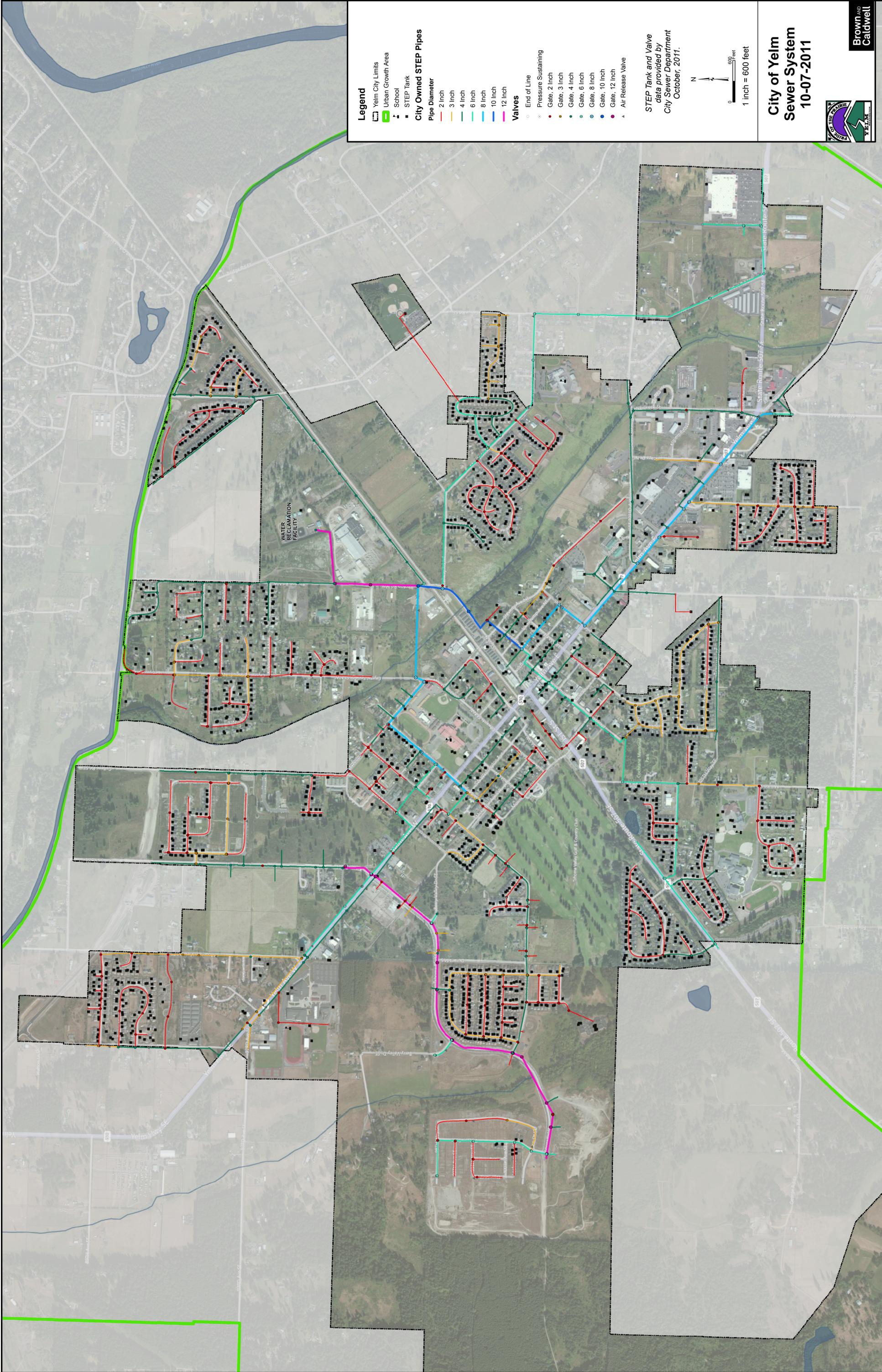


APPENDIX 3: CHAPTER 3 APPENDICES

- 3A: Collection System Detailed Map
- 3B: Future Load by Basin
- 3C: Not Used
- 3D: Example Language for Pretreatment of Wastewater

3A: Collection System Detailed Map



Legend

- Yelm City Limits
- Urban Growth Area
- School
- STEP Tank

City Owned STEP Pipes

Pipe Diameter

- 2 inch
- 3 inch
- 4 inch
- 6 inch
- 8 inch
- 10 inch
- 12 inch

Valves

- End of Line
- Pressure Sustaining
- Gate, 2 inch
- Gate, 3 inch
- Gate, 4 inch
- Gate, 6 inch
- Gate, 8 inch
- Gate, 10 inch
- Gate, 12 inch
- Air Release Valve

STEP Tank and Valve data provided by City Sewer Department October, 2011.

0 600 feet
1 inch = 600 feet

**City of Yelm
Sewer System
10-07-2011**



3B: Future Load by Basin

Basin	2010 Tanks Per Basin						Basin Description				percent of growth-2020				percent of growth-2030				
	Single Family Res. Tanks		Multi Family Res. Tanks		Total Res. Tanks		in city limits/UGA	zoning	residential	commercial	schools	residential	commercial	school					
	Res. Tanks	Multi Family Res. Tanks	Total Res. Tanks	Comm. Tanks	School Tanks														
Basin 1- MPCs					0														
Basin 2					0		UGA	Env Sens Area	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Basin 3	277	8	286	7	5		City	Tahoma Terra	30%	30%	20%	20%	20%	10%	20%	10%	10%	10%	10%
Basin 4			0				UGA	Low Density Res	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Basin 5	119	4	123	9			City/UGA	Residential	17%	5%	0%	20%	20%	10%	20%	0%	10%	0%	0%
Basin 6	61	3	64	7			City/UGA	City/UGA	17%	5%	0%	5%	15%	0%	15%	0%	15%	0%	0%
Basin 7	196	10	206	5			City/UGA	Res/Indust	5%	5%	20%	5%	15%	5%	15%	5%	15%	5%	5%
Basin 8			0	1			UGA	Low Dens Res	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Basin 9	137		137				City	fully developed	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Basin 10	261	1	262	1	1		City/UGA	Mod Dens Res/Indust	7%	0%	20%	0%	5%	5%	5%	5%	5%	5%	5%
Basin 11	116	54	171	66			City	Com/Heavy Com	15%	35%	0%	0%	15%	0%	15%	0%	15%	0%	0%
Basin 12			0				UGA	Low/Mod Dens Res	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Basin 13			0					Low Dens/Env Sens/School	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%
Basin 14			0	1				Low Density Res	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Basin 15	591	88	681	82	12			Com/heavy com/school/r	7%	20%	40%	20%	10%	10%	10%	10%	10%	10%	10%
Total:	1,758	168	1,930	179	18				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

flow type	Peak Day Flow - 2010		Peak Day Flow - 2020		Peak Day Flow - 2030		Growth: 2010-2020		Growth: 2020-2030	
	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD	MGD
residential	0.34	0.75	0.34	0.75	1.08	0.41	0.41	0.33	0.33	0.33
commercial	0.09	0.22	0.09	0.22	0.35	0.14	0.14	0.12	0.12	0.12
schools	0.01	0.03	0.01	0.03	0.04	0.01	0.01	0.01	0.01	0.01
total	0.44	1.00	0.44	1.00	1.46	0.56	0.56	0.46	0.46	0.46

Basin	Flow Added to Current Peak Day- for 2020 model	Flow Added to 2020- for 2030 model
Basin 2	-	-
Basin 3	0.17	0.08
Basin 4	-	0.03
Basin 5	0.08	0.06
Basin 6	0.08	0.07
Basin 7	0.03	0.04
Basin 8	-	0.02
Basin 9	0.01	-
Basin 10	0.03	0.02
Basin 11	0.11	0.05
Basin 12	-	0.02
Basin 13	-	0.02
Basin 14	-	0.02
Basin 15	0.06	0.05
Total:	0.56	0.46

3C: Not Used

3D: Example Language for Pretreatment of Wastewater

Article III. Pretreatment of Wastewater

14.06.031 Pretreatment facilities.

(1) Users shall provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) as required to comply with this chapter and shall achieve compliance with all applicable pretreatment standards and requirements set out in this chapter within the time limitations specified by the EPA, the state, or the administrator, whichever is more stringent.

Any facilities required to pretreat wastewater to a level acceptable to the administrator shall be provided, operated, and maintained at the user's expense. The use of hot water, enzymes, bacteria, chemicals or other agents or devices for the purpose of causing the contents of a pretreatment device to be discharged into the sanitary sewer system is prohibited.

Facilities required to pretreat waste or wastewater before discharge to the POTW must submit six complete sets of plans and specifications for the pretreatment system to the administrator. All such plans shall describe the proposed pretreatment method, process, or technology, including products, chemicals, agents, or devices used for pretreatment. All plans and specifications shall be prepared under the supervision of a professional engineer licensed in accordance with Chapter 18.43 RCW and in accordance with the requirements for approval of industrial wastewater facilities contained in Chapter 173-240 WAC. All copies of these documents submitted for review shall bear the seal of the professional engineer under whose supervision the documents were prepared. No construction or installation shall begin until written approval of the plans and specifications has been given by the administrator.

(2) Inspection of Construction of Pretreatment Facilities.

(a) During the construction of all pretreatment facilities, including private sewers that directly or indirectly connect to the public system, the administrator shall have access thereto for inspection purposes and, if considered advisable by the administrator, may require an inspector on the job continuously. At no time shall sewers be backfilled or covered until the department has been notified and has given proper inspection and approval. If the work is not approved, it shall be repaired or removed and reconstructed, whichever is directed by the administrator.

(b) All costs of inspection and testing shall be borne by the owner.

A person may not discharge wastewater to the POTW from or through a pretreatment facility until the facility's design, size, construction plan, installation, and connection to the POTW has been inspected and approved by the administrator.

The administrator may require a pretreatment facility, process, device, agent or product to be tested prior to use or commencement of discharge to the POTW.

Within 90 days after the completion of the wastewater pretreatment facility, the discharger shall furnish as-built drawings and its operations and maintenance procedures to the administrator. Any subsequent significant changes in the pretreatment facility or method of operation shall be reported to and approved by the administrator prior to the initiation of the changes.

New sources and new users determined to be significant industrial users (SIUs) must have pretreatment facilities installed and operating prior to discharge, if required.

(3) Pretreatment Facilities for FOG. The administrator shall approve installation of grease removal and treatment systems. Users who operate restaurants, cafes, lunch counters, cafeterias, bars or clubs, hotels, hospitals, retirement homes, assisted living centers, grocery stores, factories, school kitchens, butcher shops, or other establishments where food (polar) grease may be introduced to the sewer system must install, operate, and maintain an approved grease interceptor (GI) to prevent the discharge of fat waste, oil, and grease.

(a) GI Design Criteria. All industrial waste streams containing FOG within restaurants, commercial kitchens, or other FOG-generating facilities shall be directed into an appropriately sized GI. No sanitary waste shall be conveyed to the GI. GIs shall be designed, constructed, and installed in accordance with city standards, the Uniform Plumbing Code (UPC) standards and sized in accordance with these rules (UPC Appendix H). But in no case shall interceptors be less than 750 gallons. A sampling port/box that will accommodate the collection of valid oil and grease samples shall be included on all GI installations.

(b) GI Installation. GIs shall be installed such that they are easily accessible for inspection, cleaning, and the removal of FOG and solid material. An accessible GI shall meet the following minimum criteria: the edge of the GI shall be flush with any edge of an overhead obstruction; and the overhead clearance shall be at least equal to the overall depth of the GI. GI access covers should be located such that the influent and effluent sanitary "T" and compartment walls are accessible at all times for proper cleaning and inspection.

(c) Fats, Oils, and Grease Sources. All fixtures, equipment, and drain lines located in a facility's food preparation and cleanup areas, which are sources of FOG, shall be connected to a GI. Dishwashers or other fixtures discharging emulsifying agents, such as detergents, should be located such that their potential to adversely impact the GI operation is minimized. The following types of equipment or fixtures have been identified as potential sources of FOG and shall be connected to a GI: pre-rinse and/or pre-wash sinks or sinks in dishwashing areas; two- or three-compartment sinks; wok stoves; self-cleaning stove ventilation/exhaust hood; kitchen floor drains; floor drains; floor sinks; mop sinks; food prep sinks; and hand sinks. The city requires that all drain lines have permanently fixed screens with maximum one-fourth-inch openings to prevent the pass through of larger solids into the GI and/or wastewater collection system. Commercial food service discharges are prohibited from the use of food grinders or garbage disposals.

(d) Record-Keeping.

(i) All GI maintenance and compliance records and correspondence must be retained on site by the permitted facility for a minimum of three years. A separate maintenance log shall be maintained for each GI and posted in the immediate vicinity of each device. GI maintenance logs shall include the following information: GI location and volume; maintenance dates; volume removed in gallons; name of company and person(s) performing maintenance; and disposal methods (i.e., the name of the state-permitted facility where the wastewater was discharged if transported off of the property).

(ii) Records associated with waste cooking oil collection and disposal shall also be retained on site by the permitted facility for a minimum of three years. Cooking oil collection logs shall include the following information: collection date; volume collected in gallons; name of company and person(s) performing collection; and disposal methods.

(e) Facility Assessment. The owner or facility representative shall, upon request by the administrator's authorized representative, open the GI(s) for the purpose of confirming that the maintenance frequency is appropriate, all necessary parts of the installation are in place, including, but not limited to, baffles and influent and effluent tees, and that the device(s) is being maintained in efficient operating condition.

(f) GI Maintenance Frequency. Unless otherwise approved by the administrator, GIs must be pumped-in-full every three months, or sooner if the total accumulation of surface FOG (including floating solids) and settled solids reaches 25 percent of the GI's overall liquid depth. A facility can petition the administrator to modify the cleaning frequency by demonstrating that the GI's solids and grease layer never exceeded 25 percent of the interceptor's capacity in a 12-month period. The administrator reserves the right at any time to increase the cleaning frequency requirement to monthly if the GI's solids and grease layer exceeds 25 percent of its capacity.

The introduction of emulsifying agents such as chemicals, solvents or enzymes either directly or indirectly into the GI, other than what is considered typical business operational practices, such as dishwashing or sanitation, is strictly prohibited. Products that are shown to reduce FOG, such as bacteria, may be used in addition to the regular GI maintenance program, but shall not be a consideration in determining GI sizing or maintenance frequency. The use of such products requires the approval of the administrator.

(g) The administrator may be petitioned to allow an alternate grease removal and/or pretreatment system where a case can be made for an economic hardship due to limited space. These alternate systems may require specific maintenance programs. Businesses installing additional or alternative pretreatment systems must have said treatment systems approved and inspected by the administrator prior to installation or use.

Users may be required to retrofit facilities that were constructed prior to the adoption of the ordinance codified in this chapter. The requirement to retrofit shall be on a case-by-case basis, as determined by the administrator for compliance with city, state, and federal regulations.

The administrator is authorized to adopt and publish additional criteria for GIs.

(4) Other Interceptors/Separators. Dischargers who operate automatic and coin-operated laundries, car washes, filling stations, commercial garages or similar businesses having any type of washing facilities (including pressure washing and steam cleaning) or any other dischargers producing grit, sand, oils, lint, or other materials that have the potential of causing partial or complete obstruction of the building side sewer or other areas in the POTW shall, upon order of the administrator, install approved interceptors, oil/water separators, or tanks in accordance with specifications adopted by the city of Puyallup such that excessive amounts of oil, sand, and inert solids are effectively prevented from entering the POTW.

(5) Installation and Maintenance. All oil/water separators, settling tanks and grit traps shall be properly installed, maintained, and operated by the discharger at his own expense. Interceptors shall be installed such that they are easily accessible for inspection, cleaning, and the removal of FOG and solid material. The installation shall be kept in continuous operation at all times, and shall be maintained to provide efficient operation. Unless otherwise approved by the administrator, the separator, tank, trap, and/or pretreatment device must be emptied every six months, or sooner if the total accumulation of surface FOG (including floating solids) and settled solids reaches 25 percent of the separator's overall liquid depth, or the device is discharging in excess of local limits. The administrator reserves the right at any time to increase the cleaning frequency if the separator solids and grease layer exceeds 25 percent of its capacity, or the device is discharging in excess of local limits. Cleaning must be performed by a service contractor qualified to perform such cleaning, or in a manner approved by the administrator. A facility can petition the administrator to modify the cleaning frequency by demonstrating that the separator's solids and FOG layer never exceeded 25 percent of the separator's capacity in a 12-month period, and that the device is discharging in compliance with local limits. All material removed shall be disposed of in accordance with all state and federal regulations. Records and certification of maintenance shall be made readily available to the administrator for review and inspection, and must be maintained for a minimum of three years.

If failure to maintain a settling tank, grit trap, GI, or oil/water separator results in partial or complete blockage of the building sewer, private sewer system discharging to the POTW, or other parts of the city POTW, or adversely affects the treatment or transmission capabilities of the POTW, or requires excessive maintenance by the city, or poses a possible health hazard, the discharger responsible for the facilities shall be subject to the remedies herein, including cost recovery, enforcement and penalties. (Ord. 2881 § 1, 2007).