

M-16

Basin: Flow Meter #3

MH #: 5-77

Description of Problem:

- Deposits (excrement, toilet paper, etc.) causing damming inside manhole
- Manhole channel may be in low spot
- Benches are full of deposits

-Minimal flow entering and exiting manhole



Deposits are causing damming inside manhole channel.



Manhole benches are full of deposits.



Infiltration stains on manhole interior walls.

M-17

Basin: Flow Meter #3

MH #: 5-79

Description of Problem:

- Steady, clear flow through manhole
- Deposits on bench-may be from surcharge event
- Minimal ponding on manhole cover-concrete collar around manhole cover, looks relatively new



Steady, clear flow through manhole. Deposits on manhole benches.



Infiltration stains on manhole interior walls.



Concrete collar around manhole rim appears relatively new.

M-18

Basin: Flow Meter #3

MH #: 5-96

Description of Problem:

- Dripping water from leak in manhole riser section
- Interior walls are wet
- Mineral deposits on one riser section around entire section circumference- may be leak all around

- No ponding on manhole cover
- Minimal flow through pipe



Minimal flow through pipe.



Dripping water from leak in manhole riser section.



Manhole benches are wet.

M-19

Basin: Flow Meter #4

MH #: 5-142.1

Description of Problem:

- Manhole riser sections are wet
- Mineral deposits on risers

- Minimal flow through pipe



Minimal flow through pipe.



Mineral deposits on risers.



Manhole riser sections are wet.

M-20

Basin: Flow Meter #4

MH #: 5-142

Description of Problem:

- Lateral crack in pavement across entire roadway width jutting out laterally from manhole
- Inflow from crack in manhole cover
- Significant flow from west
- Manhole risers are wet
- Toilet paper on highest rung of manhole ladder (approx 16" down from manhole rim)



Significant flows from west.



Infiltration stains on manhole risers.



Lateral crack in pavement across entire roadway width jutting out laterally from manhole.

M-21	Basin: Flow Meter #4	MH #: 5-148
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Description of Problem:

- Bench is wet
 - Significant flow from north
 - Lateral crack in road from manhole to both edges of pavement
 - Pavement around manhole rim has been elevated
 - Mineral deposits around outside of north pipe invert
-
- No visible infiltration through manhole rim



M-22

Basin: Flow Meter #4

MH #: 5-152

Description of Problem:

- Steady flow through manhole
- Quite a bit of debris (i.e. leaves, rocks, branches) on bench
- Manhole rim and cover have shifted 1.5 to 2 inches
- Manhole risers are wet



Steady flows through manhole. Debris on bench.



Manhole rim and cover have shifted.

M-23

Basin: Flow Meter #4

MH #: 5-154

Description of Problem:

- Mineral deposits on outside of east invert
 - Mineral deposits on south side bench
 - Cracks in pavement around manhole rim
 - Streaks on interior manhole walls
 - Grasses and weeds overgrown on manhole cover
- Minimal flow through manhole



Mineral deposits on outside of east invert on south bench.



Streaks on interior manhole walls.



Deposits on north side bench.

M-24

Basin: Flow Meter #4

MH #: 5-164

Description of Problem:

- Wet bench
- Seepage around edge from top of bench up to first riser section
- Visible infiltration around manhole rim
- Pavement is cracked around manhole rim
- Rim slightly above grade of pavement

-Minimal flow



Minimal flow through manhole.



Seepage around edge from top of bench up to first riser section.



Rim slightly above grade of pavement. Pavement is cracked around manhole rim.

M-25

Basin: Flow Meter #4

MH #: 5-165

Description of Problem:

- Sticks, debris and firecrackers inside
 - Wet benches
 - Stains on north side interior wall
 - Minor pavement cracking around manhole rim
 - Manhole rim at or slightly above adjacent grade
- No flow through manhole



No flow through manhole.



Sticks, debris and firecrackers inside.



Stains on north side interior wall.

M-26

Basin: Flow Meter #4

MH #: 5-166

Description of Problem:

- Wet benches
- Seepage around edge at top of bench up to first rung of manhole

-Minimal flow



Manhole rim flush with adjacent grade.



Benches are wet.



Interior walls are wet above manhole benches.

M-27

Basin: Flow Meter #4

MH #: 5-178

Description of Problem:

- Steady flow from north
- Pavement cracked around manhole rim
- Lateral pavement cracking across entire roadway width jutting out from manhole
- Benches are wet
- Mineral deposits on south riser section

-Minimal flow from west



Steady flow from north. Minimal flow from west.



Mineral deposits on south riser section.



Stains on manhole interior wall.

M-28

Basin: Flow Meter #4

MH #: 5-179

Description of Problem:

- South bench is wet and has deposited solids
- Visible infiltration on southeast interior wall behind ladder rung

-Minimal flow through manhole



South bench is wet and has deposited solids.



Infiltration stains.



Visible infiltration on interior wall.

M-29

Basin: Flow Meter #1

MH #: 16-171.1

Description of Problem:

- Heavy mineral deposits on south interior wall
- Benches are wet
- Visible infiltration through north interior wall
- Rim above adjacent grade

-Minimal flow through pipe



Minimal flow through manhole. Benches are wet.



Heavy mineral deposits on interior wall.

M-30

Basin: Flow Meter #1

MH #: 16-171

Description of Problem:

- Benches are wet
- Visible infiltration through manhole wall right above bench
- Manhole wall has mineral deposits
- Manhole rim slightly above adjacent grade

-Minimal flow through manhole



Deposits on benches.



Minimal flow through manhole. Benches are wet.

M-31

Basin: Flow Meter #4

MH #: 5-132.2

Description of Problem:

-Streaks on interior manhole walls

-Manhole rim flush with pavement

-Minimal flow through manhole



Minimal flow through manhole.



Appears to be infiltration at manhole wall joint.



Infiltration stains on manhole interior walls.

M-32

MH #: 5-132.1A

Basin: Flow Meter #4

Description of Problem:

- Appears to be a newer manhole
- Minimal flow through manhole
- No visible infiltration at time of inspection
- Manhole at base of driveway in front of 5115 191st St SW



Minimal flow through manhole.



Light infiltration stains on manhole walls.



Manhole walls and ladder appear newer.

M-33

Basin: Flow Meter #4

MH #: 5-157

Description of Problem:

- Steady flow from west
- Manhole rim above adjacent grade

- Benches appear dry
- No visible infiltration



Steady flow from west.



Light stains on interior manhole walls. No visible infiltration.



Standing water in manhole riser section.

APPENDIX D
TV INSPECTION

BACKGROUND

Gray & Osborne, Inc. contracted with Pro-Vac Clean Service Company to perform the TV inspection videotaping. The TV inspection was completed in two phases. Phase 1 was conducted in January 2010 and included approximately 19,000 lineal feet of pipe. Gray & Osborne made a preliminary review of the results of the Phase 1 inspection and found numerous problems. Based on the preliminary results of the Phase 1 inspection, the City authorized Gray & Osborne to continue with the Phase 2 inspection. Phase 2 inspection was conducted between February and April of 2010. The TV inspection was performed in the winter and early spring months when the groundwater level was higher so infiltration into the sewer could be more readily identified.

TV inspection provides a continuous picture of the conditions inside the sewer. The TV inspection functions to identify cracks, sags, offset joints, broken or deformed pipe, defective connections, leaking joints, root intrusion, and leaky manholes. The inspection is performed with a remote-controlled robotic camera that provides a digital recording. The robotic camera was inserted into a manhole and advanced down the sewer pipe to the manhole at the other end. The camera has the ability to pan and tilt to view any problems identified. The camera operator stops the camera and reports any problems and their location in the pipe from the manhole where the camera was launched. In addition, a launch camera can be used to perform TV inspection of side sewers off the sewer main line.

TV INSPECTION LOCATION

Phase 1 of the TV inspection was conducted primarily in the Flow Meter Basin #4 in the Scriber Lake area. Approximately 19,000 linear feet of sewer pipe was inspected. Phase 2 was conducted primarily in Flow Meter Basin #3 and #4 with a small amount of inspection in Flow Meter Basin #6. Phase 2 consisted of the TV inspection of approximately 45,000 linear feet of sewer pipe. In addition, the Phase 2 inspection included the launching of 101 side sewer laterals. The side sewer laterals were identified during the mainline inspection as locations where excessive and constant flows were seen to be coming from a side sewer. The side sewer lateral inspection included launching a push camera up to 50 feet up the lateral. The total length of sewer pipe that was TV inspected in each Flow Meter Basin can be seen in Table D-1. The total length of pipe that was TV inspected can be seen in Figure D-1.

TABLE D-1

TV Inspection Pipe Lengths

Flow Meter Basin	Sewer Pipe TV Inspected (lf)
Flow Meter Basin #3	28,700
Flow Meter Basin #4	32,800
Flow Meter Basin #6	2,400
Flow Meter Basin #8	200
Total	64,100

RESULTS

Pro-Vac Clean Service Company performed the TV inspection videotaping. They created a TV inspection report for each run of sewer pipe between two manholes. The report includes the manhole number, the date the inspection was performed, and the distances from the launch manhole of each side sewer and any problems that were identified during the inspection. The Pro-Vac inspection reports can be found at the end of Appendix D.

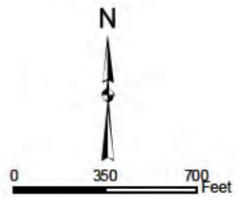
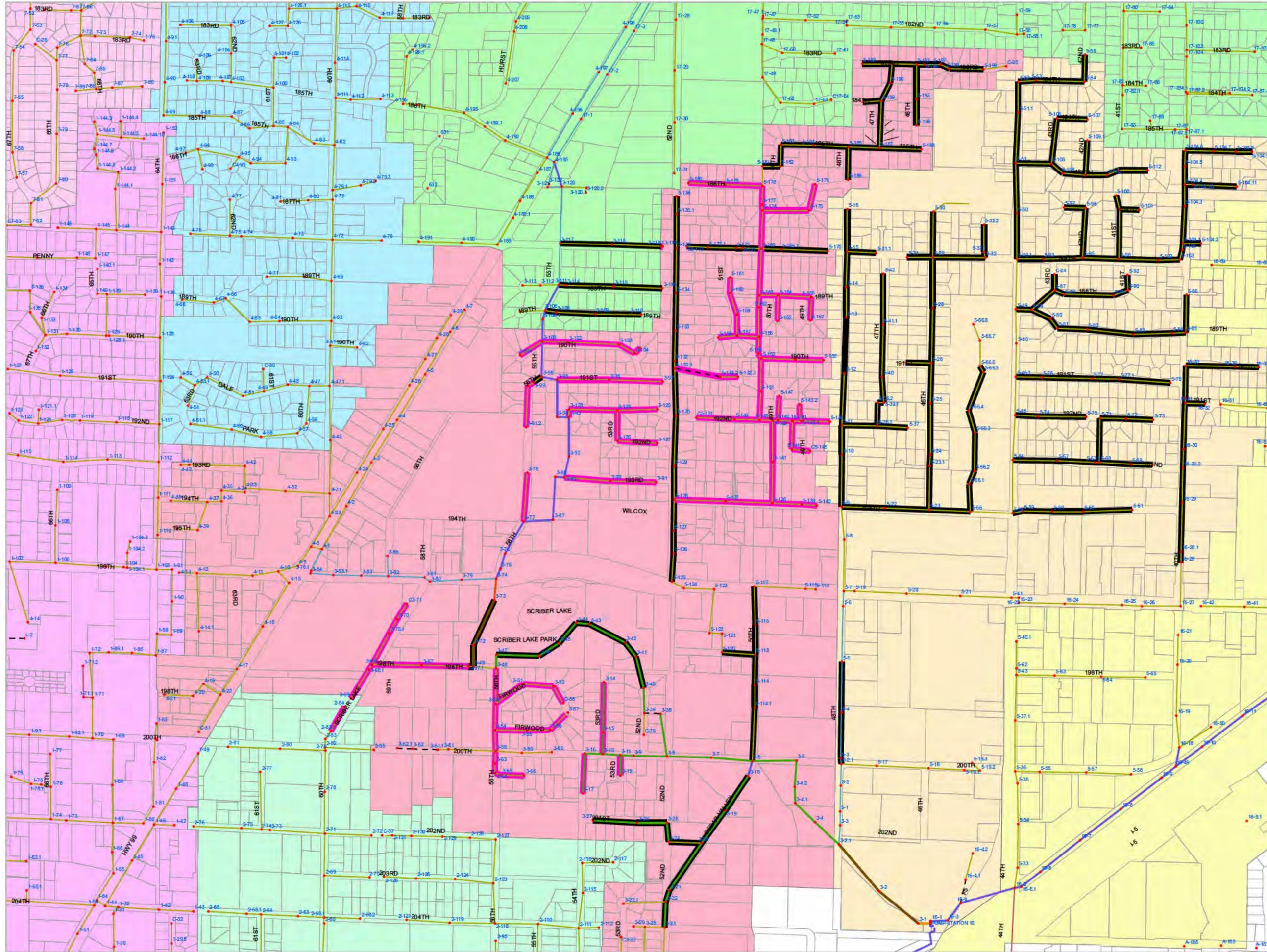
Pro-Vac provided Gray & Osborne with 20 DVDs containing 65 hours of TV inspection video. Gray & Osborne viewed all the video and created TV inspection reports documenting all the problems that were identified in the video. The Gray & Osborne inspection reports can be found at the end of Appendix D.

A total of 715 problems were identified through the TV inspection. Each of the TV inspection problems identified were ranked by the severity of the problem using the same designations as the other inspection results. The severity of each problem was broken down into the following categories; Severe, Heavy, Medium, and Light problems. The Severe category included the most severe problem and the Light category included least severe problems. Results are seen in Table D-2.

TABLE D-2

TV Inspection Problems Severity

Severity	Number of Problems
Severe	1
Heavy	111
Medium	138
Light	465
Total =	715



LEGEND:

- SEWER MANHOLES
- SEWERLINES:**
- unknown
- 6 in
- 8 in
- 10 in
- 12 in
- 15 in
- 18 in
- 21 in
- 24 in
- TV INSPECTION PHASE 1 (1835 LF)
- TV INSPECTION PHASE 2 (45279 LF)
- PARCELS
- FLOW METER BASINS:**
- BASIN #1 - 338 ACRES
- BASIN #2 - 356 ACRES
- BASIN #3 - 320 ACRES
- BASIN #4 - 511 ACRES
- BASIN #5 - 250 ACRES
- BASIN #6 - 722 ACRES
- BASIN #7 - 285 ACRES
- BASIN #8 - 463 ACRES
- BASIN #9 - 464 ACRES
- BASIN #10 - 295 ACRES
- BASIN #11 - 110 ACRES

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FIGURE D-1
TV INSPECTION AREA

L:\lynnwood\062416\Study\GIS\FIGURE1_FINAL.mxd

SUMMARY

A summary of TV inspection results can be seen in Table D-3. This table contains all the information about the TV inspection problems including the upstream and downstream manhole numbers, location, a description of the problem, the distance to the problem, and the problem severity. The table includes a TV inspection reference number that can be used to reference the TV inspection summary sheets at the end of Appendix D. All the TV inspection problems were assigned a problem number related to the proximity to the manhole number that is consistent with the numbering for the results of the other sources of inspection. The problem number is the upstream manhole number and the length the problem is located downstream the mainline from the manhole.

APPENDIX E

TV INSPECTION DVDS

APPENDIX E
TV INSPECTION DVDS

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INFILTRATION & INFLOW STUDY
TV INSPECTION - JANUARY - APRIL 2010
DVD #1

Gray & Osborne Inc.
701 Dexter Ave N, Suite #200
Seattle, WA 98109
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TV INSPECTION
SEVERE PROBLEMS

APPENDIX F

ALL INSPECTION PROBLEMS

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
1	3-90-74	Severe	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Easement	Medium infiltration @ joint- medium mineral deposits @ joint & pipe segment joint- pipe segment joint is broken- severe infiltration @ main pipe segment joint	Mainline Point Repair	\$ 11,010	9	74.0	TV-42	TV Inspection	2010	4	N/A
2	2-84-29	Heavy	1	2-84	2-83.1	Scriber Lake Road	Sidewalk	Public	Heavy rock debris in pipe	Pipe Cleaning	\$ 950	1 or 2	29.0	TV-1	TV Inspection	2010	8	N/A
3	3-14-48	Heavy	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	Heavy mineral deposits @ inside of joint; medium infiltration	Side Sewer Tee Repair	\$ 11,580	7	48.0	TV-3	TV Inspection	2010	4	N/A
4	3-55-210	Heavy	1	3-55	3-54	56th Ave W & Firwood Dr.	Residential	Public	Heavy infiltration @ joint	Mainline Point Repair	\$ 11,010	1 or 2	210.0	TV-9	TV Inspection	2010	4	N/A
5	3-50-104	Heavy	1	3-50	3-48	56th Ave W & 200th St SW	Residential	Public	Heavy circular crack- pipe broken; heavy infiltration	Mainline Point Repair	\$ 11,010	4	104.0	TV-11	TV Inspection	2010	4	N/A
6	3-50-106	Heavy	1	3-50	3-48	56th Ave W & 200th St SW	Residential	Public	Large longitudinal crack on each side of pipe; heavy infiltration	Mainline Point Repair	\$ 11,010	4	106.0	TV-12	TV Inspection	2010	4	N/A
7	3-50-191	Heavy	1	3-50	3-48	56th Ave W & 200th St SW	Residential	Public	Heavy infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	191.0	TV-13	TV Inspection	2010	4	N/A
8	3-50-273	Heavy	1	3-50	3-48	56th Ave W & 200th St SW	Residential	Public	Heavy debris in pipe- blocking camera passage	Pipe Cleaning	\$ 950	4	273.0	TV-14	TV Inspection	2010	4	N/A
9	3-127-35	Heavy	1	3-127	3-126	53rd Pl W & 192nd Pl SW	Residential	Public	Broken lateral joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	35.0	TV-17	TV Inspection	2010	4	N/A
10	3-126-5	Heavy	1	3-126	3-124	53rd Pl W & 192nd Pl SW	Residential	Public	Heavy mineral deposits in lateral and @ joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	5.0	TV-18	TV Inspection	2010	4	N/A
11	3-103-395	Heavy	1	3-103	3-102	190th St SW	Residential	Public	Heavy infiltration through manhole walls and cover	Manhole Grouting	\$ 2,190	1 or 2	395.0	TV-25	TV Inspection	2010	4	N/A
12	3-102-192	Heavy	1	3-102	3-100	55th Ave W & 191st St SW	Residential	Public	Water level in pipe is more than half full	Relay Sagging Pipe	\$ 16,030	1 or 2	192.0	TV-27	TV Inspection	2010	4	N/A
13	3-91-215	Heavy	2	3-91	3-90	193rd Pl SW	Residential	Public	Heavy roots @ lateral joint	Root Removal	\$ 1,400	4	215.0	TV-39	TV Inspection	2010	4	N/A
14	3-90-175	Heavy	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Easement	Heavy infiltration in lateral- heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	9	175.0	TV-43	TV Inspection	2010	4	N/A
15	3-90-323	Heavy	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Easement	Water level in pipe is more than half full	Relay Sagging Pipe	\$ 16,030	9	323.0	TV-46	TV Inspection	2010	4	N/A
16	3-70-1-222	Heavy	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Heavy root problem in lateral	Root Removal	\$ 1,400	9	222.0	TV-55	TV Inspection	2010	4	N/A
17	3-70-0	Heavy	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	Heavy infiltration in manhole	Manhole Grouting	\$ 2,190	8	0.0	TV-58	TV Inspection	2010	4	N/A
18	3-70-90	Heavy	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	Heavy root problem in lateral	Root Removal	\$ 1,400	8	90.0	TV-62	TV Inspection	2010	4	N/A
19	3-68-377	Heavy	2	3-68	3-67	198th St SW	Residential	Public	Heavy root problem in lateral	Root Removal	\$ 1,400	3	377.0	TV-72	TV Inspection	2010	4	N/A
20	3-67-346	Heavy	2	3-67	3-67.1	198th St SW	Residential	Public	Medium circular crack- infiltration gusher in pipe crack	Mainline Point Repair	\$ 11,010	1 or 2	346.0	TV-73	TV Inspection	2010	4	N/A
21	5-154-0	Heavy	3	5-154	5-152	190th St SW	Residential	Public	Heavy infiltration in upstream manhole	Manhole Grouting	\$ 2,190	5	0.0	TV-79	TV Inspection	2010	4	N/A
22	5-149-68	Heavy	3	5-149	5-148	192nd St SW	Residential	Public	Heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	5	68.0	TV-86	TV Inspection	2010	4	N/A
23	5-146-148	Heavy	3	5-146	5-143.1	192nd St SW	Residential	Public	Heavy mineral deposits in lateral- light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	8	148.0	TV-101	TV Inspection	2010	4	N/A
24	5-144-81	Heavy	3	5-144	5-143	49th Ave W & 192nd St SW	Easement	Easement	Heavy mineral deposits	Mainline Point Repair	\$ 11,010	1 or 2	81.0	TV-102	TV Inspection	2010	4	N/A
25	5-143.1-27	Heavy	3	5-143.1	5-143	192nd St SW	Residential	Public	Heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	5	27.0	TV-106	TV Inspection	2010	4	N/A
26	5-142.1-1	Heavy	3	5-142.1	5-142	192nd St SW	Residential	Public	Heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	5	1.0	TV-110	TV Inspection	2010	4	N/A
27	5-142.1-37	Heavy	3	5-142.1	5-142	192nd St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	5	37.0	TV-113	TV Inspection	2010	4	N/A
28	5-142-105	Heavy	3	5-142	5-141	South of 192nd St SW	Easement	Easement	Camera underwater (upstream manhole to 145 ft upstream)	Relay Sagging Pipe	\$ 16,030	4	105.0	TV-115	TV Inspection	2010	4	N/A
29	5-142-325	Heavy	3	5-142	5-141	South of 192nd St SW	Easement	Easement	Heavy infiltration inside downstream manhole	Manhole Grouting	\$ 2,190	4	325.0	TV-116	TV Inspection	2010	4	N/A
30	5-139-181	Heavy	3	5-139	5-138	194th St SW	Residential	Public	Pipe flowing greater than 3/4 full- surcharge from downstream manhole	N/A		3	181.0	TV-120	TV Inspection	2010	4	N/A
31	5-138-4	Heavy	3	5-138	5-137	194th St SW	Residential	Public	Heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	4	4.0	TV-121	TV Inspection	2010	4	N/A
32	5-138-367	Heavy	3	5-138	5-137	194th St SW	Residential	Public	Pipe flowing approx 50% full- 120 ft upstream of downstream manhole	N/A		4	367.0	TV-124	TV Inspection	2010	4	N/A
33	5-132.2-193	Heavy	3	5-132.2	5-132.1A	191st St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	193.0	TV-126	TV Inspection	2010	4	N/A
34	3-97-417	Heavy	3	3-97	3-96	191st St SW	Residential	Public	Heavy break in pipe- medium infiltration	Mainline Point Repair	\$ 11,010	6	417.0	TV-131	TV Inspection	2010	4	N/A
35	5-179-103	Heavy	5	5-179	5-178	186th Pl W	Residential	Public	Heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	103.0	TV-141	TV Inspection	2010	4	N/A
36	5-178-65	Heavy	5	5-178	5-177	186th Pl W	Residential	Public	Sag in pipe- 65 ft	Relay Sagging Pipe	\$ 16,030	1 or 2	65.0	TV-150	TV Inspection	2010	4	N/A
37	5-176-220	Heavy	5	5-176	5-175	186th Pl W	Residential	Public	Large circular crack- infiltration runner in pipe	Mainline Point Repair	\$ 11,010	1 or 2	220.0	TV-152	TV Inspection	2010	4	N/A
38	5-104.3-287.6	Heavy	6	5-104.3	5-104.1	40th Ave W & 188th St SW	Collector	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	287.6	TV-169	TV Inspection	2010	3	N/A
39	5-104.1-0	Heavy	6	5-104.1	5-104	40th Ave W & 188th St SW	Collector	Public	Heavy infiltration in upstream manhole	Manhole Grouting	\$ 2,190	1 or 2	0.0	TV-170	TV Inspection	2010	3	N/A
40	5-26-233.4	Heavy	7	5-26	5-25	46th Ave W & 191st St SW	Residential	Public	Heavy mineral deposits and debris @ lateral joint- appears to be completely blocking potential flow- joint offset- light infiltration @ joint	Side Sewer Tee Repair	\$ 11,580	4	233.4	TV-211	TV Inspection	2010	3	N/A
41	5-25-10.7	Heavy	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Heavy mineral deposits and light infiltration through lateral joint- joint may be offset or cracked- deposits severely blocking flow	Side Sewer Tee Repair	\$ 11,580	8	10.7	TV-213	TV Inspection	2010	3	N/A
42	5-25-127.9	Heavy	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Heavy mineral deposits and light infiltration through lateral joint	Side Sewer Tee Repair	\$ 11,580	8	127.9	TV-215	TV Inspection	2010	3	N/A
43	5-15-32.3	Heavy	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Offset lateral joint and heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	32.3	TV-235	TV Inspection	2010	3	N/A
44	5-11-179.4	Heavy	7	5-11	5-12	48th Ave W & 192nd St SW	Residential	Public	Heavy mineral deposits in lateral flow channel	Side Sewer Tee Repair	\$ 11,580	5	179.4	TV-257	TV Inspection	2010	3	N/A
45	5-42-176.7	Heavy	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Large hole in top of pipe- top of pipe caved in- mineral deposits and light infiltration through hole	Mainline Point Repair	\$ 11,010	9	176.7	TV-266	TV Inspection	2010	3	N/A
46	5-41.1-132	Heavy	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Pipe corrosion @ joint- light mineral deposits and heavy infiltration	Mainline Point Repair	\$ 11,010	10 or More	132.0	TV-274	TV Inspection	2010	3	N/A
47	5-41.1-147.4	Heavy	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration runner in top of pipe- may be hole in top	Mainline Point Repair	\$ 11,010	10 or More	147.4	TV-277	TV Inspection	2010	3	N/A
48	5-39-85.2	Heavy	8	5-39	5-38	44th Ave W & 194th St SW	Residential	Public	Heavy break in pipe- TV inspection abandoned	Mainline Point Repair	\$ 11,010	1 or 2	85.2	TV-291	TV Inspection	2010	3	N/A
49	5-36.1-96	Heavy	8	5-36.1	5-37	48th Ave W & 192nd St SW	Residential	Public	Heavy debris in pipe- mineral deposits @ joint- blocking flow if there is any- infiltration runner through deposits @ joint	Mainline Point Repair	\$ 11,010	3	96.0	TV-293	TV Inspection	2010	3	N/A
50	5-30-32.8	Heavy	8	5-30	5-29	46th Ave W & 188th St SW	Residential	Public	Heavy mineral deposits; light infiltration @ top of lateral- appears as though lateral joint may be offset	Side Sewer Tee Repair	\$ 11,580	5	32.8	TV-299	TV Inspection	2010	3	N/A
51	5-30-109.7	Heavy	8	5-30	5-29	46th Ave W & 188th St SW	Residential	Public	Heavy mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	109.7	TV-300	TV Inspection	2010	3	N/A
52	5-30-356.9	Heavy	8	5-30	5-29	46th Ave W & 188th St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	5	356.9	TV-303	TV Inspection	2010	3	N/A
53	5-28-399.7	Heavy	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Heavy infiltration- infiltration in several locations inside manhole	Manhole Grouting	\$ 2,190	9	399.7	TV-323	TV Inspection	2010	3	N/A
54	5-68-28.9	Heavy	9	5-68	5-67.1	44th Ave W & 192nd St SW	Residential	Public	Heavy break in pipe- appears to be hole in pipe @ break- soil visible and infiltration through hole- may be due to a deflected joint	Mainline Point Repair	\$ 11,010	1 or 2	28.9	TV-328	TV Inspection	2010	3	N/A
55	5-67-323.1	Heavy	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits, infiltration and root problem @ pipe segment joint- heavy break	Mainline Point Repair	\$ 11,010	10 or More	323.1	TV-350	TV Inspection	2010	3	N/A
56	5-66.5-301.3	Heavy	9	5-66.5	5-66.4	44th Ave W & 191st St SW	Residential	Public	Heavy infiltration- stains appear to begin at manhole section joint- light mineral deposits on manhole interior walls	Manhole Grouting	\$ 2,190	1 or 2	301.3	TV-353	TV Inspection	2010	3	N/A
57	5-66.4-188	Heavy	9	5-66.4	5-66.3	44th Ave W & 192nd St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	188.0	TV-354	TV Inspection	2010	3	N/A
58	5-66.3-2.9	Heavy	9	5-66.3	5-66.2	44th Ave W & 192nd Pl SW	Residential	Public	Infiltration runner @ pipe segment joint and medium mineral deposits	Mainline Point Repair	\$ 11,010	1 or 2	2.9	TV-355	TV Inspection	2010	3	N/A
59	5-66.3-295.2	Heavy	9	5-66.3	5-66.2	44th Ave W & 192nd Pl SW	Residential	Public	Root ball in pipe- blocking entire pipe- survey abandoned	Root Removal	\$ 1,400	1 or 2	295.2	TV-356	TV Inspection	2010	3	N/A
60	5-66.1-110.7	Heavy	9	5-66.1	5-66.2	44th Ave W & 194th St SW	Residential	Public	Heavy roots inside upstream manhole- infiltration through manhole rim and interior walls	Manhole Grouting	\$ 2,190	1 or 2	110.7	TV-357	TV Inspection	2010	3	N/A
61	5-50-125.6	Heavy	9	5-50	5-49.1	44th Ave W & 188th St SW	Minor Arterial	Public	Heavy debris in pipe- perhaps rocks- disallowing camera to continue- survey abandoned	Pipe Cleaning	\$ 950	1 or 2	125.6	TV-370	TV Inspection	2010	3	N/A
62	5-87-125	Heavy	10	5-87	C-2													

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
63	16-33-252	Heavy	10	16-33	16-31	40th Ave W & 190th Pl SW	Collector	Public	Infiltration runner @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	252.0	TV-376	TV Inspection	2010	3	N/A
64	5-99-396.7	Heavy	10	5-99	5-98	41st Pl W & 186th Pl SW	Residential	Public	Heavy infiltration- hole in manhole- water pouring out of hole	Manhole Grouting	\$ 2,190	3	396.7	TV-379	TV Inspection	2010	3	N/A
65	5-96-0	Heavy	10	5-96	5-97	42nd Pl W & 188th St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	0.0	TV-380	TV Inspection	2010	3	N/A
66	5-90-14.3	Heavy	10	5-90	5-92	41st Pl W & 188th St SW	Residential	Public	Concrete debris- halts and redirects flow- survey abandoned	Pipe Cleaning	\$ 950	1 or 2	14.3	TV-387	TV Inspection	2010	3	N/A
67	5-88-7.3	Heavy	10	5-88	5-87	43rd Pl W & 188th Pl SW	Residential	Public	Offset joint inside lateral- heavy infiltration through visible soil @ offset joint	Mainline Point Repair	\$ 11,010	1 or 2	7.3	TV-402	TV Inspection	2010	3	N/A
68	5-87-69.6	Heavy	10	5-87	5-79	43rd Pl W & 188th Pl SW	Easement	Easement	Infiltration runner @ pipe segment joint	Mainline Point Repair	\$ 11,010	6	69.6	TV-403	TV Inspection	2010	3	N/A
69	5-77.1-191.4	Heavy	10	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Public	Heavily grouted joint- survey abandoned	Mainline Point Repair	\$ 11,010	4	191.4	TV-415	TV Inspection	2010	3	N/A
70	5-77-21.2	Heavy	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Heavy mineral deposits inside lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	21.2	TV-421	TV Inspection	2010	3	N/A
71	5-73-216.3	Heavy	10	5-73	5-72	40th Ave W & 192nd St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	3	216.3	TV-438	TV Inspection	2010	3	N/A
72	5-72-0	Heavy	10	5-72	5-71	40th Ave W & 192nd St SW	Residential	Public	Heavy infiltration in upstream manhole	Manhole Grouting	\$ 2,190	1 or 2	0.0	TV-439	TV Inspection	2010	3	N/A
73	5-72-206	Heavy	10	5-72	5-71	40th Ave W & 192nd St SW	Residential	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	206.0	TV-440	TV Inspection	2010	3	N/A
74	5-71-0	Heavy	10	5-71	5-68	40th Ave W & 192nd St SW	Easement	Easement	Heavy infiltration in upstream manhole	Manhole Grouting	\$ 2,190	6	0.0	TV-441	TV Inspection	2010	3	N/A
75	3-118-203	Heavy	12	3-118	3-117	188th St SW & 55th Ave W	Collector	Public	Severely broken pipe, soil visible, circular and longitudinal cracks, pipe bottom is corroding with voids visible	Mainline Point Repair	\$ 11,010	7	203.0	TV-472	TV Inspection	2010	4	N/A
76	3-109-130.9	Heavy	12	3-109	3-108	189th Pl SW & 55th Ave W	Easement	Easement	Leak gushing from left side.	Mainline Point Repair	\$ 11,010	4	130.9	TV-486	TV Inspection	2010	4	N/A
77	5-115-167.6	Heavy	12	5-115	5-116	50th Ave W & 196th St SW	Collector	Public	Heavy mineral deposits at side sewer connection	Side Sewer Tee Repair	\$ 11,580	5	167.6	TV-502	TV Inspection	2010	4	N/A
78	5-171-0	Heavy	13	5-171	5-169	188th St SW & 51st Pl W	Collector	Public	Circular crack with water spraying in; heavy solids in channel	Mainline Point Repair	\$ 11,010	5	0.0	TV-512	TV Inspection	2010	4	N/A
79	5-171-80.9	Heavy	13	5-171	5-169	188th St SW & 51st Pl W	Collector	Public	Heavy mineral deposits at lateral connection joint, lateral approximately 50% blocked	Side Sewer Tee Repair	\$ 11,580	5	80.9	TV-513	TV Inspection	2010	4	N/A
80	5-114.1-0	Heavy	13	5-114.1	3-6	50th Ave W & 200th St SW	Collector	Public	Heavy infiltration in upstream manhole; light mineral deposits	Manhole Grouting	\$ 2,190	1 or 2	0.0	TV-558	TV Inspection	2010	4	N/A
81	5-114-173.8	Heavy	13	5-114	5-114.1	50th Ave W & 200th St SW	Collector	Public	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	173.8	TV-562	TV Inspection	2010	4	N/A
82	3-46-187.7	Heavy	13	3-46	3-45	Easement in Scriber Lake Park	Easement	Easement	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	187.7	TV-566	TV Inspection	2010	4	N/A
83	3-45-0	Heavy	13	3-45	3-44	Easement in Scriber Lake Park	Easement	Easement	Heavy infiltration in upstream manhole	Manhole Grouting	\$ 2,190	3	0.0	TV-567	TV Inspection	2010	4	N/A
84	3-42-86.4	Heavy	13	3-42	3-41	Easement in Scriber Lake Park	Easement	Easement	Pipe flowing nearly 75% full	N/A		1 or 2	86.4	TV-571	TV Inspection	2010	4	N/A
85	3-42-98.4	Heavy	13	3-42	3-41	Easement in Scriber Lake Park	Easement	Easement	Heavy infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	98.4	TV-572	TV Inspection	2010	4	N/A
86	5-195-250.2	Heavy	14	5-195	5-193	46th Pl W & 183rd Pl SW	Residential	Public	Severely broken pipe, soil visible, chunks of pipe missing, infiltration visible, void space behind pipe visible	Mainline Point Repair	\$ 11,010	6	250.2	TV-583	TV Inspection	2010	4	N/A
87	5-191-3.0	Heavy	14	5-191	5-190	47th Pl W & 183rd Pl SW	Easement	Easement	Circular crack, heavy mineral deposits, visible infiltration	Mainline Point Repair	\$ 11,010	6	3.0	TV-588	TV Inspection	2010	4	N/A
88	5-189-237.5	Heavy	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Offset broken connection, visible infiltration and gasket at joint	Mainline Point Repair	\$ 11,010	10 or More	237.5	TV-601	TV Inspection	2010	4	N/A
89	5-189-283.5	Heavy	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Infiltration runner at pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	283.5	TV-604	TV Inspection	2010	4	N/A
90	5-189-376.3	Heavy	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Circular crack and infiltration runner	Mainline Point Repair	\$ 11,010	10 or More	376.3	TV-605	TV Inspection	2010	4	N/A
91	5-189-377.0	Heavy	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Broken pipe in side sewer connection in manhole, large offset, void space behind pipe visible; cracks noticeable at all pipe connections into manhole	Manhole Replacement	\$ 23,410	10 or More	377.0	TV-606	TV Inspection	2010	4	N/A
92	5-185-81.6	Heavy	14	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Public	Heavy mineral deposits within lateral; unable to determine if it is active; stones visible	Side Sewer Tee Repair	\$ 11,580	5	81.6	TV-620	TV Inspection	2010	4	N/A
93	5-185-185.8	Heavy	14	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Public	Infiltration runner at pipe segment joint	Mainline Point Repair	\$ 11,010	5	185.8	TV-622	TV Inspection	2010	4	N/A
94	5-185-74.5	Heavy	14	5-185	5-184	48th Ave W & 185th Pl SW	Residential	Public	Heavy mineral deposits; possible pipe offset	Side Sewer Tee Repair	\$ 11,580	7	74.5	TV-626	TV Inspection	2010	4	N/A
95	5-67.1-43.9	Heavy	16	5-67.1	5-67	44th Ave W & 192nd Pl SW	Residential	Public	Large offset joint in lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	43.9	TV-641	TV Inspection	2010	3	81.8
96	5-67.1-32.2	Heavy	16	5-67.1	5-67	44th Ave W & 192nd Pl SW	Residential	Public	Infiltration runner @ pipe joint	Side Sewer Point Repair	\$ 8,400	10 or More	23.2	TV-645	TV Inspection	2010	3	286.6
97	5-15-0	Heavy	16	5-15	5-14	48th Ave W & 188th Pl SW	Residential	Public	Heavy debris @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	0.0	TV-652	TV Inspection	2010	3	32.2
98	5-76-8.9	Heavy	17	5-76	5-77	44th Ave W & 191st St SW	Residential	Public	Heavy debris	Pipe Cleaning	\$ 950	10 or More	8.9	TV-656	TV Inspection	2010	3	377.4
99	5-76-20.3	Heavy	17	5-76	5-77	44th Ave W & 191st St SW	Residential	Public	Heavy rock debris	Pipe Cleaning	\$ 950	10 or More	20.3	TV-657	TV Inspection	2010	3	60.9
100	5-76-26.0	Heavy	16	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Heavy broken joint- visible soil- large offset joint in lateral	Side Sewer Tee Repair	\$ 11,580	9	26.0	TV-658	TV Inspection	2010	3	29.3
101	5-77-1-0	Heavy	18	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Public	Heavily grouted joint- survey abandoned	Side Sewer Point Repair	\$ 8,400	4	0.0	TV-665	TV Inspection	2010	3	189.6
102	5-77.1-21.4	Heavy	18	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Large separated joint	Side Sewer Point Repair	\$ 8,400	8	21.4	TV-666	TV Inspection	2010	3	30.1
103	5-77.1-21.4	Heavy	18	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Visible soil through joint separation- infiltration runner	Side Sewer Point Repair	\$ 8,400	8	21.4	TV-667	TV Inspection	2010	3	30.1
104	5-77.1-21.4	Heavy	18	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Survey abandoned	Side Sewer Point Repair	\$ 8,400	8	21.4	TV-668	TV Inspection	2010	3	30.1
105	5-196-8.8	Heavy	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	Break in concrete pipe, soil is visible through break	Side Sewer Point Repair	\$ 8,400	10 or More	8.8	TV-675	TV Inspection	2010	4	150.5
106	5-191-1.0	Heavy	14	5-191	5-190	183rd Pl SW & 47th Pl W	Easement	Easement	Heavy mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	6	1.0	TV-685	TV Inspection	2010	4	107.8
107	5-189-1.5	Heavy	14	5-189	5-187	47th Pl W & 184th Pl SW	Easement	Easement	Heavy mineral deposits @ joint in lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	1.5	TV-691	TV Inspection	2010	4	68.7
108	5-188-24.3	Heavy	14	5-188	5-187	185th Pl SW & 46th Pl W	Residential	Public	Heavy mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	24.3	TV-692	TV Inspection	2010	4	4.0
109	5-183-13.9	Heavy	14	5-183	5-182	49th Pl W & 185th Pl SW	Residential	Public	Heavy mineral deposits	Side Sewer Point Repair	\$ 8,400	3	13.9	TV-707	TV Inspection	2010	4	70.4
110	5-182-6.0	Heavy	19	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Heavy mineral deposits with infiltration	Side Sewer Point Repair	\$ 8,400	10 or More	6.0	TV-709	TV Inspection	2010	4	48.7
111	5-182-11.9	Heavy	19	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Heavy mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	11.9	TV-710	TV Inspection	2010	4	48.7
112	5-182-25.3	Heavy	19	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Heavy mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	25.3	TV-714	TV Inspection	2010	4	48.7
113	5-14-N/A	Heavy	N/A	5-14	5-13	18827 48th Ave W, Lynnwood, WA	Yard	Private	Large hole below grade covered by long grass on the north side yard (smoke)	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-8	Smoke Testing	2009	3	N/A
114	5-81-N/A	Heavy	N/A	5-81	5-80	4305 189th Pl. SW, Lynnwood, WA	Yard	Private	Smoke seen from a large hole in the ground in empty lot.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-17	Smoke Testing	2009	3	N/A
115	5-77-N/A	Heavy	N/A	5-77	5-76	4309 191st St. SW, Lynnwood, WA	Yard	Private	Downspout connected to sewer. Cleanout lid cracked (Smoke seen coming from downspout and cleanout).	Storm Drain Piping	\$ 13,360	10 or More	N/A	S-6	Smoke Testing	2009	3	N/A
116	5-123-N/A	Heavy	N/A	5-123	5-122	5108 196th St. SW, Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer (smoke seen coming from downspout)	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-23	Smoke Testing	2009	4	N/A
117	3-101-N/A	Heavy	N/A	3-101	3-100	5521 190th St SW Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer.	Storm Drain Piping	\$ 13,360	3	N/A	S-26	Smoke Testing	1992	4	N/A
118	3-97-N/A	Heavy	N/A	3-97	3-96	5230 190th St SW, Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer.	Storm Drain Piping	\$ 13,360	6	N/A	S-27	Smoke Testing	1992	4	N/A
119	3-15-N/A	Heavy	N/A	3-15	3-10	19925 53rd Ave W, Lynnwood, WA	Driveway	Private	Drain in front of garage at base of driveway.	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-42	Smoke Testing	1992	4	N/A
120	5-166-N/A	Heavy	N/A	5-166	5-164	4905 189th St SW, Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer.	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-44	Smoke Testing	1992	4	N/A
121	3-27-N/A	Heavy	N/A	3-27	3-26	5320 201st Pl SW, Lynnwood, WA	Driveway	Private	Drain in driveway.	Storm Drain Piping	\$ 13,360	4	N/A	S-48	Smoke Testing	1992	4	N/A
122	4-165-N/A	Heavy	N/A	4-165	4-162	6013 178th St. SW, Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer (smoke seen coming from downspout on east side of house).	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-54	Smoke Testing	2009	5	N/A
123	4-121-N/A	Heavy	N															

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
127	4-117-N/A	Heavy	N/A	4-117	4-116	5902 183rd St. SW, Lynnwood, WA	Yard	Private	Storm drain in depression at the bottom of driveway connected to sanitary sewer.	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-63	Smoke Testing	2009	5	N/A
128	1-60.2-N/A	Heavy	N/A	1-60.2	1-50	6629 204th St SW, Lynnwood, WA	Yard	Private	Smoke billowing out of downspout	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-72	Smoke Testing	2009	7	N/A
129	2-118-N/A	Heavy	N/A	2-118	2-110	5523 204th St. SW, Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer (smoke seen coming from the downspout on the southeast corner of the house).	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-86	Smoke Testing	2009	8	N/A
130	2-56-N/A	Heavy	N/A	2-56	2-55	5910 207th Pl. SW, Lynnwood, WA	Driveway	Private	Storm drain at bottom of driveway connected to sanitary sewer (smoke seen coming from drain).	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-87	Smoke Testing	2009	8	N/A
131	2-14-N/A	Heavy	N/A	2-14	2-10	6207 211th St. SW, Lynnwood, WA	Yard	Private	Downspout connected to sanitary sewer (smoke seen coming from the downspout on the northwest corner of the house).	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-89	Smoke Testing	2009	8	N/A
132	5-97-N/A	Heavy	N/A	5-97	5-96	18632 42nd Ave, Lynnwood, WA	Yard	Private	Downspouts connected to sanitary sewer (smoke seen coming from downspouts). Owner claims no connection.	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-13	Smoke Testing	2009	3	N/A
133	3-14-67	Medium	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	Medium circular crack; light infiltration	Mainline Point Repair	\$ 11,010	7	67.0	TV-4	TV Inspection	2010	4	N/A
134	3-14-97	Medium	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	30 ft sag in pipe	Relay Sagging Pipe	\$ 16,030	7	97.0	TV-5	TV Inspection	2010	4	N/A
135	3-14-174	Medium	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	30 ft sag in pipe	Relay Sagging Pipe	\$ 16,030	7	174.0	TV-6	TV Inspection	2010	4	N/A
136	3-52-102	Medium	1	3-52	3-51	56th Ave W & Firwood Dr.	Residential	Public	Pipe damage @ lateral connection w/ main-lateral has dropped or shifted down; light infiltration	Side Sewer Tee Repair	\$ 11,580	1 or 2	102.0	TV-10	TV Inspection	2010	4	N/A
137	3-103-221	Medium	1	3-103	3-102	190th St SW	Residential	Public	Large circular crack in main & medium infiltration through crack	Mainline Point Repair	\$ 11,010	1 or 2	221.0	TV-24	TV Inspection	2010	4	N/A
138	3-99-66	Medium	2	3-99	3-98	56th Ave W & 191st St SW	Residential	Public	Camera underwater in manhole- upstream 5 ft of manhole	N/A		1 or 2	66.0	TV-31	TV Inspection	2010	4	N/A
139	3-90-296	Medium	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Public	Main pipe segment deflection @ joint	Mainline Point Repair	\$ 11,010	9	296.0	TV-44	TV Inspection	2010	4	N/A
140	3-78-359	Medium	2	3-78	3-77	56th Ave W & 194th St SW	Residential	Public	Large circular crack- soil visible through crack	Mainline Point Repair	\$ 11,010	3	359.0	TV-48	TV Inspection	2010	4	N/A
141	3-78-360	Medium	2	3-78	3-77	56th Ave W & 194th St SW	Residential	Public	Manhole surcharged- water still flowing however	N/A		3	360.0	TV-49	TV Inspection	2010	4	N/A
142	3-70.1-27	Medium	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Offset joint @ pipe material change (medium)	Mainline Point Repair	\$ 11,010	9	27.0	TV-50	TV Inspection	2010	4	N/A
143	3-70.1-239	Medium	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Large circular crack	Mainline Point Repair	\$ 11,010	9	239.0	TV-57	TV Inspection	2010	4	N/A
144	3-70-91	Medium	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	Large circular crack in pipe	Mainline Point Repair	\$ 11,010	8	91.0	TV-63	TV Inspection	2010	4	N/A
145	3-69-16	Medium	2	3-69	3-68.1	Scriber Lake Road	Sidewalk	Public	Broken lateral joint	Side Sewer Tee Repair	\$ 11,580	4	16.0	TV-65	TV Inspection	2010	4	N/A
146	3-68.1-43	Medium	2	3-68.1	3-68	Scriber Lake Road	Sidewalk	Public	Joint gasket exposed- medium roots in joint	Root Removal	\$ 1,400	1 or 2	43.0	TV-69	TV Inspection	2010	4	N/A
147	3-58-2	Medium	2	3-58	3-54	56th Ave W	Residential	Public	Large circular crack- light roots in pipe crack	Mainline Point Repair	\$ 11,010	3	2.0	TV-74	TV Inspection	2010	4	N/A
148	3-58-41	Medium	2	3-58	3-54	56th Ave W	Residential	Public	Medium amounts of infiltration	Mainline Point Repair	\$ 11,010	3	41.0	TV-75	TV Inspection	2010	4	N/A
149	3-57-197	Medium	2	3-57	3-56	Firwood Drive	Residential	Public	Large circular crack	Mainline Point Repair	\$ 11,010	1 or 2	197.0	TV-78	TV Inspection	2010	4	N/A
150	5-154-205	Medium	3	5-154	5-152	190th St SW	Residential	Public	Medium mineral deposits @ lateral joint and in lateral- light infiltration @ joint	Side Sewer Tee Repair	\$ 11,580	5	205.0	TV-83	TV Inspection	2010	4	N/A
151	5-148-41	Medium	3	5-148	5-142	192nd St SW	Residential	Public	Medium joint offset in pipe- sag begins	Mainline Point Repair	\$ 11,010	5	41.0	TV-91	TV Inspection	2010	4	N/A
152	5-148-48	Medium	3	5-148	5-142	192nd St SW	Residential	Public	Pipe flowing 1/3 full	N/A		5	48.0	TV-92	TV Inspection	2010	4	N/A
153	5-148-98	Medium	3	5-148	5-142	192nd St SW	Residential	Public	Medium joint separation in pipe	Mainline Point Repair	\$ 11,010	5	98.0	TV-93	TV Inspection	2010	4	N/A
154	5-143-43	Medium	3	5-143	5-142.1	49th Pl W & 192nd St SW	Residential	Public	Medium mineral deposits in lateral and medium infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	43.0	TV-109	TV Inspection	2010	4	N/A
155	5-142-3	Medium	3	5-142	5-141	South of 192nd St SW	Easement	Easement	Joint offset in pipe (medium)	Mainline Point Repair	\$ 11,010	4	3.0	TV-114	TV Inspection	2010	4	N/A
156	5-141-1	Medium	3	5-141	5-138	North of 194th St SW	Easement	Easement	Large circular crack- medium roots & visible soil through crack	Mainline Point Repair	\$ 11,010	1 or 2	1.0	TV-117	TV Inspection	2010	4	N/A
157	5-137-398	Medium	3	5-137	5-128	194th St SW	Residential	Public	Broken pipe	Mainline Point Repair	\$ 11,010	1 or 2	398.0	TV-125	TV Inspection	2010	4	N/A
158	3-97-69	Medium	3	3-97	3-96	191st St SW	Residential	Public	Large circular crack- severe infiltration through pipe crack	Mainline Point Repair	\$ 11,010	6	69.0	TV-127	TV Inspection	2010	4	N/A
159	5-180-251	Medium	5	5-180	5-179	186th Pl W (W of 52nd Ave W)	Residential	Public	Medium mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	4	251.0	TV-138	TV Inspection	2010	4	N/A
160	5-179-130	Medium	5	5-179	5-178	186th Pl W	Residential	Public	Medium circular crack	Mainline Point Repair	\$ 11,010	10 or More	130.0	TV-143	TV Inspection	2010	4	N/A
161	5-179-139	Medium	5	5-179	5-178	186th Pl W	Residential	Public	Medium mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	139.0	TV-144	TV Inspection	2010	4	N/A
162	5-179-166	Medium	5	5-179	5-178	186th Pl W	Residential	Public	Infiltration in pipe segment joint-runner- light mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	166	TV-145	TV Inspection	2010	4	N/A
163	5-179-227	Medium	5	5-179	5-178	186th Pl W	Residential	Public	Medium joint offset in pipe	Mainline Point Repair	\$ 11,010	10 or More	227	TV-146	TV Inspection	2010	4	N/A
164	5-179-271	Medium	5	5-179	5-178	186th Pl W	Residential	Public	Medium spiral crack & light mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	271	TV-148	TV Inspection	2010	4	N/A
165	5-179-272	Medium	5	5-179	5-178	186th Pl W	Residential	Public	Medium mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	272	TV-149	TV Inspection	2010	4	N/A
166	5-176-1	Medium	5	5-176	5-175	186th Pl W	Residential	Public	Medium circular crack- infiltration weeper in pipe	Mainline Point Repair	\$ 11,010	1 or 2	1	TV-151	TV Inspection	2010	4	N/A
167	5-3-37.2	Medium	6	5-3	5-2.1	48th Ave W & 200th St SW	Residential	Public	Medium grease in pipe	Pipe Cleaning	\$ 950	1 or 2	37.2	TV-154	TV Inspection	2010	3	N/A
168	5-10-87.2	Medium	6	5-10	5-11	48th Ave W & 192nd St SW	Residential	Public	Medium mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	4	87.2	TV-160	TV Inspection	2010	3	N/A
169	5-106-85.1	Medium	6	5-106	5-107	43rd Pl W & 184th Pl SW	Residential	Public	Medium circular crack and infiltration runner through pipe crack	Mainline Point Repair	\$ 11,010	5	85.1	TV-164	TV Inspection	2010	3	N/A
170	5-99-33.8	Medium	6	5-99	5-100	41st Pl W & 186th St SW	Residential	Public	Medium mineral deposits @ lateral connection	Side Sewer Tee Repair	\$ 11,580	3	33.8	TV-171	TV Inspection	2010	3	N/A
171	5-99-133.0	Medium	6	5-99	5-100	41st Pl W & 186th St SW	Residential	Public	Infiltration runner @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	133.0	TV-173	TV Inspection	2010	3	N/A
172	5-10-398	Medium	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Pipe 1/2 Full- sag continues- medium offset joint in pipe	Mainline Point Repair	\$ 11,010	8	398	TV-180	TV Inspection	2010	3	N/A
173	16-30-103.7	Medium	6	16-30	16-29.2	40th Ave W & 192nd Pl SW	Collector	Public	Medium mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	103.7	TV-185	TV Inspection	2010	3	N/A
174	5-31-4	Medium	7	5-31	5-29	46th Ave W & 188th St SW	Collector	Public	Medium circular crack- infiltration weeper through pipe crack and light mineral deposits	Mainline Point Repair	\$ 11,010	3	4	TV-187	TV Inspection	2010	3	N/A
175	5-31-202.9	Medium	7	5-31	5-29	46th Ave W & 188th St SW	Collector	Public	Medium infiltration near pipe outlet into manhole and medium mineral deposits	Manhole Grouting	\$ 2,190	3	202.9	TV-189	TV Inspection	2010	3	N/A
176	5-25-315	Medium	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Medium mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	8	315.0	TV-219	TV Inspection	2010	3	N/A
177	5-24-93	Medium	7	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Public	Medium infiltration near both pipe inlets into manhole	Manhole Grouting	\$ 2,190	4	93.0	TV-224	TV Inspection	2010	3	N/A
178	5-23.1-29.4	Medium	7	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Public	Medium mineral deposits in lateral- infiltration weeper	Side Sewer Tee Repair	\$ 11,580	4	29.4	TV-225	TV Inspection	2010	3	N/A
179	5-23-348.4	Medium	7	5-23	5-22	46th Ave W & 194th St SW	Residential	Public	Medium mineral deposits in lateral flow channel	Side Sewer Tee Repair	\$ 11,580	3	348.4	TV-231	TV Inspection	2010	3	N/A
180	5-15-103.3	Medium	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Medium mineral deposits & infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	103.3	TV-237	TV Inspection	2010	3	N/A
181	5-15-111.5	Medium	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Medium mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	111.5	TV-238	TV Inspection	2010	3	N/A
182	5-15-135.5	Medium	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Medium mineral deposits and light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	135.5	TV-243	TV Inspection	2010	3	N/A
183	5-42-250.1	Medium	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Large circular crack	Mainline Point Repair	\$ 11,010	9	250.1	TV-267	TV Inspection	2010	3	N/A
184	5-41.1-146.3	Medium	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Left pipe segment joint deflection- medium joint offset	Mainline Point Repair	\$ 11,010	10 or More	146.3	TV-276	TV Inspection	2010	3	N/A
185	5-41.1-400.7	Medium	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Heavy mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	400.7	TV-287	TV Inspection	2010	3	N/A
186	5-39-1.9	Medium	8	5-39	5-38	44th Ave W & 194th St SW	Residential	Public	Heavy infiltration at manhole outlet	Manhole Grouting	\$ 2,190	1 or 2	1.9	TV-290	TV Inspection	2010	3	N/A
187	5-36.1-169.3	Medium	8	5-36.1	5-11	48th Ave W & 192nd St SW	Residential	Public	Heavy mineral deposits and light infiltration @ joint	Mainline Point Repair	\$ 11,010	1 or 2	169.3	TV-295	TV Inspection	2010	3	N/A
188	5-31.1-45.7	Medium	8	5-31.1	5-15	48th Ave W & 188th St SW	Collector	Public	Large circular crack- soil visible through crack- top of pipe has shifted down-left side of pipe has caved in or shifted towards center of pipe- visible infiltration	Mainline Point Repair	\$ 11,010	1 or 2	45.7	TV-297				

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
192	5-29.1-291.5	Medium	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Infiltration runner and light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	291.5	TV-312	TV Inspection	2010	3	N/A
193	5-29.1-339.6	Medium	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Medium infiltration in downstream manhole	Manhole Grouting	\$ 2,190	10 or More	339.6	TV-314	TV Inspection	2010	3	N/A
194	5-67-320	Medium	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Medium offset joint and right joint deflection	Mainline Point Repair	\$ 11,010	10 or More	320	TV-349	TV Inspection	2010	3	N/A
195	5-61-390	Medium	9	5-61	5-60	40th Ave W & 194th St SW	Residential	Public	Medium infiltration inside downstream manhole- roots protruding through	Manhole Grouting	\$ 2,190	1 or 2	390.0	TV-361	TV Inspection	2010	3	N/A
196	5-55-145.5	Medium	9	5-55	5-54	42nd Pl W & 184th St SW	Residential	Public	Medium offset pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	145.5	TV-363	TV Inspection	2010	3	N/A
197	5-51.1-15.1	Medium	9	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Public	Medium joint separation and light infiltration through joint separation	Mainline Point Repair	\$ 11,010	4	15.1	TV-364	TV Inspection	2010	3	N/A
198	5-51.1-119.6	Medium	9	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Public	Medium longitudinal crack and light infiltration through crack	Mainline Point Repair	\$ 11,010	4	119.6	TV-365	TV Inspection	2010	3	N/A
199	5-51.1-234	Medium	9	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Public	Medium joint separation and light infiltration through joint separation- light stain @ joint	Mainline Point Repair	\$ 11,010	4	234	TV-366	TV Inspection	2010	3	N/A
200	5-50-263.8	Medium	9	5-50	5-51	44th Ave W & 186th St SW	Minor Arterial	Public	Medium offset joint, light infiltration and stain @ joint	Mainline Point Repair	\$ 11,010	3	263.8	TV-369	TV Inspection	2010	3	N/A
201	5-99-390.9	Medium	10	5-99	5-98	41st Pl W & 186th Pl SW	Residential	Public	Medium offset pipe segment joint	Mainline Point Repair	\$ 11,010	3	390.9	TV-377	TV Inspection	2010	3	N/A
202	5-99-393.9	Medium	10	5-99	5-98	41st Pl W & 186th Pl SW	Residential	Public	Infiltration runner @ pipe segment joint- medium mineral deposits	Mainline Point Repair	\$ 11,010	3	393.9	TV-378	TV Inspection	2010	3	N/A
203	5-89-142.3	Medium	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Heavy mineral deposits @ inside of lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	142.3	TV-398	TV Inspection	2010	3	N/A
204	5-79-20.7	Medium	10	5-79	5-49	44th Ave W & 189th Pl SW	Residential	Public	Light mineral deposits and infiltration runner in joint	Mainline Point Repair	\$ 11,010	7	20.7	TV-410	TV Inspection	2010	3	N/A
205	5-77.1-10	Medium	10	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Public	Medium mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	10.0	TV-414	TV Inspection	2010	3	N/A
206	5-77.1-30.5	Medium	10	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Medium mineral deposits @ lateral connection	Side Sewer Tee Repair	\$ 11,580	8	30.5	TV-416	TV Inspection	2010	3	N/A
207	5-77-114.8	Medium	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Medium mineral deposits @ lateral connection w/ infiltration dripper	Side Sewer Tee Repair	\$ 11,580	10 or More	114.8	TV-424	TV Inspection	2010	3	N/A
208	5-71-326.7	Medium	10	5-71	5-68	40th Ave W & 192nd St SW	Easement	Easement	Infiltration weeper and medium mineral deposits inside lateral	Side Sewer Tee Repair	\$ 11,580	6	326.7	TV-443	TV Inspection	2010	3	N/A
209	5-71-352.1	Medium	10	5-71	5-68	40th Ave W & 192nd St SW	Easement	Easement	Medium infiltration in downstream manhole	Manhole Grouting	\$ 2,190	6	352.1	TV-444	TV Inspection	2010	3	N/A
210	3-41-0	Medium	12	3-41	3-40	Easement in Scriber Lake Park	Easement	Easement	Pipe flowing approximately 90% full, debris hanging from ceiling	N/A		3	0.0	TV-446	TV Inspection	2010	4	N/A
211	3-41-12.5	Medium	12	3-41	3-40	Easement in Scriber Lake Park	Easement	Easement	Camera submerged	N/A		3	12.5	TV-447	TV Inspection	2010	4	N/A
212	3-26-266.2	Medium	12	3-26	3-27	201st Pl SW	Residential	Public	Circular crack at side sewer connection joint, soil visible through crack	Side Sewer Tee Repair	\$ 11,580	4	266.2	TV-449	TV Inspection	2010	4	N/A
213	3-26-72.9	Medium	12	3-26	3-25	201st Pl SW	Residential	Public	Side sewer protrudes into main.	Side Sewer Grinding	\$ 1,400	3	72.9	TV-451	TV Inspection	2010	4	N/A
214	3-25-114.7	Medium	12	3-25	3-24	52nd Ave W & Cedar Valley Rd	Residential	Public	35 ft sag	Relay Sagging Pipe	\$ 16,030	1 or 2	114.7	TV-454	TV Inspection	2010	4	N/A
215	3-21-337	Medium	12	3-21	3-20	Cedar Valley Rd & 52nd Ave W	Collector	Public	8 ft section of pipe flowing 50% full or greater	N/A		1 or 2	337.0	TV-461	TV Inspection	2010	4	N/A
216	3-118-294.3	Medium	12	3-118	3-117	188th St SW & 55th Ave W	Collector	Public	Hole in pipe with light mineral deposits and infiltration	Mainline Point Repair	\$ 11,010	7	294.3	TV-473	TV Inspection	2010	4	N/A
217	3-118-294.9	Medium	12	3-118	3-117	188th St SW & 55th Ave W	Collector	Public	Hole in pipe with light mineral deposits and infiltration	Mainline Point Repair	\$ 11,010	7	294.9	TV-474	TV Inspection	2010	4	N/A
218	3-118-395	Medium	12	3-118	3-117	188th St SW & 55th Ave W	Collector	Public	Pipe flowing approximately full	N/A		7	395.0	TV-475	TV Inspection	2010	4	N/A
219	3-116-243.3	Medium	12	3-116	3-115	189th St SW & 55th Ave W	Residential	Public	Side sewer protrudes into main.	Side Sewer Grinding	\$ 1,400	1 or 2	243.3	TV-476	TV Inspection	2010	4	N/A
220	3-108-39.4	Medium	12	3-108	3-106	189th Pl SW & 55th Ave W	Easement	Easement	70 ft sag	Relay Sagging Pipe	\$ 16,030	4	39.4	TV-492	TV Inspection	2010	4	N/A
221	3-108-120.4	Medium	12	3-108	3-106	189th Pl SW & 55th Ave W	Easement	Easement	Camera under water	N/A		4	120.4	TV-493	TV Inspection	2010	4	N/A
222	5-116-21.5	Medium	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	Heavy flows- 60 ft section	N/A		7	21.5	TV-495	TV Inspection	2010	4	N/A
223	5-116-107.2	Medium	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	90 ft sag	N/A		7	107.2	TV-496	TV Inspection	2010	4	N/A
224	5-116-196.5	Medium	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	Circular crack- pipe flowing approximately half-full	Mainline Point Repair	\$ 11,010	7	196.5	TV-499	TV Inspection	2010	4	N/A
225	5-172-60.8	Medium	13	5-172	5-171	188th St SW & 52nd Ave W	Collector	Public	Circular crack with water spraying in; heavy solids in channel	Mainline Point Repair	\$ 11,010	1 or 2	60.8	TV-511	TV Inspection	2010	4	N/A
226	5-171-131	Medium	13	5-171	5-169	188th St SW & 51st Pl W	Collector	Public	Pipe joint deflection	Mainline Point Repair	\$ 11,010	5	131	TV-515	TV Inspection	2010	4	N/A
227	5-169-167.2	Medium	13	5-169.1	5-169	188th St SW & 51st Pl W	Collector	Public	20 ft sag	Relay Sagging Pipe	\$ 16,030	3	67.2	TV-522	TV Inspection	2010	4	N/A
228	5-135.1-48	Medium	13	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	Public	24 ft sag	Relay Sagging Pipe	\$ 16,030	4	48.0	TV-524	TV Inspection	2010	4	N/A
229	5-135.1-169	Medium	13	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	Public	21 ft sag	Relay Sagging Pipe	\$ 16,030	4	169.0	TV-526	TV Inspection	2010	4	N/A
230	5-135.1-235	Medium	13	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	Public	16 ft sag	Relay Sagging Pipe	\$ 16,030	4	235.0	TV-527	TV Inspection	2010	4	N/A
231	5-135-213	Medium	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	65 ft sag	Relay Sagging Pipe	\$ 16,030	9	213.0	TV-532	TV Inspection	2010	4	N/A
232	5-135-297.6	Medium	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	9 ft sag	Relay Sagging Pipe	\$ 16,030	9	297.6	TV-534	TV Inspection	2010	4	N/A
233	5-132.1-103.6	Medium	13	5-132.1	5-130	52nd Ave W & 192nd St SW	Collector	Public	Large circular crack, medium infiltration through crack	Mainline Point Repair	\$ 11,010	1 or 2	103.6	TV-547	TV Inspection	2010	4	N/A
234	5-115-0	Medium	13	5-115	5-114	50th Ave W & 196th St SW	Collector	Public	Heavy flows (at least 30% full) from upstream manhole to 197 ft downstream	N/A		1 or 2	0.0	TV-557	TV Inspection	2010	4	N/A
235	5-114.1-313.6	Medium	13	5-114.1	3-6	50th Ave W & 200th St SW	Collector	Public	Pipe offset; pipe flowing greater than 50% full	Mainline Point Repair	\$ 11,010	1 or 2	313.6	TV-559	TV Inspection	2010	4	N/A
236	5-114.1-314.2	Medium	13	5-114.1	3-6	50th Ave W & 200th St SW	Collector	Public	Camera under water	N/A		1 or 2	314.2	TV-560	TV Inspection	2010	4	N/A
237	5-114-79.9	Medium	13	5-114	5-114.1	50th Ave W & 200th St SW	Collector	Public	Camera under water, pipe flowing greater than 50% full	N/A		1 or 2	79.9	TV-561	TV Inspection	2010	4	N/A
238	3-73-0	Medium	13	3-73	3-72	Easement in Scriber Lake Park	Easement	Easement	Pipe flowing greater than 50% full	N/A		1 or 2	0.0	TV-563	TV Inspection	2010	4	N/A
239	5-189-152	Medium	14	5-189	5-189 CO	47th Pl W & 184th Pl SW	Residential	Public	Joint gasket not around pipe, rock between gasket and pipe	Mainline Point Repair	\$ 11,010	5	152	TV-595	TV Inspection	2010	4	N/A
240	5-189-111.9	Medium	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Offset joint, mineral deposits at joint.	Mainline Point Repair	\$ 11,010	10 or More	111.9	TV-598	TV Inspection	2010	4	N/A
241	5-189-220.6	Medium	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Medium offset pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	220.6	TV-600	TV Inspection	2010	4	N/A
242	5-189-254.6	Medium	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Circular and lateral crack	Side Sewer Tee Repair	\$ 11,580	10 or More	254.6	TV-602	TV Inspection	2010	4	N/A
243	5-189-267.9	Medium	14	5-189	5-187	47th Pl W & 185th Pl SW	Easement	Easement	Large circular crack, left side from top to bottom	Mainline Point Repair	\$ 11,010	10 or More	267.9	TV-603	TV Inspection	2010	4	N/A
244	5-188-7.0	Medium	14	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Public	Offset pipe within side sewer; mineral deposits at connection to main	Side Sewer Tee Repair	\$ 11,580	10 or More	7.0	TV-607	TV Inspection	2010	4	N/A
245	5-188-298.1	Medium	14	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Public	Joint separation and root intrusion	Mainline Point Repair	\$ 11,010	10 or More	298.1	TV-614	TV Inspection	2010	4	N/A
246	5-187-189.8	Medium	14	5-187	5-185	47th Pl W & 185th Pl SW	Residential	Public	Root ball in lateral; circular crack at connection	Root Removal	\$ 1,400	4	189.8	TV-617	TV Inspection	2010	4	N/A
247	5-187-272.2	Medium	14	5-187	5-185	47th Pl W & 185th Pl SW	Residential	Public	Circular crack with infiltration	Mainline Point Repair	\$ 11,010	4	272.2	TV-619	TV Inspection	2010	4	N/A
248	5-184-64.1	Medium	14	5-184	5-183	49th Pl W & 185th Pl SW	Residential	Public	Large circular and lateral crack	Mainline Point Repair	\$ 11,010	9	64.1	TV-627	TV Inspection	2010	4	N/A
249	5-172.1-37.3	Medium	14	5-172.1	5-172	51st Pl W & 188th St SW	Collector	Public	Large crack with root intrusion; soil visible	Mainline Point Repair	\$ 11,010	4	37.3	TV-632	TV Inspection	2010	4	N/A
250	5-172.1-162	Medium	14	5-172.1	5-172	51st Pl W & 188th St SW	Collector	Public	Large circular crack and infiltration weeper	Mainline Point Repair	\$ 11,010	4	162	TV-634	TV Inspection	2010	4	N/A
251	5-172.1-233.1	Medium	14	5-172.1	5-172	51st Pl W & 188th St SW	Collector	Public	Large circular crack and soil visible	Mainline Point Repair	\$ 11,010	4	233.1	TV-635	TV Inspection	2010	4	N/A
252	5-67.1-21.7	Medium	16	5-67.1	5-67	44th Ave W & 192nd Pl SW	Residential	Public	Medium break in lateral wall- circular crack									

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
270	5-182-20	Medium	19	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Medium mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	20.0	TV-712	TV Inspection	2010	4	48.7
271	3-103-N/A	Medium	N/A	3-103	3-103	190th St SW (near 55th Ave W)	Residential	Public	Visible infiltration on interior manhole walls; numerous mineral deposits on manhole bench; infiltration through riser sections; both manhole benches are wet	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-9	Manhole Inspection	2010	4	N/A
272	16-171.1-N/A	Medium	N/A	16-171.1	16-171.1	Alderwood Mall Pkwy (near Beech Rd)	Residential	Public	Heavy mineral deposits on south interior wall; benches are wet; visible infiltration through north interior wall	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-29	Manhole Inspection	2010	1	N/A
273	16-171-N/A	Medium	N/A	16-171	16-171	Alderwood Mall Pkwy (near Beech Rd)	Residential	Public	Benches are wet; visible infiltration through manhole wall right above bench; manhole wall has mineral deposits	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-30	Manhole Inspection	2010	1	N/A
274	5-84-N/A	Medium	N/A	5-84	5-83	4019 189th Pl. SW, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen along front door landing and stairs).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-3	Smoke Testing	2009	3	N/A
275	5-82-N/A	Medium	N/A	5-82	5-81	4221 189th Pl. SW, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming from gravel at the base of a rhododendron bush directly in back of the tree).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-4	Smoke Testing	2009	3	N/A
276	5-79-N/A	Medium	N/A	5-79	5-49	4326 189th Pl.SW, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming from hole on the west side of the foundation in the flower bed).	Side Sewer Point Repair	\$ 8,400	7	N/A	S-5	Smoke Testing	2009	3	N/A
277	5-112-N/A	Medium	N/A	5-112	5-111	4114 186th St. SW, Lynnwood, WA	Driveway	Private	Malfunctioning sewer connection (smoke seen through dirt along the driveway).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-10	Smoke Testing	2009	3	N/A
278	5-50-N/A	Medium	N/A	5-50	5-49.1	18705 44th Ave W, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection or uncapped cleanout at grade (smoke seen coming out of a hole in ground in the front yard).	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-11	Smoke Testing	2009	3	N/A
279	5-80-N/A	Medium	N/A	5-80	5-79	4312 189th Pl. SW, Lynnwood, WA	Yard	Private	Smoke seen in back yard.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-14	Smoke Testing	2009	3	N/A
280	5-107-N/A	Medium	N/A	5-107	5-106	18427 42nd Pl. W, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming through dirt and around concrete walkway slab.).	Side Sewer Point Repair	\$ 8,400	5	N/A	S-18	Smoke Testing	2009	3	N/A
281	5-30-N/A	Medium	N/A	CO	5-30	18638 44th Ave. W, Lynnwood, WA (Lynnwood Elementary (A))	Yard	Private	Uncapped cleanout at grade in grass just off of the concrete slab on the south side of school.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-19	Smoke Testing	2009	3	N/A
282	5-30-N/A_2	Medium	N/A	CO	5-30	18639 44th Ave. W, Lynnwood, WA (Lynnwood Elementary (B))	Yard	Private	Malfunctioning sewer connection (smoke seen coming from edges of the small concrete slab around cleanout). South side of School.	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-20	Smoke Testing	2009	3	N/A
283	5-20-N/A	Medium	N/A	5-20	5-19	4419 200th St SW (in back of JD's Market)	Yard	Private	Loose cap on cleanout at grade behind JD's Market near Freezer/Refrigerator	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-21	Smoke Testing	2009	3	N/A
284	C-25-N/A	Medium	N/A	C-25	5-199	18320 44th Ave W, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming from rockery and ground around the pond on the far west side of the street).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-22	Smoke Testing	2009	4	N/A
285	3-68.1-N/A	Medium	N/A	3-68.1	3-68	Southwest corner of Scriber Lake Ave. and 198th St. SW, Lynnwood, WA	Sidewalk	Public	Malfunctioning sewer (smoke seen coming from crack in sidewalk and from the side of the sidewalk).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-24	Smoke Testing	2009	4	N/A
286	3-70.1-N/A	Medium	N/A	3-70.1	3-68	5824 196th St SW, Lynnwood, WA (Jo-Ann Fabric)	Yard	Private	Malfunctioning sewer connection (smoke seen coming from under concrete slab on southwest corner of Jo-Ann Fabric).	Side Sewer Point Repair	\$ 8,400	9	N/A	S-25	Smoke Testing	1992	4	N/A
287	3-123-N/A	Medium	N/A	3-123	3-93	Near 192nd St SW and 56th Ave W	Yard	Private	Smoke emanating from ground. (Possibly cracked sewer pipe)	Mainline Point Repair	\$ 11,010	1 or 2	N/A	S-29	Smoke Testing	1992	4	N/A
288	3-90-N/A	Medium	N/A	3-90	3-89	5215 193rd Pl SW, Lynnwood, WA	Residential/ Easement	Private	Smoke emanating from crack in concrete patch. (Possibly cracked sewer pipe)	Mainline Point Repair	\$ 11,010	9	N/A	S-31	Smoke Testing	1992	4	N/A
289	C-36-N/A	Medium	N/A	C-36	3-52	19828 Firwood Drive, Lynnwood, WA	Yard	Private	Side sewer has gaps in pipe joints held together by duct tape.	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-35	Smoke Testing	1992	4	N/A
290	3-12-N/A	Medium	N/A	3-12	3-11	20020 53rd Pl W, Lynnwood, WA	Sidewalk	Public	Smoke emanating from joint between concrete sidewalk and asphalt. (Possibly either leaky side sewer pipe or unplugged cleanout under asphalt)	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-43	Smoke Testing	1992	4	N/A
291	C5-131-N/A	Medium	N/A	C5-131	5-149	5103 192nd St SW, Lynnwood, WA	Yard	Private	Smoke emanating from ground along fence line. (Likely broken side sewer.)	Side Sewer Point Repair	\$ 8,400	5	N/A	S-49	Smoke Testing	1992	4	N/A
292	5-152-N/A	Medium	N/A	5-152	5-152	MH 5-152 in Lynnwood, WA	Residential	Public	Manhole located in drainage way. Puddles form on manhole cover.	Adjust Manhole Lid	\$ 3,830	5	N/A	S-45	Smoke Testing	1992	4	N/A
293	5-132-N/A	Medium	N/A	5-132	5-132.1	52nd Ave W and 191st St SW in Lynnwood, WA	Yard	Private	Smoke emanating from ground near old house foundation with side sewer connection not plugged.	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-53	Smoke Testing	1992	4	N/A
294	4-105-N/A	Medium	N/A	4-105	4-104	6209 183rd Pl. SW, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming from gravel under a bush).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-56	Smoke Testing	2009	5	N/A
295	4-71-N/A	Medium	N/A	4-71	4-70	6031 189th Pl. SW, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming under concrete porch).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-64	Smoke Testing	2009	5	N/A
296	4-60-N/A	Medium	N/A	4-60	4-58	6131 Park Way, Lynnwood, WA	Yard	Private	Malfunctioning sewer connection (smoke seen coming from surfaced pipe with no cap and ground around pipe).	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-65	Smoke Testing	2009	5	N/A
297	4-76-N/A	Medium	N/A	4-76	4-75	6303 188th St. SW, Lynnwood, WA	Yard	Private	Large uncapped cleanout in yard at grade (smoke seen from open cleanout).	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-66	Smoke Testing	2009	5	N/A
298	2-80-N/A	Medium	N/A	2-80	2-79	200th St. SW, Lynnwood, WA (near MH 2-80)	Sidewalk	Public	Malfunctioning sewer (smoke seen coming from base of no parking sign and crack in sidewalk).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-84	Smoke Testing	2009	8	N/A
299	2-75-N/A	Medium	N/A	2-75	2-74	6125 202nd St. SW, Lynnwood, WA	Yard	Private	Smoke seen coming from hole in ground in flowerbed on south side of building (possibly a uncapped cleanout below grade).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-91	Smoke Testing	2009	8	N/A
300	2-131-N/A	Medium	N/A	2-131	2-130	5823 202nd St. SW, Lynnwood, WA	Yard	Private	Smoke seen coming from two holes in the ground in the lawn on the south side of the building (possibly uncapped cleanouts below grade).	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-92	Smoke Testing	2009	8	N/A
301	2-57-N/A	Medium	N/A	2-57	2-56	5827 207th Pl. SW, Lynnwood, WA	Driveway	Private	Storm drain connected to sanitary sewer in driveway.	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-93	Smoke Testing	2009	8	N/A
302	3-14-10	Light	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	Light mineral deposits @ inside of joint; medium infiltration	Mainline Point Repair	\$ 11,010	7	10	TV-2	TV Inspection	2010	4	N/A
303	3-14-205	Light	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	Light infiltration and mineral deposits	Mainline Point Repair	\$ 11,010	7	205	TV-7	TV Inspection	2010	4	N/A
304	3-14-223	Light	1	3-14	3-15	53rd Ave W & 200th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	7	223	TV-8	TV Inspection	2010	4	N/A
305	3-17-139	Light	1	3-17	3-16	54th Ave W & 200th St SW	Residential	Public	Large circular crack- soil visible through crack; light infiltration	Mainline Point Repair	\$ 11,010	1 or 2	139	TV-15	TV Inspection	2010	4	N/A
306	3-17-175	Light	1	3-17	3-16	54th Ave W & 200th St SW	Residential	Public	Large root in main pipe @ lateral joint- causes backup of lateral	Root Removal	\$ 1,400	1 or 2	175.0	TV-16	TV Inspection	2010	4	N/A
307	3-105-30	Light	1	3-105	3-104	190th St SW	Residential	Public	Light infiltration @ joint in pipe	Mainline Point Repair	\$ 11,010	1 or 2	30.0	TV-19	TV Inspection	2010	4	N/A
308	3-105-53	Light	1	3-105	3-104	190th St SW	Residential	Public	Light roots in main	Root Removal	\$ 1,400	1 or 2	53.0	TV-20	TV Inspection	2010	4	N/A
309	3-104-71	Light	1	3-104	3-103	190th St SW	Residential	Public	Light infiltration & medium mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	71.0	TV-21	TV Inspection	2010	4	N/A
310	3-104-130	Light	1	3-104	3-103	190th St SW	Residential	Public	Light infiltration & light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	129.6	TV-22	TV Inspection	2010	4	N/A
311	3-104-143	Light	1	3-104	3-103	190th St SW	Residential	Public	Light mineral deposits in manhole channel	Manhole Grouting	\$ 2,190	3	143.0	TV-23	TV Inspection	2010	4	N/A
312	3-102-165	Light	1	3-102	3-100	55th Ave W & 191st St SW	Residential	Public	Water level in pipe is more than a quarter full	N/A		1 or 2	165.0	TV-26	TV Inspection	2010	4	N/A
313	3-101-161	Light	1	3-101	3-100	55th Ave W & 190th St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	161.0	TV-28	TV Inspection	2010	4	N/A
314	3-101-206	Light	1	3-101	3-100	55th Ave W & 190th St SW	Residential	Public	Light mineral deposits inside manhole	Manhole Grouting	\$ 2,190	3	206.0	TV-29	TV Inspection	2010	4	N/A
315	5-177-30	Light	2	5-177	5-174	Near 52nd Ave W & 186th Pl SW	Easement	Easement	Pipe flowing greater than a quarter full	N/A		1 or 2	30.0	TV-30	TV Inspection	2010	4	N/A
316	3-96-16	Light	2	3-96	3-95	191st St SW	Residential	Public	Light soil infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	5	16.0	TV-32	TV Inspection	2010	4	N/A
317	3-96-38	Light	2	3-96	3-95	191st St SW	Residential	Public	Light infiltration in pipe- light mineral deposits	Mainline Point Repair	\$ 11,010	5	38.0	TV-33	TV Inspection	2010	4	N/A
318	3-96-120	Light	2	3-96	3-95	191st St SW	Residential	Public	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	120.0	TV-34	TV Inspection	2010	4	N/A

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
319	3-96-169	Light	2	3-96	3-95	191st St SW	Residential	Public	Light infiltration @ lateral joint & in lateral	Side Sewer Tee Repair	\$ 11,580	5	169.0	TV-35	TV Inspection	2010	4	N/A
320	3-96-305	Light	2	3-96	3-95	191st St SW	Residential	Public	Light infiltration in pipe	Mainline Point Repair	\$ 11,010	5	305.0	TV-36	TV Inspection	2010	4	N/A
321	3-91-125	Light	2	3-91	3-90	193rd Pl SW	Residential	Public	Mineral deposits @ lateral joint and light infiltration	Side Sewer Tee Repair	\$ 11,580	4	125.0	TV-37	TV Inspection	2010	4	N/A
322	3-91-207	Light	2	3-91	3-90	193rd Pl SW	Residential	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	206.8	TV-38	TV Inspection	2010	4	N/A
323	3-90-4	Light	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Public	Light mineral deposits & medium infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	9	4.0	TV-40	TV Inspection	2010	4	N/A
324	3-90-6	Light	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Easement	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	6.0	TV-41	TV Inspection	2010	4	N/A
325	3-90-320	Light	2	3-90	3-89	193rd Pl SW	Residential/ Easement	Easement	Water level in pipe is more than a quarter full	N/A		9	320.0	TV-45	TV Inspection	2010	4	N/A
326	3-78-350	Light	2	3-78	3-77	56th Ave W & 194th St SW	Residential	Public	Joint deflection down in joint	Mainline Point Repair	\$ 11,010	3	350.0	TV-47	TV Inspection	2010	4	N/A
327	3-70.1-65	Light	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Light material damage- pipe corrosion	Mainline Point Repair	\$ 11,010	9	65.0	TV-51	TV Inspection	2010	4	N/A
328	3-70.1-144	Light	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Light roots in pipe segment joint	Root Removal	\$ 1,400	9	144.0	TV-52	TV Inspection	2010	4	N/A
329	3-70.1-196	Light	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Light roots in pipe segment joint	Root Removal	\$ 1,400	9	196.0	TV-53	TV Inspection	2010	4	N/A
330	3-70.1-219	Light	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Light roots in pipe segment joint	Root Removal	\$ 1,400	9	219.0	TV-54	TV Inspection	2010	4	N/A
331	3-70.1-234	Light	2	3-70.1	3-68	Scriber Lake Road	Sidewalk	Public	Light roots in pipe segment joint	Root Removal	\$ 1,400	9	234.0	TV-56	TV Inspection	2010	4	N/A
332	3-70-38	Light	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	Light root problem in pipe segment joint	Root Removal	\$ 1,400	8	38.0	TV-59	TV Inspection	2010	4	N/A
333	3-70-51	Light	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	Small hole in pipe	Mainline Point Repair	\$ 11,010	8	51.0	TV-60	TV Inspection	2010	4	N/A
334	3-70-70	Light	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	Light to medium roots in pipe segment joint	Mainline Point Repair	\$ 11,010	8	70.0	TV-61	TV Inspection	2010	4	N/A
335	3-70-107	Light	2	3-70	3-70.1	Scriber Lake Road	Sidewalk	Public	10 ft sag in pipe	Relay Sagging Pipe	\$ 16,030	8	107.0	TV-64	TV Inspection	2010	4	N/A
336	3-69-216	Light	2	3-69	3-68.1	Scriber Lake Road	Sidewalk	Public	Light mineral deposits- old repair	Mainline Point Repair	\$ 11,010	4	216.0	TV-66	TV Inspection	2010	4	N/A
337	3-69-221	Light	2	3-69	3-68.1	Scriber Lake Road	Sidewalk	Public	Medium circular crack and infiltration pipe stain	Mainline Point Repair	\$ 11,010	4	221.0	TV-67	TV Inspection	2010	4	N/A
338	3-69-225	Light	2	3-69	3-68.1	Scriber Lake Road	Sidewalk	Public	Medium circular crack- light infiltration through crack	Mainline Point Repair	\$ 11,010	4	225.0	TV-68	TV Inspection	2010	4	N/A
339	3-68-7	Light	2	3-68	3-67	198th St SW	Residential	Public	Aggregate visible on surface of inside pipe- surface erosion	Mainline Point Repair	\$ 11,010	3	7.0	TV-70	TV Inspection	2010	4	N/A
340	3-68-55	Light	2	3-68	3-67	198th St SW	Residential	Public	55 ft sag in pipe	Relay Sagging Pipe	\$ 16,030	3	55.0	TV-71	TV Inspection	2010	4	N/A
341	3-58-65	Light	2	3-58	3-54	56th Ave W	Residential	Public	Medium longitudinal crack- infiltration stain inside pipe	Mainline Point Repair	\$ 11,010	3	65.0	TV-76	TV Inspection	2010	4	N/A
342	3-57-138	Light	2	3-57	3-56	Firwood Drive	Residential	Public	Light root problem in pipe segment joint	Root Removal	\$ 1,400	1 or 2	138.0	TV-77	TV Inspection	2010	4	N/A
343	5-154-6	Light	3	5-154	5-152	190th St SW	Residential	Public	Light mineral deposits @ lateral joint and light infiltration	Side Sewer Tee Repair	\$ 11,580	5	6.0	TV-80	TV Inspection	2010	4	N/A
344	5-154-43	Light	3	5-154	5-152	190th St SW	Residential	Public	Light mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	43.0	TV-81	TV Inspection	2010	4	N/A
345	5-154-89	Light	3	5-154	5-152	190th St SW	Residential	Public	Infiltration @ pipe segment joint- infiltration stain	Mainline Point Repair	\$ 11,010	5	89.0	TV-82	TV Inspection	2010	4	N/A
346	5-153-16	Light	3	5-153	5-152	51st Pl W & 190th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	16.0	TV-84	TV Inspection	2010	4	N/A
347	5-149-7	Light	3	5-149	5-148	192nd St SW	Residential	Public	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	7.0	TV-85	TV Inspection	2010	4	N/A
348	5-149-92	Light	3	5-149	5-148	192nd St SW	Residential	Public	Light mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	92.0	TV-87	TV Inspection	2010	4	N/A
349	5-149-170	Light	3	5-149	5-148	192nd St SW	Residential	Public	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	170.0	TV-88	TV Inspection	2010	4	N/A
350	5-149-198	Light	3	5-149	5-148	192nd St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	5	198.0	TV-89	TV Inspection	2010	4	N/A
351	5-148-5	Light	3	5-148	5-142	192nd St SW	Residential	Public	Medium joint separation in pipe- infiltration weeper @ joint separation	Mainline Point Repair	\$ 11,010	5	5.0	TV-90	TV Inspection	2010	4	N/A
352	5-146-47	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Infiltration in joint- infiltration stain	Mainline Point Repair	\$ 11,010	8	47.0	TV-94	TV Inspection	2010	4	N/A
353	5-146-51	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Infiltration in joint- infiltration stain	Mainline Point Repair	\$ 11,010	8	51.0	TV-95	TV Inspection	2010	4	N/A
354	5-146-63	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	63.0	TV-96	TV Inspection	2010	4	N/A
355	5-146-77	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Light infiltration @ lateral joint- medium mineral deposits	Side Sewer Tee Repair	\$ 11,580	8	77.0	TV-97	TV Inspection	2010	4	N/A
356	5-146-121	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Infiltration in joint- infiltration stain	Mainline Point Repair	\$ 11,010	8	121.0	TV-98	TV Inspection	2010	4	N/A
357	5-146-125	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Infiltration in joint- infiltration stain	Mainline Point Repair	\$ 11,010	8	125.0	TV-99	TV Inspection	2010	4	N/A
358	5-146-141	Light	3	5-146	5-143.1	192nd St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	141.0	TV-100	TV Inspection	2010	4	N/A
359	5-144-158	Light	3	5-144	5-143	49th Ave W & 192nd St SW	Easement	Easement	Light root problem in lateral	Root Removal	\$ 1,400	1 or 2	158.0	TV-103	TV Inspection	2010	4	N/A
360	5-143.1-13	Light	3	5-143.1	5-143	192nd St SW	Residential	Public	Infiltration in joint- infiltration stain	Mainline Point Repair	\$ 11,010	5	13.0	TV-104	TV Inspection	2010	4	N/A
361	5-143.1-25	Light	3	5-143.1	5-143	192nd St SW	Residential	Public	Infiltration in joint- infiltration stain	Mainline Point Repair	\$ 11,010	5	25.0	TV-105	TV Inspection	2010	4	N/A
362	5-143.1-27	Light	3	5-143.1	5-143	192nd St SW	Residential	Public	Medium circular crack	Mainline Point Repair	\$ 11,010	5	27.0	TV-107	TV Inspection	2010	4	N/A
363	5-143.1-44	Light	3	5-143.1	5-143	192nd St SW	Residential	Public	Light infiltration and mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	5	44.0	TV-108	TV Inspection	2010	4	N/A
364	5-142.1-32	Light	3	5-142.1	5-142	192nd St SW	Residential	Public	Joint offset in pipe (medium)	Mainline Point Repair	\$ 11,010	5	32.0	TV-111	TV Inspection	2010	4	N/A
365	5-142.1-34	Light	3	5-142.1	5-142	192nd St SW	Residential	Public	Medium circular crack and light mineral deposits and infiltration weeper through crack	Mainline Point Repair	\$ 11,010	5	34.0	TV-112	TV Inspection	2010	4	N/A
366	5-139-19	Light	3	5-139	5-138	194th St SW	Residential	Public	Infiltration @ pipe joint- weeper & light mineral deposits	Mainline Point Repair	\$ 11,010	3	19.0	TV-118	TV Inspection	2010	4	N/A
367	5-139-115	Light	3	5-139	5-138	194th St SW	Residential	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	115.0	TV-119	TV Inspection	2010	4	N/A
368	5-138-82	Light	3	5-138	5-137	194th St SW	Residential	Public	Light infiltration in lateral	Side Sewer Tee Repair	\$ 11,580	4	82.0	TV-122	TV Inspection	2010	4	N/A
369	5-138-142	Light	3	5-138	5-137	194th St SW	Residential	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	142.0	TV-123	TV Inspection	2010	4	N/A
370	3-97-124	Light	3	3-97	3-96	191st St SW	Residential	Public	Offset joint in pipe	Mainline Point Repair	\$ 11,010	6	124.0	TV-128	TV Inspection	2010	4	N/A
371	3-97-140	Light	3	3-97	3-96	191st St SW	Residential	Public	Offset joint in pipe- joint deflected down	Mainline Point Repair	\$ 11,010	6	140.0	TV-129	TV Inspection	2010	4	N/A
372	3-97-276	Light	3	3-97	3-96	191st St SW	Residential	Public	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	6	276.0	TV-130	TV Inspection	2010	4	N/A
373	C5-131-201	Light	5	C5-131	5-149	192nd St SW	Residential	Public	Infiltration in pipe segment joint- weeper	Mainline Point Repair	\$ 11,010	5	201.0	TV-132	TV Inspection	2010	4	N/A
374	C5-131-246	Light	5	C5-131	5-149	192nd St SW	Residential	Public	Infiltration in pipe segment joint (stain)	Mainline Point Repair	\$ 11,010	5	246.0	TV-133	TV Inspection	2010	4	N/A
375	C5-131-258	Light	5	C5-131	5-149	192nd St SW	Residential	Public	Infiltration in pipe segment joint (stain)	Mainline Point Repair	\$ 11,010	5	258.0	TV-134	TV Inspection	2010	4	N/A
376	C5-131-270	Light	5	C5-131	5-149	192nd St SW	Residential	Public	Infiltration in pipe segment joint (stain)	Mainline Point Repair	\$ 11,010	5	270.0	TV-135	TV Inspection	2010	4	N/A
377	5-180-16	Light	5	5-180	5-179	186th Pl W (W of 52nd Ave W)	Residential	Public	Infiltration in pipe segment joint- weeper	Mainline Point Repair	\$ 11,010	4	16.0	TV-136	TV Inspection	2010	4	N/A
378	5-180-76	Light	5	5-180	5-179	186th Pl W (W of 52nd Ave W)	Residential	Public	Light root problems in joint	Root Removal	\$ 1,400	4	76.0	TV-137	TV Inspection	2010	4	N/A
379	5-180-253	Light	5	5-180	5-179	186th Pl W (W of 52nd Ave W)	Residential	Public	Infiltration weeper @ pipe joint	Mainline Point Repair	\$ 11,010	4	253.0	TV-139	TV Inspection	2010	4	N/A
380	5-179-57	Light	5	5-179	5-178	186th Pl W	Residential	Public	Infiltration weeper in pipe	Mainline Point Repair	\$ 11,010	10 or More	57.0	TV-140	TV Inspection	2010	4	N/A
381	5-179-106	Light	5	5-179	5-178	186th Pl W	Residential	Public	Light mineral deposits in lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	106.0	TV-142	TV Inspection	2010	4	N/A
382	5-179-230	Light	5	5-179	5-178	186th Pl W	Residential	Public	Light mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	230.0	TV-147	TV Inspection	2010	4	N/A
383	5-3-15	Light	6	5-3	5-2.1	48th Ave W & 200th St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	15.0	TV-153	TV Inspection	2010	3	N/A
384	5-111-0	Light	6	5-111	5-110	42nd Pl W & 186th St SW	Residential	Public	Light infiltration in upstream manhole	Manhole Grouting	\$ 2,190	1 or 2	0.0	TV-155	TV Inspection	2010	3	N/A
385	5-110-30.5	Light	6	5-110	5-109	42nd Pl W & 186th St SW	Residential	Public	Infiltration weeper and light mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	30.5	TV-156	TV Inspection	2010	3	N/A
386	5-110-160.1	Light	6	5-110	5-109	42nd Pl W & 186th St SW	Residential	Public	Light infiltration and light mineral deposits in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	160.1	TV-157	TV Inspection	2010	3	N/A
387	5-10-12.9	Light	6	5-10	5-11	48th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration stain @ lateral connection	Side Sewer Tee Repair	\$ 11,580	4	12.9	TV-158	TV Inspection	2010	3	N/A
388	5-10-13.1	Light	6	5-10	5-11	48th Ave W & 192nd St SW	Residential	Public	Small spiral crack and infiltration dripper through crack; light mineral deposits	Mainline Point Repair	\$ 11,010	4	13.1	TV-159	TV Inspection	2010	3	N/A
389	5-10-131.5	Light	6	5-10	5-11	48th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration weeper @ lateral connection	Side Sewer Tee Repair	\$ 11,580	4	131.5	TV-161	TV Inspection	2010	3	N/A
390	5-109-3	Light	6	5-109	5-10													

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
395	5-106-251.1	Light	6	5-106	5-105	43rd Pl W & 184th Pl SW	Residential	Public	Rat in the side sewer	N/A		1 or 2	251.1	TV-168	TV Inspection	2010	3	N/A
396	5-99-102.2	Light	6	5-99	5-100	41st Pl W & 186th St SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	102.2	TV-172	TV Inspection	2010	3	N/A
397	5-10-156.9	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Infiltration weeper @ lateral connection joint	Side Sewer Tee Repair	\$ 11,580	8	156.9	TV-174	TV Inspection	2010	3	N/A
398	5-10-252.1	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	252.1	TV-175	TV Inspection	2010	3	N/A
399	5-10-301.2	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	301.2	TV-176	TV Inspection	2010	3	N/A
400	5-10-305	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	305.0	TV-177	TV Inspection	2010	3	N/A
401	5-10-317	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	317.0	TV-178	TV Inspection	2010	3	N/A
402	5-10-394.3	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Sag Begins	Relay Sagging Pipe	\$ 16,030	8	394.3	TV-179	TV Inspection	2010	3	N/A
403	5-10-400.8	Light	6	5-10	5-9	48th Ave W & 194th St SW	Residential	Public	Medium joint separation @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	400.8	TV-181	TV Inspection	2010	3	N/A
404	16-31-76.7	Light	6	16-31	16-30	40th Ave W & 191st Pl SW	Collector	Public	Light mineral deposits @ lateral connection	Side Sewer Tee Repair	\$ 11,580	1 or 2	76.7	TV-182	TV Inspection	2010	3	N/A
405	16-30-40.7	Light	6	16-30	16-29.2	40th Ave W & 192nd Pl SW	Collector	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	40.7	TV-183	TV Inspection	2010	3	N/A
406	16-30-87.4	Light	6	16-30	16-29.2	40th Ave W & 192nd Pl SW	Collector	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	87.4	TV-184	TV Inspection	2010	3	N/A
407	16-29-2.2	Light	6	16-29.2	16-29	40th Ave W & 192nd Pl SW	Collector	Public	Small circular crack- light infiltration through (stained at infiltration location)	Mainline Point Repair	\$ 11,010	1 or 2	2.0	TV-186	TV Inspection	2010	3	N/A
408	5-31-23.4	Light	7	5-31	5-29	46th Ave W & 188th St SW	Collector	Public	Infiltration weeper through pipe segment joint	Mainline Point Repair	\$ 11,010	3	23.4	TV-188	TV Inspection	2010	3	N/A
409	5-28-24.1	Light	7	5-28	5-26	46th Ave W & 191st St SW	Residential	Public	Medium mineral deposits @ lateral joint and light infiltration	Side Sewer Tee Repair	\$ 11,580	6	24.1	TV-190	TV Inspection	2010	3	N/A
410	5-28-66.4	Light	7	5-28	5-26	46th Ave W & 191st St SW	Residential	Public	Infiltration dripper @ pipe segment joint- light infiltration stain	Mainline Point Repair	\$ 11,010	6	66.4	TV-191	TV Inspection	2010	3	N/A
411	5-28-117.9	Light	7	5-28	5-26	46th Ave W & 191st St SW	Residential	Public	Light infiltration in pipe- no visible crack and not located @ pipe segment joint	Mainline Point Repair	\$ 11,010	6	117.9	TV-192	TV Inspection	2010	3	N/A
412	5-28-153.5	Light	7	5-28	5-26	46th Ave W & 191st St SW	Residential	Public	Infiltration dripper and light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	6	153.5	TV-193	TV Inspection	2010	3	N/A
413	5-28-407.8	Light	7	5-28	5-26	46th Ave W & 191st St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	6	407.8	TV-194	TV Inspection	2010	3	N/A
414	5-28-430.2	Light	7	5-28	5-26	46th Ave W & 191st St SW	Residential	Public	Medium circular crack	Mainline Point Repair	\$ 11,010	6	430.2	TV-195	TV Inspection	2010	3	N/A
415	5-27-5.3	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Medium offset joint in pipe	Mainline Point Repair	\$ 11,010	10 or More	5.3	TV-196	TV Inspection	2010	3	N/A
416	5-27-10	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Infiltration stain @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	10.0	TV-197	TV Inspection	2010	3	N/A
417	5-27-24.3	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	24.3	TV-198	TV Inspection	2010	3	N/A
418	5-27-28.3	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Medium offset joint and infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	28.3	TV-199	TV Inspection	2010	3	N/A
419	5-27-32.2	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	32.2	TV-200	TV Inspection	2010	3	N/A
420	5-27-40.5	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Infiltration stain and light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	40.5	TV-201	TV Inspection	2010	3	N/A
421	5-27-44.6	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	44.6	TV-202	TV Inspection	2010	3	N/A
422	5-27-48.8	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	48.8	TV-203	TV Inspection	2010	3	N/A
423	5-27-81.3	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	81.3	TV-204	TV Inspection	2010	3	N/A
424	5-27-105.8	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Medium joint offset and light infiltration @ offset	Mainline Point Repair	\$ 11,010	10 or More	105.8	TV-205	TV Inspection	2010	3	N/A
425	5-27-114.3	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	114.3	TV-206	TV Inspection	2010	3	N/A
426	5-27-134.7	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light stain and infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	134.7	TV-207	TV Inspection	2010	3	N/A
427	5-27-167.5	Light	7	5-27	5-26	46th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	167.5	TV-208	TV Inspection	2010	3	N/A
428	5-26-164.3	Light	7	5-26	5-25	46th Ave W & 191st St SW	Residential	Public	Light infiltration through lateral	Side Sewer Tee Repair	\$ 11,580	4	164.3	TV-209	TV Inspection	2010	3	N/A
429	5-26-229.1	Light	7	5-26	5-25	46th Ave W & 191st St SW	Residential	Public	Root problem in lateral- minor tap problem	Root Removal	\$ 1,400	4	229.1	TV-210	TV Inspection	2010	3	N/A
430	5-26-237.2	Light	7	5-26	5-25	46th Ave W & 191st St SW	Residential	Public	Light infiltration and mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	4	237.2	TV-212	TV Inspection	2010	3	N/A
431	5-25-126	Light	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Light infiltration and stain through pipe segment joint	Mainline Point Repair	\$ 11,010	8	126.0	TV-214	TV Inspection	2010	3	N/A
432	5-25-195.1	Light	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Light infiltration and mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	195.1	TV-216	TV Inspection	2010	3	N/A
433	5-25-252	Light	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Light infiltration and mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	252.0	TV-217	TV Inspection	2010	3	N/A
434	5-25-309.1	Light	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	309.1	TV-218	TV Inspection	2010	3	N/A
435	5-25-377.5	Light	7	5-25	5-24	46th Ave W & 192nd St SW	Residential	Public	Light infiltration and mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	377.5	TV-220	TV Inspection	2010	3	N/A
436	5-24-10	Light	7	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	4	10.0	TV-221	TV Inspection	2010	3	N/A
437	5-24-18	Light	7	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	4	18.0	TV-222	TV Inspection	2010	3	N/A
438	5-24-91.2	Light	7	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Public	Light mineral deposits @ pipe outlet into manhole	Manhole Grouting	\$ 2,190	4	91.2	TV-223	TV Inspection	2010	3	N/A
439	5-23-1-71.8	Light	7	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Public	Light mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	4	71.8	TV-226	TV Inspection	2010	3	N/A
440	5-23-1-224.8	Light	7	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Public	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	224.8	TV-227	TV Inspection	2010	3	N/A
441	5-23-1-241.2	Light	7	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Public	Light mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	241.2	TV-228	TV Inspection	2010	3	N/A
442	5-23-105	Light	7	5-23	5-22	46th Ave W & 194th St SW	Residential	Public	Light mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	105.0	TV-229	TV Inspection	2010	3	N/A
443	5-23-288	Light	7	5-23	5-22	46th Ave W & 194th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	288.0	TV-230	TV Inspection	2010	3	N/A
444	5-22-207	Light	7	5-22	5-9	46th Ave W & 194th St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	207.0	TV-232	TV Inspection	2010	3	N/A
445	5-15-25.5	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	25.5	TV-233	TV Inspection	2010	3	N/A
446	5-15-29.9	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	29.9	TV-234	TV Inspection	2010	3	N/A
447	5-15-83.1	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	83.1	TV-236	TV Inspection	2010	3	N/A
448	5-15-115.5	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	115.5	TV-239	TV Inspection	2010	3	N/A
449	5-15-119.6	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration dripper, stain and light mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	119.6	TV-240	TV Inspection	2010	3	N/A
450	5-15-127.5	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	127.5	TV-241	TV Inspection	2010	3	N/A
451	5-15-131.6	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	131.6	TV-242	TV Inspection	2010	3	N/A
452	5-15-147.8	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Light mineral deposits and infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	147.8	TV-244	TV Inspection	2010	3	N/A
453	5-15-176.3	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	176.3	TV-245	TV Inspection	2010	3	N/A
454	5-15-233.6	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	233.6	TV-246	TV Inspection	2010	3	N/A
455	5-15-268.2	Light	7	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Light mineral deposits	Mainline Point Repair								

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
472	5-42-124.8	Light	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Medium mineral deposits and infiltration dripper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	9	124.8	TV-265	TV Inspection	2010	3	N/A
473	5-42-250.2	Light	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Infiltration dripper through crack- pipe is heavily stained from infiltration	Mainline Point Repair	\$ 11,010	9	250.2	TV-268	TV Inspection	2010	3	N/A
474	5-42-319.5	Light	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Light mineral deposits	Mainline Point Repair	\$ 11,010	9	319.5	TV-269	TV Inspection	2010	3	N/A
475	5-42-331.5	Light	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Light mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	9	331.5	TV-270	TV Inspection	2010	3	N/A
476	5-42-347.9	Light	8	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Public	Infiltration dripper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	9	347.9	TV-271	TV Inspection	2010	3	N/A
477	5-41.1-67.1	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	67.1	TV-272	TV Inspection	2010	3	N/A
478	5-41.1-113.8	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	113.8	TV-273	TV Inspection	2010	3	N/A
479	5-41.1-143.1	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Right joint deflection- infiltration weeper @ joint	Mainline Point Repair	\$ 11,010	10 or More	143.1	TV-275	TV Inspection	2010	3	N/A
480	5-41.1-150.1	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Right joint deflection	Mainline Point Repair	\$ 11,010	10 or More	150.1	TV-278	TV Inspection	2010	3	N/A
481	5-41.1-156.3	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	156.3	TV-279	TV Inspection	2010	3	N/A
482	5-41.1-203.1	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	203.1	TV-280	TV Inspection	2010	3	N/A
483	5-41.1-248	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	248	TV-281	TV Inspection	2010	3	N/A
484	5-41.1-260.2	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	260.2	TV-282	TV Inspection	2010	3	N/A
485	5-41.1-313.1	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Medium infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	313.1	TV-283	TV Inspection	2010	3	N/A
486	5-41.1-317.2	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	317.2	TV-284	TV Inspection	2010	3	N/A
487	5-41.1-325.3	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	325.3	TV-285	TV Inspection	2010	3	N/A
488	5-41.1-390.4	Light	8	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	390.4	TV-286	TV Inspection	2010	3	N/A
489	5-40-168.4	Light	8	5-40	5-39.1	47th Ave W & 191st St SW	Residential	Public	Infiltration dripper and light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	168.4	TV-288	TV Inspection	2010	3	N/A
490	5-40-172.3	Light	8	5-40	5-39.1	47th Ave W & 191st St SW	Residential	Public	Infiltration dripper @ top of lateral joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	172.3	TV-289	TV Inspection	2010	3	N/A
491	5-36.1-73.9	Light	8	5-36.1	5-37	48th Ave W & 192nd St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	73.9	TV-292	TV Inspection	2010	3	N/A
492	5-36.1-153.1	Light	8	5-36.1	5-37	48th Ave W & 192nd St SW	Residential	Public	Infiltration dripper through lateral joint	Side Sewer Tee Repair	\$ 11,580	3	153.1	TV-294	TV Inspection	2010	3	N/A
493	5-36.1-236.9	Light	8	5-36.1	5-11	48th Ave W & 192nd St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	236.9	TV-296	TV Inspection	2010	3	N/A
494	5-30-273.8	Light	8	5-30	5-29	46th Ave W & 188th St SW	Residential	Public	50 ft Sag	Relay Sagging Pipe	\$ 16,030	5	273.8	TV-302	TV Inspection	2010	3	N/A
495	5-29.1-52.1	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Light mineral deposits @ lateral connection	Side Sewer Tee Repair	\$ 11,580	10 or More	52.1	TV-304	TV Inspection	2010	3	N/A
496	5-29.1-59.8	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Light infiltration through pipe wall	Mainline Point Repair	\$ 11,010	10 or More	59.8	TV-305	TV Inspection	2010	3	N/A
497	5-29.1-102.5	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	102.5	TV-306	TV Inspection	2010	3	N/A
498	5-29.1-110.9	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	110.9	TV-307	TV Inspection	2010	3	N/A
499	5-29.1-174.1	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Light infiltration and stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	174.1	TV-308	TV Inspection	2010	3	N/A
500	5-29.1-203.2	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Infiltration weeper and light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	203.2	TV-310	TV Inspection	2010	3	N/A
501	5-29.1-234.1	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Infiltration weeper through pipe wall	Mainline Point Repair	\$ 11,010	10 or More	234.1	TV-311	TV Inspection	2010	3	N/A
502	5-29.1-320.9	Light	8	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Public	Light mineral deposits and infiltration weeper through pipe wall	Mainline Point Repair	\$ 11,010	10 or More	320.9	TV-313	TV Inspection	2010	3	N/A
503	5-28-35.1	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	35.1	TV-315	TV Inspection	2010	3	N/A
504	5-28-43	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	43	TV-316	TV Inspection	2010	3	N/A
505	5-28-53.3	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Light mineral deposits and infiltration dripper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	9	53.3	TV-317	TV Inspection	2010	3	N/A
506	5-28-161.3	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	161.3	TV-318	TV Inspection	2010	3	N/A
507	5-28-259.4	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	259.4	TV-319	TV Inspection	2010	3	N/A
508	5-28-279.9	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	279.9	TV-320	TV Inspection	2010	3	N/A
509	5-28-312.6	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration dripper and stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	312.6	TV-321	TV Inspection	2010	3	N/A
510	5-28-341.3	Light	8	5-28	5-29	46th Ave W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	341.3	TV-322	TV Inspection	2010	3	N/A
511	5-70-33.7	Light	9	5-70	5-69	40th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	33.7	TV-324	TV Inspection	2010	3	N/A
512	5-69-211.4	Light	9	5-69	5-68	40th Ave W & 192nd St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	211.4	TV-325	TV Inspection	2010	3	N/A
513	5-69-251.3	Light	9	5-69	5-68	40th Ave W & 192nd St SW	Residential	Public	Medium infiltration inside downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	251.3	TV-326	TV Inspection	2010	3	N/A
514	5-68-24.3	Light	9	5-68	5-67.1	44th Ave W & 192nd St SW	Residential	Public	8 ft Sag	Relay Sagging Pipe	\$ 16,030	1 or 2	24.3	TV-327	TV Inspection	2010	3	N/A
515	5-67.1-144.1	Light	9	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	144.1	TV-329	TV Inspection	2010	3	N/A
516	5-67.1-147	Light	9	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	147	TV-330	TV Inspection	2010	3	N/A
517	5-67.1-188	Light	9	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	188	TV-331	TV Inspection	2010	3	N/A
518	5-67.1-216.9	Light	9	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	216.9	TV-332	TV Inspection	2010	3	N/A
519	5-67.1-264.4	Light	9	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	264.4	TV-333	TV Inspection	2010	3	N/A
520	5-67-175.6	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration on pipe wall	Mainline Point Repair	\$ 11,010	10 or More	175.6	TV-334	TV Inspection	2010	3	N/A
521	5-67-187.6	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	187.6	TV-335	TV Inspection	2010	3	N/A
522	5-67-218	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration and stain @ joint	Mainline Point Repair	\$ 11,010	10 or More	218	TV-336	TV Inspection	2010	3	N/A
523	5-67-224.1	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	224.1	TV-337	TV Inspection	2010	3	N/A
524	5-67-226.1	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Root ball in lateral	Root Removal	\$ 1,400	10 or More	226.1	TV-338	TV Inspection	2010	3	N/A
525	5-67-245.1	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	245.1	TV-339	TV Inspection	2010	3	N/A
526	5-67-248.1	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	248.1	TV-340	TV Inspection	2010	3	N/A
527	5-67-256.9	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint, light roots projecting through joint	Mainline Point Repair	\$ 11,010	10 or More	256.9	TV-341	TV Inspection	2010	3	N/A
528	5-67-263.0	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration and roots @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	263	TV-342	TV Inspection	2010	3	N/A
529	5-67-269.0	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits @ joint	Mainline Point Repair	\$ 11,010	10 or More	269	TV-343	TV Inspection	2010	3	N/A
530	5-67-281.0	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits, infiltration and root problem @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	281	TV-344	TV Inspection	2010	3	N/A
531	5-67-287.1	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits, infiltration and root problem @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	287.1	TV-345	TV Inspection	2010	3	N/A
532	5-67-295.9	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light mineral deposits, infiltration and root problem @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	295.9	TV-346	TV Inspection	2010	3	N/A
533	5-67-302.2	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration and mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	302.2	TV-347	TV Inspection	2010	3	N/A
534	5-67-311.1	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	311.1	TV-348	TV Inspection	2010	3	N/A
535	5-67-338.3	Light	9	5-67	5-44	44th Ave W & 192nd St SW	Residential	Public	Light infiltration and mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	338.3	TV-351	TV Inspection	2010	3	N/A
536	5-66.5-297.8	Light	9	5-66.5	5-66.4	44th Ave W & 191st SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	297.8	TV-352	TV Inspection	2010	3	N/A
537	5-66.1-66.0	Light	9	5-66.1	5-66	44th Ave W & 194th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	66.0	TV-358	TV Inspection	2010	3	N/A
538	5-66-107.5	Light	9	5-66	5-23	46th Ave W & 194th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010</							

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
546	5-87-120.8	Light	10	5-87	C-24	43rd Pl W & 188th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	5	120.8	TV-374	TV Inspection	2010	3	N/A
547	5-96-156.5	Light	10	5-96	5-97	42nd Pl W & 188th St SW	Residential	Public	Light infiltration in upstream manhole	Manhole Grouting	\$ 2,190	1 or 2	156.5	TV-381	TV Inspection	2010	3	N/A
548	5-96-296.8	Light	10	5-96	5-95	42nd Pl W & 188th St SW	Residential	Public	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	296.8	TV-382	TV Inspection	2010	3	N/A
549	5-96-351.8	Light	10	5-96	5-95	42nd Pl W & 188th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	4	351.8	TV-383	TV Inspection	2010	3	N/A
550	5-96-389.4	Light	10	5-96	5-95	42nd Pl W & 188th St SW	Residential	Public	Light infiltration stain	Mainline Point Repair	\$ 11,010	4	389.4	TV-384	TV Inspection	2010	3	N/A
551	5-96-402.3	Light	10	5-96	5-95	42nd Pl W & 188th St SW	Residential	Public	Medium infiltration in downstream manhole	Manhole Grouting	\$ 2,190	4	402.3	TV-385	TV Inspection	2010	3	N/A
552	5-90-14.3	Light	10	5-90	5-92	41st Pl W & 188th St SW	Residential	Public	Light infiltration and mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	14.3	TV-386	TV Inspection	2010	3	N/A
553	5-90-57.3	Light	10	5-90	5-89	41st Pl W & 188th St SW	Residential	Public	Pipe damaged @ lateral connection- light infiltration	Side Sewer Tee Repair	\$ 11,580	3	57.3	TV-388	TV Inspection	2010	3	N/A
554	5-90-113.8	Light	10	5-90	5-89	41st Pl W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	113.8	TV-389	TV Inspection	2010	3	N/A
555	5-90-120.0	Light	10	5-90	5-89	41st Pl W & 188th St SW	Residential	Public	Medium mineral deposits and light infiltration inside lateral	Side Sewer Tee Repair	\$ 11,580	3	120.0	TV-390	TV Inspection	2010	3	N/A
556	5-89-9.3	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	9.3	TV-391	TV Inspection	2010	3	N/A
557	5-89-17.5	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	17.5	TV-392	TV Inspection	2010	3	N/A
558	5-89-33.9	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	33.9	TV-393	TV Inspection	2010	3	N/A
559	5-89-66.5	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	66.5	TV-394	TV Inspection	2010	3	N/A
560	5-89-78.6	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	78.6	TV-395	TV Inspection	2010	3	N/A
561	5-89-91.0	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration and stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	91	TV-396	TV Inspection	2010	3	N/A
562	5-89-126.2	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light mineral deposits and infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	126.2	TV-397	TV Inspection	2010	3	N/A
563	5-89-207.8	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light mineral deposits @ lateral connection	Side Sewer Tee Repair	\$ 11,580	10 or More	207.8	TV-399	TV Inspection	2010	3	N/A
564	5-89-273.1	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration @ lateral connection	Side Sewer Tee Repair	\$ 11,580	10 or More	273.1	TV-400	TV Inspection	2010	3	N/A
565	5-89-301.5	Light	10	5-89	5-88	41st Pl W & 188th St SW	Residential	Public	Light infiltration @ lateral connection	Side Sewer Tee Repair	\$ 11,580	10 or More	301.5	TV-401	TV Inspection	2010	3	N/A
566	5-87-77.9	Light	10	5-87	5-79	43rd Pl W & 188th Pl SW	Easement	Easement	Small longitudinal crack @ top of pipe- infiltration weeper and stain through crack	Mainline Point Repair	\$ 11,010	6	77.9	TV-404	TV Inspection	2010	3	N/A
567	5-87-98.7	Light	10	5-87	5-79	43rd Pl W & 188th Pl SW	Easement	Easement	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	6	98.7	TV-405	TV Inspection	2010	3	N/A
568	5-87-169.3	Light	10	5-87	5-79	43rd Pl W & 188th Pl SW	Easement	Easement	14 ft Sag	Relay Sagging Pipe	\$ 16,030	6	169.3	TV-406	TV Inspection	2010	3	N/A
569	5-87-172.0	Light	10	5-87	5-79	43rd Pl W & 188th Pl SW	Easement	Easement	Medium joint separation- light infiltration- pipe flowing 1/3 full	Mainline Point Repair	\$ 11,010	6	172	TV-407	TV Inspection	2010	3	N/A
570	5-87-233.4	Light	10	5-87	5-79	43rd Pl W & 188th Pl SW	Easement	Easement	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	6	233.4	TV-408	TV Inspection	2010	3	N/A
571	5-79-15.0	Light	10	5-79	5-49	44th Ave W & 189th Pl SW	Residential	Public	Old repair- infiltration dripper in pipe	Mainline Point Repair	\$ 11,010	7	15	TV-409	TV Inspection	2010	3	N/A
572	5-79-57.6	Light	10	5-79	5-49	44th Ave W & 189th Pl SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	7	57.6	TV-411	TV Inspection	2010	3	N/A
573	5-79-102.5	Light	10	5-79	5-49	44th Ave W & 189th Pl SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	7	102.5	TV-412	TV Inspection	2010	3	N/A
574	5-79-122.9	Light	10	5-79	5-49	44th Ave W & 189th Pl SW	Residential	Public	Left joint deflection- medium joint separation	Mainline Point Repair	\$ 11,010	7	122.9	TV-413	TV Inspection	2010	3	N/A
575	5-77-1-50.6	Light	10	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Infiltration weeper @ lateral connection	Side Sewer Tee Repair	\$ 11,580	8	50.6	TV-417	TV Inspection	2010	3	N/A
576	5-77-1-163.1	Light	10	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	163.1	TV-418	TV Inspection	2010	3	N/A
577	5-77-1-166.9	Light	10	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	166.9	TV-419	TV Inspection	2010	3	N/A
578	5-77-1-203.1	Light	10	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Public	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	8	203.1	TV-420	TV Inspection	2010	3	N/A
579	5-77-22.9	Light	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	22.9	TV-422	TV Inspection	2010	3	N/A
580	5-77-33.5	Light	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Infiltration stain @ lateral connection	Side Sewer Tee Repair	\$ 11,580	10 or More	33.5	TV-423	TV Inspection	2010	3	N/A
581	5-77-339.4	Light	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Light mineral deposits inside lateral	Side Sewer Tee Repair	\$ 11,580	10 or More	339.4	TV-425	TV Inspection	2010	3	N/A
582	5-77-397.3	Light	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	10 or More	397.3	TV-426	TV Inspection	2010	3	N/A
583	5-77-397.4	Light	10	5-77	5-76	44th Ave W & 191st St SW	Residential	Public	Rat inside manhole	N/A		10 or More	397.4	TV-427	TV Inspection	2010	3	N/A
584	5-76-14.7	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	14.7	TV-428	TV Inspection	2010	3	N/A
585	5-76-39.0	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	39	TV-429	TV Inspection	2010	3	N/A
586	5-76-43.0	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Infiltration stain @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	43	TV-430	TV Inspection	2010	3	N/A
587	5-76-51.2	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Light mineral deposits @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	51.2	TV-431	TV Inspection	2010	3	N/A
588	5-76-59.5	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	59.5	TV-432	TV Inspection	2010	3	N/A
589	5-76-67.5	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	67.5	TV-433	TV Inspection	2010	3	N/A
590	5-76-102.7	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Infiltration weeper @ lateral connection	Side Sewer Tee Repair	\$ 11,580	9	102.7	TV-434	TV Inspection	2010	3	N/A
591	5-76-205.5	Light	10	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Public	Light mineral deposits and infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	9	205.5	TV-435	TV Inspection	2010	3	N/A
592	5-74-110.6	Light	10	5-74	5-75	44th Ave W & 192nd St SW	Residential	Public	Infiltration weeper through joint with cap	Mainline Point Repair	\$ 11,010	3	110.6	TV-436	TV Inspection	2010	3	N/A
593	5-74-263.7	Light	10	5-74	5-75	44th Ave W & 192nd St SW	Residential	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	3	263.7	TV-437	TV Inspection	2010	3	N/A
594	5-71-62.5	Light	10	5-71	5-68	40th Ave W & 192nd St SW	Easement	Easement	Infiltration weeper and light stain in pipe- small, longitudinal crack	Mainline Point Repair	\$ 11,010	6	62.5	TV-442	TV Inspection	2010	3	N/A
595	3-43-242.0	Light	12	3-43	3-42	Easement in Scriber Lake Park	Easement	Easement	Grease deposits on top of pipe	Pipe Cleaning	\$ 950	1 or 2	242	TV-445	TV Inspection	2010	4	N/A
596	3-26-74.5	Light	12	3-26	3-27	201st Pl SW	Residential	Public	Circular crack	Mainline Point Repair	\$ 11,010	4	74.5	TV-448	TV Inspection	2010	4	N/A
597	3-26-338.0	Light	12	3-26	3-27	201st Pl SW	Residential	Public	Debris inside manhole	Manhole Cleaning	\$ 950	4	338	TV-450	TV Inspection	2010	4	N/A
598	3-26-158.1	Light	12	3-26	3-25	201st Pl SW	Residential	Public	Pipe protrudes into the main, circular crack all the way around the pipe	Side Sewer Tee Repair	\$ 11,580	3	158.1	TV-452	TV Inspection	2010	4	N/A
599	3-26-158.4	Light	12	3-26	3-25	201st Pl SW	Residential	Public	Lateral crack at side sewer connection joint	Side Sewer Tee Repair	\$ 11,580	3	158.4	TV-453	TV Inspection	2010	4	N/A
600	3-20-0.0	Light	12	3-20	3-24	52nd Ave W & Cedar Valley Rd	Easement	Easement	50 ft section of pipe running 50% full or more	N/A		1 or 2	0	TV-455	TV Inspection	2010	4	N/A
601	3-20-71.0	Light	12	3-20	3-24	52nd Ave W & Cedar Valley Rd	Easement	Easement	10 ft sag	Relay Sagging Pipe	\$ 16,030	1 or 2	71	TV-456	TV Inspection	2010	4	N/A
602	3-22-0.0	Light	12	3-22	3-23	52nd Ave W & Cedar Valley Rd	Collector	Public	20 ft sag	Relay Sagging Pipe	\$ 16,030	1 or 2	0	TV-457	TV Inspection	2010	4	N/A
603	3-22-199.9	Light	12	3-22	3-23	52nd Ave W & Cedar Valley Rd	Collector	Public	Bad grouting at manhole connection	Manhole Grouting	\$ 2,190	1 or 2	199.9	TV-458	TV Inspection	2010	4	N/A
604	3-22-35.0	Light	12	3-22	3-21	52nd Ave W & Cedar Valley Rd	Collector	Public	10 ft section of heavy flows through pipe	N/A		1 or 2	35	TV-459	TV Inspection	2010	4	N/A
605	3-21-38.4	Light	12	3-21	3-20	Cedar Valley Rd & 52nd Ave W	Collector	Public	Offset pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	38.4	TV-460	TV Inspection	2010	4	N/A
606	3-19-4.0	Light	12	3-19	3-18	Cedar Valley Rd & 50th Ave W	Collector	Public	Circular crack- infiltration through crack	Mainline Point Repair	\$ 11,010	1 or 2	4	TV-462	TV Inspection	2010	4	N/A
607	3-19-308.4	Light	12	3-19	3-18	Cedar Valley Rd & 50th Ave W	Collector	Public	Grease/ debris hanging from roof of pipe from 308 ft to manhole	Pipe Cleaning	\$ 950	1 or 2	308.4	TV-463	TV Inspection	2010	4	N/A
608	3-118-180.0	Light	12	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Public	Debris inside pipe- 8 ft section	Pipe Cleaning	\$ 950	5	180.0	TV-464	TV Inspection	2010	4	N/A
609	3-118-267.1	Light	12	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	5	267.1	TV-465	TV Inspection	2010	4	N/A
610	3-118-271.1	Light	12	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	5	271.1	TV-466	TV Inspection	2010	4	N/A
611	3-118-325.4	Light	12	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Public	Light infiltration at side sewer joint	Side Sewer Tee Repair	\$ 11,580	5	325.4	TV-467	TV Inspection	2010	4	N/A
612	3-118-332.1	Light	12	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Public	Light debris in manhole channel	Manhole Cleaning	\$ 950	5	332.1	TV-468	TV Inspection	2010	4	N/A
613	3-118-2.1	Light	12	3-118	3-117	188th St SW & 55th Ave W	Collector	Public	Circular crack and light infiltration through crack	Mainline Point Repair	\$ 11,010	7	2.1	TV-469	TV Inspection	2010	4	N/A
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Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
624	3-110-160	Light	12	3-110	3-109	189th Pl SW & 52nd Ave W	Residential	Public	Light mineral deposits at pipe segment joint	Mainline Point Repair	\$ 11,010	6	160 to 360	TV-485	TV Inspection	2010	4	N/A
625	3-109-142.7	Light	12	3-109	3-108	189th Pl SW & 55th Ave W	Easement	Easement	Grout at side sewer connection appears to be broken	Side Sewer Tee Repair	\$ 11,580	4	142.7	TV-487	TV Inspection	2010	4	N/A
626	3-109-199.4	Light	12	3-109	3-108	189th Pl SW & 55th Ave W	Easement	Easement	Infiltration weeper through hole in pipe on left side	Mainline Point Repair	\$ 11,010	4	199.4	TV-488	TV Inspection	2010	4	N/A
627	3-109-199.6	Light	12	3-109	3-108	189th Pl SW & 55th Ave W	Easement	Easement	Infiltration weeper through hole in pipe on right side	Mainline Point Repair	\$ 11,010	4	199.6	TV-489	TV Inspection	2010	4	N/A
628	3-108-1.2	Light	12	3-108	3-106	189th Pl SW & 55th Ave W	Easement	Easement	Light mineral deposits.	Mainline Point Repair	\$ 11,010	4	1.2	TV-490	TV Inspection	2010	4	N/A
629	3-108-5.0	Light	12	3-108	3-106	189th Pl SW & 55th Ave W	Easement	Easement	Infiltration weeper.	Mainline Point Repair	\$ 11,010	4	5	TV-491	TV Inspection	2010	4	N/A
630	5-116-12.3	Light	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	Light mineral deposits	Mainline Point Repair	\$ 11,010	7	12.3	TV-494	TV Inspection	2010	4	N/A
631	5-116-120.0	Light	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	Light mineral deposits at joint	Mainline Point Repair	\$ 11,010	7	120	TV-497	TV Inspection	2010	4	N/A
632	5-116-181.6	Light	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	Light mineral deposits at joint	Mainline Point Repair	\$ 11,010	7	181.6	TV-498	TV Inspection	2010	4	N/A
633	5-116-198.6	Light	12	5-116	5-117	50th Ave W & 196th St SW	Collector	Public	Light infiltration through top of manhole	Manhole Grouting	\$ 2,190	7	198.6	TV-500	TV Inspection	2010	4	N/A
634	5-115-26.8	Light	12	5-115	5-116	50th Ave W & 196th St SW	Collector	Public	Light infiltration @ pipe segment joint	Mainline Point Repair	\$ 11,010	5	26.8	TV-501	TV Inspection	2010	4	N/A
635	5-115-179.9	Light	12	5-115	5-116	50th Ave W & 196th St SW	Collector	Public	Light mineral deposits at side sewer connection.	Side Sewer Tee Repair	\$ 11,580	5	179.9	TV-503	TV Inspection	2010	4	N/A
636	5-115-285.2	Light	12	5-115	5-116	50th Ave W & 196th St SW	Collector	Public	Light mineral deposits at side sewer connection.	Side Sewer Tee Repair	\$ 11,580	5	285.2	TV-504	TV Inspection	2010	4	N/A
637	5-115-327.5	Light	12	5-115	5-116	50th Ave W & 196th St SW	Collector	Public	Light infiltration around manhole rim	Manhole Grouting	\$ 2,190	5	327.5	TV-505	TV Inspection	2010	4	N/A
638	5-182-130.6	Light	13	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Light mineral deposits at pipe segment joint, heavy infiltration	Mainline Point Repair	\$ 11,010	10 or More	130.6	TV-506	TV Inspection	2010	4	N/A
639	5-182-133.0	Light	13	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Light mineral deposits at pipe segment joint, light infiltration	Mainline Point Repair	\$ 11,010	10 or More	133.0	TV-507	TV Inspection	2010	4	N/A
640	5-182-140.5	Light	13	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Circular crack	Mainline Point Repair	\$ 11,010	10 or More	140.5	TV-508	TV Inspection	2010	4	N/A
641	5-182-141.5	Light	13	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Easement	Light infiltration in downstream manhole	Manhole Grouting	\$ 2,190	10 or More	141.5	TV-509	TV Inspection	2010	4	N/A
642	5-172-34.1	Light	13	5-172	5-171	188th St SW & 52nd Ave W	Collector	Public	Light mineral deposits at pipe segment joint, pipe separation	Mainline Point Repair	\$ 11,010	1 or 2	34.1	TV-510	TV Inspection	2010	4	N/A
643	5-171-98.4	Light	13	5-171	5-169	188th St SW & 51st Pl W	Collector	Public	5 ft sag	Relay Sagging Pipe	\$ 16,030	5	98.4	TV-514	TV Inspection	2010	4	N/A
644	5-171-136.9	Light	13	5-171	5-169	188th St SW & 51st Pl W	Collector	Public	Light mineral deposits at outside drop	Manhole Grouting	\$ 2,190	5	136.9	TV-516	TV Inspection	2010	4	N/A
645	5-169.1-72.0	Light	13	5-169.1	5-170	188th St SW & 48th Ave W	Collector	Public	Light mineral deposits at lateral connection	Side Sewer Tee Repair	\$ 11,580	3	72.0	TV-517	TV Inspection	2010	4	N/A
646	5-169.1-294.0	Light	13	5-169.1	5-170	188th St SW & 48th Ave W	Collector	Public	Pipe segment joint deflection on right side of pipe	Mainline Point Repair	\$ 11,010	3	294.0	TV-518	TV Inspection	2010	4	N/A
647	5-169.1-325.6	Light	13	5-169.1	5-170	188th St SW & 48th Ave W	Collector	Public	Light mineral deposits at lateral connection	Side Sewer Tee Repair	\$ 11,580	3	325.6	TV-519	TV Inspection	2010	4	N/A
648	5-169.1-14.6	Light	13	5-169.1	5-169	188th St SW & 51st Pl W	Collector	Public	12 ft sag	Relay Sagging Pipe	\$ 16,030	3	14.6	TV-520	TV Inspection	2010	4	N/A
649	5-169.1-26.3	Light	13	5-169.1	5-169	188th St SW & 51st Pl W	Collector	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	3	26.3	TV-521	TV Inspection	2010	4	N/A
650	5-169.1-120.0	Light	13	5-169.1	5-169	188th St SW & 51st Pl W	Collector	Public	12 ft sag	Relay Sagging Pipe	\$ 16,030	3	120.0	TV-523	TV Inspection	2010	4	N/A
651	5-135.1-72.8	Light	13	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	Public	12 ft sag	Relay Sagging Pipe	\$ 16,030	4	72.8	TV-525	TV Inspection	2010	4	N/A
652	5-135-101.4	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	Light mineral deposits at lateral connection	Side Sewer Tee Repair	\$ 11,580	9	101.4	TV-528	TV Inspection	2010	4	N/A
653	5-135-119.6	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	Light infiltration at pipe segment joint	Mainline Point Repair	\$ 11,010	9	119.6	TV-529	TV Inspection	2010	4	N/A
654	5-135-136.0	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	Light infiltration at pipe segment joint	Mainline Point Repair	\$ 11,010	9	136.0	TV-530	TV Inspection	2010	4	N/A
655	5-135-196.0	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	9 ft sag	Relay Sagging Pipe	\$ 16,030	9	196	TV-531	TV Inspection	2010	4	N/A
656	5-135-285.6	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	12 ft sag	Relay Sagging Pipe	\$ 16,030	9	285.6	TV-533	TV Inspection	2010	4	N/A
657	5-135-320.0	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	18 ft sag	Relay Sagging Pipe	\$ 16,030	9	320.0	TV-535	TV Inspection	2010	4	N/A
658	5-135-338.4	Light	13	5-135	5-134	52nd Ave W & 189th St SW	Collector	Public	9 ft sag	Relay Sagging Pipe	\$ 16,030	9	338.4	TV-536	TV Inspection	2010	4	N/A
659	5-134-27.6	Light	13	5-134	5-133	52nd Ave W & 189th St SW	Collector	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	6	27.6	TV-537	TV Inspection	2010	4	N/A
660	5-134-43.9	Light	13	5-134	5-133	52nd Ave W & 189th St SW	Collector	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	6	43.9	TV-538	TV Inspection	2010	4	N/A
661	5-134-133.2	Light	13	5-134	5-133	52nd Ave W & 189th St SW	Collector	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	6	133.2	TV-539	TV Inspection	2010	4	N/A
662	5-134-231.7	Light	13	5-134	5-133	52nd Ave W & 189th St SW	Collector	Public	Joint separation and infiltration weeper	Mainline Point Repair	\$ 11,010	6	231.7	TV-540	TV Inspection	2010	4	N/A
663	5-134-263.5	Light	13	5-134	5-133	52nd Ave W & 189th St SW	Collector	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	6	263.5	TV-541	TV Inspection	2010	4	N/A
664	5-134-271.5	Light	13	5-134	5-133	52nd Ave W & 189th St SW	Collector	Public	9 ft sag	Relay Sagging Pipe	\$ 16,030	6	271.5	TV-542	TV Inspection	2010	4	N/A
665	5-133-185.6	Light	13	5-133	5-132	52nd Ave W & 189th Pl SW	Collector	Public	Circular crack at side sewer connection	Side Sewer Tee Repair	\$ 11,580	3	185.6	TV-543	TV Inspection	2010	4	N/A
666	5-133-229.2	Light	13	5-133	5-132	52nd Ave W & 189th Pl SW	Collector	Public	9 ft sag	Relay Sagging Pipe	\$ 16,030	3	229.2	TV-544	TV Inspection	2010	4	N/A
667	5-133-236.3	Light	13	5-133	5-132	52nd Ave W & 189th Pl SW	Collector	Public	Light mineral deposits and infiltration at lateral joint	Side Sewer Tee Repair	\$ 11,580	3	236.3	TV-545	TV Inspection	2010	4	N/A
668	5-132.1-72.9	Light	13	5-132.1	5-130	52nd Ave W & 192nd St SW	Collector	Public	11 ft sag	Relay Sagging Pipe	\$ 16,030	1 or 2	72.9	TV-546	TV Inspection	2010	4	N/A
669	5-132.1-195.0	Light	13	5-132.1	5-130	52nd Ave W & 192nd St SW	Collector	Public	13 ft sag	Relay Sagging Pipe	\$ 16,030	1 or 2	195.0	TV-548	TV Inspection	2010	4	N/A
670	5-132-5.2	Light	13	5-132	5-132.1	52nd Ave W & 191st St SW	Collector	Public	Light mineral deposits and infiltration weeper	Mainline Point Repair	\$ 11,010	1 or 2	5.2	TV-549	TV Inspection	2010	4	N/A
671	5-130-199.5	Light	13	5-130	5-129	52nd Ave W & 192nd St SW	Collector	Public	Infiltration weeper and light mineral deposits	Mainline Point Repair	\$ 11,010	3	199.5	TV-550	TV Inspection	2010	4	N/A
672	5-130-303.4	Light	13	5-130	5-129	52nd Ave W & 192nd St SW	Collector	Public	Light mineral deposits and infiltration weeper @ side sewer connection	Side Sewer Tee Repair	\$ 11,580	3	303.4	TV-551	TV Inspection	2010	4	N/A
673	5-130-340.3	Light	13	5-130	5-129	52nd Ave W & 192nd St SW	Collector	Public	Light mineral deposits and infiltration weeper @ side sewer connection	Side Sewer Tee Repair	\$ 11,580	3	340.3	TV-552	TV Inspection	2010	4	N/A
674	5-129-59.0	Light	13	5-129	5-128	52nd Ave W & 194th St SW	Collector	Public	56 ft sag	Relay Sagging Pipe	\$ 16,030	3	59.0	TV-553	TV Inspection	2010	4	N/A
675	5-129-151.0	Light	13	5-129	5-128	52nd Ave W & 194th St SW	Collector	Public	69 ft sag	Relay Sagging Pipe	\$ 16,030	3	151	TV-554	TV Inspection	2010	4	N/A
676	5-129-220.3	Light	13	5-129	5-128	52nd Ave W & 194th St SW	Collector	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	3	220.3	TV-555	TV Inspection	2010	4	N/A
677	5-115-59.3	Light	13	5-115	5-114	50th Ave W & 196th St SW	Collector	Public	Infiltration weeper @ pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	59.3	TV-556	TV Inspection	2010	4	N/A
678	3-73-405.4	Light	13	3-73	3-72	Easement in Scriber Lake Park	Easement	Easement	Light infiltration in downstream manhole	Manhole Grouting	\$ 2,190	1 or 2	405.4	TV-564	TV Inspection	2010	4	N/A
679	3-46-7.8	Light	13	3-46	3-45	Easement in Scriber Lake Park	Easement	Easement	Infiltration at pipe segment joint	Mainline Point Repair	\$ 11,010	1 or 2	7.8	TV-565	TV Inspection	2010	4	N/A
680	3-45-149.7	Light	13	3-45	3-44	Easement in Scriber Lake Park	Easement	Easement	Small hole in manhole; infiltration weeper	Manhole Grouting	\$ 2,190	3	149.7	TV-568	TV Inspection	2010	4	N/A
681	3-42-10.8	Light	13	3-42	3-41	Easement in Scriber Lake Park	Easement	Easement	Infiltration dripper @ pipe segment joint	Mainline Point Repair	\$ 11,010	4	10.8	TV-569	TV Inspection	2010	4	N/A
682	3-42-73.5	Light	13	3-42	3-41	Easement in Scriber Lake Park	Easement	Easement	Light infiltration @ lateral joint	Side Sewer Tee Repair	\$ 11,580	4	73.5	TV-570	TV Inspection	2010	4	N/A
683	5-196-9.1	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	Roots visible in side sewer	Root Removal	\$ 1,400	10 or More	9.1	TV-573	TV Inspection	2010	4	N/A
684	5-196-9.1.2	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	8 ft sag	Relay Sagging Pipe	\$ 16,030	10 or More	9.1	TV-574	TV Inspection	2010	4	N/A
685	5-196-13.7	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	Light mineral deposits @ pipe segment joints from 14 ft to 40 ft downstream from upstream manhole	Mainline Point Repair	\$ 11,010	10 or More	13.7	TV-575	TV Inspection	2010	4	N/A
686	5-196-44.9	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	6 ft sag	Relay Sagging Pipe	\$ 16,030	10 or More	44.9	TV-576	TV Inspection	2010	4	N/A
687	5-196-51.3	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	9 ft sag	Relay Sagging Pipe	\$ 16,030	10 or More	51.3	TV-577	TV Inspection	2010	4	N/A
688	5-196-89.3	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	6 ft sag	Relay Sagging Pipe	\$ 16,030	10 or More	89.3	TV-578	TV Inspection	2010	4	N/A
689	5-196-151.2	Light	14	5-196	5-195	46th Pl W & 183rd Pl SW	Residential	Public	Large circular crack	Mainline Point Repair	\$ 11,010	10 or More	151.2	TV-579	TV Inspection	2010	4	N/A
690	5-195-89.6	Light	14	5-195	5-193	46th Pl W & 183rd Pl SW	Residential	Public	6 ft sag	Relay Sagging Pipe	\$ 16,030	6	89.6	TV-580	TV Inspection	2010	4	N/A
691	5-195-95.7	Light	14	5-195														

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
702	5-189-75.2	Light	14	5-189	5-189 CO	47th PI W & 184th PI SW	Residential	Public	Joint infiltration, visible staining	Mainline Point Repair	\$ 11,010	5	75.2	TV-594	TV Inspection	2010	4	N/A
703	5-189-48.0	Light	14	5-189	5-187	47th PI W & 185th PI SW	Easement	Easement	Build-up along flowline	Pipe Cleaning	\$ 950	10 or More	48.0	TV-596	TV Inspection	2010	4	N/A
704	5-189-77.2	Light	14	5-189	5-187	47th PI W & 185th PI SW	Easement	Easement	Mineral deposits within side sewer. Infiltration visible at bend in side sewer.	Side Sewer Tee Repair	\$ 11,580	10 or More	77.2	TV-597	TV Inspection	2010	4	N/A
705	5-189-132.5	Light	14	5-189	5-187	47th PI W & 185th PI SW	Easement	Easement	Infiltration weeper at pipe segment joint.	Mainline Point Repair	\$ 11,010	10 or More	132.5	TV-599	TV Inspection	2010	4	N/A
706	5-188-15.6	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	Joint infiltration with mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	15.6	TV-608	TV Inspection	2010	4	N/A
707	5-188-84.7	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	11 ft sag	Relay Sagging Pipe	\$ 16,030	10 or More	84.7	TV-609	TV Inspection	2010	4	N/A
708	5-188-184.3	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	Root intrusion within joint	Root Removal	\$ 1,400	10 or More	184.3	TV-610	TV Inspection	2010	4	N/A
709	5-188-201.0	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	Root intrusion at connection	Root Removal	\$ 1,400	10 or More	201.0	TV-611	TV Inspection	2010	4	N/A
710	5-188-201.0	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	Root intrusion within joint	Root Removal	\$ 1,400	10 or More	201.0	TV-612	TV Inspection	2010	4	N/A
711	5-188-273.1	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	Joint infiltration with mineral deposits	Mainline Point Repair	\$ 11,010	10 or More	273.1	TV-613	TV Inspection	2010	4	N/A
712	5-188-299.3	Light	14	5-188	5-187	46th PI W & 185th PI SW	Residential	Public	Circular crack and visible soil	Mainline Point Repair	\$ 11,010	10 or More	299.3	TV-615	TV Inspection	2010	4	N/A
713	5-187-65.4	Light	14	5-187	5-185	47th PI W & 185th PI SW	Residential	Public	Offset connection	Mainline Point Repair	\$ 11,010	4	65.4	TV-616	TV Inspection	2010	4	N/A
714	5-187-212.6	Light	14	5-187	5-185	47th PI W & 185th PI SW	Residential	Public	Small hole; beginning of root intrusion	Mainline Point Repair	\$ 11,010	4	212.6	TV-618	TV Inspection	2010	4	N/A
715	5-185-182.9	Light	14	5-185	5-186	48th Ave W & 185th PI SW	Residential	Public	Offset pipe within side sewer	Side Sewer Tee Repair	\$ 11,580	5	182.9	TV-621	TV Inspection	2010	4	N/A
716	5-185-248.2	Light	14	5-185	5-186	48th Ave W & 185th PI SW	Residential	Public	Joint infiltration	Mainline Point Repair	\$ 11,010	5	248.2	TV-623	TV Inspection	2010	4	N/A
717	5-185-251.1	Light	14	5-185	5-186	48th Ave W & 185th PI SW	Residential	Public	Unable to tell if side sewer is active; water backed up into pipe	N/A		5	251.1	TV-624	TV Inspection	2010	4	N/A
718	5-185-39.0	Light	14	5-185	5-184	48th Ave W & 185th PI SW	Residential	Public	Joint infiltration	Mainline Point Repair	\$ 11,010	7	39.0	TV-625	TV Inspection	2010	4	N/A
719	5-184-114.7	Light	14	5-184	5-183	49th PI W & 185th PI SW	Residential	Public	Light mineral deposits at connection	Side Sewer Tee Repair	\$ 11,580	9	114.7	TV-628	TV Inspection	2010	4	N/A
720	5-184-138.2	Light	14	5-184	5-183	49th PI W & 185th PI SW	Residential	Public	Staining, light mineral deposits	Mainline Point Repair	\$ 11,010	9	138.2	TV-629	TV Inspection	2010	4	N/A
721	5-184-248.9	Light	14	5-184	5-183	49th PI W & 185th PI SW	Residential	Public	Mineral deposits with infiltration at connection	Side Sewer Tee Repair	\$ 11,580	9	248.9	TV-630	TV Inspection	2010	4	N/A
722	5-182-153.5	Light	14	5-182	5-183	49th PI W & 185th PI SW	Residential	Public	Infiltration at joint and offset joint; light mineral deposits	Mainline Point Repair	\$ 11,010	3	153.5	TV-631	TV Inspection	2010	4	N/A
723	5-172.1-44.8	Light	14	5-172.1	5-172	51st PI W & 188th St SW	Collector	Public	Mineral deposits and infiltration at side sewer connection	Side Sewer Tee Repair	\$ 11,580	4	44.8	TV-633	TV Inspection	2010	4	N/A
724	5-172.1-3.0	Light	15	5-172.1	5-173 CO	52nd Ave W & 188th St SW	Collector	Public	Root intrusion in lateral	Root Removal	\$ 1,400	1 or 2	3.0	TV-636	TV Inspection	2010	4	N/A
725	5-199-171.5	Light	15	5-199	5-198	44th Ave W & 183rd PI SW	Residential	Public	Directional bore pipe through top of pipe; pipe is pink with black stripe with date stamp 5/16/08. Long cracks around holes	Mainline Point Repair	\$ 11,010	1 or 2	171.5	TV-637	TV Inspection	2010	4	N/A
726	5-197-0.0	Light	15	5-197	5-194	46th PI W & 183rd PI SW	Residential	Public	Root intrusion in manhole through rings or riser	Root Removal	\$ 1,400	1 or 2	0.0	TV-638	TV Inspection	2010	4	N/A
727	5-197-121.7	Light	15	5-197	5-194	46th PI W & 183rd PI SW	Residential	Public	Mineral deposits at connection to manhole	Manhole Grouting	\$ 2,190	1 or 2	121.7	TV-639	TV Inspection	2010	4	N/A
728	5-67.1-42.7	Light	16	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Public	Light mineral deposits @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	42.7	TV-642	TV Inspection	2010	3	145.2
729	5-67.1-20.0	Light	16	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Public	Infiltration stain @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	20	TV-643	TV Inspection	2010	3	286.6
730	5-67.1-25.7	Light	16	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	25.7	TV-646	TV Inspection	2010	3	289.7
731	5-67.1-32.5	Light	16	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Public	Infiltration stain @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	32.5	TV-647	TV Inspection	2010	3	289.7
732	5-16-33.3	Light	16	5-16	5-15	48th Ave W & 188th St SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	3	33.3	TV-649	TV Inspection	2010	3	115.3
733	5-15-25.4	Light	16	5-15	5-14	48th Ave W & 188th St SW	Residential	Public	Circular crack in pipe	Side Sewer Point Repair	\$ 8,400	10 or More	25.4	TV-653	TV Inspection	2010	3	60.7
734	5-76-21.7	Light	17	5-76	5-77	44th Ave W & 191st St SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	10 or More	21.7	TV-654	TV Inspection	2010	3	227.1
735	5-76-36.9	Light	17	5-76	5-77	44th Ave W & 191st St SW	Residential	Public	Capped end- infiltration weeper	Side Sewer Point Repair	\$ 8,400	10 or More	36.9	TV-655	TV Inspection	2010	3	365.2
736	5-73-8.9	Light	17	5-73	5-72	40th Ave W & 192nd St SW	Residential	Public	Capped end- infiltration weeper through cap	Side Sewer Point Repair	\$ 8,400	3	8.9	TV-660	TV Inspection	2010	3	202.5
737	5-71-0.0	Light	17	5-71	5-68	44th Ave W & 192nd St SW	Easement	Easement	Light mineral deposits @ lateral joint	Side Sewer Point Repair	\$ 8,400	6	0.0	TV-661	TV Inspection	2010	3	326.6
738	5-71-6.6	Light	17	5-71	5-68	44th Ave W & 192nd St SW	Easement	Easement	Light mineral deposits & light infiltration	Side Sewer Tee Repair	\$ 11,580	6	6.6	TV-662	TV Inspection	2010	3	326.6
739	5-70-5.1	Light	17	5-70	5-69	44th Ave W & 192nd PI SW	Residential	Public	Infiltration weeper @ lateral joint	Side Sewer Tee Repair	\$ 11,580	1 or 2	5.1	TV-663	TV Inspection	2010	3	112.3
740	5-196-12.0	Light	14	5-196	5-195	46th PI W & 183rd PI SW	Residential	Public	Light mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	12.0	TV-670	TV Inspection	2010	4	40.5
741	5-196-14.4	Light	14	5-196	5-195	46th PI W & 183rd PI SW	Residential	Public	Joint infiltration	Side Sewer Point Repair	\$ 8,400	10 or More	14.4	TV-671	TV Inspection	2010	4	40.5
742	5-196-20.4	Light	14	5-196	5-195	46th PI W & 183rd PI SW	Residential	Public	Light mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	20.4	TV-672	TV Inspection	2010	4	40.5
743	5-196-23.4	Light	14	5-196	5-195	46th PI W & 183rd PI SW	Residential	Public	Light mineral deposits	Side Sewer Point Repair	\$ 8,400	10 or More	23.4	TV-673	TV Inspection	2010	4	40.5
744	5-196-31.9	Light	14	5-196	5-195	46th PI W & 183rd PI SW	Residential	Public	Visible soil and infiltration	Side Sewer Point Repair	\$ 8,400	10 or More	31.9	TV-674	TV Inspection	2010	4	40.5
745	5-195-13.9	Light	14	5-195	5-193	46th PI W & 183rd PI SW	Residential	Public	Roots in lateral	Root Removal	\$ 1,400	6	13.9	TV-676	TV Inspection	2010	4	89.7
746	5-193-2.4	Light	14	5-193	5-191	183rd PI SW & 46th PI W	Residential	Public	Joint infiltration	Side Sewer Point Repair	\$ 11,010	5	2.4	TV-678	TV Inspection	2010	4	187.5
747	5-192-21.8	Light	14	5-192	5-191	183rd PI SW & 46th PI W	Residential	Public	Roots in lateral	Root Removal	\$ 1,400	4	21.8	TV-680	TV Inspection	2010	4	97.7
748	5-192-11.0	Light	14	5-192	5-191	183rd PI SW & 46th PI W	Residential	Public	Mineral deposits in joint	Side Sewer Point Repair	\$ 11,010	4	11.0	TV-681	TV Inspection	2010	4	210.9
749	5-192-15.1	Light	14	5-192	5-191	183rd PI SW & 46th PI W	Residential	Public	Debris in lateral	Pipe Cleaning	\$ 950	4	15.1	TV-683	TV Inspection	2010	4	229.5
750	5-191-10.0	Light	14	5-191	5-190	183rd PI SW & 47th PI W	Easement	Easement	Roots in lateral @ joint	Side Sewer Tee Repair	\$ 11,580	6	10	TV-684	TV Inspection	2010	4	45.7
751	5-191-11.6	Light	14	5-191	5-190	183rd PI SW & 47th PI W	Easement	Easement	Roots in joint	Root Removal	\$ 1,400	6	11.6	TV-686	TV Inspection	2010	4	82.0
752	5-189 CO-17.5	Light	14	5-189 CO	5-189	184th PI SW & 47th PI W	Residential	Public	Root ball in lateral	Root Removal	\$ 1,400	5	17.5	TV-688	TV Inspection	2010	4	106.1
753	5-188-0.5	Light	14	5-188	5-187	185th PI SW & 46th PI W	Residential	Public	Roots in joint in lateral	Root Removal	\$ 1,400	10 or More	0.5	TV-693	TV Inspection	2010	4	200.7
754	5-188-4.0	Light	14	5-188	5-187	185th PI SW & 46th PI W	Residential	Public	Roots in joint in lateral	Root Removal	\$ 1,400	10 or More	4.0	TV-694	TV Inspection	2010	4	200.7
755	5-188-6.2	Light	14	5-188	5-187	185th PI SW & 46th PI W	Residential	Public	Roots in joint in lateral	Root Removal	\$ 1,400	10 or More	6.2	TV-695	TV Inspection	2010	4	200.7
756	5-185-0.0	Light	14	5-185	5-184	185th PI SW & 48th Ave W	Residential	Public	Mineral deposits @ joint	Side Sewer Point Repair	\$ 8,400	7	0.0	TV-697	TV Inspection	2010	4	74.5
757	5-185-3.9	Light	14	5-185	5-184	185th PI SW & 48th Ave W	Residential	Public	Joint infiltration	Side Sewer Point Repair	\$ 8,400	7	3.9	TV-698	TV Inspection	2010	4	74.5
758	5-185-21.8	Light	14	5-185	5-184	185th PI SW & 48th Ave W	Residential	Public	Joint infiltration	Side Sewer Point Repair	\$ 8,400	7	21.8	TV-699	TV Inspection	2010	4	74.5
759	5-185-21.6	Light	14	5-185	5-184	185th PI SW & 48th Ave W	Residential	Public	Joint infiltration	Side Sewer Point Repair	\$ 8,400	7	21.6	TV-700	TV Inspection	2010	4	249.7
760	5-184-13.6	Light	14	5-184	5-183	185th PI SW & 49th PI W	Residential	Public	Broken joint with infiltration	Side Sewer Point Repair	\$ 8,400	9	13.6	TV-702	TV Inspection	2010	4	46.5
761	5-184-16.4	Light	14	5-184	5-183	185th PI SW & 49th PI W	Residential	Public	Joint infiltration	Side Sewer Point Repair	\$ 8,400	9	16.4	TV-70				

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
773	3-97-N/A	Light	N/A	3-97	3-97	Near 52nd Ave W & 191st St SW	Residential	Public	East interior manhole wall is wet; numerous streaks on interior manhole wall; uneven grade around manhole cover; north side bench visibly wet; some riser bricks have moved, grout fallen out in places; no visible flow through manhole	Manhole Grouting	\$ 2,190	6	N/A	M-7	Manhole Inspection	2010	4	N/A
774	3-102-N/A	Light	N/A	3-102	3-102	190th St SW & 55th Ave W	Residential	Public	Visible infiltration through interior manhole walls; north manhole bench is very wet; visible water dripping on south interior manhole wall	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-8	Manhole Inspection	2010	4	N/A
775	3-104-N/A	Light	N/A	3-104	3-104	190th St SW (near 55th Ave W)	Residential	Public	Numerous cracks in pavement surrounding manhole; top manhole riser is wet	N/A		3	N/A	M-10	Manhole Inspection	2010	4	N/A
776	3-106-N/A	Light	N/A	3-106	3-106	55th Ave W & 189th Pl SW	Residential	Public	Manhole is surcharging; roots pushing through between riser sections; mineral deposits formed outside north and east inlets; interior walls are wet	Manhole Grouting	\$ 2,190	4	N/A	M-11	Manhole Inspection	2010	6	N/A
777	3-120-N/A	Light	N/A	3-120	3-120	Hwy 99 (near 186th Pl SW)	Easement	Easement	Heavy flows through manhole	N/A		1 or 2	N/A	M-12	Manhole Inspection	2010	6	N/A
778	4-130-N/A	Light	N/A	4-130	4-130	182nd St SW & 64th Ave W	Residential	Public	Manhole rim below adjacent grade; stains down manhole interior wall; wet on base of north side wall- perhaps circular crack; pavement cracked in multiple spots around manhole cover	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-13	Manhole Inspection	2010	5	N/A
779	5-68-N/A	Light	N/A	5-68	5-68	192nd Pl SW & 44th Ave W	Residential	Public	Mineral deposits around north and west pipes; infiltration stains on north interior wall; benches are wet and covered with deposits	Manhole Grouting	\$ 2,190	6	N/A	M-14	Manhole Inspection	2010	3	N/A
780	5-75-N/A	Light	N/A	5-75	5-75	192nd St SW & 44th Ave W	Residential	Public	Labeled "Drain" on cover- however identified as sewer manhole on basemap; appears to be catch basin- could be surcharged	N/A		3	N/A	M-15	Manhole Inspection	2010	3	N/A
781	5-77-N/A	Light	N/A	5-77	5-77	191st St SW & 44th Ave W	Residential	Public	Deposits causing damming inside manhole; manhole channel may be in low spot; benches are full of deposits	Manhole Cleaning	\$ 950	10 or More	N/A	M-16	Manhole Inspection	2010	3	N/A
782	5-79-N/A	Light	N/A	5-79	5-79	189th Pl SW & 44th Ave W	Residential	Public	Steady, clear flow through manhole; deposits on bench- may be from surcharge event	Manhole Cleaning	\$ 950	6	N/A	M-17	Manhole Inspection	2010	3	N/A
783	5-96-N/A	Light	N/A	5-96	5-96	42nd Pl W & 188th St SW	Residential	Public	Dripping water from leak in manhole riser section; interior walls are wet; mineral deposits on one riser section around entire section circumference- may be leak all around	Manhole Grouting	\$ 2,190	4	N/A	M-18	Manhole Inspection	2010	3	N/A
784	5-142.1-N/A	Light	N/A	5-142.1	5-142.1	192nd St SW (near 49th Pl W)	Residential	Public	Manhole riser sections are wet; mineral deposits on risers	Manhole Grouting	\$ 2,190	5	N/A	M-19	Manhole Inspection	2010	4	N/A
785	5-142-N/A	Light	N/A	5-142	5-142	192nd St SW (near 49th Pl W)	Residential	Public	Lateral crack in pavement across entire roadway width jutting out laterally from manhole; inflow from crack in manhole cover; significant flow from west; manhole risers are wet;	Adjust Manhole Lid	\$ 3,830	4	N/A	M-20	Manhole Inspection	2010	4	N/A
786	5-148-N/A	Light	N/A	5-148	5-148	192nd St SW (near 49th Pl W)	Residential	Public	Bench is wet; significant flow from north; lateral crack in road from manhole to both edges of pavement; pavement around manhole rim has been elevated; mineral deposits around outside of north pipe invert	Manhole Grouting	\$ 2,190	5	N/A	M-21	Manhole Inspection	2010	4	N/A
787	5-152-N/A	Light	N/A	5-152	5-152	190th St SW (near 51st Pl W)	Residential	Public	Steady flow through manhole; quite a bit of debris on bench; manhole rim and cover have shifted 1.5 to 2 inches; manhole risers are wet	Manhole Cleaning	\$ 950	5	N/A	M-22	Manhole Inspection	2010	4	N/A
788	5-154-N/A	Light	N/A	5-154	5-154	190th St SW (near 51st Pl W)	Residential	Public	Mineral deposits on outside of east invert and south side bench; cracks in pavement around manhole rim; streaks on interior manhole walls; grasses and weeds overgrown on manhole cover	Adjust Manhole Lid	\$ 3,830	5	N/A	M-23	Manhole Inspection	2010	4	N/A
789	5-164-N/A	Light	N/A	5-164	5-164	189th St SW & 50th Pl W	Residential	Public	Wet bench; seepage around edge from top of bench up to first riser section; visible infiltration around manhole rim; pavement is cracked around manhole rim; rim slightly above grade of pavement	Adjust Manhole Lid	\$ 3,830	1 or 2	N/A	M-24	Manhole Inspection	2010	4	N/A
790	5-165-N/A	Light	N/A	5-165	5-165	50th Pl W (near 189th St SW)	Residential	Public	Sticks, debris and firecrackers inside; wet benches; stains on north side interior wall; minor pavement cracking around manhole rim	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-25	Manhole Inspection	2010	4	N/A
791	5-166-N/A	Light	N/A	5-166	5-166	189th St SW & 49th Pl W	Residential	Public	Wet benches; seepage around edge at top of bench up to first rung of manhole	Manhole Grouting	\$ 2,190	1 or 2	N/A	M-26	Manhole Inspection	2010	4	N/A
792	5-178-N/A	Light	N/A	5-178	5-178	49th Pl W & 186th Pl SW	Residential	Public	Pavement cracked around manhole rim; lateral pavement cracking across entire roadway width jutting out from manhole; benches are wet; mineral deposits on south riser section	Manhole Grouting	\$ 2,190	10 or More	N/A	M-27	Manhole Inspection	2010	4	N/A
793	5-179-N/A	Light	N/A	5-179	5-179	186th Pl SW (near 49th Pl W)	Residential	Public	South bench is wet and has deposited solids; visible infiltration on southeast interior wall behind ladder rung	Manhole Grouting	\$ 2,190	10 or More	N/A	M-28	Manhole Inspection	2010	4	N/A
794	5-104.6-N/A	Light	N/A	5-104.6	5-104.6	40th Ave W and 185th Pl. SW, Lynnwood, WA.	Collector	Public	Rubber ring around the MH is coming undone.	Adjust Manhole Lid	\$ 3,830	1 or 2	N/A	S-1	Smoke Testing	2009	3	N/A
795	5-104.3-N/A	Light	N/A	5-104.3	5-104.1	18702 40th Ave, Lynnwood, WA	Yard	Private	Uncapped cleanout in flower bed	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-2	Smoke Testing	2009	3	N/A
796	16-29-N/A	Light	N/A	16-29	16-28.1	19427 40th Ave W, Lynnwood, WA	Driveway	Private	Loose cleanout cover behind Bail Bond by Nate	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-9	Smoke Testing	2009	3	N/A
797	5-6-N/A	Light	N/A	5-6	5-5	19701 48th Ave W, Lynnwood, WA	Yard	Private	Cleanout missing plug.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-15	Smoke Testing	2009	3	N/A
798	3-3-N/A	Light	N/A	3-3	3-2.1	48th Ave W in the Park and Ride Facility, Lynnwood, WA	Yard	Private	Loose cleanout cap in shrubs	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-16	Smoke Testing	2009	3	N/A
799	3-99-N/A	Light	N/A	3-99	3-98	Intersection of 191st St SW and 56th Ave W, Lynnwood, WA	Yard	Private	Missing cleanout caps.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-28	Smoke Testing	1992	4	N/A
800	3-125-N/A	Light	N/A	3-125	3-124	Near 192nd St SW and 52nd Ave W (Between MH 3-125 and MH 3-124) in Lynnwood, WA	Yard	Private	Missing cleanout cap.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-30	Smoke Testing	1992	4	N/A
801	3-91-N/A	Light	N/A	3-91	3-90	19312 52nd Ave W, Lynnwood, WA	Yard	Private	Missing cleanout cap.	Cleanout Cap Repair	\$ 1,180	4	N/A	S-32	Smoke Testing	1992	4	N/A
802	3-90-N/A 2	Light	N/A	3-90	3-89	5317 193rd Pl SW, Lynnwood, WA	Sidewalk	Private	Leaky cleanout inside of water meter box.	Cleanout Cap Repair	\$ 1,180	9	N/A	S-33	Smoke Testing	1992	4	N/A
803	3-88-N/A	Light	N/A	3-88	3-87	Near MH 3-87 and MH 3-88 in Lynnwood, WA	Easement	Easement	Leaking cleanout caps.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-34	Smoke Testing	1992	4	N/A
804	3-51-N/A	Light	N/A	3-51	3-50	5512 Firwood Drive, Lynnwood, WA	Yard	Private	Unsatisfactory cleanout cover.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-36	Smoke Testing	1992	4	N/A
805	3-60-N/A	Light	N/A	3-60	3-59	5508 Firwood Drive, Lynnwood, WA	Yard	Private	Unsatisfactory cleanout cover.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-37	Smoke Testing	1992	4	N/A
806	3-44-N/A	Light	N/A	3-44	3-44	MH 3-44 in Lynnwood, WA	Easement	Easement	Brick and mortar missing in manhole neck.	Adjust Manhole Lid	\$ 3,830	3	N/A	S-38	Smoke Testing	1992	4	N/A
807	3-45-N/A	Light	N/A	3-45	3-45	MH 3-45 in Lynnwood, WA	Easement	Easement	Brick and mortar missing in manhole neck.	Adjust Manhole Lid	\$ 3,830	3	N/A	S-39	Smoke Testing	1992	4	N/A
808	3-41-N/A	Light	N/A	3-41	3-41	MH 3-41 in Lynnwood, WA	Easement	Easement	Smoke emanating from base of manhole frame and cover.	Manhole Grouting	\$ 2,190	4	N/A	S-40	Smoke Testing	1992	4	N/A
809	3-60-N/A	Light	N/A	3-60	3-59	5502 200th St SW, Lynnwood, WA	Yard	Private	Missing cleanout cap and/or plug.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-41	Smoke Testing	1992	4	N/A
810	5-152-N/A 2	Light	N/A	5-152	5-151	4928 190th St SW, Lynnwood, WA	Easement	Private	Loose cleanout cap under deck on rear of house.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-46	Smoke Testing	1992	4	N/A
811	5-163-N/A	Light	N/A	5-163	5-163	MH 5-163 in Lynnwood, WA	Easement	Easement	Manhole below grade.	Adjust Manhole Lid	\$ 3,830	1 or 2	N/A	S-51	Smoke Testing	1992	4	N/A
812	5-160-N/A	Light	N/A	5-160	5-159	18915 51st Pl W, Lynnwood, WA	Yard	Private	Missing cleanout cap.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-52	Smoke Testing	1992	4	N/A
813	4-101-N/A	Light	N/A	4-101	4-100	18416 61st Pl. W, Lynnwood, WA	Yard	Private	Loose concrete cleanout cap at grade.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-57	Smoke Testing	2009	5	N/A

Table F-1

All Problems Identified Summary

Project Priority	Problem Number	Severity	DVD Number	Upstream MH	Downstream MH	Location	Roadway Type	Access: Public/Private	Description	Project Type	Cost	No. of Problems in Pipe Run	Distance to Reading	Reference	Type of Testing	Year Tested	Basin	Distance To Lateral
814	4-167-N/A	Light	N/A	4-167	4-166	6112 178th St. SW, Lynnwood, WA	Yard	Private	Smoke seen coming from cleanout box.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-62	Smoke Testing	2009	5	N/A
815	1-146-N/A	Light	N/A	1-146	1-145	6605 188th St SW, Lynnwood, WA	Yard	Private	Uncapped pipe above grade near fern and bush in front yard	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-67	Smoke Testing	2009	7	N/A
816	1-94.1-N/A	Light	N/A	1-94.1	1-94	20014 68th Ave W, Lynnwood, WA (International Students Welcome Center)	Yard	Private	Uncapped pipe above grade on back side of house	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-69	Smoke Testing	2009	7	N/A
817	1-100-N/A	Light	N/A	1-100	1-100	196th St SW and 68th Ave W, Lynnwood, WA	Collector	Public	Manhole with bad seal in the middle of the intersection	Manhole Grouting	\$ 2,190	1 or 2	N/A	S-70	Smoke Testing	2009	7	N/A
818	1-29.1-N/A	Light	N/A	1-29.1	1-29.1	6511 and 6533 208th St SW, Lynnwood, WA (Buildings G and H)	Easement	Easement	Water was infiltrating manhole from nearby stream	Manhole Grouting	\$ 2,190	1 or 2	N/A	S-73	Smoke Testing	2009	7	N/A
819	1-25.1-N/A	Light	N/A	1-25.1	1-25	6506, 6512, and 6514 208th St SW, Lynnwood, WA (Buildings C, F, and H)	Easement	Easement	Smoke emanating from base of manhole top, top is partially exposed	Manhole Grouting	\$ 2,190	1 or 2	N/A	S-74	Smoke Testing	2009	7	N/A
820	1-26-N/A	Light	N/A	1-26	1-25.1	6518 208th St SW, Lynnwood, WA (Bldg I) adjacent to parking stall # 266	Easement	Easement	Smoke emanating from cleanout, cleanout cap is missing and replaced by oven burner pan and duct tape.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-75	Smoke Testing	2009	7	N/A
821	1-96-N/A	Light	N/A	1-96	1-95	20107 68th Ave W, Lynnwood, WA (adjacent to 20113 68th Ave W)	Yard	Private	Smoke emanating from yard	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-76	Smoke Testing	2009	7	N/A
822	2-73-N/A 2	Light	N/A	2-73	2-71	6001 202nd St. SW, Lynnwood, WA	Yard	Private	Uncapped pipe in flowerbed on the east side of the building	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-79	Smoke Testing	2009	8	N/A
823	2-53-N/A	Light	N/A	2-53	2-52	6109 208th St. SW, Lynnwood, WA	Yard	Private	Cracked pipe cap just above grade on east side of abandoned house.	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-80	Smoke Testing	2009	8	N/A
824	2-68-N/A	Light	N/A	2-68	2-68.1	6208 204th St. SW, Lynnwood, WA	Yard	Private	Loose cleanout cap at grade (smoke seen coming from cleanout cap).	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-81	Smoke Testing	2009	8	N/A
825	2-76-N/A	Light	N/A	2-76	2-75	6208 202nd St. SW, Lynnwood, WA	Yard	Private	Uncapped pipe in empty lot of trailer park on the southeast corner.	Cleanout Cap Repair	\$ 1,180	3	N/A	S-82	Smoke Testing	2009	8	N/A
826	2-81-N/A	Light	N/A	2-81	2-80	6210 200th St. SW, Lynnwood, WA	Parking Lot	Private	Two loose cleanout caps at grade in the northeast corner of Lynnwood Bowl & Skate's parking lot.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-97	Smoke Testing	2009	8	N/A
827	1-6-N/A	Light	N/A	1-6	11-4	67th Ave W and 214th St SW, Lynnwood, WA	Residential	Easement	Manhole on side of hill in depression with a leaky seal.	Manhole Grouting	\$ 2,190	1 or 2	N/A	S-98	Smoke Testing	2009	8	N/A
828	5-32.2-N/A	Unknown	N/A	5-32.2	5-32.1	4505 188th St SW, Lynnwood, WA	Residential	Public	Storm drain cover connected to sanitary sewer.	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-7	Smoke Testing	2009	3	N/A
829	5-101-N/A	Unknown	N/A	5-101	5-99	4108 186th Pl. SW, Lynnwood, WA	Driveway	Private	Uncapped pipe laying on ground near garage	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-12	Smoke Testing	2009	3	N/A
830	C-71-N/A	Unknown	N/A	C-71	3-70	19620 Scriber Lake Road, Suite A, Lynnwood, WA	Yard	Private	Smoke emanating from hole next to sidewalk in planter.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-47	Smoke Testing	1992	4	N/A
831	3-20-N/A	Unknown	N/A	3-20	3-19	20121 Cedar Valley Rd, Lynnwood, WA (Stoneway Electric Supply)	Yard	Private	Smoke emanating from unknown source in ground. Source covered with stickers. Possibly a bad cleanout.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-50	Smoke Testing	1992	4	N/A
832	4-98-N/A	Unknown	N/A	4-98	4-96	6230 186th St. SW, Lynnwood, WA	Yard	Private	Cleanout cap partially open. Unknown pipe leading into cleanout.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-58	Smoke Testing	2009	5	N/A
833	2-73-N/A	Unknown	N/A	2-73	2-71	6001 202nd St. SW, Lynnwood, WA	Yard	Private	Unknown source (smoke seen coming from ivy near a tree on the southwest corner of lot).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-78	Smoke Testing	2009	8	N/A
834	2-76-N/A 2	Unknown	N/A	2-76	2-75	6208 202nd St. SW, Lynnwood, WA (Unit 62 or 64)	Yard	Private	Smoke seen in back yard from an unknown source at or below grade.	Side Sewer Point Repair	\$ 8,400	3	N/A	S-83	Smoke Testing	2009	8	N/A
835	2-129-N/A	Unknown	N/A	2-129	2-128	5703 202nd St. SW, Lynnwood, WA	Yard	Private	Unknown source (smoke seen coming from roof on the northeast corner in a suspicious way; downspout may be connected to sanitary sewer).	Storm Drain Piping	\$ 13,360	1 or 2	N/A	S-85	Smoke Testing	2009	8	N/A
836	2-47-N/A	Unknown	N/A	2-47	2-4	20923 59th Pl. W, Lynnwood, WA	Yard	Private	Unknown source (smoke seen coming from water meter box).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-88	Smoke Testing	2009	8	N/A
837	2-20-N/A	Unknown	N/A	2-20	2-19	20920 on what appears to be a private road (Near 55th Ave W and 210th St. SW), Lynnwood, WA	Yard	Private	Smoke seen from depression in the ground.	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-94	Smoke Testing	2009	8	N/A
838	1-18-N/A	Unknown	N/A	1-18	1-17	21116 67th Ave W, Lynnwood, WA	Yard	Private	Unknown source (smoke seen coming from water meter box).	Side Sewer Point Repair	\$ 8,400	1 or 2	N/A	S-95	Smoke Testing	2009	8	N/A
839	2-24-N/A	Unknown	N/A	2-24	2-22	20903 54th Ave W, Lynnwood, WA	Yard	Private	Unknown source (smoke seen coming from under deck).	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-96	Smoke Testing	2009	8	N/A
840	1-57-N/A	None	N/A	1-57	1-56	20612 Hwy 99, Lynnwood, WA (Jack Carroll's Lynnwood Dodge)	Driveway	Private	Drain under carport in car wash on east side of building	N/A		1 or 2	N/A	S-68	Smoke Testing	2009	7	N/A
841	1-152-N/A	None	N/A	1-152	1-151	6326 186th St SW, Lynnwood, WA	Yard	Private	Smoke emanating from water meter box, likely a cleanout	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-71	Smoke Testing	2009	7	N/A
842	1-96-N/A 2	None	N/A	1-96	1-95	20113 68th Ave W, Lynnwood, WA (in front of Divan Café)	Yard	Private	Smoke emanating through hole in sewer cleanout cover	Cleanout Cap Repair	\$ 1,180	1 or 2	N/A	S-77	Smoke Testing	2009	7	N/A
843	1-14-N/A	None	N/A	1-14	1-13	21101 Hwy 99, Lynnwood, WA	Driveway	Private	Large drain used for washing cars under structure.	N/A		1 or 2	N/A	S-90	Smoke Testing	2009	8	N/A

APPENDIX G

POINT REPAIR COST ESTIMATES

**City of Lynnwood Infiltration & Inflow Study
Cleanout Cap Repair Cost Estimate**

	Item	Quantity		Unit Cost	Total
Labor	Mobilization & Demobilization	1	LS	\$ 100	\$ 100
	Laborer	8	HR	\$ 50	\$ 400
	Work Truck	4	HR	\$ 52	\$ 208
	Labor Subtotal				\$ 708
Sales Tax				\$ 67	
Total Labor Cost				\$ 780	
Materials	6" PVC Side Sewer Pipe	5	LF	\$ 50	\$ 250
	Gravel Base	5	TN	\$ 20	\$ 100
	Hydroseed	3	SY	\$ 3	\$ 9
	Material Subtotal				\$ 359
Sales Tax				\$ 34	
Total Material Cost				\$ 400	
TOTAL ESTIMATED COST				\$ 1,180	

Cost Assumptions

Approx. 10% of sum of other items before tax
 2 laborers x 4 hours of work
 Truck rental x 4 hours of work
 9.50%
 Backfill 4' x 4' x 4' deep gravel, 1.7 TN/CY, 5% waste
 Hydroseed 8' x 8' area
 9.50%

Project Description

Replace or repair damaged or leaking cleanout cap

Project Assumptions

- Project will take approximately 0.5 days to complete
- Work crew of 2 laborers
- Project can be completed by hand digging
- Project is located in grass area off street
- Project is potentially located in private property so right-of-entry may be required

Project Photo



City of Lynnwood I// Study
Cleanout Cap Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-14-N/A	Heavy	18827 48th Ave W, Lynnwood, WA	
5-81-N/A	Heavy	4305 189th Pl. SW, Lynnwood, WA	
5-50-N/A	Medium	18705 44th Ave W, Lynnwood, WA	
5-80-N/A	Medium	4312 189th Pl. SW, Lynnwood, WA	
5-30-N/A	Medium	18638 44th Ave. W, Lynnwood, WA (Lynnwood Elementary (A))	
5-20-N/A	Medium	4419 200th St SW (in back of JD's Market)	
4-60-N/A	Medium	6131 Park Way, Lynnwood, WA	
4-76-N/A	Medium	6303 188th St. SW, Lynnwood, WA	
2-131-N/A	Medium	5823 202nd St. SW, Lynnwood, WA	
5-104.3-N/A	Light	18702 40th Ave, Lynnwood, WA	
16-29-N/A	Light	19427 40th Ave W, Lynnwood, WA	
5-6-N/A	Light	19701 48th Ave W, Lynnwood, WA	
3-3-N/A	Light	48th Ave W in the Park and Ride Facility, Lynnwood, WA	
3-99-N/A	Light	Intersection of 191st St SW and 56th Ave W, Lynnwood, WA	
3-125-N/A	Light	Near 192nd St SW and 52nd Ave W (Between MH 3-125 and MH 3-124) in Lynnwood, WA	
3-91-N/A	Light	19312 52nd Ave W, Lynnwood, WA	
3-90-N/A	Light	5317 193rd Pl SW, Lynnwood, WA	
3-88-N/A	Light	Near MH 3-87 and MH 3-88 in Lynnwood, WA	
3-51-N/A	Light	5512 Firwood Drive, Lynnwood, WA	
3-60-N/A	Light	5508 Firwood Drive, Lynnwood, WA	
3-60-N/A	Light	5502 200th St SW, Lynnwood, WA	
5-152-N/A	Light	4928 190th St SW, Lynnwood, WA	
5-160-N/A	Light	18915 51st Pl W, Lynnwood, WA	
4-101-N/A	Light	18416 61st Pl. W, Lynnwood, WA	
4-167-N/A	Light	6112 178th St. SW, Lynnwood, WA	
1-146-N/A	Light	6605 188th St SW, Lynnwood, WA	
1-94.1-N/A	Light	20014 68th Ave W, Lynnwood, WA (International Students Welcome Center)	
1-26-N/A	Light	6518 208th St SW, Lynnwood, WA (Bldg I) adjacent to parking stall # 266	
1-96-N/A	Light	20107 68th Ave W, Lynnwood, WA (adjacent to 20113 68th Ave W)	
2-73-N/A	Light	6001 202nd St. SW, Lynnwood, WA	
2-68-N/A	Light	6208 204th St. SW, Lynnwood, WA	
2-76-N/A	Light	6208 202nd St. SW, Lynnwood, WA	
2-81-N/A	Light	6210 200th St. SW, Lynnwood, WA	
5-101-N/A	Unknown	4108 186th Pl. SW, Lynnwood, WA	
C-71-N/A	Unknown	19620 Scriber Lake Road, Suite A, Lynnwood, WA	
3-20-N/A	Unknown	20121 Cedar Valley Rd, Lynnwood, WA (Stoneway Electric Supply)	
4-98-N/A	Unknown	6230 186th St. SW, Lynnwood, WA	

City of Lynnwood I/I Study
Cleanout Cap Repair Project Priority

Problem No.	Severity	Location	Date Completed
2-20-N/A	Unknown	20920 on what appears to be a private road (Near 55th Ave W and 210th St. SW), Lynnwood, WA	
2-24-N/A	Unknown	20903 54th Ave W, Lynnwood, WA	
1-152-N/A	None	6326 186th St SW, Lynnwood, WA	
1-96-N/A	None	20113 68th Ave W, Lynnwood, WA (in front of Divan Café)	

**City of Lynnwood Infiltration & Inflow Study
Side Sewer Tee Repair Cost Estimate**

	Item	Quantity	Unit Cost	Total	
Labor	Mobilization & Demobilization	1	LS \$ 510	\$ 510	
	Locate Existing Utilities	1	LS \$ 500	\$ 500	
	Temporary Erosion and Sediment Control	1	LS \$ 500	\$ 500	
	Traffic Control	1	LS \$ 500	\$ 500	
	Trench Excavation Safety Systems	1	LS \$ 750	\$ 750	
	Temporary Sewage Pumping	1	LS \$ 750	\$ 750	
	Backhoe	12	HR \$ 100	\$ 1,200	
	Dump Truck	12	HR \$ 65	\$ 780	
	Operator	12	HR \$ 65	\$ 780	
	Truck Driver	12	HR \$ 60	\$ 720	
	Laborer	24	HR \$ 50	\$ 1,200	
	Labor Subtotal				\$ 8,190
	Sales Tax				\$ 778
Total Labor Cost				\$ 8,970	
Materials	6" PVC Side Sewer Pipe	5	LF \$ 50	\$ 250	
	8" PVC Sewer Pipe	8	LF \$ 60	\$ 480	
	Crushed Surfacing Top Course	11	TN \$ 25	\$ 275	
	Crushed Surfacing Base Course	3	TN \$ 25	\$ 75	
	Foundation Gravel	3	TN \$ 25	\$ 75	
	Gravel Base	43	TN \$ 20	\$ 860	
	HMA Cl. 1/2 IN. PG 58-22	3	TN \$ 120	\$ 360	
	Material Subtotal				\$ 2,375
Sales Tax				\$ 226	
Total Material Cost				\$ 2,610	
TOTAL ESTIMATED COST				\$ 11,580	

Cost Assumptions

Approx. 10% of sum of other items before tax
 Estimate
 Estimate
 Estimate
 Estimate
 Estimate
 1.5 Days
 1.5 Days
 1 operator x 1.5 Days of work
 1 driver x 1.5 Days of work
 2 laborers x 1.5 Days of work

9.50%

9.50%

Project Photo



Project Description

Replace damaged "hammer tap" concrete side sewer tee with new PVC tee and pipe

Project Assumptions

- Project will take approximately 1.5 days to complete
- Work crew of 4: 2 laborers, operator, and dump truck driver
- Sewer pipe is 8-inch diameter and side sewer is 6-inch
- Sewer pipe has approximately 8-feet of cover
- Project is located on a residential street so a major traffic control effort is not required
- Sewer line is not major arterial so major temporary sewer pumping effort is not required
- Roadway trench patch restoration is required
- Project is located in R/W or easement so right-of-entry is not required

City of Lynnwood I/I Study
Side Sewer Tee Repair

Problem No.	Severity	Location	Date Completed
3-14-48	Heavy	53rd Ave W & 200th St SW	
3-50-191	Heavy	56th Ave W & 200th St SW	
3-127-35	Heavy	53rd Pl W & 192nd Pl SW	
3-126-5	Heavy	53rd Pl W & 192nd Pl SW	
3-90-175	Heavy	193rd Pl SW	
5-149-68	Heavy	192nd St SW	
5-146-148	Heavy	192nd St SW	
5-143.1-27	Heavy	192nd St SW	
5-142.1-1	Heavy	192nd St SW	
5-138-4	Heavy	194th St SW	
5-179-103	Heavy	186th Pl W	
5-26-233.4	Heavy	46th Ave W & 191st St SW	
5-25-10.7	Heavy	46th Ave W & 192nd St SW	
5-25-127.9	Heavy	46th Ave W & 192nd St SW	
5-15-32.3	Heavy	48th Ave W & 188th St SW	
5-11-179.4	Heavy	48th Ave W & 192nd St SW	
5-30-32.8	Heavy	46th Ave W & 188th St SW	
5-30-109.7	Heavy	46th Ave W & 188th St SW	
5-77-21.2	Heavy	44th Ave W & 191st St SW	
5-115-167.6	Heavy	50th Ave W & 196th St SW	
5-171-80.9	Heavy	188th St SW & 51st Pl W	
5-185-81.6	Heavy	48th Ave W & 185th Pl SW	
5-185-74.5	Heavy	48th Ave W & 185th Pl SW	
5-67.1-43.9	Heavy	44th Ave W & 192nd Pl SW	
5-15-0	Heavy	48th Ave W & 188th St SW	
5-76-26.0	Heavy	44th Ave W & 191st St SW	
5-191-1.0	Heavy	183rd Pl SW & 47th Pl W	
5-189-1.5	Heavy	47th Pl W & 184th Pl SW	
3-52-102	Medium	56th Ave W & Firwood Dr.	
3-69-16	Medium	Scriber Lake Road	
5-154-205	Medium	190th St SW	
5-143-43	Medium	49th Pl W & 192nd St SW	
5-180-251	Medium	186th Pl W (W of 52nd Ave W)	
5-10-87.2	Medium	48th Ave W & 192nd St SW	
5-99-33.8	Medium	41st Pl W & 186th St SW	
5-99-133.0	Medium	41st Pl W & 186th St SW	
5-25-315	Medium	46th Ave W & 192nd St SW	
5-23.1-29.4	Medium	46th Ave W & 194th St SW	
5-23-348.4	Medium	46th Ave W & 194th St SW	
5-29.1-291.5	Medium	46th Ave W & 188th St SW	
5-89-142.3	Medium	41st Pl W & 188th St SW	
5-77.1-10	Medium	40th Ave W & 191st St SW	
5-77.1-30.5	Medium	44th Ave W & 191st St SW	

City of Lynnwood I/I Study
Side Sewer Tee Repair

Problem No.	Severity	Location	Date Completed
5-77-114.8	Medium	44th Ave W & 191st St SW	
5-71-326.7	Medium	40th Ave W & 192nd St SW	
3-26-266.2	Medium	201st Pl SW	
5-189-254.6	Medium	47th Pl W & 185th Pl SW	
5-188-7.0	Medium	46th Pl W & 185th Pl SW	
3-104-71	Light	190th St SW	
3-104-130	Light	190th St SW	
3-96-120	Light	191st St SW	
3-96-169	Light	191st St SW	
3-91-125	Light	193rd Pl SW	
3-91-207	Light	193rd Pl SW	
3-90-4	Light	193rd Pl SW	
5-154-6	Light	190th St SW	
5-154-43	Light	190th St SW	
5-149-7	Light	192nd St SW	
5-149-92	Light	192nd St SW	
5-149-170	Light	192nd St SW	
5-146-77	Light	192nd St SW	
5-143.1-44	Light	192nd St SW	
5-139-115	Light	194th St SW	
5-138-82	Light	194th St SW	
5-138-142	Light	194th St SW	
3-97-276	Light	191st St SW	
5-179-106	Light	186th Pl W	
5-10-12.9	Light	48th Ave W & 192nd St SW	
5-10-131.5	Light	48th Ave W & 192nd St SW	
5-99-102.2	Light	41st Pl W & 186th St SW	
5-10-156.9	Light	48th Ave W & 194th St SW	
16-31-76.7	Light	40th Ave W & 191st Pl SW	
16-30-40.7	Light	40th Ave W & 192nd Pl SW	
5-28-24.1	Light	46th Ave W & 191st St SW	
5-28-153.5	Light	46th Ave W & 191st St SW	
5-27-10	Light	46th Ave W & 191st St SW	
5-26-164.3	Light	46th Ave W & 191st St SW	
5-23.1-224.8	Light	46th Ave W & 194th St SW	
5-23.1-241.2	Light	46th Ave W & 194th St SW	
5-42-16.1	Light	47th Ave W & 188th St SW	
5-42-67.9	Light	47th Ave W & 188th St SW	
5-42-124.8	Light	47th Ave W & 188th St SW	
5-42-331.5	Light	47th Ave W & 188th St SW	
5-42-347.9	Light	47th Ave W & 188th St SW	
5-41.1-67.1	Light	47th Ave W & 188th St SW	

City of Lynnwood I/I Study
Side Sewer Tee Repair

Problem No.	Severity	Location	Date Completed
5-41.1-156.3	Light	47th Ave W & 188th St SW	
5-40-168.4	Light	47th Ave W & 191st St SW	
5-40-172.3	Light	47th Ave W & 191st St SW	
5-36.1-153.1	Light	48th Ave W & 192nd St SW	
5-29.1-52.1	Light	46th Ave W & 188th St SW	
5-29.1-102.5	Light	46th Ave W & 188th St SW	
5-29.1-203.2	Light	46th Ave W & 188th St SW	
5-28-53.3	Light	46th Ave W & 188th St SW	
5-67.1-144.1	Light	44th Ave W & 192nd St SW	
5-67.1-147	Light	44th Ave W & 192nd St SW	
5-67.1-216.9	Light	44th Ave W & 192nd St SW	
5-96-296.8	Light	42nd Pl W & 188th St SW	
5-90-14.3	Light	41st Pl W & 188th St SW	
5-90-57.3	Light	41st Pl W & 188th St SW	
5-90-120.0	Light	41st Pl W & 188th St SW	
5-89-126.2	Light	41st Pl W & 188th St SW	
5-89-207.8	Light	41st Pl W & 188th St SW	
5-89-273.1	Light	41st Pl W & 188th St SW	
5-89-301.5	Light	41st Pl W & 188th St SW	
5-77.1-50.6	Light	44th Ave W & 191st St SW	
5-77-33.5	Light	44th Ave W & 191st St SW	
5-77-339.4	Light	44th Ave W & 191st St SW	
5-76-102.7	Light	44th Ave W & 191st St SW	
3-26-158.1	Light	201st Pl SW	
3-26-158.4	Light	201st Pl SW	
3-118-325.4	Light	188th St SW & 52nd Ave W	
3-118-26.8	Light	188th St SW & 55th Ave W	
3-118-142.7	Light	188th St SW & 55th Ave W	
3-116-317.1	Light	189th St SW & 55th Ave W	
3-109-142.7	Light	189th Pl SW & 55th Ave W	
5-115-179.9	Light	50th Ave W & 196th St SW	
5-115-285.2	Light	50th Ave W & 196th St SW	
5-169.1-72.0	Light	188th St SW & 48th Ave W	
5-169.1-325.6	Light	188th St SW & 48th Ave W	
5-135-101.4	Light	52nd Ave W & 189th St SW	
5-133-185.6	Light	52nd Ave W & 189th Pl SW	
5-133-236.3	Light	52nd Ave W & 189th Pl SW	
5-130-303.4	Light	52nd Ave W & 192nd St SW	
5-130-340.3	Light	52nd Ave W & 192nd St SW	
3-42-73.5	Light	Easement in Scriber Lake Park	
5-193-7.7	Light	46th Pl W & 183rd Pl SW	
5-189-77.2	Light	47th Pl W & 185th Pl SW	
5-185-182.9	Light	48th Ave W & 185th Pl SW	

City of Lynnwood I/I Study
Side Sewer Tee Repair

Problem No.	Severity	Location	Date Completed
5-184-114.7	Light	49th Pl W & 185th Pl SW	
5-184-248.9	Light	49th Pl W & 185th Pl SW	
5-172.1-44.8	Light	51st Pl W & 188th St SW	
5-67.1-42.7	Light	44th Ave W & 192nd Pl SW	
5-67.1-20.0	Light	44th Ave W & 192nd Pl SW	
5-67.1-25.7	Light	44th Ave W & 192nd Pl SW	
5-67.1-32.5	Light	44th Ave W & 192nd Pl SW	
5-16-33.3	Light	48th Ave W & 188th St SW	
5-76-21.7	Light	44th Ave W & 191st St SW	
5-71-6.6	Light	44th Ave W & 192nd St SW	
5-70-5.1	Light	44th Ave W & 192nd Pl SW	
5-191-10.0	Light	183rd Pl SW & 47th Pl W	

**City of Lynnwood Infiltration & Inflow Study
Mainline Point Repair Cost Estimate**

	Item	Quantity	Unit Cost	Total	Cost Assumptions	
Labor	Mobilization & Demobilization	1	LS	\$ 460	\$ 460	Approx. 10% of sum of other items before tax
	Locate Existing Utilities	1	LS	\$ 500	\$ 500	Estimate
	Temporary Erosion and Sediment Control	1	LS	\$ 500	\$ 500	Estimate
	Traffic Control	1	LS	\$ 500	\$ 500	Estimate
	Trench Excavation Safety Systems	1	LS	\$ 750	\$ 750	Estimate
	Temporary Sewage Pumping	1	LS	\$ 750	\$ 750	Estimate
	Backhoe	12	HR	\$ 100	\$ 1,200	1.5 Days
	Dump Truck	12	HR	\$ 65	\$ 780	1.5 Days
	Operator	12	HR	\$ 65	\$ 780	1 operator x 1.5 Days of work
	Truck Driver	12	HR	\$ 60	\$ 720	1 driver x 1.5 Days of work
	Laborer	24	HR	\$ 50	\$ 1,200	2 laborers x 1.5 Days of work
		Labor Subtotal			\$ 8,140	
				Sales Tax	\$ 773	9.50%
	Total Labor Cost			\$ 8,920		
Materials	8" PVC Sewer Pipe	10	LF	\$ 60	\$ 600	10' of 8" PVC Sewer replacement
	Crushed Surfacing Top Course	8	TN	\$ 25	\$ 200	Pipe backfill 6' wide x 10' long x 2' deep CSTC; 1.7TN/CY, 5% waste
	Crushed Surfacing Base Course	2	TN	\$ 25	\$ 50	Road Base 8' wide x 10' long x 4" deep CSBC, 1.7TN/CY, 5% waste
	Foundation Gravel	2	TN	\$ 25	\$ 50	Base 6' wide x 10' x 6" deep foundation, 1.7TN/CY, 5% waste
	Gravel Base	32	TN	\$ 20	\$ 640	Backfill 6' wide x 10' long x 8' deep gravel, 1.7 TN/CY, 5% waste
	HMA Cl. 1/2 IN. PG 58-22	3	TN	\$ 120	\$ 360	Roadway 8' wide x 10' long x 4" deep HMA, 2.1 TN/CY, 5% waste
	Material Subtotal			\$ 1,900		
				Sales Tax	\$ 181	9.50%
	Total Material Cost			\$ 2,090		
	TOTAL ESTIMATED COST			\$ 11,010		

Project Description

Replace damaged section of concrete sewer pipe with section of PVC sewer pipe

Project Assumptions

- Project will take approximately 1.5 days to complete
- Work crew of 4: 2 laborers, operator, and dump truck driver
- Sewer line is 8-inch diameter
- Sewer pipe has approximately 8-feet of cover
- Project is located on a residential street so a major traffic control effort is not required
- Sewer line is not major arterial so major temporary sewer pumping effort is not required
- Roadway trench patch restoration is required
- Project is located in R/W or easement so right-of-entry is not required

Project Photo



City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-90-74	Severe	193rd Pl SW	
3-55-210	Heavy	56th Ave W & Firwood Dr.	
3-50-104	Heavy	56th Ave W & 200th St SW	
3-50-106	Heavy	56th Ave W & 200th St SW	
3-67-346	Heavy	198th St SW	
5-144-81	Heavy	49th Ave W & 192nd St SW	
3-97-417	Heavy	191st St SW	
5-176-220	Heavy	186th Pl W	
5-42-176.7	Heavy	47th Ave W & 188th St SW	
5-41.1-132	Heavy	47th Ave W & 188th St SW	
5-41.1-147.4	Heavy	47th Ave W & 188th St SW	
5-39-85.2	Heavy	44th Ave W & 194th St SW	
5-36.1-96	Heavy	48th Ave W & 192nd St SW	
5-68-28.9	Heavy	44th Ave W & 192nd St SW	
5-67-323.1	Heavy	44th Ave W & 192nd St SW	
5-66.3-2.9	Heavy	44th Ave W & 192nd Pl SW	
16-33-252	Heavy	40th Ave W & 190th Pl SW	
5-88-7.3	Heavy	43rd Pl W & 188th Pl SW	
5-87-69.6	Heavy	43rd Pl W & 188th Pl SW	
5-77.1-191.4	Heavy	40th Ave W & 191st St SW	
3-118-203	Heavy	188th St SW & 55th Ave W	
3-109-130.9	Heavy	189th Pl SW & 55th Ave W	
5-171-0	Heavy	188th St SW & 51st Pl W	
5-195-250.2	Heavy	46th Pl W & 183rd Pl SW	
5-191-3.0	Heavy	47th Pl W & 183rd Pl SW	
5-189-237.5	Heavy	47th Pl W & 185th Pl SW	
5-189-283.5	Heavy	47th Pl W & 185th Pl SW	
5-189-376.3	Heavy	47th Pl W & 185th Pl SW	
5-185-185.8	Heavy	48th Ave W & 185th Pl SW	
3-14-67	Medium	53rd Ave W & 200th St SW	
3-103-221	Medium	190th St SW	
3-90-296	Medium	193rd Pl SW	
3-78-359	Medium	56th Ave W & 194th St SW	
3-70.1-27	Medium	Scriber Lake Road	
3-70.1-239	Medium	Scriber Lake Road	
3-70-91	Medium	Scriber Lake Road	
3-58-2	Medium	56th Ave W	
3-58-41	Medium	56th Ave W	
3-57-197	Medium	Firwood Drive	
5-148-41	Medium	192nd St SW	
5-148-98	Medium	192nd St SW	
5-142-3	Medium	South of 192nd St SW	
5-141-1	Medium	North of 194th St SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-137-398	Medium	194th St SW	
3-97-69	Medium	191st St SW	
5-179-130	Medium	186th Pl W	
5-179-139	Medium	186th Pl W	
5-179-166	Medium	186th Pl W	
5-179-227	Medium	186th Pl W	
5-179-271	Medium	186th Pl W	
5-179-272	Medium	186th Pl W	
5-176-1	Medium	186th Pl W	
5-106-85.1	Medium	43rd Pl W & 184th Pl SW	
5-10-398	Medium	48th Ave W & 194th St SW	
16-30-103.7	Medium	40th Ave W & 192nd Pl SW	
5-31-4	Medium	46th Ave W & 188th St SW	
5-15-103.3	Medium	48th Ave W & 188th St SW	
5-15-111.5	Medium	48th Ave W & 188th St SW	
5-15-135.5	Medium	48th Ave W & 188th St SW	
5-42-250.1	Medium	47th Ave W & 188th St SW	
5-41.1-146.3	Medium	47th Ave W & 188th St SW	
5-41.1-400.7	Medium	47th Ave W & 188th St SW	
5-36.1-169.3	Medium	48th Ave W & 192nd St SW	
5-31.1-45.7	Medium	48th Ave W & 188th St SW	
5-31.1-49.8	Medium	48th Ave W & 188th St SW	
5-30-162.6	Medium	46th Ave W & 188th St SW	
5-29.1-197.3	Medium	46th Ave W & 188th St SW	
5-67-320	Medium	44th Ave W & 192nd St SW	
5-55-145.5	Medium	42nd Pl W & 184th St SW	
5-51.1-15.1	Medium	44th Ave W & 184th St SW	
5-51.1-119.6	Medium	44th Ave W & 184th St SW	
5-51.1-234	Medium	44th Ave W & 184th St SW	
5-50-263.8	Medium	44th Ave W & 186th St SW	
5-99-390.9	Medium	41st Pl W & 186th Pl SW	
5-99-393.9	Medium	41st Pl W & 186th Pl SW	
5-79-20.7	Medium	44th Ave W & 189th Pl SW	
3-118-294.3	Medium	188th St SW & 55th Ave W	
3-118-294.9	Medium	188th St SW & 55th Ave W	
5-116-196.5	Medium	50th Ave W & 196th St SW	
5-172-60.8	Medium	188th St SW & 52nd Ave W	
5-171-131	Medium	188th St SW & 51st Pl W	
5-132.1-103.6	Medium	52nd Ave W & 192nd St SW	
5-114.1-313.6	Medium	50th Ave W & 200th St SW	
5-189-152	Medium	47th Pl W & 184th Pl SW	
5-189-111.9	Medium	47th Pl W & 185th Pl SW	
5-189-220.6	Medium	47th Pl W & 185th Pl SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-189-267.9	Medium	47th Pl W & 185th Pl SW	
5-188-298.1	Medium	46th Pl W & 185th Pl SW	
5-187-272.2	Medium	47th Pl W & 185th Pl SW	
5-184-64.1	Medium	49th Pl W & 185th Pl SW	
5-172.1-37.3	Medium	51st Pl W & 188th St SW	
5-172.1-162	Medium	51st Pl W & 188th St SW	
5-172.1-233.1	Medium	51st Pl W & 188th St SW	
3-123-N/A	Medium	Near 192nd St SW and 56th Ave W (Between MH 3-123 and MH 3-93) in Lynnwood, WA	
3-90-N/A	Medium	5215 193rd Pl SW, Lynnwood, WA	
3-14-10	Light	53rd Ave W & 200th St SW	
3-14-205	Light	53rd Ave W & 200th St SW	
3-14-223	Light	53rd Ave W & 200th St SW	
3-17-139	Light	54th Ave W & 200th St SW	
3-105-30	Light	190th St SW	
3-101-161	Light	55th Ave W & 190th St SW	
3-96-16	Light	191st St SW	
3-96-38	Light	191st St SW	
3-96-305	Light	191st St SW	
3-90-6	Light	193rd Pl SW	
3-78-350	Light	56th Ave W & 194th St SW	
3-70.1-65	Light	Scriber Lake Road	
3-70-51	Light	Scriber Lake Road	
3-70-70	Light	Scriber Lake Road	
3-69-216	Light	Scriber Lake Road	
3-69-221	Light	Scriber Lake Road	
3-69-225	Light	Scriber Lake Road	
3-68-7	Light	198th St SW	
3-58-65	Light	56th Ave W	
5-154-89	Light	190th St SW	
5-153-16	Light	51st Pl W & 190th St SW	
5-149-198	Light	192nd St SW	
5-148-5	Light	192nd St SW	
5-146-47	Light	192nd St SW	
5-146-51	Light	192nd St SW	
5-146-63	Light	192nd St SW	
5-146-121	Light	192nd St SW	
5-146-125	Light	192nd St SW	
5-146-141	Light	192nd St SW	
5-143.1-13	Light	192nd St SW	
5-143.1-25	Light	192nd St SW	
5-143.1-27	Light	192nd St SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-142.1-32	Light	192nd St SW	
5-142.1-34	Light	192nd St SW	
5-139-19	Light	194th St SW	
3-97-124	Light	191st St SW	
3-97-140	Light	191st St SW	
C5-131-201	Light	192nd St SW	
C5-131-246	Light	192nd St SW	
C5-131-258	Light	192nd St SW	
C5-131-270	Light	192nd St SW	
5-180-16	Light	186th Pl W (W of 52nd Ave W)	
5-180-253	Light	186th Pl W (W of 52nd Ave W)	
5-179-57	Light	186th Pl W	
5-179-230	Light	186th Pl W	
5-3-15	Light	48th Ave W & 200th St SW	
5-110-30.5	Light	42nd Pl W & 186th St SW	
5-10-13.1	Light	48th Ave W & 192nd St SW	
5-109-3	Light	42nd Pl W & 186th St SW	
5-109-117.2	Light	42nd Pl W & 186th St SW	
5-106-154.2	Light	43rd Pl W & 184th Pl SW	
5-106-227.1	Light	43rd Pl W & 184th Pl SW	
5-106-227.6	Light	43rd Pl W & 184th Pl SW	
5-10-252.1	Light	48th Ave W & 194th St SW	
5-10-301.2	Light	48th Ave W & 194th St SW	
5-10-305	Light	48th Ave W & 194th St SW	
5-10-317	Light	48th Ave W & 194th St SW	
5-10-400.8	Light	48th Ave W & 194th St SW	
16-30-87.4	Light	40th Ave W & 192nd Pl SW	
16-29.2-2	Light	40th Ave W & 192nd Pl SW	
5-31-23.4	Light	46th Ave W & 188th St SW	
5-28-66.4	Light	46th Ave W & 191st St SW	
5-28-117.9	Light	46th Ave W & 191st St SW	
5-28-407.8	Light	46th Ave W & 191st St SW	
5-28-430.2	Light	46th Ave W & 191st St SW	
5-27-5.3	Light	46th Ave W & 191st St SW	
5-27-24.3	Light	46th Ave W & 191st St SW	
5-27-28.3	Light	46th Ave W & 191st St SW	
5-27-32.2	Light	46th Ave W & 191st St SW	
5-27-40.5	Light	46th Ave W & 191st St SW	
5-27-44.6	Light	46th Ave W & 191st St SW	
5-27-48.8	Light	46th Ave W & 191st St SW	
5-27-81.3	Light	46th Ave W & 191st St SW	
5-27-105.8	Light	46th Ave W & 191st St SW	
5-27-114.3	Light	46th Ave W & 191st St SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-27-134.7	Light	46th Ave W & 191st St SW	
5-27-167.5	Light	46th Ave W & 191st St SW	
5-26-237.2	Light	46th Ave W & 191st St SW	
5-25-126	Light	46th Ave W & 192nd St SW	
5-25-195.1	Light	46th Ave W & 192nd St SW	
5-25-252	Light	46th Ave W & 192nd St SW	
5-25-309.1	Light	46th Ave W & 192nd St SW	
5-25-377.5	Light	46th Ave W & 192nd St SW	
5-24-10	Light	46th Ave W & 192nd St SW	
5-24-18	Light	46th Ave W & 192nd St SW	
5-23.1-71.8	Light	46th Ave W & 194th St SW	
5-23-105	Light	46th Ave W & 194th St SW	
5-23-288	Light	46th Ave W & 194th St SW	
5-22-207	Light	46th Ave W & 194th St SW	
5-15-25.5	Light	48th Ave W & 188th St SW	
5-15-29.9	Light	48th Ave W & 188th St SW	
5-15-83.1	Light	48th Ave W & 188th St SW	
5-15-115.5	Light	48th Ave W & 188th St SW	
5-15-119.6	Light	48th Ave W & 188th St SW	
5-15-127.5	Light	48th Ave W & 188th St SW	
5-15-131.6	Light	48th Ave W & 188th St SW	
5-15-147.8	Light	48th Ave W & 188th St SW	
5-15-176.3	Light	48th Ave W & 188th St SW	
5-15-233.6	Light	48th Ave W & 188th St SW	
5-15-268.2	Light	48th Ave W & 188th St SW	
5-15-270.0	Light	48th Ave W & 188th St SW	
5-14-40.9	Light	48th Ave W & 189th St SW	
5-13-92.7	Light	48th Ave W & 190th St SW	
5-13-108.9	Light	48th Ave W & 190th St SW	
5-13-258.6	Light	48th Ave W & 190th St SW	
5-13-295.2	Light	48th Ave W & 190th St SW	
5-120-93.8	Light	50th Ave W & 198th St SW	
5-11-1.7	Light	48th Ave W & 192nd St SW	
5-11-141.1	Light	48th Ave W & 192nd St SW	
5-11-209.6	Light	48th Ave W & 192nd St SW	
5-11-306.8	Light	48th Ave W & 192nd St SW	
5-5-359	Light	48th Ave W & 196th St SW	
5-42-250.2	Light	47th Ave W & 188th St SW	
5-42-319.5	Light	47th Ave W & 188th St SW	
5-41.1-113.8	Light	47th Ave W & 188th St SW	
5-41.1-143.1	Light	47th Ave W & 188th St SW	
5-41.1-150.1	Light	47th Ave W & 188th St SW	
5-41.1-203.1	Light	47th Ave W & 188th St SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-41.1-248	Light	47th Ave W & 188th St SW	
5-41.1-260.2	Light	47th Ave W & 188th St SW	
5-41.1-313.1	Light	47th Ave W & 188th St SW	
5-41.1-317.2	Light	47th Ave W & 188th St SW	
5-41.1-325.3	Light	47th Ave W & 188th St SW	
5-41.1-390.4	Light	47th Ave W & 188th St SW	
5-36.1-73.9	Light	48th Ave W & 192nd St SW	
5-36.1-236.9	Light	48th Ave W & 192nd St SW	
5-29.1-59.8	Light	46th Ave W & 188th St SW	
5-29.1-110.9	Light	46th Ave W & 188th St SW	
5-29.1-174.1	Light	46th Ave W & 188th St SW	
5-29.1-234.1	Light	46th Ave W & 188th St SW	
5-29.1-320.9	Light	46th Ave W & 188th St SW	
5-28-35.1	Light	46th Ave W & 188th St SW	
5-28-43	Light	46th Ave W & 188th St SW	
5-28-161.3	Light	46th Ave W & 188th St SW	
5-28-259.4	Light	46th Ave W & 188th St SW	
5-28-279.9	Light	46th Ave W & 188th St SW	
5-28-312.6	Light	46th Ave W & 188th St SW	
5-28-341.3	Light	46th Ave W & 188th St SW	
5-70-33.7	Light	40th Ave W & 192nd St SW	
5-69-211.4	Light	40th Ave W & 192nd St SW	
5-67.1-188	Light	44th Ave W & 192nd St SW	
5-67.1-264.4	Light	44th Ave W & 192nd St SW	
5-67-175.6	Light	44th Ave W & 192nd St SW	
5-67-187.6	Light	44th Ave W & 192nd St SW	
5-67-218	Light	44th Ave W & 192nd St SW	
5-67-224.1	Light	44th Ave W & 192nd St SW	
5-67-245.1	Light	44th Ave W & 192nd St SW	
5-67-248.1	Light	44th Ave W & 192nd St SW	
5-67-256.9	Light	44th Ave W & 192nd St SW	
5-67-263.0	Light	44th Ave W & 192nd St SW	
5-67-269.0	Light	44th Ave W & 192nd St SW	
5-67-281.0	Light	44th Ave W & 192nd St SW	
5-67-287.1	Light	44th Ave W & 192nd St SW	
5-67-295.9	Light	44th Ave W & 192nd St SW	
5-67-302.2	Light	44th Ave W & 192nd St SW	
5-67-311.1	Light	44th Ave W & 192nd St SW	
5-67-338.3	Light	44th Ave W & 192nd St SW	
5-66.5-297.8	Light	44th Ave W & 191st SW	
5-66.1-66.0	Light	44th Ave W & 194th St SW	
5-66-107.5	Light	46th Ave W & 194th St SW	
5-66-253.4	Light	46th Ave W & 194th St SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-50-260.0	Light	44th Ave W & 186th St SW	
5-87-8.5	Light	43rd Pl W & 188th St SW	
5-87-12.5	Light	43rd Pl W & 188th St SW	
5-87-49.5	Light	43rd Pl W & 188th St SW	
5-87-120.8	Light	43rd Pl W & 188th St SW	
5-96-351.8	Light	42nd Pl W & 188th St SW	
5-96-389.4	Light	42nd Pl W & 188th St SW	
5-90-113.8	Light	41st Pl W & 188th St SW	
5-89-9.3	Light	41st Pl W & 188th St SW	
5-89-17.5	Light	41st Pl W & 188th St SW	
5-89-33.9	Light	41st Pl W & 188th St SW	
5-89-66.5	Light	41st Pl W & 188th St SW	
5-89-78.6	Light	41st Pl W & 188th St SW	
5-89-91.0	Light	41st Pl W & 188th St SW	
5-87-77.9	Light	43rd Pl W & 188th Pl SW	
5-87-98.7	Light	43rd Pl W & 188th Pl SW	
5-87-172.0	Light	43rd Pl W & 188th Pl SW	
5-87-233.4	Light	43rd Pl W & 188th Pl SW	
5-79-15.0	Light	44th Ave W & 189th Pl SW	
5-79-57.6	Light	44th Ave W & 189th Pl SW	
5-79-102.5	Light	44th Ave W & 189th Pl SW	
5-79-122.9	Light	44th Ave W & 189th Pl SW	
5-77.1-163.1	Light	44th Ave W & 191st St SW	
5-77.1-166.9	Light	44th Ave W & 191st St SW	
5-77.1-203.1	Light	44th Ave W & 191st St SW	
5-77-22.9	Light	44th Ave W & 191st St SW	
5-77-397.3	Light	44th Ave W & 191st St SW	
5-76-14.7	Light	44th Ave W & 191st St SW	
5-76-39.0	Light	44th Ave W & 191st St SW	
5-76-43.0	Light	44th Ave W & 191st St SW	
5-76-51.2	Light	44th Ave W & 191st St SW	
5-76-59.5	Light	44th Ave W & 191st St SW	
5-76-67.5	Light	44th Ave W & 191st St SW	
5-76-205.5	Light	44th Ave W & 191st St SW	
5-74-110.6	Light	44th Ave W & 192nd St SW	
5-74-263.7	Light	44th Ave W & 192nd St SW	
5-71-62.5	Light	40th Ave W & 192nd St SW	
3-26-74.5	Light	201st Pl SW	
3-21-38.4	Light	Cedar Valley Rd & 52nd Ave W	
3-19-4.0	Light	Cedar Valley Rd & 50th Ave W	
3-118-267.1	Light	188th St SW & 52nd Ave W	
3-118-271.1	Light	188th St SW & 52nd Ave W	
3-118-2.1	Light	188th St SW & 55th Ave W	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-110-51.6	Light	189th Pl SW & 52nd Ave W	
3-110-233.0	Light	189th Pl SW & 52nd Ave W	
3-110-260.0	Light	189th Pl SW & 52nd Ave W	
3-110-265.0	Light	189th Pl SW & 52nd Ave W	
3-110-296.4	Light	189th Pl SW & 52nd Ave W	
3-110-160	Light	189th Pl SW & 52nd Ave W	
3-109-199.4	Light	189th Pl SW & 55th Ave W	
3-109-199.6	Light	189th Pl SW & 55th Ave W	
3-108-1.2	Light	189th Pl SW & 55th Ave W	
3-108-5.0	Light	189th Pl SW & 55th Ave W	
5-116-12.3	Light	50th Ave W & 196th St SW	
5-116-120.0	Light	50th Ave W & 196th St SW	
5-116-181.6	Light	50th Ave W & 196th St SW	
5-115-26.8	Light	50th Ave W & 196th St SW	
5-182-130.6	Light	49th Pl W & 185th Pl SW	
5-182-133.0	Light	49th Pl W & 185th Pl SW	
5-182-140.5	Light	49th Pl W & 185th Pl SW	
5-172-34.1	Light	188th St SW & 52nd Ave W	
5-169.1-294.0	Light	188th St SW & 48th Ave W	
5-135-119.6	Light	52nd Ave W & 189th St SW	
5-135-136.0	Light	52nd Ave W & 189th St SW	
5-134-231.7	Light	52nd Ave W & 189th St SW	
5-132-5.2	Light	52nd Ave W & 191st St SW	
5-130-199.5	Light	52nd Ave W & 192nd St SW	
5-115-59.3	Light	50th Ave W & 196th St SW	
3-46-7.8	Light	Easement in Scriber Lake Park	
3-42-10.8	Light	Easement in Scriber Lake Park	
5-196-13.7	Light	46th Pl W & 183rd Pl SW	
5-196-151.2	Light	46th Pl W & 183rd Pl SW	
5-194-60.4	Light	46th Pl W & 183rd Pl SW	
5-191-43.9	Light	47th Pl W & 183rd Pl SW	
5-190-74.5	Light	47th Pl W & 184th Pl SW	
5-190-78.2	Light	47th Pl W & 184th Pl SW	
5-190-81.4	Light	47th Pl W & 184th Pl SW	
5-189-45.0	Light	47th Pl W & 184th Pl SW	
5-189-75.2	Light	47th Pl W & 184th Pl SW	
5-189-132.5	Light	47th Pl W & 185th Pl SW	
5-188-15.6	Light	46th Pl W & 185th Pl SW	
5-188-273.1	Light	46th Pl W & 185th Pl SW	
5-188-299.3	Light	46th Pl W & 185th Pl SW	
5-187-65.4	Light	47th Pl W & 185th Pl SW	
5-187-212.6	Light	47th Pl W & 185th Pl SW	
5-185-248.2	Light	48th Ave W & 185th Pl SW	

City of Lynnwood I/I Study
Mainline Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-185-39.0	Light	48th Ave W & 185th Pl SW	
5-184-138.2	Light	49th Pl W & 185th Pl SW	
5-182-153.5	Light	49th Pl W & 185th Pl SW	
5-199-171.5	Light	44th Ave W & 183rd Pl SW	

**City of Lynnwood Infiltration & Inflow Study
Manhole Cleaning Cost Estimate**

Labor	Item	Quantity		Unit Cost	Total
	Mobilization & Demobilization	1	LS	\$ 80	\$ 80
	Traffic Control	1	LS	\$ 100	\$ 100
	Vactor Truck	2	HR	\$ 285	\$ 570
	Debris Disposal	1	TN	\$ 110	\$ 110
				Labor Subtotal	\$ 860
				Sales Tax	\$ 82
				TOTAL ESTIMATED COST	\$ 950

Cost Assumptions

Approx. 10% of sum of other items before tax

Estimate

Estimate

Estimate

9.50%

Project Description

Vactor clean manhole

Project Assumptions

- Project will take approximately 2 hours to complete
- Vactor Truck crew consists of 2 workers and 1 truck
- Vactor Truck Unit Cost is per Michels Corporation
- Disposal Fee is per Pro-Vac, their rate is based on fee charged by Cedar Hills Landfill
- Project is located on a residential street so a major traffic control effort is not required
- Project is located in R/W or easement so right-of-entry is not required

Project Photo



City of Lynnwood I/I Study
Manhole Cleaning Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-26-338.0	Light	201st Pl SW	
3-118-332.1	Light	188th St SW & 52nd Ave W	
5-77-N/A	Light	191st St SW & 44th Ave W	
5-79-N/A	Light	189th Pl SW & 44th Ave W	
5-152-N/A	Light	190th St SW (near 51st Pl W)	

**City of Lynnwood Infiltration & Inflow Study
Manhole Grouting Cost Estimate**

	Item	Quantity		Unit Cost	Total
Labor	Mobilization & Demobilization	1	LS	\$ 140	\$ 140
	Traffic Control	1	LS	\$ 100	\$ 100
	Vactor Truck	4	HR	\$ 285	\$ 1,140
	Debris Disposal	1	TN	\$ 110	\$ 110
				Labor Subtotal	\$ 1,490
				Sales Tax	\$ 142
				Total Labor Cost	\$ 1,640
Materials	Grout	1	EA	\$ 500	\$ 500
				Material Subtotal	\$ 500
				Sales Tax	\$ 48
				Total Material Cost	\$ 550
				TOTAL ESTIMATED COST	\$ 2,190

Project Description

Chemically grout leaky manhole

Project Assumptions

- Project will take approximately 4 hours to complete
- Vactor Truck consists of 2 workers and 1 truck
- Vactor Truck Unit Cost is per Michels Corporation
- Manhole will need to be cleaned prior to grouting
- Disposal Fee per Pro-Vac, their rate based on fee charged by Cedar Hills Landfill
- Grout pack costs are per Titus Industries, 1 pack consists of 12 grout cartridges
- Project is located on residential street, major traffic control effort is not required
- Project is located in R/W or easement so right-of-entry is not required

Project Photo



City of Lynnwood I/I Study
Manhole Grouting Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-103-395	Heavy	190th St SW	
3-70-0	Heavy	Scriber Lake Road	
5-154-0	Heavy	190th St SW	
5-142.1-37	Heavy	192nd St SW	
5-142-325	Heavy	South of 192nd St SW	
5-132.2-193	Heavy	191st St SW	
5-104.3-287.6	Heavy	40th Ave W & 186th St SW	
5-104.1-0	Heavy	40th Ave W & 188th St SW	
5-30-356.9	Heavy	46th Ave W & 188th St SW	
5-28-399.7	Heavy	46th Ave W & 188th St SW	
5-66.5-301.3	Heavy	44th Ave W & 191st SW	
5-66.4-188	Heavy	44th Ave W & 192nd St SW	
5-66.1-110.7	Heavy	44th Ave W & 194th St SW	
5-99-396.7	Heavy	41st Pl W & 186th Pl SW	
5-96-0	Heavy	42nd Pl W & 188th St SW	
5-73-216.3	Heavy	40th Ave W & 192nd St SW	
5-72-0	Heavy	40th Ave W & 192nd St SW	
5-72-206	Heavy	40th Ave W & 192nd St SW	
5-71-0	Heavy	40th Ave W & 192nd St SW	
5-114.1-0	Heavy	50th Ave W & 200th St SW	
5-114-173.8	Heavy	50th Ave W & 200th St SW	
3-46-187.7	Heavy	Easement in Scriber Lake Park	
3-45-0	Heavy	Easement in Scriber Lake Park	
3-42-98.4	Heavy	Easement in Scriber Lake Park	
5-31-202.9	Medium	46th Ave W & 188th St SW	
5-24-93	Medium	46th Ave W & 192nd St SW	
5-39-1.9	Medium	44th Ave W & 194th St SW	
5-29.1-339.6	Medium	46th Ave W & 188th St SW	
5-61-390	Medium	40th Ave W & 194th St SW	
5-71-352.1	Medium	40th Ave W & 192nd St SW	
3-103-N/A	Medium	190th St SW (near 55th Ave W)	
16-171.1-N/A	Medium	Alderwood Mall Pkwy (near Beech Rd)	
16-171-N/A	Medium	Alderwood Mall Pkwy (near Beech Rd)	
3-104-143	Light	190th St SW	
3-101-206	Light	55th Ave W & 190th St SW	
5-111-0	Light	42nd Pl W & 186th St SW	
5-110-160.1	Light	42nd Pl W & 186th St SW	
5-24-91.2	Light	46th Ave W & 192nd St SW	
5-112-228.5	Light	42nd Pl W & 186th St SW	
5-69-251.3	Light	40th Ave W & 192nd St SW	
5-96-156.5	Light	42nd Pl W & 188th St SW	
5-96-402.3	Light	42nd Pl W & 188th St SW	
3-22-199.9	Light	52nd Ave W & Cedar Valley Rd	
3-114-51.0	Light	189th St SW & 55th Ave W	

City of Lynnwood I/I Study
Manhole Grouting Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-116-198.6	Light	50th Ave W & 196th St SW	
5-115-327.5	Light	50th Ave W & 196th St SW	
5-182-141.5	Light	49th Pl W & 185th Pl SW	
5-171-136.9	Light	188th St SW & 51st Pl W	
3-73-405.4	Light	Easement in Scriber Lake Park	
3-45-149.7	Light	Easement in Scriber Lake Park	
5-197-121.7	Light	46th Pl W & 183rd Pl SW	
1-29-N/A	Light	Near Hwy 99 and 186th Pl SW	
3-4.2-N/A	Light	Near 48th Ave W & 200th St SW	
3-43-N/A	Light	Scriber Lake Park	
3-89-N/A	Light	Near 56th Ave W & 193rd Pl SW	
3-97-N/A	Light	Near 52nd Ave W & 191st St SW	
3-102-N/A	Light	190th St SW & 55th Ave W	
3-106-N/A	Light	55th Ave W & 189th Pl SW	
4-130-N/A	Light	182nd St SW & 64th Ave W	
5-68-N/A	Light	192nd Pl SW & 44th Ave W	
5-96-N/A	Light	42nd Pl W & 188th St SW	
5-142.1-N/A	Light	192nd St SW (near 49th Pl W)	
5-148-N/A	Light	192nd St SW (near 49th Pl W)	
5-165-N/A	Light	50th Pl W (near 189th St SW)	
5-166-N/A	Light	189th St SW & 49th Pl W	
5-178-N/A	Light	49th Pl W & 186th Pl SW	
5-179-N/A	Light	186th Pl SW (near 49th Pl W)	
3-41-N/A	Light	MH 3-41 in Lynnwood, WA	
1-100-N/A	Light	196th St SW and 68th Ave W, Lynnwood, WA	
1-29.1-N/A	Light	(Buildings G and H)	
1-25.1-N/A	Light	6506, 6512, and 6514 208th St SW, Lynnwood, WA (Buildings C, F, and H)	
1-6-N/A	Light	67th Ave W and 214th St SW, Lynnwood, WA	

**City of Lynnwood Infiltration & Inflow Study
Manhole Replacement Cost Estimate**

	Item	Quantity	Unit Cost	Total	Cost Assumptions	
Labor	Mobilization & Demobilization	1	LS	\$ 1,100	\$ 1,100	Approx. 10% of sum of other items before tax
	Locate Existing Utilities	1	LS	\$ 1,000	\$ 1,000	Estimate
	Temporary Erosion and Sediment Control	1	LS	\$ 1,000	\$ 1,000	Estimate
	Traffic Control	1	LS	\$ 1,000	\$ 1,000	Estimate
	Trench Excavation Safety Systems	1	LS	\$ 1,500	\$ 1,500	Estimate
	Temporary Sewage Pumping	1	LS	\$ 1,500	\$ 1,500	Estimate
	Excavator	16	HR	\$ 140	\$ 2,240	2 Days
	Dump Truck	16	HR	\$ 65	\$ 1,040	2 Days
	Operator	16	HR	\$ 65	\$ 1,040	1 operator x 2 Days of work
	Truck Driver	16	HR	\$ 60	\$ 960	1 driver x 2 Days of work
	Laborer	32	HR	\$ 50	\$ 1,600	2 laborers x 2 Days of work
		Labor Subtotal			\$ 13,980	
					Sales Tax	\$ 1,328
	Total Labor Cost			\$ 15,310		
Materials	6" PVC Side Sewer Pipe	5	LF	\$ 50	\$ 250	1 run of 5' of side sewer replacement
	8" PVC Sewer Pipe	15	LF	\$ 60	\$ 900	3 runs for a total of 15' of 8" PVC Sewer replacement
	Crushed Surfacing Top Course	14	TN	\$ 25	\$ 350	Pipe backfill 5' wide x 20' long x 2' deep CSTC; 1.7TN/CY, 5% waste
	Crushed Surfacing Base Course	5	TN	\$ 25	\$ 125	Road Base 15' x 15' x 4" deep CSBC, 1.7TN/CY, 5% waste
	Foundation Gravel	2	TN	\$ 25	\$ 50	Manhole Base 6' x 6' x 6" deep foundation, 1.7TN/CY, 5% waste
	Gravel Base	119	TN	\$ 20	\$ 2,380	Backfill 15' x 15' x 8' deep gravel, 1.7 TN/CY, 5% waste
	HMA Cl. 1/2 IN. PG 58-22	7	TN	\$ 120	\$ 840	Roadway 15' x 15' x 4" deep HMA, 2.1 TN/CY, 5% waste
	48" Manhole	1	EA	\$ 2,500	\$ 2,500	10' deep manhole
		Material Subtotal			\$ 7,395	
				Sales Tax	\$ 703	9.50%
	Total Material Cost			\$ 8,100		
	TOTAL ESTIMATED COST			\$ 23,410		

Project Description

Replace damaged manhole

Project Assumptions

- Project will take approximately 2 days to complete
- Work crew of 4: 2 laborers, operator, and dump truck driver
- 3 Sewer pipes of 8-inch diameter into manhole and 1 sewer pipe of 6-inch diameter
- Manhole is approximately 10-feet deep
- Project is located on residential street so major traffic control effort isn't required
- Sewer lines through MH aren't major arterials, major bypass pumping isn't required
- Roadway patch restoration around MH is required
- Project is located in R/W or easement so right-of-entry is not required

Project Photo



City of Lynnwood I/I Study
Manhole Replacement Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-189-377.0	Heavy	47th Pl W & 185th Pl SW	

**City of Lynnwood Infiltration & Inflow Study
Pipe Cleaning Cost Estimate**

	Item	Quantity		Unit Cost	Total
Labor	Mobilization & Demobilization	1	LS	\$ 80	\$ 80
	Traffic Control	1	LS	\$ 100	\$ 100
	Vactor Truck	2	HR	\$ 285	\$ 570
	Debris Disposal	1	TN	\$ 110	\$ 110
				Labor Subtotal	\$ 860
				Sales Tax	\$ 82
				Total Labor Cost	\$ 950

Cost Assumptions

Approx. 10% of sum of other items before tax
 Estimate
 Estimate
 Estimate
 9.50%

Project Description

Vactor clean sewer pipe

Project Assumptions

- Project will take approximately 2 hours to complete
- Vactor Truck crew consists of 2 workers and 1 truck
- Vactor Truck Unit Cost is per Michels Corporation
- Disposal Fee is per Pro-Vac, rate is based on fee charged by Cedar Hills Landfill
- Project is located on a residential street so major traffic control effort isn't required
- Project is located in R/W or easement so right-of-entry is not required

Project Photo



City of Lynnwood I/I Study
Pipe Cleaning Repair Project Priority

Problem No.	Severity	Location	Date Completed
2-84-29	Heavy	Scriber Lake Road	
3-50-273	Heavy	56th Ave W & 200th St SW	
5-50-125.6	Heavy	44th Ave W & 188th St SW	
5-87-125	Heavy	43rd Pl W & 188th St SW	
5-90-14.3	Heavy	41st Pl W & 188th St SW	
5-76-8.9	Heavy	44th Ave W & 191st St SW	
5-76-20.3	Heavy	44th Ave W & 191st St SW	
5-3-37.2	Medium	48th Ave W & 200th St SW	
3-43-242.0	Light	Easement in Scriber Lake Park	
3-19-308.4	Light	Cedar Valley Rd & 50th Ave W	
3-118-180.0	Light	188th St SW & 52nd Ave W	
3-115-376.2	Light	189th St SW & 55th Ave W	
5-189-48.0	Light	47th Pl W & 185th Pl SW	
5-192-15.1	Light	183rd Pl SW & 46th Pl W	

**City of Lynnwood Infiltration & Inflow Study
Adjust Manhole Lid Cost Estimate**

	Item	Quantity	Unit	Unit Cost	Total	Cost Assumptions	
Labor	Mobilization & Demobilization	1	LS	\$ 180	\$ 180	Approx. 10% of sum of other items before tax	
	Temporary Erosion and Sediment Control	1	LS	\$ 250	\$ 250	Estimate	
	Traffic Control	1	LS	\$ 500	\$ 500	Estimate	
	Excavator	4	HR	\$ 140	\$ 560	1/2 Days	
	Dump Truck	4	HR	\$ 65	\$ 260	1/2 Days	
	Operator	4	HR	\$ 65	\$ 260	1 operator x 1/2 Days of work	
	Truck Driver	4	HR	\$ 60	\$ 240	1 driver x 1/2 Days of work	
	Laborer	4	HR	\$ 50	\$ 200	1 laborers x 1/2 Days of work	
					Labor Subtotal	\$ 2,450	
					Sales Tax	\$ 233	9.50%
				Total Labor Cost	\$ 2,690		
Materials	Manhole Riser Sections	2	EA	\$ 100	\$ 200	6-inch riser sections	
	Manhole Frame and Cover	1	EA	\$ 500	\$ 500	New manhole frame and cover	
	Gravel Base	5	TN	\$ 20	\$ 100	Backfill 6' x 6' x 2' deep gravel, 1.7 TN/CY, 5% waste	
	HMA Cl. 1/2 IN. PG 58-22	2	TN	\$ 120	\$ 240	Roadway 8' x 8' x 4" deep HMA, 2.1 TN/CY, 5% waste	
	48" Manhole		EA	\$ 200	\$ -	10' deep manhole	
					Material Subtotal	\$ 1,040	
				Sales Tax	\$ 99	9.50%	
				Total Material Cost	\$ 1,140		
				TOTAL ESTIMATED COST	\$ 3,830		

Project Description

Raise or repair damaged lid and risers

Project Assumptions

- Project will take approximately 0.5 days to complete
- Work crew of 3: laborer, operator, and dump truck driver
- 2 new manhole riser sections are required
- New Manhole frame and cover is required
- Project is located on residential street so major traffic control effort isn't required
- Roadway patch restoration around MH is required
- Project is located in R/W or easement so right-of-entry isn't required

Project Photo



City of Lynnwood I/I Study
Adjust Manhole Lid Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-152-N/A	Medium	MH 5-152 in Lynnwood, WA	
5-142-N/A	Light	192nd St SW (near 49th Pl W)	
5-154-N/A	Light	190th St SW (near 51st Pl W)	
5-164-N/A	Light	189th St SW & 50th Pl W	
5-104.6-N/A	Light	40th Ave W and 185th Pl. SW, Lynnwood, WA.	
3-44-N/A	Light	MH 3-44 in Lynnwood, WA	
3-45-N/A	Light	MH 3-45 in Lynnwood, WA	
5-163-N/A	Light	MH 5-163 in Lynnwood, WA	

**City of Lynnwood Infiltration & Inflow Study
Relay Sagging Pipe Cost Estimate**

	Item	Quantity	Unit Cost	Total	Cost Assumptions	
Labor	Mobilization & Demobilization	1	LS \$ 820	\$ 820	Approx. 10% of sum of other items before tax	
	Locate Existing Utilities	1	LS \$ 500	\$ 500	Estimate	
	Temporary Erosion and Sediment Control	1	LS \$ 500	\$ 500	Estimate	
	Traffic Control	1	LS \$ 500	\$ 500	Estimate	
	Trench Excavation Safety Systems	1	LS \$ 750	\$ 750	Estimate	
	Temporary Sewage Pumping	1	LS \$ 750	\$ 750	Estimate	
	Backhoe	16	HR \$ 100	\$ 1,600	1.5 Days	
	Dump Truck	16	HR \$ 65	\$ 1,040	1.5 Days	
	Operator	16	HR \$ 65	\$ 1,040	1 operator x 2 Days of work	
	Truck Driver	16	HR \$ 60	\$ 960	1 driver x 2 Days of work	
	Laborer	32	HR \$ 50	\$ 1,600	2 laborers x 2 Days of work	
	Labor Subtotal				\$ 10,060	
	Sales Tax				\$ 956	9.50%
Total Labor Cost				\$ 11,020		
Materials	8" PVC Sewer Pipe	25	LF \$ 60	\$ 1,500	25' of 8" PVC Sewer replacement	
	Crushed Surfacing Top Course	20	TN \$ 25	\$ 500	Pipe backfill 6' wide x 25' long x 2' deep CSTC; 1.7TN/CY, 5% waste	
	Crushed Surfacing Base Course	5	TN \$ 25	\$ 125	Road Base 8' wide x 25' long x 4" deep CSBC, 1.7TN/CY, 5% waste	
	Foundation Gravel	5	TN \$ 25	\$ 125	Base 6' wide x 25' x 6" deep foundation, 1.7TN/CY, 5% waste	
	Gravel Base	80	TN \$ 20	\$ 1,600	Backfill 6' wide x 25' long x 8" deep gravel, 1.7 TN/CY, 5% waste	
	HMA Cl. 1/2 IN. PG 58-22	6	TN \$ 120	\$ 720	Roadway 8' wide x 25' long x 4" deep HMA, 2.1 TN/CY, 5% waste	
Material Subtotal				\$ 4,570		
Sales Tax				\$ 434	9.50%	
Total Material Cost				\$ 5,010		
TOTAL ESTIMATED COST				\$ 16,030		

Project Description

Relay section of sewer pipe that has sags

Project Assumptions

- Project will take approximately 2 days to complete
- Work crew of 4: 2 laborers, operator, and dump truck driver
- Sewer line is 8-inch diameter
- Project will replace approximately 25-feet of sagging sewer pipe
- Sewer pipe has approximately 8-feet of cover over pipe
- Project is located on a residential street so major traffic control isn't required
- Sewer line is not major arterial so major temporary sewer pumping isn't required
- Roadway trench patch restoration is required
- Project is located in R/W or easement so right-of-entry isn't required

Project Photo



City of Lynnwood I/I Study
Relay Sagging Pipe Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-102-192	Heavy	55th Ave W & 191st St SW	
3-90-323	Heavy	193rd Pl SW	
5-142-105	Heavy	South of 192nd St SW	
5-178-65	Heavy	186th Pl W	
3-14-97	Medium	53rd Ave W & 200th St SW	
3-14-174	Medium	53rd Ave W & 200th St SW	
3-25-114.7	Medium	52nd Ave W & Cedar Valley Rd	
3-108-39.4	Medium	189th Pl SW & 55th Ave W	
5-169.1-67.2	Medium	188th St SW & 51st Pl W	
5-135.1-48	Medium	52nd Ave W & 188th St SW	
5-135.1-169	Medium	52nd Ave W & 188th St SW	
5-135.1-235	Medium	52nd Ave W & 188th St SW	
5-135-213	Medium	52nd Ave W & 189th St SW	
5-135-297.6	Medium	52nd Ave W & 189th St SW	
3-70-107	Light	Scriber Lake Road	
3-68-55	Light	198th St SW	
5-10-394.3	Light	48th Ave W & 194th St SW	
5-30-273.8	Light	46th Ave W & 188th St SW	
5-68-24.3	Light	44th Ave W & 192nd St SW	
5-87-169.3	Light	43rd Pl W & 188th Pl SW	
3-20-71.0	Light	52nd Ave W & Cedar Valley Rd	
3-22-0.0	Light	52nd Ave W & Cedar Valley Rd	
5-171-98.4	Light	188th St SW & 51st Pl W	
5-169.1-14.6	Light	188th St SW & 51st Pl W	
5-169.1-26.3	Light	188th St SW & 51st Pl W	
5-169.1-120.0	Light	188th St SW & 51st Pl W	
5-135.1-72.8	Light	52nd Ave W & 188th St SW	
5-135-196.0	Light	52nd Ave W & 189th St SW	
5-135-285.6	Light	52nd Ave W & 189th St SW	
5-135-320.0	Light	52nd Ave W & 189th St SW	
5-135-338.4	Light	52nd Ave W & 189th St SW	
5-134-27.6	Light	52nd Ave W & 189th St SW	
5-134-43.9	Light	52nd Ave W & 189th St SW	
5-134-133.2	Light	52nd Ave W & 189th St SW	
5-134-263.5	Light	52nd Ave W & 189th St SW	
5-134-271.5	Light	52nd Ave W & 189th St SW	
5-133-229.2	Light	52nd Ave W & 189th Pl SW	
5-132.1-72.9	Light	52nd Ave W & 192nd St SW	
5-132.1-195.0	Light	52nd Ave W & 192nd St SW	
5-129-59.0	Light	52nd Ave W & 194th St SW	
5-129-151.0	Light	52nd Ave W & 194th St SW	
5-129-220.3	Light	52nd Ave W & 194th St SW	
5-196-9.1_2	Light	46th Pl W & 183rd Pl SW	

City of Lynnwood I/I Study
Relay Sagging Pipe Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-196-44.9	Light	46th Pl W & 183rd Pl SW	
5-196-51.3	Light	46th Pl W & 183rd Pl SW	
5-196-89.3	Light	46th Pl W & 183rd Pl SW	
5-195-89.6	Light	46th Pl W & 183rd Pl SW	
5-195-95.7	Light	46th Pl W & 183rd Pl SW	
5-195-186.4	Light	46th Pl W & 183rd Pl SW	
5-193-93.7	Light	46th Pl W & 183rd Pl SW	
5-193-176.5	Light	46th Pl W & 183rd Pl SW	
5-188-84.7	Light	46th Pl W & 185th Pl SW	

**City of Lynnwood Infiltration & Inflow Study
Root Removal Cost Estimate**

	Item	Quantity	Unit Cost	Total
Labor	Mobilization & Demobilization	1	LS \$ 120	\$ 120
	Traffic Control	1	LS \$ 100	\$ 100
	Vactor Truck	2	HR \$ 185	\$ 370
	TV Truck	2	HR \$ 285	\$ 570
	Debris Disposal	1	TN \$ 110	\$ 110
	Labor Subtotal			\$ 1,270
	Sales Tax			\$ 121
	Total Labor Cost			\$ 1,400
	TOTAL ESTIMATED COST			\$ 1,400

Cost Assumptions

Approx. 10% of sum of other items before tax

Estimate

Estimate

Estimate

9.50%

Project Description

Remove roots blocking sewer line

Project Assumptions

- Project will take approximately 2 hours to complete
- Vactor Truck crew consists of 2 workers and 1 truck
- Vactor Truck Unit Cost is per Pro-Vac
- TV Truck crew consists of 2 workers and 1 truck
- TV Truck Unit Cost is per Pro-Vac
- Disposal Fee is per Pro-Vac, their rate is based on fee charged by Cedar Hills Landfill
- Project is located on a residential street so major traffic control isn't required
- Project is located in R/W or easement so right-of-entry isn't required

Project Photo



City of Lynnwood I/I Study
Root Removal Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-91-215	Heavy	193rd Pl SW	
3-70.1-222	Heavy	Scriber Lake Road	
3-70-90	Heavy	Scriber Lake Road	
3-68-377	Heavy	198th St SW	
5-66.3-295.2	Heavy	44th Ave W & 192nd Pl SW	
3-68.1-43	Medium	Scriber Lake Road	
5-187-189.8	Medium	47th Pl W & 185th Pl SW	
5-67-1.9	Medium	44th Ave W & 192nd Pl SW	
5-16-48.2	Medium	48th Ave W & 188th St SW	
5-73-26.0	Medium	40th Ave W & 192nd St SW	
5-196-3.6	Medium	46th Pl W & 183rd Pl SW	
5-195-16.1	Medium	46th Pl W & 183rd Pl SW	
5-193-9.9	Medium	183rd Pl SW & 46th Pl W	
5-192-36.6	Medium	183rd Pl SW & 46th Pl W	
5-188-13	Medium	185th Pl SW & 46th Pl W	
3-17-175	Light	54th Ave W & 200th St SW	
3-105-53	Light	190th St SW	
3-70.1-144	Light	Scriber Lake Road	
3-70.1-196	Light	Scriber Lake Road	
3-70.1-219	Light	Scriber Lake Road	
3-70.1-234	Light	Scriber Lake Road	
3-70-38	Light	Scriber Lake Road	
3-57-138	Light	Firwood Drive	
5-144-158	Light	49th Ave W & 192nd St SW	
5-180-76	Light	186th Pl W (W of 52nd Ave W)	
5-26-229.1	Light	46th Ave W & 191st St SW	
5-67-226.1	Light	44th Ave W & 192nd St SW	
5-196-9.1	Light	46th Pl W & 183rd Pl SW	
5-188-184.3	Light	46th Pl W & 185th Pl SW	
5-188-201.0	Light	46th Pl W & 185th Pl SW	
5-188-201.0	Light	46th Pl W & 185th Pl SW	
5-172.1-3.0	Light	52nd Ave W & 188th St SW	
5-197-0.0	Light	46th Pl W & 183rd Pl SW	
5-195-13.9	Light	46th Pl W & 183rd Pl SW	
5-192-21.8	Light	183rd Pl SW & 46th Pl W	
5-191-11.6	Light	183rd Pl SW & 47th Pl W	
5-189 CO-17.5	Light	184th Pl SW & 47th Pl W	
5-188-0.5	Light	185th Pl SW & 46th Pl W	
5-188-4.0	Light	185th Pl SW & 46th Pl W	
5-188-6.2	Light	185th Pl SW & 46th Pl W	
3-70-N/A	Light	Scriber Lake Rd & 196th St SW	

**City of Lynnwood Infiltration & Inflow Study
Side Sewer Grinding Cost Estimate**

Labor	Item	Quantity	Unit Cost	Total
		Mobilization & Demobilization	1	LS \$ 120
	Traffic Control	1	LS \$ 100	\$ 100
	Vactor Truck	2	HR \$ 285	\$ 570
	TV Truck	2	HR \$ 185	\$ 370
	Debris Disposal	1	TN \$ 110	\$ 110
			Labor Subtotal	\$ 1,270
			Sales Tax	\$ 121
			Total Labor Cost	\$ 1,400
			TOTAL ESTIMATED COST	\$ 1,400

Cost Assumptions

Approx. 10% of sum of other items before tax

Estimate

Estimate

Estimate

9.50%

Project Description

Grind concrete side sewer protruding into sewer main

Project Assumptions

- Project will take approximately 2 hours to complete
- Vactor Truck crew consists of 2 workers and 1 truck
- Vactor Truck Unit Cost is per Pro-Vac
- TV Truck crew consists of 2 workers and 1 truck
- TV Truck Unit Cost is per Pro-Vac
- Disposal Fee is per Pro-Vac, rate is based on fee charged by Cedar Hills Landfill
- Project is located on a residential street so major traffic control isn't required

Project Photo



City of Lynnwood I/I Study
Side Sewer Grinding Repair Project Priority

Problem No.	Severity	Location	Date Completed
3-26-72.9	Medium	201st Pl SW	
3-116-243.3	Medium	189th St SW & 55th Ave W	
5-5-197.6	Light	48th Ave W & 196th St SW	

**City of Lynnwood Infiltration & Inflow Study
Side Sewer Point Repair Cost Estimate**

	Item	Quantity	Unit	Unit Cost	Total	Cost Assumptions
Labor	Mobilization & Demobilization	1	LS	\$ 450	\$ 450	Approx. 10% of sum of other items before tax
	Locate Existing Utilities	1	LS	\$ 500	\$ 500	Estimate
	Temporary Erosion and Sediment Control	1	LS	\$ 500	\$ 500	Estimate
	Trench Excavation Safety Systems	1	LS	\$ 750	\$ 750	Estimate
	Temporary Sewage Pumping	1	LS	\$ 250	\$ 250	Estimate
	Dump Truck	12	HR	\$ 65	\$ 780	1.5 Days
	Operator	12	HR	\$ 65	\$ 780	1 operator x 1.5 Days of work
	Truck Driver	12	HR	\$ 60	\$ 720	1 driver x 1.5 Days of work
	Laborer	24	HR	\$ 50	\$ 1,200	2 laborers x 1.5 Days of work
		Labor Subtotal			\$ 5,930	
	Sales Tax			\$ 563	9.50%	
	Total Labor Cost			\$ 6,500		
Materials	6" PVC Side Sewer Pipe	10	LF	\$ 50	\$ 500	10' of 6" PVC Side Sewer replacement
	Crushed Surfacing Top Course	8	TN	\$ 25	\$ 200	Pipe backfill 6' wide x 10' long x 2' deep CSTC; 1.7TN/CY, 5% waste
	Foundation Gravel	2	TN	\$ 25	\$ 50	Base 6' wide x 10' x 6" deep foundation, 1.7TN/CY, 5% waste
	Gravel Base	24	TN	\$ 20	\$ 480	Backfill 6' wide x 10' long x 6' deep gravel, 1.7 TN/CY, 5% waste
	Grass/Landscaping Restoration	1	LS	\$ 500	\$ 500	
		Material Subtotal			\$ 1,730	
	Sales Tax			\$ 164	9.50%	
	Total Material Cost			\$ 1,900		
	TOTAL ESTIMATED COST			\$ 8,400		

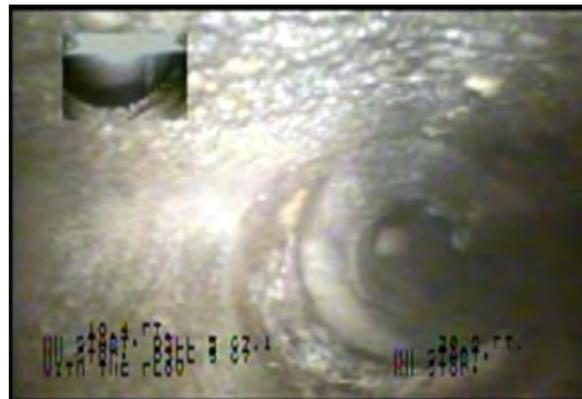
Project Description

Replace damaged section of concrete side sewer pipe with new PVC sewer pipe

Project Assumptions

- Project will take approximately 1.5 days to complete
- Work crew of 4: 2 laborers, operator, and dump truck driver
- Side sewer line is 6-inch diameter
- Side sewer pipe has approximately 6-feet of cover over pipe
- Project is located in grass area off street
- Project is potentially located on private property so right-of-entry may be required

Project Photo



City of Lynnwood I/I Study
Side Sewer Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-67.1-32.2	Heavy	44th Ave W & 192nd Pl SW	
5-77.1-0	Heavy	40th Ave W & 191st St SW	
5-77.1-21.4	Heavy	44th Ave W & 191st St SW	
5-77.1-21.4	Heavy	44th Ave W & 191st St SW	
5-77.1-21.4	Heavy	44th Ave W & 191st St SW	
5-196-8.8	Heavy	46th Pl W & 183rd Pl SW	
5-188-24.3	Heavy	185th Pl SW & 46th Pl W	
5-183-13.9	Heavy	49th Pl W & 185th Pl SW	
5-182-6.0	Heavy	49th Pl W & 185th Pl SW	
5-182-11.9	Heavy	49th Pl W & 185th Pl SW	
5-182-25.3	Heavy	49th Pl W & 185th Pl SW	
5-67.1-21.7	Medium	44th Ave W & 192nd Pl SW	
5-67.1-23.7	Medium	44th Ave W & 192nd Pl SW	
5-16-24.1	Medium	48th Ave W & 188th St SW	
5-77.1-19.2	Medium	40th Ave W & 191st St SW	
5-191-12.8	Medium	183rd Pl SW & 47th Pl W	
5-189 CO-30.1	Medium	184th Pl SW & 47th Pl W	
5-189-6.8	Medium	47th Pl W & 184th Pl SW	
5-185-24.3	Medium	185th Pl SW & 48th Ave W	
5-184-18.8	Medium	185th Pl SW & 49th Pl W	
5-182-17.4	Medium	49th Pl W & 185th Pl SW	
5-182-20	Medium	49th Pl W & 185th Pl SW	
5-84-N/A	Medium	4019 189th Pl. SW, Lynnwood, WA	
5-82-N/A	Medium	4221 189th Pl. SW, Lynnwood, WA	
5-79-N/A	Medium	4326 189th Pl. SW, Lynnwood, WA	
5-112-N/A	Medium	4114 186th St. SW, Lynnwood, WA	
5-107-N/A	Medium	18427 42nd Pl. W, Lynnwood, WA	
5-30-N/A_2	Medium	18639 44th Ave. W, Lynnwood, WA (Lynnwood Elementary (B))	
C-25-N/A	Medium	18320 44th Ave W, Lynnwood, WA	
3-68.1-N/A	Medium	Southwest corner of Scriber Lake Ave. and 198th St. SW, Lynnwood, WA	
3-70.1-N/A	Medium	5824 196th St SW, Lynnwood, WA (Jo-Ann Fabric)	
C-36-N/A	Medium	19828 Firwood Drive, Lynnwood, WA	
3-12-N/A	Medium	20020 53rd Pl W, Lynnwood, WA	
C5-131-N/A	Medium	5103 192nd St SW, Lynnwood, WA	
5-132-N/A	Medium	52nd Ave W and 191st St SW in Lynnwood, WA	
4-105-N/A	Medium	6209 183rd Pl. SW, Lynnwood, WA	
4-71-N/A	Medium	6031 189th Pl. SW, Lynnwood, WA	
2-80-N/A	Medium	200th St. SW, Lynnwood, WA (near MH 2-80)	

City of Lynnwood I/I Study
Side Sewer Point Repair Project Priority

Problem No.	Severity	Location	Date Completed
2-75-N/A	Medium	6125 202nd St. SW, Lynnwood, WA	
5-15-25.4	Light	48th Ave W & 188th St SW	
5-76-36.9	Light	44th Ave W & 191st St SW	
5-73-8.9	Light	40th Ave W & 192nd St SW	
5-71-0.0	Light	44th Ave W & 192nd St SW	
5-196-12.0	Light	46th Pl W & 183rd Pl SW	
5-196-14.4	Light	46th Pl W & 183rd Pl SW	
5-196-20.4	Light	46th Pl W & 183rd Pl SW	
5-196-23.4	Light	46th Pl W & 183rd Pl SW	
5-196-31.9	Light	46th Pl W & 183rd Pl SW	
5-193-2.4	Light	183rd Pl SW & 46th Pl W	
5-192-11.0	Light	183rd Pl SW & 46th Pl W	
5-185-0.0	Light	185th Pl SW & 48th Ave W	
5-185-3.9	Light	185th Pl SW & 48th Ave W	
5-185-21.8	Light	185th Pl SW & 48th Ave W	
5-185-21.6	Light	185th Pl SW & 48th Ave W	
5-184-13.6	Light	185th Pl SW & 49th Pl W	
5-184-16.4	Light	185th Pl SW & 49th Pl W	
5-184-24.2	Light	185th Pl SW & 49th Pl W	
5-184-5.4	Light	185th Pl SW & 49th Pl W	
5-183-19.2	Light	49th Pl W & 185th Pl SW	
5-182-22.8	Light	49th Pl W & 185th Pl SW	
5-182-27.9	Light	49th Pl W & 185th Pl SW	
2-53-N/A	Light	6109 208th St. SW, Lynnwood, WA	
2-73-N/A	Unknown	6001 202nd St. SW, Lynnwood, WA	
2-76-N/A	Unknown	6208 202nd St. SW, Lynnwood, WA (Unit 62 or 64)	
2-47-N/A	Unknown	20923 59th Pl. W, Lynnwood, WA	
1-18-N/A	Unknown	21116 67th Ave W, Lynnwood, WA	

**City of Lynnwood Infiltration & Inflow Study
Storm Drain Piping Cost Estimate**

	Item	Quantity	Unit Cost	Total	<u>Cost Assumptions</u>
Labor	Mobilization & Demobilization	1	LS \$ 750	\$ 750	Approx. 10% of sum of other items before tax
	Locate Existing Utilities	1	LS \$ 500	\$ 500	Estimate
	Temporary Erosion and Sediment Control	1	LS \$ 500	\$ 500	Estimate
	Trench Excavation Safety Systems	1	LS \$ 750	\$ 750	Estimate
	Temporary Sewage Pumping	1	LS \$ 250	\$ 250	Estimate
	Backhoe	12	HR \$ 100	\$ 1,200	2 Days
	Dump Truck	12	HR \$ 65	\$ 780	2 Days
	Operator	12	HR \$ 65	\$ 780	1 operator x 2 Days of work
	Truck Driver	12	HR \$ 60	\$ 720	1 driver x 2 Days of work
	Laborer	24	HR \$ 50	\$ 1,200	2 laborers x 2 Days of work
	Labor Subtotal		\$ 7,430		
	Sales Tax		\$ 706	9.50%	
	Total Labor Cost		\$ 8,140		
Materials	4" PVC Storm Drainage Pipe	50	LF \$ 40	\$ 2,000	50' of new 4" PVC Storm Drainage Piping
	Crushed Surfacing Top Course	20	TN \$ 25	\$ 500	Pipe backfill 4' wide x 50' long x 1.5' deep CSTC; 1.7TN/CY, 5% waste
	Crushed Surfacing Base Course	2	TN \$ 25	\$ 50	Road Base 6' wide x 10' long x 4" deep CSBC, 1.7TN/CY, 5% waste
	Foundation Gravel	7	TN \$ 25	\$ 175	Base 4' wide x 50' x 6" deep foundation, 1.7TN/CY, 5% waste
	Gravel Base	40	TN \$ 20	\$ 800	Backfill 4' wide x 50' long x 3' deep gravel, 1.7 TN/CY, 5% waste
	HMA Cl. 1/2 IN. PG 58-22	2	TN \$ 120	\$ 240	Roadway patch 6' wide x 10' long x 4" deep HMA, 2.1 TN/CY, 5% waste
	Grass/Landscaping Restoration	1	LS \$ 1,000	\$ 1,000	
	Material Subtotal		\$ 4,765		
	Sales Tax		\$ 453	9.50%	
	Total Material Cost		\$ 5,220		
	TOTAL ESTIMATED COST		\$ 13,360		

Project Description

Install new storm drain pipe to reconnect existing illicit connection to storm sewer

Project Assumptions

- Project will take approximately 1.5 days to complete
- Work crew of 4: 2 laborers, operator, and dump truck driver
- Storm drain piping is 4-inch diameter
- Storm drain piping will have 4-feet of cover
- Majority of project is located on private property in grass areas
- Roadway trench patch is required to connect to existing storm catch basin
- Project is located on private property so right-of-entry is required

Project Photo



City of Lynnwood I/I Study
Storm Drain Pipe Repair Project Priority

Problem No.	Severity	Location	Date Completed
5-77-N/A	Heavy	4309 191st St. SW, Lynnwood, WA	
5-123-N/A	Heavy	5108 196th St. SW, Lynnwood, WA	
3-101-N/A	Heavy	5521 190th St SW Lynnwood, WA	
3-97-N/A	Heavy	5230 190th St SW, Lynnwood, WA	
3-15-N/A	Heavy	19925 53rd Ave W, Lynnwood, WA	
5-166-N/A	Heavy	4905 189th St SW, Lynnwood, WA	
3-27-N/A	Heavy	5320 201st Pl SW, Lynnwood, WA	
4-165-N/A	Heavy	6013 178th St. SW, Lynnwood, WA	
4-121-N/A	Heavy	5813 182nd Pl. SW, Lynnwood, WA	
4-149-N/A	Heavy	6026 180th St. SW, Lynnwood, WA	
4-184-N/A	Heavy	6319 177th Pl. SW, Lynnwood, WA	
4-80-N/A	Heavy	18630 60th Ave W, Lynnwood, WA	
4-117-N/A	Heavy	5902 183rd St. SW, Lynnwood, WA	
1-60.2-N/A	Heavy	6629 204th St SW, Lynnwood, WA	
2-188-N/A	Heavy	5523 204th St. SW, Lynnwood, WA	
2-56-N/A	Heavy	5910 207th Pl. SW, Lynnwood, WA	
2-14-N/A	Heavy	6207 211th St. SW, Lynnwood, WA	
5-97-N/A	Heavy	18632 42nd Ave, Lynnwood, WA	
2-57-N/A	Medium	5827 207th Pl. SW, Lynnwood, WA	
5-32.2-N/A	Unknown	4505 188th St SW, Lynnwood, WA	
2-129-N/A	Unknown	5703 202nd St. SW, Lynnwood, WA	

APPENDIX H

MULTIPLE PROBLEM AREAS

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
Ten or More	1	5-15-32.3	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Offset lateral joint and heavy mineral deposits in lateral	32.3	TV-235	Heavy	\$11,580	2010	Offset Joint; Mineral Deposits	3	N/A
	2	5-15-0	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Heavy debris @ lateral joint	0.0	TV-652	Heavy	\$11,580	2010	Debris	3	32.2
	3	5-15-103.3	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Medium mineral deposits & infiltration weeper @ pipe segment joint	103.3	TV-237	Medium	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	4	5-15-111.5	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Medium mineral deposits @ pipe segment joint	111.5	TV-238	Medium	\$11,010	2010	Mineral Deposits	3	N/A
	5	5-15-135.5	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Medium mineral deposits and light infiltration stain @ pipe segment joint	135.5	TV-243	Medium	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	6	5-15-25.5	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	25.5	TV-233	Light	\$11,010	2010	Infiltration	3	N/A
	7	5-15-29.9	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	29.9	TV-234	Light	\$11,010	2010	Infiltration	3	N/A
	8	5-15-83.1	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	83.1	TV-236	Light	\$11,010	2010	Infiltration	3	N/A
	9	5-15-115.5	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	115.5	TV-239	Light	\$11,010	2010	Infiltration	3	N/A
	10	5-15-119.6	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration dripper, stain and light mineral deposits @ pipe segment joint	119.6	TV-240	Light	\$11,010	2010	Infiltration; Mineral Deposits	3	N/A
	11	5-15-127.5	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	127.5	TV-241	Light	\$11,010	2010	Infiltration	3	N/A
	12	5-15-131.6	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	131.6	TV-242	Light	\$11,010	2010	Infiltration	3	N/A
	13	5-15-147.8	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Light mineral deposits and infiltration dripper @ pipe segment joint	147.8	TV-244	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	14	5-15-176.3	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	176.3	TV-245	Light	\$11,010	2010	Infiltration	3	N/A
	15	5-15-233.6	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Infiltration dripper @ pipe segment joint	233.6	TV-246	Light	\$11,010	2010	Infiltration	3	N/A
	16	5-15-268.2	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Light mineral deposits	268.2	TV-247	Light	\$11,010	2010	Mineral Deposits	3	N/A
	17	5-15-270.0	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Light mineral deposits and infiltration dripper @ pipe segment joint	270.0	TV-248	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	18	5-15-25.4	TV Inspection	5-15	5-14	48th Ave W & 188th St SW	Residential	Circular crack in pipe	25.4	TV-653	Light	\$11,010	2010	Pipe Crack	3	60.7
											Total	\$199,320	1			
19	5-67-323.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits, infiltration and root problem @ pipe segment joint-heavy break	323.1	TV-350	Heavy	\$11,010	2010	Mineral Deposits; Infiltration; Roots	3	N/A	
20	5-67-320	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Medium offset joint and right joint deflection	320.0	TV-349	Medium	\$11,010	2010	Offset Joint	3	N/A	
21	5-67-1.9	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Root ball in pipe	1.9	TV-648	Medium	\$1,400	2010	Roots	3	225.8	
22	5-67-175.6	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration on pipe wall	175.6	TV-334	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A	
23	5-67-187.6	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	187.6	TV-335	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A	
24	5-67-218	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration and stain @ joint	218.0	TV-336	Light	\$11,010	2010	Infiltration	3	N/A	
25	5-67-224.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	224.1	TV-337	Light	\$11,010	2010	Infiltration	3	N/A	
26	5-67-226.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Root ball in lateral	226.1	TV-338	Light	\$1,400	2010	Roots	3	N/A	
27	5-67-245.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	245.1	TV-339	Light	\$11,010	2010	Infiltration	3	N/A	
28	5-67-248.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	248.1	TV-340	Light	\$11,010	2010	Infiltration	3	N/A	
29	5-67-256.9	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint, light roots projecting through joint	256.9	TV-341	Light	\$11,010	2010	Mineral Deposits; Infiltration; Roots	3	N/A	
30	5-67-263.0	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration and roots @ pipe segment joint	263.0	TV-342	Light	\$11,010	2010	Infiltration; Roots	3	N/A	
31	5-67-269.0	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits @ joint	269.0	TV-343	Light	\$11,010	2010	Mineral Deposits	3	N/A	
32	5-67-281.0	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits, infiltration and root problem @ pipe segment joint	281.0	TV-344	Light	\$11,010	2010	Mineral Deposits; Infiltration; Roots	3	N/A	
33	5-67-287.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits, infiltration and root problem @ pipe segment joint	287.1	TV-345	Light	\$11,010	2010	Mineral Deposits; Infiltration; Roots	3	N/A	
34	5-67-295.9	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light mineral deposits, infiltration and root problem @ pipe segment joint	295.9	TV-346	Light	\$11,010	2010	Mineral Deposits; Infiltration; Roots	3	N/A	
35	5-67-302.2	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	302.2	TV-347	Light	\$11,010	2010	Infiltration; Mineral Deposits	3	N/A	
36	5-67-311.1	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	311.1	TV-348	Light	\$11,010	2010	Infiltration	3	N/A	
37	5-67-338.3	TV Inspection	5-67	5-44	44th Ave W & 192nd St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	338.3	TV-351	Light	\$11,010	2010	Infiltration; Mineral Deposits	3	N/A	
											Total	\$189,970	2			
38	5-41.1-132	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Pipe corrosion @ joint- light mineral deposits and heavy infiltration	132.0	TV-274	Heavy	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A	
39	5-41.1-147.4	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration runner in top of pipe- may be hole in top	147.4	TV-277	Heavy	\$11,010	2010	Infiltration; Pipe Hole	3	N/A	
40	5-41.1-146.3	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Left joint deflection- medium joint offset	146.3	TV-276	Medium	\$11,010	2010	Offset Joint	3	N/A	
41	5-41.1-400.7	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Heavy mineral deposits @ pipe segment joint	400.7	TV-287	Medium	\$11,010	2010	Mineral Deposits	3	N/A	
42	5-41.1-67.1	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration weeper @ lateral joint	67.1	TV-272	Light	\$11,580	2010	Infiltration	3	N/A	
43	5-41.1-113.8	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration weeper @ pipe segment joint	113.8	TV-273	Light	\$11,010	2010	Infiltration	3	N/A	
44	5-41.1-143.1	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Right joint deflection- infiltration weeper @ joint	143.1	TV-275	Light	\$11,010	2010	Offset Joint; Infiltration	3	N/A	
45	5-41.1-150.1	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Right joint deflection	150.1	TV-278	Light	\$11,010	2010	Offset Joint	3	N/A	
46	5-41.1-156.3	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration weeper @ lateral joint	156.3	TV-279	Light	\$11,580	2010	Infiltration	3	N/A	
47	5-41.1-203.1	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	203.1	TV-280	Light	\$11,010	2010	Infiltration	3	N/A	
48	5-41.1-248	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Light infiltration stain @ pipe segment joint	248.0	TV-281	Light	\$11,010	2010	Infiltration	3	N/A	
49	5-41.1-260.2	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Light infiltration stain @ pipe segment joint	260.2	TV-282	Light	\$11,010	2010	Infiltration	3	N/A	
50	5-41.1-313.1	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Medium infiltration stain @ pipe segment joint	313.1	TV-283	Light	\$11,010	2010	Infiltration	3	N/A	
51	5-41.1-317.2	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Light infiltration @ pipe segment joint	317.2	TV-284	Light	\$11,010	2010	Infiltration	3	N/A	
52	5-41.1-325.3	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	325.3	TV-285	Light	\$11,010	2010	Infiltration	3	N/A	
53	5-41.1-390.4	TV Inspection	5-41.1	5-40	47th Ave W & 188th St SW	Residential	Infiltration weeper @ pipe segment joint	390.4	TV-286	Light	\$11,010	2010	Infiltration	3	N/A	

Table H-1
Multiple Problem Areas

# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
											Total	\$177,300	3			
Ten or More	54	5-196-8.8	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Break in concrete pipe, soil is visible through break	8.8	TV-675	Heavy	\$11,010	2010	Broken Pipe; Visible Soil	4	150.5
	55	5-196-3.6	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Mineral deposits and root ball	3.6	TV-669	Medium	\$1,400	2010	Mineral Deposits; Roots	4	9.1
	56	5-196-9.1	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Roots visible in side sewer	9.1	TV-573	Light	\$1,400	2010	Roots	4	N/A
	57	5-196-9.1.2	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	8 ft sag	9.1	TV-574	Light	\$16,030	2010	Sag	4	N/A
	58	5-196-13.7	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Light mineral deposits @ pipe segment joints from 14 ft to 40 ft downstream from upstream manhole	13.7	TV-575	Light	\$11,010	2010	Mineral Deposits	4	N/A
	59	5-196-44.9	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	6 ft sag	44.9	TV-576	Light	\$16,030	2010	Sag	4	N/A
	60	5-196-51.3	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	9 ft sag	51.3	TV-577	Light	\$16,030	2010	Sag	4	N/A
	61	5-196-89.3	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	6 ft sag	89.3	TV-578	Light	\$16,030	2010	Sag	4	N/A
	62	5-196-151.2	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Large circular crack	151.2	TV-579	Light	\$11,010	2010	Pipe Crack	4	N/A
	63	5-196-12.0	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Light mineral deposits	12.0	TV-670	Light	\$11,010	2010	Mineral Deposits	4	40.5
	64	5-196-14.4	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Joint infiltration	14.4	TV-671	Light	\$11,010	2010	Infiltration	4	40.5
	65	5-196-20.4	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Light mineral deposits	20.4	TV-672	Light	\$11,010	2010	Mineral Deposits	4	40.5
	66	5-196-23.4	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Light mineral deposits	23.4	TV-673	Light	\$11,010	2010	Mineral Deposits	4	40.5
	67	5-196-31.9	TV Inspection	5-196	5-195	46th PI W & 183rd PI SW	Residential	Visible soil and infiltration	31.9	TV-674	Light	\$11,010	2010	Visible Soil; Infiltration	4	40.5
											Total	\$155,000	4			
	68	5-189-237.5	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Offset broken connection, visible infiltration and gasket at joint	237.5	TV-601	Heavy	\$11,010	2010	Offset Joint; Infiltration	4	N/A
	69	5-189-283.5	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Infiltration runner at joint	283.5	TV-604	Heavy	\$11,010	2010	Infiltration	4	N/A
	70	5-189-376.3	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Circular crack and infiltration runner	376.3	TV-605	Heavy	\$11,010	2010	Pipe Crack; Infiltration	4	N/A
	71	5-189-377.0	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Broken pipe in side sewer connection in manhole, large offset, void space behind pipe visible; cracks noticeable at all pipe connections into manhole	377.0	TV-606	Heavy	\$23,410	2010	Broken Pipe; Offset Joint; Pipe Crack	4	N/A
	72	5-189-1.5	TV Inspection	5-189	5-187	47th PI W & 184th PI SW	Easement	Heavy mineral deposits @ joint in lateral	1.5	TV-691	Heavy	\$11,580	2010	Mineral Deposits	4	68.7
	73	5-189-111.9	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Offset joint, mineral deposits at joint.	111.9	TV-598	Medium	\$11,010	2010	Offset Joint; Mineral Deposits	4	N/A
	74	5-189-220.6	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Medium offset joint	220.6	TV-600	Medium	\$11,010	2010	Offset Joint	4	N/A
	75	5-189-254.6	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Circular and lateral crack	254.6	TV-602	Medium	\$11,580	2010	Pipe Crack	4	N/A
	76	5-189-267.9	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Large circular crack, left side from top to bottom	267.9	TV-603	Medium	\$11,010	2010	Pipe Crack	4	N/A
	77	5-189-6.8	TV Inspection	5-189	5-187	47th PI W & 184th PI SW	Easement	Joint offset, offset too large too pass	6.8	TV-690	Medium	\$8,400	2010	Offset Joint	4	46.9
	78	5-189-48.0	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Build-up along flowline	48.0	TV-596	Light	\$950	2010	Debris	4	N/A
	79	5-189-77.2	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Mineral deposits within side sewer. Infiltration visible at bend in side sewer.	77.2	TV-597	Light	\$11,580	2010	Mineral Deposits; Infiltration	4	N/A
	80	5-189-132.0	TV Inspection	5-189	5-187	47th PI W & 185th PI SW	Easement	Infiltration weeper at joint.	132.0	TV-599	Light	\$11,010	2010	Infiltration	4	N/A
											Total	\$144,570	5			
	81	5-27-5.3	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Medium offset joint in pipe	5.3	TV-193	Light	\$11,010	2010	Offset joint	3	N/A
	82	5-27-10	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Infiltration stain @ lateral joint	10.0	TV-197	Light	\$11,580	2010	Infiltration	3	N/A
	83	5-27-24.3	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Infiltration stain @ pipe segment joint	24.3	TV-198	Light	\$11,010	2010	Infiltration	3	N/A
	84	5-27-28.3	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Medium offset joint and infiltration weeper @ pipe segment joint	28.3	TV-199	Light	\$11,010	2010	Offset Joint; Infiltration	3	N/A
	85	5-27-32.2	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	32.2	TV-200	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	86	5-27-40.5	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Infiltration stain and light infiltration @ pipe segment joint	40.5	TV-201	Light	\$11,010	2010	Infiltration	3	N/A
	87	5-27-44.6	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light infiltration stain @ pipe segment joint	44.6	TV-202	Light	\$11,010	2010	Infiltration	3	N/A
	88	5-27-48.8	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light infiltration stain @ pipe segment joint	48.8	TV-203	Light	\$11,010	2010	Infiltration	3	N/A
	89	5-27-81.3	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration weeper @ pipe segment joint	81.3	TV-204	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	90	5-27-105.8	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Medium joint offset and light infiltration @ offset	105.8	TV-205	Light	\$11,010	2010	Offset Joint; Infiltration	3	N/A
	91	5-27-114.3	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light infiltration @ pipe segment joint	114.3	TV-206	Light	\$11,010	2010	Infiltration	3	N/A
	92	5-27-134.7	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light stain and infiltration weeper @ pipe segment joint	134.7	TV-207	Light	\$11,010	2010	Infiltration	3	N/A
	93	5-27-167.5	TV Inspection	5-27	5-26	46th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration weeper @ pipe segment joint	167.5	TV-208	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
											Total	\$143,700	6			
	94	5-67.1-43.9	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Large offset joint in lateral	43.9	TV-641	Heavy	\$11,580	2010	Offset Joint	3	81.8
	95	5-67.1-23.2	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Infiltration runner @ pipe joint	23.2	TV-645	Heavy	\$11,010	2010	Infiltration	3	286.6
	96	5-67.1-21.7	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Medium break in lateral wall- circular crack	21.7	TV-640	Medium	\$8,400	2010	Pipe Crack	3	18.3
	97	5-67.1-23.7	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Medium circular crack	23.7	TV-644	Medium	\$8,400	2010	Pipe Crack	3	286.6
	98	5-67.1-144.1	TV Inspection	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Light mineral deposits @ lateral joint	144.1	TV-329	Light	\$11,580	2010	Mineral Deposits	3	N/A
	99	5-67.1-147	TV Inspection	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Light mineral deposits @ lateral joint	147.0	TV-330	Light	\$11,580	2010	Mineral Deposits	3	N/A
	100	5-67.1-188	TV Inspection	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	188.0	TV-331	Light	\$11,010	2010	Infiltration	3	N/A
	101	5-67.1-216.9	TV Inspection	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration @ lateral joint	216.9	TV-332	Light	\$11,580	2010	Mineral Deposits; Infiltration	3	N/A
	102	5-67.1-264.4	TV Inspection	5-67.1	5-67	44th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	264.4	TV-333	Light	\$11,010	2010	Infiltration	3	N/A
	103	5-67.1-42.7	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Light mineral deposits @ lateral joint	42.7	TV-642	Light	\$11,580	2010	Mineral Deposits	3	145.2
	104	5-67.1-20.0	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Infiltration stain @ lateral joint	20.0	TV-643	Light	\$11,580	2010	Infiltration	3	286.6
	105	5-67.1-25.7	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Infiltration weeper @ lateral joint	25.7	TV-646	Light	\$11,580	2010	Infiltration	3	289.7
	106	5-67.1-32.5	TV Inspection	5-67.1	5-67	44th Ave W & 192nd PI SW	Residential	Infiltration stain @ lateral joint	32.5	TV-647	Light	\$11,580	2010	Infiltration	3	289.7
											Total	\$142,470	7			
	107	5-89-142.3	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Heavy mineral deposits @ inside of lateral	142.3	TV-398	Medium	\$11,580	2010	Mineral Deposits	3	N/A
	108	5-89-9.3	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration @ pipe segment joint	9.3	TV-391	Light	\$11,010	2010	Infiltration	3	N/A
	109	5-89-17.5	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	17.5	TV-392	Light	\$11,010	2010	Infiltration	3	N/A
	110	5-89-33.9	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration @ pipe segment joint	33.9	TV-393	Light	\$11,010	2010	Infiltration	3	N/A
	111	5-89-66.5	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration stain @ pipe segment joint	66.5	TV-394	Light	\$11,010	2010	Infiltration	3	N/A
	112	5-89-78.6	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration stain @ pipe segment joint	78.6	TV-395	Light	\$11,010	2010	Infiltration	3	N/A
	113	5-89-91.0	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration and stain @ pipe segment joint	91.0	TV-396	Light	\$11,010	2010	Infiltration	3	N/A
	114	5-89-126.2	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light mineral deposits and infiltration @ lateral joint	126.2	TV-397	Light	\$11,580	2010	Mineral Deposits; Infiltration	3	N/A
	115	5-89-207.8	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light mineral deposits @ lateral connection	207.8	TV-399	Light	\$11,580	2010	Mineral Deposits	3	N/A
	116	5-89-273.1	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration @ lateral connection	273.1	TV-400	Light	\$11,580	2010	Infiltration	3	N/A
	117	5-89-301.5	TV Inspection	5-89	5-88	41st PI W & 188th St SW	Residential	Light infiltration @ lateral connection	30							

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
Ten or More											Total	\$123,960	8			
	118	5-29.1-197.3	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Medium mineral deposits- infiltration dripper through pipe wall- no visible pipe cracks- 2 ft segment	197.3	TV-309	Medium	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
	119	5-29.1-291.5	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Infiltration runner and light mineral deposits @ joint	291.5	TV-312	Medium	\$11,010	2010	Infiltration; Mineral Deposits	3	N/A
	120	5-29.1-339.6	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Medium infiltration in downstream manhole	339.6	TV-314	Medium	\$2,190	2010	Infiltration	3	N/A
	121	5-29.1-52.1	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Light mineral deposits @ lateral connection	52.1	TV-304	Light	\$11,580	2010	Mineral Deposits	3	N/A
	122	5-29.1-59.8	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Light infiltration through pipe wall	59.8	TV-305	Light	\$11,010	2010	Infiltration	3	N/A
	123	5-29.1-102.5	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Infiltration weeper @ lateral joint	102.5	TV-306	Light	\$11,580	2010	Infiltration	3	N/A
	124	5-29.1-110.9	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Infiltration stain @ pipe segment joint	110.9	TV-306	Light	\$11,010	2010	Infiltration	3	N/A
	125	5-29.1-174.1	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Light infiltration and stain @ pipe segment joint	174.1	TV-308	Light	\$11,010	2010	Infiltration	3	N/A
	126	5-29.1-203.2	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Infiltration weeper and light mineral deposits @ lateral joint	203.2	TV-310	Light	\$11,580	2010	Infiltration; Mineral Deposits	3	N/A
	127	5-29.1-234.1	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Infiltration weeper through pipe wall	234.1	TV-311	Light	\$11,010	2010	Infiltration	3	N/A
	128	5-29.1-320.9	TV Inspection	5-29.1	5-29	46th Ave W & 188th St SW	Collector	Light mineral deposits and infiltration weeper through pipe wall	320.9	TV-313	Light	\$11,010	2010	Mineral Deposits; Infiltration	3	N/A
											Total	\$114,000	9			
	129	5-179-103	TV Inspection	5-179	5-178	186th Pl W	Residential	Heavy mineral deposits in lateral	103 ft	TV-141	Heavy	\$11,580	2010	Mineral Deposits	4	N/A
	130	5-179-130	TV Inspection	5-179	5-178	186th Pl W	Residential	Medium circular crack	130 ft	TV-143	Medium	\$11,010	2010	Pipe Crack	4	N/A
	131	5-179-139	TV Inspection	5-179	5-178	186th Pl W	Residential	Medium mineral deposits	139 ft	TV-144	Medium	\$11,010	2010	Mineral Deposits	4	N/A
	132	5-179-166	TV Inspection	5-179	5-178	186th Pl W	Residential	Infiltration in joint-runner- light mineral deposits	166 ft	TV-145	Medium	\$11,010	2010	Mineral Deposits; Infiltration	4	N/A
	133	5-179-227	TV Inspection	5-179	5-178	186th Pl W	Residential	Medium joint offset in pipe	227 ft	TV-146	Medium	\$11,010	2010	Offset Joint	4	N/A
	134	5-179-271	TV Inspection	5-179	5-178	186th Pl W	Residential	Medium spiral crack & light mineral deposits	271 ft	TV-148	Medium	\$11,010	2010	Pipe Crack; Mineral Deposits	4	N/A
	135	5-179-272	TV Inspection	5-179	5-178	186th Pl W	Residential	Medium mineral deposits	272 ft	TV-149	Medium	\$11,010	2010	Mineral Deposits	4	N/A
	136	5-179-57	TV Inspection	5-179	5-178	186th Pl W	Residential	Infiltration weeper in pipe	57 ft	TV-140	Light	\$11,010	2010	Infiltration	4	N/A
	137	5-179-106	TV Inspection	5-179	5-178	186th Pl W	Residential	Light mineral deposits in lateral	106 ft	TV-142	Light	\$11,580	2010	Mineral Deposits	4	N/A
	138	5-179-230	TV Inspection	5-179	5-178	186th Pl W	Residential	Light mineral deposits	230 ft	TV-147	Light	\$11,010	2010	Mineral Deposits	4	N/A
											Total	\$111,240	10			
	139	5-182-6.0	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Heavy mineral deposits with infiltration	6.0	TV-709	Heavy	\$11,010	2010	Mineral Deposits; Infiltration	4	48.7
	140	5-182-11.9	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Heavy mineral deposits	11.9	TV-710	Heavy	\$11,010	2010	Mineral Deposits	4	48.7
	141	5-182-25.3	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Heavy mineral deposits	25.3	TV-714	Heavy	\$11,010	2010	Mineral Deposits	4	48.7
	142	5-182-17.4	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Medium mineral deposits	17.4	TV-711	Medium	\$8,400	2010	Mineral Deposits	4	48.7
	143	5-182-20	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Medium mineral deposits	20.0	TV-712	Medium	\$8,400	2010	Mineral Deposits	4	48.7
	144	5-182-130.6	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Light mineral deposits at pipe segment joint, heavy infiltration	130.6	TV-506	Light	\$11,010	2010	Mineral Deposits; Infiltration	4	N/A
	145	5-182-133.0	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Light mineral deposits at pipe segment joint, light infiltration	133.0	TV-507	Light	\$11,010	2010	Mineral Deposits; Infiltration	4	N/A
	146	5-182-140.5	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Circular crack	140.5	TV-508	Light	\$11,010	2010	Pipe Crack	4	N/A
	147	5-182-141.5	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Light infiltration in downstream manhole	141.5	TV-509	Light	\$2,190	2010	Infiltration	4	N/A
	148	5-182-22.8	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Light mineral deposits	22.8	TV-713	Light	\$11,010	2010	Mineral Deposits	4	48.7
	149	5-182-27.9	TV Inspection	5-182	5-181	49th Pl W & 185th Pl SW	Easement	Light mineral deposits	27.9	TV-715	Light	\$11,010	2010	Mineral Deposits	4	48.7
											Total	\$107,070	11			
	150	5-76-21.7	TV Inspection	5-76	5-77	44th Ave W & 191st St SW	Residential	Infiltration weeper @ lateral joint	21.7	TV-654	Light	\$11,580	2010	Infiltration	3	227.1
	151	5-76-36.9	TV Inspection	5-76	5-77	44th Ave W & 191st St SW	Residential	Capped end- infiltration weeper	36.9	TV-655	Light	\$11,010	2010	Infiltration	3	365.2
	152	5-77-21.2	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Heavy mineral deposits inside lateral	21.2	TV-421	Heavy	\$11,580	2010	Mineral Deposits	3	N/A
	153	5-77-N/A	Smoke Testing	5-77	5-76	4309 191st St. SW, Lynnwood, WA	Residential	Downspout connected to sewer. Cleanout lid cracked (Smoke seen coming from downspout and cleanout).	N/A	M-16	Heavy	\$13,360	2009	Maintenance Issue	3	N/A
	154	5-77-114.8	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Medium mineral deposits @ lateral connection w/ infiltration dripper	114.8	TV-424	Medium	\$11,580	2010	Mineral Deposits; Infiltration	3	N/A
	155	5-77-22.9	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Infiltration stain @ pipe segment joint	22.9	TV-422	Light	\$11,010	2010	Infiltration	3	N/A
	156	5-77-33.5	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Infiltration stain @ lateral connection	33.5	TV-423	Light	\$11,580	2010	Infiltration	3	N/A
	157	5-77-339.4	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Light mineral deposits inside lateral	339.4	TV-425	Light	\$11,580	2010	Mineral Deposits	3	N/A
	158	5-77-397.3	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Infiltration weeper @ pipe segment joint	397.3	TV-426	Light	\$11,010	2010	Infiltration	3	N/A
	159	5-77-397.4	TV Inspection	5-77	5-76	44th Ave W & 191st St SW	Residential	Rat inside manhole	397.4	TV-427	Light	\$0	2010	Rat	3	N/A
											Total	\$104,290	12			
	160	5-188-24.3	TV Inspection	5-188	5-187	185th Pl SW & 46th Pl W	Residential	Heavy mineral deposits	24.3	TV-692	Heavy	\$11,010	2010	Mineral Deposits	4	4.0
	161	5-188-7.0	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Offset pipe within side sewer; mineral deposits at connection to main	7.0	TV-607	Medium	\$11,580	2010	Offset Joint; Mineral Deposits	4	N/A
	162	5-188-298.1	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Joint separation and root intrusion	298.1	TV-614	Medium	\$11,010	2010	Joint Separation; Roots	4	N/A
	163	5-188-13	TV Inspection	5-188	5-187	185th Pl SW & 46th Pl W	Residential	Root ball in lateral	13.0	TV-696	Medium	\$1,400	2010	Roots	4	200.7
	164	5-188-15.6	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Joint infiltration with mineral deposits	15.6	TV-608	Light	\$11,010	2010	Infiltration; Mineral Deposits	4	N/A
	165	5-188-84.7	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	11 ft sag	84.7	TV-609	Light	\$16,030	2010	Sag	4	N/A
	166	5-188-184.3	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Root intrusion within joint	184.3	TV-610	Light	\$1,400	2010	Roots	4	N/A
	167	5-188-201.0	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Root intrusion at connection	201.0	TV-611	Light	\$1,400	2010	Roots	4	N/A
	168	5-188-201.0	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Root intrusion within joint	201.0	TV-612	Light	\$1,400	2010	Roots	4	N/A
	169	5-188-273.1	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Joint infiltration with mineral deposits	273.1	TV-613	Light	\$11,010	2010	Infiltration; Mineral Deposits	4	N/A
	170	5-188-299.3	TV Inspection	5-188	5-187	46th Pl W & 185th Pl SW	Residential	Circular crack and visible soil	299.3	TV-615	Light	\$11,010	2010	Pipe Crack; Visible Soil	4	N/A
	171	5-188-0.5	TV Inspection	5-188	5-187	185th Pl SW & 46th Pl W	Residential	Roots in joint in lateral	0.5	TV-693	Light	\$1,400	2010	Roots	4	200.7
	172	5-188-4.0	TV Inspection	5-188	5-187	185th Pl SW & 46th Pl W	Residential	Roots in joint in lateral	4.0	TV-694	Light	\$1,400	2010	Roots	4	200.7
	173	5-188-6.2	TV Inspection	5-188	5-187	185th Pl SW & 46th Pl W	Residential	Roots in joint in lateral	6.2	TV-695	Light	\$1,400	2010	Roots	4	200.7
											Total	\$92,460	13			
Nine	174	5-42-176.7	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Large hole in top of pipe- top of pipe caved in- mineral deposits and light infiltration through hole	176.7	TV-266	Heavy		2010	Pipe Hole; Mineral Deposits; Infiltration	3	N/A
	175	5-42-250.1	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Large circular crack	250.1	TV-267	Medium		2010	Pipe Crack	3	N/A
	176	5-42-16.1	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Medium circular crack and light mineral deposits @ lateral connection	16.1	TV-263	Light		2010	Pipe Crack; Mineral Deposits	3	N/A
	177	5-42-67.9	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Light mineral deposits and light infiltration @ lateral joint	67.9	TV-264	Light		2010	Mineral Deposits; Infiltration	3	N/A
	178	5-42-124.8	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Medium mineral deposits and infiltration dripper @ lateral joint	124.8	TV-265	Light		2010	Mineral Deposits; Infiltration	3	N/A
	179	5-42-250.2	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Infiltration dripper through crack- pipe is heavily stained from infiltration	250.2	TV-268	Light		2010	Infiltration	3	N/A
180	5-42-319.5	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Light mineral deposits	319.5	TV-269	Light		2010	Mineral Deposits	3	N/A	

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	181	5-42-331.5	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Light mineral deposits and infiltration @ lateral joint	331.5	TV-270	Light		2010	Mineral Deposits; Infiltration	3	N/A
	182	5-42-347.9	TV Inspection	5-42	5-41.1	47th Ave W & 188th St SW	Residential	Infiltration dripper @ lateral joint	347.9	TV-271	Light		2010	Infiltration	3	N/A
Nine	183	5-76-26.0	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Heavy broken joint- visible soil- large offset joint in lateral	26.0	TV-658	Heavy		2010	Broken Joint; Visible Soil; Offset Joint	3	29.3
	184	5-76-14.7	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	14.7	TV-428	Light		2010	Mineral Deposits; Infiltration	3	N/A
	185	5-76-39.0	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration stain @ pipe segment joint	39.0	TV-429	Light		2010	Mineral Deposits; Infiltration	3	N/A
	186	5-76-43.0	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Infiltration stain @ pipe segment joint	43.0	TV-430	Light		2010	Infiltration	3	N/A
	187	5-76-51.2	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Light mineral deposits @ pipe segment joint	51.2	TV-431	Light		2010	Mineral Deposits	3	N/A
	188	5-76-59.5	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration weeper @ pipe segment joint	59.5	TV-432	Light		2010	Mineral Deposits; Infiltration	3	N/A
	189	5-76-67.5	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Infiltration weeper @ pipe segment joint	67.5	TV-433	Light		2010	Infiltration	3	N/A
	190	5-76-102.7	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Infiltration weeper @ lateral connection	102.7	TV-434	Light		2010	Infiltration	3	N/A
	191	5-76-205.5	TV Inspection	5-76	5-46.1	44th Ave W & 191st St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	205.5	TV-435	Light		2010	Mineral Deposits; Infiltration	3	N/A
	192	3-90-74	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Medium infiltration @ joint- medium mineral deposits @ joint & pipe segment joint- pipe segment joint is broken- severe infiltration @ main pipe segment joint	74 ft	TV-42	Severe		2010	Mineral Deposits; Infiltration	4	N/A
	193	3-90-175	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Heavy infiltration in lateral- heavy mineral deposits in lateral	175 ft	TV-43	Heavy		2010	Mineral Deposits; Infiltration	4	N/A
	194	3-90-323	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Water level in pipe is more than half full	323 ft	TV-46	Heavy		2010	Pipe Flow	4	N/A
	195	3-90-296	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Main pipe segment deflection @ joint	296 ft	TV-44	Medium		2010	Offset Joint	4	N/A
	196	3-90-N/A	Smoke Testing	3-90	3-89	5215 193rd Pl SW, Lynnwood, WA	Residential/ Easement	Smoke emanating from crack in concrete patch. (Possibly cracked sewer pipe)	N/A	S-31	Medium		1992	Infiltration / Inflow	4	N/A
	197	3-90-4	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Light mineral deposits & medium infiltration @ lateral joint	4 ft	TV-40	Light		2010	Mineral Deposits; Infiltration	4	N/A
	198	3-90-6	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Light infiltration @ pipe segment joint	6 ft	TV-41	Light		2010	Infiltration	4	N/A
	199	3-90-320	TV Inspection	3-90	3-89	193rd Pl SW	Residential/ Easement	Water level in pipe is more than a quarter full	320 ft	TV-45	Light		2010	Pipe Flow	4	N/A
	200	3-90-N/A	Smoke Testing	3-90	3-89	5317 193rd Pl SW, Lynnwood, WA	Residential/ Easement	Leaky cleanout inside of water meter box.	N/A	S-33	Light		1992	Maintenance Issue	4	N/A
	201	5-28-399.7	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Heavy infiltration- infiltration in several locations inside manhole	399.7	TV-323	Heavy		2010	Infiltration	3	N/A
	202	5-28-35.1	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration dripper @ pipe segment joint	35.1	TV-315	Light		2010	Infiltration	3	N/A
	203	5-28-43	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration dripper @ pipe segment joint	43.0	TV-316	Light		2010	Infiltration	3	N/A
	204	5-28-53.3	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Light mineral deposits and infiltration dripper @ lateral joint	53.3	TV-317	Light		2010	Mineral Deposits; Infiltration	3	N/A
	205	5-28-161.3	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	161.3	TV-318	Light		2010	Infiltration	3	N/A
	206	5-28-259.4	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration dripper @ pipe segment joint	259.4	TV-319	Light		2010	Infiltration	3	N/A
	207	5-28-279.9	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration dripper @ pipe segment joint	279.9	TV-320	Light		2010	Infiltration	3	N/A
	208	5-28-312.6	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration dripper and stain @ pipe segment joint	312.6	TV-321	Light		2010	Infiltration	3	N/A
	209	5-28-341.3	TV Inspection	5-28	5-29	46th Ave W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	341.3	TV-322	Light		2010	Infiltration	3	N/A
	210	3-70.1-222	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Heavy root problem in lateral	222 ft	TV-55	Heavy		2010	Roots	4	N/A
	211	3-70.1-27	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Offset joint @ pipe material change (medium)	27 ft	TV-50	Medium		2010	Offset Joint	4	N/A
	212	3-70.1-239	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Large circular crack	239 ft	TV-57	Medium		2010	Pipe Crack	4	N/A
	213	3-70.1-N/A	Smoke Testing	3-70.1	3-68	5824 196th St SW, Lynnwood, WA (Jo-Ann Fabric)	Residential	Malfunctioning sewer connection (smoke seen coming from under concrete slab on southwest corner of Jo-Ann Fabric).	N/A	S-25	Medium		2009	Infiltration / Inflow	4	N/A
	214	3-70.1-65	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Light material damage- pipe corrosion	65 ft	TV-51	Light		2010	Pipe Corrosion	4	N/A
	215	3-70.1-144	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Light roots in pipe segment joint	144 ft	TV-52	Light		2010	Roots	4	N/A
	216	3-70.1-196	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Light roots in pipe segment joint	196 ft	TV-53	Light		2010	Roots	4	N/A
	217	3-70.1-219	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Light roots in pipe segment joint	219 ft	TV-54	Light		2010	Roots	4	N/A
	218	3-70.1-234	TV Inspection	3-70.1	3-68	Scriber Lake Road	Sidewalk	Light roots in pipe segment joint	234 ft	TV-56	Light		2010	Roots	4	N/A
	219	5-135-213	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	65 ft sag	213.0	TV-532	Medium		2010	Sag	4	N/A
	220	5-135-297.6	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	9 ft sag	297.6	TV-534	Medium		2010	Sag	4	N/A
	221	5-135-101.4	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	Light mineral deposits at lateral connection	101.4	TV-528	Light		2010	Mineral Deposits	4	N/A
	222	5-135-119.6	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	Light infiltration at pipe segment joint	119.6	TV-529	Light		2010	Infiltration	4	N/A
	223	5-135-136.0	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	Light infiltration at pipe segment joint	136.0	TV-530	Light		2010	Infiltration	4	N/A
	224	5-135-196.0	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	9 ft sag	196.0	TV-531	Light		2010	Sag	4	N/A
	225	5-135-285.6	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	12 ft sag	285.6	TV-533	Light		2010	Sag	4	N/A
	226	5-135-320.0	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	18 ft sag	320.0	TV-535	Light		2010	Sag	4	N/A
	227	5-135-338.4	TV Inspection	5-135	5-134	52nd Ave W & 189th St SW	Collector	9 ft sag	338.4	TV-536	Light		2010	Sag	4	N/A
	228	5-184-64.1	TV Inspection	5-184	5-183	49th Pl W & 185th Pl SW	Residential	Large circular and lateral crack	64.1	TV-627	Medium		2010	Pipe Crack	4	N/A
	229	5-184-18.8	TV Inspection	5-184	5-183	185th Pl SW & 49th Pl W	Residential	Medium mineral deposits	18.8	TV-706	Medium		2010	Mineral Deposits	4	249.6
	230	5-184-114.7	TV Inspection	5-184	5-183	49th Pl W & 185th Pl SW	Residential	Light mineral deposits at connection	114.7	TV-628	Light		2010	Mineral Deposits	4	N/A
	231	5-184-138.2	TV Inspection	5-184	5-183	49th Pl W & 185th Pl SW	Residential	Staining, light mineral deposits	138.2	TV-629	Light		2010	Mineral Deposits	4	N/A
	232	5-184-248.9	TV Inspection	5-184	5-183	49th Pl W & 185th Pl SW	Residential	Mineral deposits with infiltration at connection	248.9	TV-630	Light		2010	Mineral Deposits; Infiltration	4	N/A
	233	5-184-13.6	TV Inspection	5-184	5-183	185th Pl SW & 49th Pl W	Residential	Broken joint with infiltration	13.6	TV-702	Light		2010	Broken Pipe	4	46.5
	234	5-184-16.4	TV Inspection	5-184	5-183	185th Pl SW & 49th Pl W	Residential	Joint infiltration	16.4	TV-703	Light		2010	Infiltration	4	115.1
	235	5-184-24.2	TV Inspection	5-184	5-183	185th Pl SW & 49th Pl W	Residential	Joint infiltration	24.2	TV-704	Light		2010	Infiltration	4	115.1
	236	5-184-5.4	TV Inspection	5-184	5-183	185th Pl SW & 49th Pl W	Residential	Light mineral deposits	5.4	TV-705	Light		2010	Mineral Deposits	4	249.6
Eight	237	3-70-0	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	Heavy infiltration in manhole	0 ft	TV-58	Heavy		2010	Infiltration	4	N/A
	238	3-70-90	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	Heavy root problem in lateral	90 ft	TV-62	Heavy		2010	Roots	4	N/A
	239	3-70-91	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	Large circular crack in pipe	91 ft	TV-63	Medium		2010	Pipe Crack	4	N/A
	240	3-70-38	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	Light root problem in pipe segment joint	38 ft	TV-59	Light		2010	Roots	4	N/A
	241	3-70-51	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	Small hole in pipe	51 ft	TV-60	Light		2010	Pipe Corrosion	4	N/A
	242	3-70-70	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	Light to medium roots in pipe segment joint	70 ft	TV-61	Light		2010	Roots	4	N/A
	243	3-70-107	TV Inspection	3-70	3-70.1	Scriber Lake Road	Sidewalk	10 ft sag in pipe	107 ft	TV-64	Light		2010	Sag	4	N/A
	244	3-70-N/A	Manhole Inspection	3-70	3-70	Scriber Lake Rd & 196th St SW	Residential	Roots in manhole riser section	N/A	M-5	Light		2010	Roots	4	N/A
	245	5-10-398	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Pipe 1/2 Full- sag continues- medium offset joint in pipe	398.0	TV-180	Medium		2010	Sag; Offset Joint	3	N/A
	246	5-10-156.9	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Infiltration weeper @ lateral connection joint	156.9	TV-174	Light		2010	Infiltration	3	N/A
	247	5-10-252.1	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Infiltration stain @ pipe segment joint	252.1	TV-175	Light		2010	Infiltration	3	N/A
	248	5-10-301.2	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Infiltration stain @ pipe segment joint	301.2	TV-176	Light		2010	Infiltration	3	N/A
	249	5-10-305	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Infiltration weeper @ pipe segment joint	305.0	TV-177	Light		2010	Infiltration	3	N/A

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	250	5-10-317	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Infiltration stain @ pipe segment joint	317.0	TV-178	Light		2010	Infiltration	3	N/A
	251	5-10-394.3	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Sag Begins	394.3	TV-179	Light		2010	Infiltration	3	N/A
	252	5-10-400.8	TV Inspection	5-10	5-9	48th Ave W & 194th St SW	Residential	Medium joint separation @ pipe segment joint	400.8	TV-181	Light		2010	Offset joint	3	N/A
Eight	253	5-25-10.7	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Heavy mineral deposits and light infiltration through lateral joint- joint may be offset or cracked- deposits severely blocking flow	10.7	TV-213	Heavy		2010	Mineral Deposits; Infiltration; Offset Joint	3	N/A
	254	5-25-127.9	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Heavy mineral deposits and light infiltration through lateral joint	127.9	TV-215	Heavy		2010	Mineral Deposits; Infiltration	3	N/A
	255	5-25-315	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Medium mineral deposits in lateral	315.0	TV-219	Medium		2010	Mineral Deposits	3	N/A
	256	5-25-126	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Light infiltration and stain through pipe segment joint	126.0	TV-214	Light		2010	Infiltration	3	N/A
	257	5-25-195.1	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	195.1	TV-216	Light		2010	Infiltration; Mineral Deposits	3	N/A
	258	5-25-252	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	252.0	TV-217	Light		2010	Infiltration; Mineral Deposits	3	N/A
	259	5-25-309.1	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Light infiltration @ pipe segment joint	309.1	TV-218	Light		2010	Infiltration	3	N/A
	260	5-25-377.5	TV Inspection	5-25	5-24	46th Ave W & 192nd St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	377.5	TV-220	Light		2010	Infiltration; Mineral Deposits	3	N/A
	261	5-146-148	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Heavy mineral deposits in lateral- light infiltration @ lateral joint	148 ft	TV-101	Heavy		2010	Mineral Deposits; Infiltration	4	N/A
	262	5-146-47	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Infiltration in joint- infiltration stain	47 ft	TV-94	Light		2010	Infiltration	4	N/A
	263	5-146-51	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Infiltration in joint- infiltration stain	51 ft	TV-95	Light		2010	Infiltration	4	N/A
	264	5-146-63	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Infiltration dripper @ joint	63 ft	TV-96	Light		2010	Infiltration	4	N/A
	265	5-146-77	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Light infiltration @ lateral joint- medium mineral deposits	77 ft	TV-97	Light		2010	Mineral Deposits; Infiltration	4	N/A
	266	5-146-121	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Infiltration in joint- infiltration stain	121 ft	TV-98	Light		2010	Infiltration	4	N/A
	267	5-146-125	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Infiltration in joint- infiltration stain	125 ft	TV-99	Light		2010	Infiltration	4	N/A
	268	5-146-141	TV Inspection	5-146	5-143.1	192nd St SW	Residential	Infiltration stain @ joint	141 ft	TV-100	Light		2010	Infiltration	4	N/A
	269	5-77.1-21.4	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Large separated joint	21.4	TV-666	Heavy		2010	Separated Joint	3	30.1
	270	5-77.1-21.4	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Visible soil through joint separation- infiltration runner	21.4	TV-667	Heavy		2010	Visible Soil; Infiltration	3	30.1
	271	5-77.1-21.4	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Survey abandoned	21.4	TV-668	Heavy		2010	Abandoned Survey	3	30.1
	272	5-77.1-30.5	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Medium mineral deposits @ lateral connection	30.5	TV-416	Medium		2010	Mineral Deposits	3	N/A
	273	5-77.1-50.6	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Infiltration weeper @ lateral connection	50.6	TV-417	Light		2010	Infiltration	3	N/A
	274	5-77.1-163.1	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Infiltration stain @ pipe segment joint	163.1	TV-418	Light		2010	Infiltration	3	N/A
	275	5-77.1-166.9	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Infiltration dripper @ pipe segment joint	166.9	TV-419	Light		2010	Infiltration	3	N/A
	276	5-77.1-203.1	TV Inspection	5-77.1	5-77	44th Ave W & 191st St SW	Residential	Infiltration dripper @ pipe segment joint	203.1	TV-420	Light		2010	Infiltration	3	N/A
Seven	277	5-79-20.7	TV Inspection	5-79	5-49	44th Ave W & 189th PI SW	Residential	Light mineral deposits and infiltration runner in joint	20.7	TV-410	Medium		2010	Mineral Deposits; Infiltration	3	N/A
	278	5-79-N/A	Smoke Testing	5-79	5-49	4326 189th PI SW, Lynnwood, WA	Residential	Malfunctioning sewer connection (smoke seen coming from hole on the west side of the foundation in the flower bed).	N/A	M-17	Medium		2009	Infiltration / Inflow	3	N/A
	279	5-79-15.0	TV Inspection	5-79	5-49	44th Ave W & 189th PI SW	Residential	Old repair- infiltration dripper in pipe	15.0	TV-409	Light		2010	Infiltration	3	N/A
	280	5-79-57.6	TV Inspection	5-79	5-49	44th Ave W & 189th PI SW	Residential	Infiltration dripper @ joint	57.6	TV-411	Light		2010	Infiltration	3	N/A
	281	5-79-102.5	TV Inspection	5-79	5-49	44th Ave W & 189th PI SW	Residential	Infiltration weeper @ pipe segment joint	102.5	TV-412	Light		2010	Infiltration	3	N/A
	282	5-79-122.9	TV Inspection	5-79	5-49	44th Ave W & 189th PI SW	Residential	Left joint deflection- medium joint separation	122.9	TV-413	Light		2010	Offset Joint; Joint Separation	3	N/A
	283	5-79-N/A	Manhole Inspection	5-79	5-79	189th PI SW & 44th Ave W	Residential	Steady, clear flow through manhole; deposits on bench- may be from surcharge event	N/A	S-5	Light		2010	Mineral Deposits	3	N/A
	284	3-14-48	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	Heavy mineral deposits @ inside of joint; medium infiltration	48 ft	TV-3	Heavy		2010	Mineral Deposits; Infiltration	4	N/A
	285	3-14-67	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	Medium circular crack; light infiltration	67 ft	TV-4	Medium		2010	Pipe Crack; Infiltration	4	N/A
	286	3-14-97	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	30 ft sag in pipe	97 ft	TV-5	Medium		2010	Sag	4	N/A
	287	3-14-174	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	30 ft sag in pipe	174 ft	TV-6	Medium		2010	Sag	4	N/A
	288	3-14-10	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	Light mineral deposits @ inside of joint; medium infiltration	10 ft	TV-2	Light		2010	Mineral Deposits; Infiltration	4	N/A
	289	3-14-205	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	Light infiltration and mineral deposits	205 ft	TV-7	Light		2010	Mineral Deposits; Infiltration	4	N/A
	290	3-14-223	TV Inspection	3-14	3-15	53rd Ave W & 200th St SW	Residential	Light infiltration @ joint	223 ft	TV-8	Light		2010	Infiltration	4	N/A
	291	3-118-2.1	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Circular crack and light infiltration through crack	2.1	TV-469	Light		2010	Pipe Crack; Infiltration	4	N/A
	292	3-118-26.8	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Light mineral deposits around lateral at lateral connection	26.8	TV-470	Light		2010	Mineral Deposits	4	N/A
	293	3-118-142.7	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Light mineral deposits and infiltration at lateral joint	142.7	TV-471	Light		2010	Mineral Deposits; Infiltration	4	N/A
	294	3-118-203	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Severely broken pipe, soil visible, circular and longitudinal cracks, pipe bottom is corroding with voids visible	203.0	TV-472	Heavy		2010	Broken Pipe; Visible Soil; Pipe Crack	4	N/A
	295	3-118-294.3	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Hole in pipe with light mineral deposits and infiltration	294.3	TV-473	Medium		2010	Pipe Hole; Mineral Deposits; Infiltration	4	N/A
	296	3-118-294.9	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Hole in pipe with light mineral deposits and infiltration	294.9	TV-474	Medium		2010	Infiltration	4	N/A
	297	3-118-395	TV Inspection	3-118	3-117	188th St SW & 55th Ave W	Collector	Pipe flowing approximately full	395.0	TV-475	Medium		2010	Pipe Flow	4	N/A
	298	5-116-21.5	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	Heavy flows- 60 ft section	21.5	TV-495	Medium		2010	Pipe Flow	4	N/A
	299	5-116-107.2	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	90 ft sag	107.2	TV-496	Medium		2010	Sag	4	N/A
	300	5-116-196.5	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	Circular crack- pipe flowing approximately half-full	196.5	TV-499	Medium		2010	Pipe Crack; Pipe Flow	4	N/A
	301	5-116-12.3	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	Light mineral deposits	12.3	TV-494	Light		2010	Mineral Deposits	4	N/A
	302	5-116-120.0	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	Light mineral deposits at joint	120.0	TV-497	Light		2010	Mineral Deposits	4	N/A
	303	5-116-181.6	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	Light mineral deposits at joint	181.6	TV-498	Light		2010	Mineral Deposits	4	N/A
	304	5-116-198.6	TV Inspection	5-116	5-117	50th Ave W & 196th St SW	Collector	Light infiltration through top of manhole	198.6	TV-500	Light		2010	Infiltration	4	N/A
	305	5-185-74.5	TV Inspection	5-185	5-184	48th Ave W & 185th PI SW	Residential	Heavy mineral deposits; possible pipe offset	74.5	TV-626	Heavy		2010	Mineral Deposits; Offset Joint	4	N/A
	306	5-185-24.3	TV Inspection	5-185	5-184	185th PI SW & 48th Ave W	Residential	Medium mineral deposits	24.3	TV-701	Medium		2010	Mineral Deposits	4	249.7
	307	5-185-39.0	TV Inspection	5-185	5-184	48th Ave W & 185th PI SW	Residential	Joint infiltration	39.0	TV-625	Light		2010	Infiltration	4	N/A
	308	5-185-0.0	TV Inspection	5-185	5-184	185th PI SW & 48th Ave W	Residential	Mineral deposits @ joint	0.0	TV-697	Light		2010	Mineral Deposits	4	74.5
	309	5-185-3.9	TV Inspection	5-185	5-184	185th PI SW & 48th Ave W	Residential	Joint infiltration	3.9	TV-698	Light		2010	Infiltration	4	74.5
	310	5-185-21.8	TV Inspection	5-185	5-184	185th PI SW & 48th Ave W	Residential	Joint infiltration	21.8	TV-699	Light		2010	Infiltration	4	74.5
	311	5-185-21.6	TV Inspection	5-185	5-184	185th PI SW & 48th Ave W	Residential	Joint infiltration	21.6	TV-700	Light		2010	Infiltration	4	249.7
Six	312	5-71-0	TV Inspection	5-71	5-68	40th Ave W & 192nd St SW	Easement	Heavy infiltration in upstream manhole	0.0	TV-441	Heavy		2010	Infiltration	3	N/A
	313	5-71-326.7	TV Inspection	5-71	5-68	40th Ave W & 192nd St SW	Easement	Infiltration weeper and medium mineral deposits inside lateral	326.7	TV-443	Medium		2010	Infiltration; Mineral Deposits	3	N/A
	314	5-71-352.1	TV Inspection	5-71	5-68	40th Ave W & 192nd St SW	Easement	Medium infiltration in downstream manhole	352.1	TV-444	Medium		2010	Infiltration	3	N/A
	315	5-71-62.5	TV Inspection	5-71	5-68	40th Ave W & 192nd St SW	Easement	Infiltration weeper and light stain in pipe- small, longitudinal crack	62.5	TV-442	Light		2010	Infiltration; Pipe Crack	3	N/A
	316	5-71-0.0	TV Inspection	5-71	5-68	44th Ave W & 192nd St SW	Easement	Light mineral deposits @ lateral joint	0.0	TV-661	Light		2010	Mineral Deposits	3	326.6

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	317	5-71-6.6	TV Inspection	5-71	5-68	44th Ave W & 192nd St SW	Easement	Light mineral deposits & light infiltration	6.6	TV-662	Light		2010	Mineral Deposits; Infiltration	3	326.6
	318	5-87-69.6	TV Inspection	5-87	5-79	43rd PI W & 188th PI SW	Easement	Infiltration runner @ pipe segment joint	69.6	TV-403	Heavy		2010	Infiltration	3	N/A
	319	5-87-77.9	TV Inspection	5-87	5-79	43rd PI W & 188th PI SW	Easement	crack	77.9	TV-404	Light		2010	Pipe Crack; Infiltration	3	N/A
	320	5-87-98.7	TV Inspection	5-87	5-79	43rd PI W & 188th PI SW	Easement	Light mineral deposits and infiltration @ pipe segment joint	98.7	TV-405	Light		2010	Mineral Deposits; Infiltration	3	N/A
Six	321	5-87-169.3	TV Inspection	5-87	5-79	43rd PI W & 188th PI SW	Easement	14 ft Sag	169.3	TV-406	Light		2010	Sag	3	N/A
	322	5-87-172.0	TV Inspection	5-87	5-79	43rd PI W & 188th PI SW	Easement	Medium joint separation- light infiltration- pipe flowing 1/3 full	172.0	TV-407	Light		2010	Joint Separation; Infiltration	3	N/A
	323	5-87-233.4	TV Inspection	5-87	5-79	43rd PI W & 188th PI SW	Easement	Light mineral deposits and infiltration @ pipe segment joint	233.4	TV-408	Light		2010	Mineral Deposits; Infiltration	3	N/A
	324	3-97-417	TV Inspection	3-97	3-96	191st St SW	Residential	Heavy break in pipe- medium infiltration	417 ft	TV-131	Heavy		2010	Broken Pipe; Infiltration	4	N/A
	325	3-97-N/A	Smoke Testing	3-97	3-96	5230 190th St SW, Lynnwood, WA	Residential	Downspout connected to sanitary sewer.	N/A	M-7	Heavy		1992	Maintenance Issue	4	N/A
	326	3-97-69	TV Inspection	3-97	3-96	191st St SW	Residential	Large circular crack- severe infiltration through pipe crack	69 ft	TV-127	Medium		2010	Pipe Crack; Infiltration	4	N/A
	327	3-97-124	TV Inspection	3-97	3-96	191st St SW	Residential	Offset joint in pipe	124 ft	TV-128	Light		2010	Offset Joint	4	N/A
	328	3-97-140	TV Inspection	3-97	3-96	191st St SW	Residential	Offset joint in pipe- joint deflected down	140 ft	TV-129	Light		2010	Offset Joint	4	N/A
	329	3-97-276	TV Inspection	3-97	3-96	191st St SW	Residential	Light infiltration @ lateral joint	276 ft	TV-130	Light		2010	Infiltration	4	N/A
	330	5-28-24.1	TV Inspection	5-28	5-26	46th Ave W & 191st St SW	Residential	Medium mineral deposits @ lateral joint and light infiltration	24.1	TV-190	Light		2010	Mineral Deposits; Infiltration	3	N/A
	331	5-28-66.4	TV Inspection	5-28	5-26	46th Ave W & 191st St SW	Residential	Infiltration dripper @ pipe segment joint- light infiltration stain	66.4	TV-191	Light		2010	Infiltration	3	N/A
	332	5-28-117.9	TV Inspection	5-28	5-26	46th Ave W & 191st St SW	Residential	Light infiltration in pipe- no visible crack and not located @ pipe segment joint	117.9	TV-192	Light		2010	Infiltration	3	N/A
	333	5-28-153.5	TV Inspection	5-28	5-26	46th Ave W & 191st St SW	Residential	Infiltration dripper and light mineral deposits @ lateral joint	153.5	TV-193	Light		2010	Infiltration; Mineral Deposits	3	N/A
	334	5-28-407.8	TV Inspection	5-28	5-26	46th Ave W & 191st St SW	Residential	Infiltration weeper @ pipe segment joint	407.8	TV-194	Light		2010	Infiltration	3	N/A
	335	5-28-430.2	TV Inspection	5-28	5-26	46th Ave W & 191st St SW	Residential	Medium circular crack	430.2	TV-195	Light		2010	Pipe Crack	3	N/A
	336	3-110-51.6	TV Inspection	3-110	3-109	189th PI SW & 52nd Ave W	Residential	Light infiltration at pipe segment joint	51.6	TV-480	Light		2010	Infiltration	4	N/A
	337	3-110-233.0	TV Inspection	3-110	3-109	189th PI SW & 52nd Ave W	Residential	Light mineral deposits at pipe segment joint	233.0	TV-481	Light		2010	Mineral Deposits	4	N/A
	338	3-110-260.0	TV Inspection	3-110	3-109	189th PI SW & 52nd Ave W	Residential	Light mineral deposits at pipe segment joint	260.0	TV-482	Light		2010	Mineral Deposits	4	N/A
	339	3-110-265.0	TV Inspection	3-110	3-109	189th PI SW & 52nd Ave W	Residential	Light mineral deposits at pipe segment joint	265.0	TV-483	Light		2010	Mineral Deposits	4	N/A
	340	3-110-296.4	TV Inspection	3-110	3-109	189th PI SW & 52nd Ave W	Residential	Light mineral deposits at pipe segment joint	296.4	TV-484	Light		2010	Mineral Deposits	4	N/A
	341	3-110-160	TV Inspection	3-110	3-109	189th PI SW & 52nd Ave W	Residential	Light mineral deposits at pipe segment joint	160 to 360	TV-485	Light		2010	Mineral Deposits	4	N/A
	342	5-134-27.6	TV Inspection	5-134	5-133	52nd Ave W & 189th St SW	Collector	8 ft sag	27.6	TV-537	Light		2010	Sag	4	N/A
	343	5-134-43.9	TV Inspection	5-134	5-133	52nd Ave W & 189th St SW	Collector	8 ft sag	43.9	TV-538	Light		2010	Sag	4	N/A
	344	5-134-133.2	TV Inspection	5-134	5-133	52nd Ave W & 189th St SW	Collector	8 ft sag	133.2	TV-539	Light		2010	Sag	4	N/A
	345	5-134-231.7	TV Inspection	5-134	5-133	52nd Ave W & 189th St SW	Collector	Joint separation and infiltration weeper	231.7	TV-540	Light		2010	Joint Separation; Infiltration	4	N/A
	346	5-134-263.5	TV Inspection	5-134	5-133	52nd Ave W & 189th St SW	Collector	8 ft sag	263.5	TV-541	Light		2010	Sag	4	N/A
	347	5-134-271.5	TV Inspection	5-134	5-133	52nd Ave W & 189th St SW	Collector	9 ft sag	271.5	TV-542	Light		2010	Sag	4	N/A
	348	5-191-3.0	TV Inspection	5-191	5-190	47th PI W & 183rd PI SW	Easement	Circular crack, heavy mineral deposits, visible infiltration	3.0	TV-588	Heavy		2010	Pipe Crack; Mineral Deposits; Infiltration	4	N/A
	349	5-191-1.0	TV Inspection	5-191	5-190	183rd PI SW & 47th PI W	Easement	Heavy mineral deposits in lateral	1.0	TV-685	Heavy		2010	Mineral Deposits	4	107.8
	350	5-191-12.8	TV Inspection	5-191	5-190	183rd PI SW & 47th PI W	Easement	Large offset joint, soil visible through offset.	12.8	TV-687	Medium		2010	Offset Joint; Visible Soil	4	82.0
	351	5-191-43.9	TV Inspection	5-191	5-190	47th PI W & 183rd PI SW	Easement	Infiltration at bend in side sewer	43.9	TV-589	Light		2010	Infiltration	4	N/A
	352	5-191-10.0	TV Inspection	5-191	5-190	183rd PI SW & 47th PI W	Easement	Roots in lateral @ joint	10.0	TV-684	Light		2010	Roots	4	45.7
	353	5-191-11.6	TV Inspection	5-191	5-190	183rd PI SW & 47th PI W	Easement	Roots in joint	11.6	TV-686	Light		2010	Roots	4	82.0
	354	5-195-250.2	TV Inspection	5-195	5-193	46th PI W & 183rd PI SW	Residential	Severely broken pipe, soil visible, chunks of pipe missing, infiltration visible, void space behind pipe visible	250.2	TV-583	Heavy		2010	Broken Pipe; Visible Soil; Infiltration	4	N/A
	355	5-195-16.1	TV Inspection	5-195	5-193	46th PI W & 183rd PI SW	Residential	Root ball in lateral	16.1	TV-677	Medium		2010	Roots	4	89.7
	356	5-195-89.6	TV Inspection	5-195	5-193	46th PI W & 183rd PI SW	Residential	6 ft sag	89.6	TV-580	Light		2010	Sag	4	N/A
	357	5-195-95.7	TV Inspection	5-195	5-193	46th PI W & 183rd PI SW	Residential	5 ft sag	95.7	TV-581	Light		2010	Sag	4	N/A
	358	5-195-186.4	TV Inspection	5-195	5-193	46th PI W & 183rd PI SW	Residential	7 ft sag	186.4	TV-582	Light		2010	Sag	4	N/A
	359	5-195-13.9	TV Inspection	5-195	5-193	46th PI W & 183rd PI SW	Residential	Roots in lateral	13.9	TV-676	Light		2010	Roots	4	89.7
Five	360	5-87-125	TV Inspection	5-87	C-24	43rd PI W & 188th St SW	Residential	Heavy rock debris in pipe- appears to be close to cleanout- survey abandoned	125.0	TV-375	Heavy		2010	Debris	3	N/A
	361	5-87-8.5	TV Inspection	5-87	C-24	43rd PI W & 188th St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	8.5	TV-371	Light		2010	Infiltration; Mineral Deposits	3	N/A
	362	5-87-12.5	TV Inspection	5-87	C-24	43rd PI W & 188th St SW	Residential	Light infiltration @ pipe segment joint	12.5	TV-372	Light		2010	Infiltration	3	N/A
	363	5-87-49.5	TV Inspection	5-87	C-24	43rd PI W & 188th St SW	Residential	Light infiltration @ pipe segment joint	49.5	TV-373	Light		2010	Infiltration	3	N/A
	364	5-87-120.8	TV Inspection	5-87	C-24	43rd PI W & 188th St SW	Residential	Light infiltration @ pipe segment joint	120.8	TV-374	Light		2010	Infiltration	3	N/A
	365	3-96-16	TV Inspection	3-96	3-95	191st St SW	Residential	Light soil infiltration @ pipe segment joint	16 ft	TV-32	Light		2010	Infiltration	4	N/A
	366	3-96-38	TV Inspection	3-96	3-95	191st St SW	Residential	Light infiltration in pipe- light mineral deposits	38 ft	TV-33	Light		2010	Mineral Deposits; Infiltration	4	N/A
	367	3-96-120	TV Inspection	3-96	3-95	191st St SW	Residential	Light infiltration @ lateral joint	120 ft	TV-34	Light		2010	Infiltration	4	N/A
	368	3-96-169	TV Inspection	3-96	3-95	191st St SW	Residential	Light infiltration @ lateral joint & in lateral	169 ft	TV-35	Light		2010	Infiltration	4	N/A
	369	3-96-305	TV Inspection	3-96	3-95	191st St SW	Residential	Light infiltration in pipe	305 ft	TV-36	Light		2010	Infiltration	4	N/A
	370	5-11-179.4	TV Inspection	5-11	5-12	48th Ave W & 192nd St SW	Residential	Heavy mineral deposits in lateral flow channel	179.4	TV-257	Heavy		2010	Mineral Deposits	3	N/A
	371	5-11-1.7	TV Inspection	5-11	5-12	48th Ave W & 192nd St SW	Residential	Infiltration weeper and light mineral deposits	1.7	TV-255	Light		2010	Infiltration; Mineral Deposits	3	N/A
	372	5-11-141.1	TV Inspection	5-11	5-12	48th Ave W & 192nd St SW	Residential	Infiltration stain @ pipe segment joint	141.1	TV-256	Light		2010	Infiltration	3	N/A
	373	5-11-209.6	TV Inspection	5-11	5-12	48th Ave W & 192nd St SW	Residential	Infiltration stain @ pipe segment joint	209.6	TV-258	Light		2010	Infiltration	3	N/A
	374	5-11-306.8	TV Inspection	5-11	5-12	48th Ave W & 192nd St SW	Residential	Infiltration stain @ pipe segment joint	306.8	TV-259	Light		2010	Infiltration	3	N/A
	375	5-30-32.8	TV Inspection	5-30	5-29	46th Ave W & 188th St SW	Residential	Heavy mineral deposits; light infiltration @ top of lateral- appears as though lateral joint may be offset	32.8	TV-299	Heavy		2010	Mineral Deposits; Infiltration; Offset Joint	3	N/A
	376	5-30-109.7	TV Inspection	5-30	5-29	46th Ave W & 188th St SW	Residential	Heavy mineral deposits and infiltration @ lateral joint	109.7	TV-300	Heavy		2010	Mineral Deposits; Infiltration	3	N/A
	377	5-30-356.9	TV Inspection	5-30	5-29	46th Ave W & 188th St SW	Residential	Heavy infiltration	356.9	TV-303	Heavy		2010	Infiltration	3	N/A
	378	5-30-162.6	TV Inspection	5-30	5-29	46th Ave W & 188th St SW	Residential	Infiltration dripper and medium mineral deposits inside lateral	162.6	TV-301	Medium		2010	Infiltration; Mineral Deposits	3	N/A
	379	5-30-273.8	TV Inspection	5-30	5-29	46th Ave W & 188th St SW	Residential	50 ft Sag	273.8	TV-302	Light		2010	Sag	3	N/A
	380	3-118-180.0	TV Inspection	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Debris inside pipe- 8 ft section	180.0	TV-464	Light		2010	Debris	4	N/A
	381	3-118-267.1	TV Inspection	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Infiltration weeper	267.1	TV-465	Light		2010	Infiltration	4	N/A
	382	3-118-271.1	TV Inspection	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Infiltration weeper	271.1	TV-466	Light		2010	Infiltration	4	N/A
	383	3-118-325.4	TV Inspection	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Light infiltration at side sewer joint	325.4	TV-467	Light		2010	Infiltration	4	N/A
	384	3-118-332.1	TV Inspection	3-118	3-118.1	188th St SW & 52nd Ave W	Collector	Light debris in manhole channel	332.1	TV-468	Light		2010	Debris	4	N/A

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	385	5-107-N/A	Smoke Testing	5-107	5-106	18427 42nd Pl. W, Lynnwood, WA	Residential	Malfunctioning sewer connection (smoke seen coming through dirt and around concrete walkway slab.)	N/A	S-18	Medium		2009	Infiltration / Inflow	3	N/A
	386	5-106-85.1	TV Inspection	5-106	5-107	43rd Pl W & 184th Pl SW	Residential	Medium circular crack and infiltration runner through pipe crack	85.1	TV-164	Medium		2010	Pipe Crack; Infiltration	3	N/A
	387	5-106-154.2	TV Inspection	5-106	5-107	43rd Pl W & 184th Pl SW	Residential	Medium circular crack and infiltration weeper in pipe	154.2	TV-165	Light		2010	Pipe Crack; Infiltration	3	N/A
	388	5-106-227.1	TV Inspection	5-106	5-107	43rd Pl W & 184th Pl SW	Residential	Medium circular crack and infiltration weeper in pipe	227.1	TV-166	Light		2010	Pipe Crack; Infiltration	3	N/A
	389	5-106-227.6	TV Inspection	5-106	5-107	43rd Pl W & 184th Pl SW	Residential	Medium longitudinal crack	227.6	TV-167	Light		2010	Pipe Crack	3	N/A
Five	390	5-115-167.6	TV Inspection	5-115	5-116	50th Ave W & 196th St SW	Collector	Heavy mineral deposits at side sewer connection	167.6	TV-502	Heavy		2010	Mineral Deposits	4	N/A
	391	5-115-26.8	TV Inspection	5-115	5-116	50th Ave W & 196th St SW	Collector	Light infiltration	26.8	TV-501	Light		2010	Infiltration	4	N/A
	392	5-115-179.9	TV Inspection	5-115	5-116	50th Ave W & 196th St SW	Collector	Light mineral deposits at side sewer connection.	179.9	TV-503	Light		2010	Mineral Deposits	4	N/A
	393	5-115-285.2	TV Inspection	5-115	5-116	50th Ave W & 196th St SW	Collector	Light mineral deposits at side sewer connection.	285.2	TV-504	Light		2010	Mineral Deposits	4	N/A
	394	5-115-327.5	TV Inspection	5-115	5-116	50th Ave W & 196th St SW	Collector	Light infiltration around manhole rim	327.5	TV-505	Light		2010	Infiltration	4	N/A
	395	5-142.1-1	TV Inspection	5-142.1	5-142	192nd St SW	Residential	Heavy mineral deposits in lateral	1 ft	TV-110	Heavy		2010	Mineral Deposits	4	N/A
	396	5-142.1-37	TV Inspection	5-142.1	5-142	192nd St SW	Residential	Heavy infiltration in downstream manhole	37 ft	TV-113	Heavy		2010	Infiltration	4	N/A
	397	5-142.1-32	TV Inspection	5-142.1	5-142	192nd St SW	Residential	Joint offset in pipe (medium)	32 ft	TV-111	Light		2010	Offset Joint	4	N/A
	398	5-142.1-34	TV Inspection	5-142.1	5-142	192nd St SW	Residential	Medium circular crack and light mineral deposits and infiltration weeper through crack	34 ft	TV-112	Light		2010	Pipe Crack; Mineral Deposits; Infiltration	4	N/A
	399	5-142.1-N/A	Manhole Inspection	5-142.1	5-142.1	192nd St SW (near 49th Pl W)	Residential	Manhole riser sections are wet; mineral deposits on risers	N/A	M-19	Light		2010	Mineral Deposits	4	N/A
	400	5-143.1-27	TV Inspection	5-143.1	5-143	192nd St SW	Residential	Heavy mineral deposits in lateral	27 ft	TV-107	Heavy		2010	Mineral Deposits	4	N/A
	401	5-143.1-13	TV Inspection	5-143.1	5-143	192nd St SW	Residential	Infiltration in joint- infiltration stain	13 ft	TV-104	Light		2010	Infiltration	4	N/A
	402	5-143.1-25	TV Inspection	5-143.1	5-143	192nd St SW	Residential	Infiltration in joint- infiltration stain	25 ft	TV-105	Light		2010	Infiltration	4	N/A
	403	5-143.1-27	TV Inspection	5-143.1	5-143	192nd St SW	Residential	Medium circular crack	27 ft	TV-106	Light		2010	Pipe Crack	4	N/A
	404	5-143.1-44	TV Inspection	5-143.1	5-143	192nd St SW	Residential	Light infiltration and mineral deposits @ lateral joint	44 ft	TV-108	Light		2010	Mineral Deposits; Infiltration	4	N/A
	405	5-148-41	TV Inspection	5-148	5-142	192nd St SW	Residential	Medium joint offset in pipe- sag begins	41 ft	TV-91	Medium		2010	Offset Joint; Sag	4	N/A
	406	5-148-48	TV Inspection	5-148	5-142	192nd St SW	Residential	Pipe flowing 1/3 full	48 ft	TV-92	Medium		2010	Pipe Flow	4	N/A
	407	5-148-98	TV Inspection	5-148	5-142	192nd St SW	Residential	Medium joint separation in pipe	98 ft	TV-93	Medium		2010	Offset Joint	4	N/A
	408	5-148-5	TV Inspection	5-148	5-142	192nd St SW	Residential	Medium joint separation in pipe- infiltration weeper @ joint separation	5 ft	TV-90	Light		2010	Offset Joint; Infiltration	4	N/A
	409	5-148-N/A	Manhole Inspection	5-148	5-148	192nd St SW (near 49th Pl W)	Residential	Bench is wet; significant flow from north; lateral crack in road from manhole to both edges of pavement; pavement around manhole rim has been elevated; mineral deposits around outside of north pipe invert	N/A	M-21	Light		2010	Pavement Cracking Surrounding Manhole Rim; Heavy Flows; Mineral Deposits	4	N/A
	410	5-149-68	TV Inspection	5-149	5-148	192nd St SW	Residential	Heavy mineral deposits in lateral	68 ft	TV-86	Heavy		2010	Mineral Deposits	4	N/A
	411	5-149-7	TV Inspection	5-149	5-148	192nd St SW	Residential	Light infiltration @ joint	7 ft	TV-85	Light		2010	Infiltration	4	N/A
	412	5-149-92	TV Inspection	5-149	5-148	192nd St SW	Residential	Light mineral deposits and infiltration @ lateral joint	92 ft	TV-87	Light		2010	Mineral Deposits; Infiltration	4	N/A
	413	5-149-170	TV Inspection	5-149	5-148	192nd St SW	Residential	Light infiltration @ lateral joint	170 ft	TV-88	Light		2010	Infiltration	4	N/A
	414	5-149-198	TV Inspection	5-149	5-148	192nd St SW	Residential	Infiltration dripper @ pipe segment joint	198 ft	TV-89	Light		2010	Infiltration	4	N/A
	415	5-154-0	TV Inspection	5-154	5-152	190th St SW	Residential	Heavy infiltration in upstream manhole	0 ft	TV-79	Heavy		2010	Infiltration	4	N/A
	416	5-154-205	TV Inspection	5-154	5-152	190th St SW	Residential	Medium mineral deposits @ lateral joint and in lateral- light infiltration @ joint	205 ft	TV-83	Medium		2010	Mineral Deposits; Infiltration	4	N/A
	417	5-154-6	TV Inspection	5-154	5-152	190th St SW	Residential	Light mineral deposits @ lateral joint and light infiltration	6 ft	TV-80	Light		2010	Mineral Deposits; Infiltration	4	N/A
	418	5-154-43	TV Inspection	5-154	5-152	190th St SW	Residential	Light mineral deposits and infiltration @ lateral joint	43 ft	TV-81	Light		2010	Mineral Deposits; Infiltration	4	N/A
	419	5-154-89	TV Inspection	5-154	5-152	190th St SW	Residential	Infiltration @ pipe segment joint- infiltration stain	89 ft	TV-82	Light		2010	Infiltration	4	N/A
	420	5-171-0	TV Inspection	5-171	5-169	188th St SW & 51st Pl W	Collector	Circular crack with water spraying in; heavy solids in channel	0.0	TV-512	Heavy		2010	Pipe Crack; Debris	4	N/A
	421	5-171-80.9	TV Inspection	5-171	5-169	188th St SW & 51st Pl W	Collector	Heavy mineral deposits at lateral connection joint, lateral approximately 50% blocked	80.9	TV-513	Heavy		2010	Mineral Deposits; Debris	4	N/A
	422	5-171-131	TV Inspection	5-171	5-169	188th St SW & 51st Pl W	Collector	Pipe joint deflection	131.0	TV-515	Medium		2010	Offset Joint	4	N/A
	423	5-171-98.4	TV Inspection	5-171	5-169	188th St SW & 51st Pl W	Collector	5 ft sag	98.4	TV-514	Light		2010	Sag	4	N/A
	424	5-171-136.9	TV Inspection	5-171	5-169	188th St SW & 51st Pl W	Collector	Light mineral deposits at outside drop	136.9	TV-516	Light		2010	Mineral Deposits	4	N/A
	425	5-185-81.6	TV Inspection	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Heavy mineral deposits within lateral; unable to determine if it is active; stones visible	81.6	TV-620	Heavy		2010	Mineral Deposits; Debris	4	N/A
	426	5-185-185.8	TV Inspection	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Infiltration runner at joint	185.8	TV-622	Heavy		2010	Infiltration	4	N/A
	427	5-185-182.9	TV Inspection	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Offset pipe within side sewer	182.9	TV-621	Light		2010	Offset Joint	4	N/A
	428	5-185-248.2	TV Inspection	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Joint infiltration	248.2	TV-623	Light		2010	Infiltration	4	N/A
	429	5-185-251.1	TV Inspection	5-185	5-186	48th Ave W & 185th Pl SW	Residential	Unable to tell if side sewer is active; water backed up into pipe	251.1	TV-624	Light		2010	Pipe Flow	4	N/A
	430	5-189 CO-30.1	TV Inspection	5-189 CO	5-189	184th Pl SW & 47th Pl W	Residential	Large offset joint, soil visible through offset.	30.1	TV-689	Medium		2010	Offset Joint; Visible Soil	4	106.1
	431	5-189 CO-17.5	TV Inspection	5-189 CO	5-189	184th Pl SW & 47th Pl W	Residential	Root ball in lateral	17.5	TV-688	Light		2010	Roots	4	106.1
	432	5-189-152	TV Inspection	5-189	5-189 CO	47th Pl W & 184th Pl SW	Residential	Joint gasket not around pipe, rock between gasket and pipe	152.0	TV-595	Medium		2010	Joint Separation	4	N/A
	433	5-189-45.0	TV Inspection	5-189	5-189 CO	47th Pl W & 184th Pl SW	Residential	Light mineral deposits, possible small crack	45.0	TV-593	Light		2010	Mineral Deposits; Pipe Crack	4	N/A
	434	5-189-75.2	TV Inspection	5-189	5-189 CO	47th Pl W & 184th Pl SW	Residential	Joint infiltration, visible staining	75.2	TV-594	Light		2010	Infiltration	4	N/A
	435	5-193-9.9	TV Inspection	5-193	5-191	183rd Pl SW & 46th Pl W	Residential	Root ball in lateral	9.9	TV-679	Medium		2010	Roots	4	187.5
	436	5-193-7.7	TV Inspection	5-193	5-191	46th Pl W & 183rd Pl SW	Residential	Possible root intrusion in side sewer	7.7	TV-585	Light		2010	Roots	4	N/A
	437	5-193-93.7	TV Inspection	5-193	5-191	46th Pl W & 183rd Pl SW	Residential	10 ft sag	93.7	TV-586	Light		2010	Sag	4	N/A
	438	5-193-176.5	TV Inspection	5-193	5-191	46th Pl W & 183rd Pl SW	Residential	12 ft sag	176.5	TV-587	Light		2010	Sag	4	N/A
	439	5-193-2.4	TV Inspection	5-193	5-191	183rd Pl SW & 46th Pl W	Residential	Joint infiltration	2.4	TV-678	Light		2010	Infiltration	4	187.5
	440	C5-131-N/A	Smoke Testing	C5-131	5-149	5103 192nd St SW, Lynnwood, WA	Residential	Smoke emanating from ground along fence line. (Likely broken side sewer.)	N/A	S-49	Medium		1992	Infiltration / Inflow	4	N/A
	441	C5-131-201	TV Inspection	C5-131	5-149	192nd St SW	Residential	Infiltration in joint- weeper	201 ft	TV-132	Light		2010	Infiltration	4	N/A
	442	C5-131-246	TV Inspection	C5-131	5-149	192nd St SW	Residential	Infiltration in joint (stain)	246 ft	TV-133	Light		2010	Infiltration	4	N/A
	443	C5-131-258	TV Inspection	C5-131	5-149	192nd St SW	Residential	Infiltration in joint (stain)	258 ft	TV-134	Light		2010	Infiltration	4	N/A
	444	C5-131-270	TV Inspection	C5-131	5-149	192nd St SW	Residential	Infiltration in joint (stain)	270 ft	TV-135	Light		2010	Infiltration	4	N/A
Four	445	3-42-86.4	TV Inspection	3-42	3-41	Easement in Scriber Lake Park	Easement	Pipe flowing nearly 75% full	86.4	TV-571	Heavy		2010	Pipe Flow	4	N/A
	446	3-42-98.4	TV Inspection	3-42	3-41	Easement in Scriber Lake Park	Easement	Heavy infiltration in downstream manhole	98.4	TV-572	Heavy		2010	Infiltration	4	N/A
	447	3-42-10.8	TV Inspection	3-42	3-41	Easement in Scriber Lake Park	Easement	Infiltration dripper @ pipe segment joint	10.8	TV-569	Light		2010	Infiltration	4	N/A
	448	3-42-73.5	TV Inspection	3-42	3-41	Easement in Scriber Lake Park	Easement	Light infiltration @ lateral joint	73.5	TV-570	Light		2010	Infiltration	4	N/A
	449	3-50-104	TV Inspection	3-50	3-48	56th Ave W & 200th St SW	Residential	Heavy circular crack- pipe broken; heavy infiltration	104 ft	TV-11	Heavy		2010	Pipe Broken; Infiltration	4	N/A

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	450	3-50-106	TV Inspection	3-50	3-48	56th Ave W & 200th St SW	Residential	Large longitudinal crack on each side of pipe; heavy infiltration	106 ft	TV-12	Heavy		2010	Pipe Crack; Infiltration	4	N/A
	451	3-50-191	TV Inspection	3-50	3-48	56th Ave W & 200th St SW	Residential	Heavy infiltration @ lateral joint	191 ft	TV-13	Heavy		2010	Infiltration	4	N/A
	452	3-50-273	TV Inspection	3-50	3-48	56th Ave W & 200th St SW	Residential	Heavy debris in pipe- blocking camera passage	273 ft	TV-14	Heavy		2010	Debris	4	N/A
	453	3-69-16	TV Inspection	3-69	3-68.1	Scriber Lake Road	Sidewalk	Broken lateral joint	16 ft	TV-65	Medium		2010	Broken Joint	4	N/A
	454	3-69-216	TV Inspection	3-69	3-68.1	Scriber Lake Road	Sidewalk	Light mineral deposits- old repair	216 ft	TV-66	Light		2010	Mineral Deposits	4	N/A
	455	3-69-221	TV Inspection	3-69	3-68.1	Scriber Lake Road	Sidewalk	Medium circular crack and infiltration pipe stain	221 ft	TV-67	Light		2010	Pipe Crack; Infiltration	4	N/A
	456	3-69-225	TV Inspection	3-69	3-68.1	Scriber Lake Road	Sidewalk	Medium circular crack- light infiltration through crack	225 ft	TV-68	Light		2010	Pipe Crack; Infiltration	4	N/A
Four	457	3-91-215	TV Inspection	3-91	3-90	193rd PI SW	Residential	Heavy roots @ lateral joint	215 ft	TV-39	Heavy		2010	Roots	4	N/A
	458	3-91-125	TV Inspection	3-91	3-90	193rd PI SW	Residential	Mineral deposits @ lateral joint and light infiltration	125 ft	TV-37	Light		2010	Mineral Deposits; Infiltration	4	N/A
	459	3-91-207	TV Inspection	3-91	3-90	193rd PI SW	Residential	Light mineral deposits @ joint	207 ft	TV-38	Light		2010	Mineral Deposits	4	N/A
	460	3-91-N/A	Smoke Testing	3-91	3-90	19312 52nd Ave W, Lynnwood, WA	Residential	Missing cleanout cap.	N/A	S-32	Light		1992	Maintenance Issue	4	N/A
	461	5-96-296.8	TV Inspection	5-96	5-95	42nd PI W & 188th St SW	Residential	Light infiltration @ lateral joint	296.8	TV-382	Light		2010	Infiltration	3	N/A
	462	5-96-351.8	TV Inspection	5-96	5-95	42nd PI W & 188th St SW	Residential	Light infiltration @ pipe segment joint	351.8	TV-383	Light		2010	Infiltration	3	N/A
	463	5-96-389.4	TV Inspection	5-96	5-95	42nd PI W & 188th St SW	Residential	Light infiltration stain	389.4	TV-384	Light		2010	Infiltration	3	N/A
	464	5-96-402.3	TV Inspection	5-96	5-95	42nd PI W & 188th St SW	Residential	Medium infiltration in downstream manhole	402.3	TV-385	Light		2010	Infiltration	3	N/A
	465	3-26-266.2	TV Inspection	3-26	3-27	201st PI SW	Residential	Circular crack at side sewer connection joint, soil visible through crack	266.2	TV-449	Medium		2010	Pipe Crack; Visible Soil	4	N/A
	466	3-27-N/A	Smoke Testing	3-27	3-26	5320 201st PI SW, Lynnwood, WA	Residential	Drain in driveway.	N/A	S-48	Heavy		1992	Maintenance Issue	4	N/A
	467	3-26-74.5	TV Inspection	3-26	3-27	201st PI SW	Residential	Circular crack	74.5	TV-448	Light		2010	Pipe Crack	4	N/A
	468	3-26-338.0	TV Inspection	3-26	3-27	201st PI SW	Residential	Debris inside manhole	338.0	TV-450	Light		2010	Debris	4	N/A
	469	5-10-87.2	TV Inspection	5-10	5-11	48th Ave W & 192nd St SW	Residential	Medium mineral deposits in lateral	87.2	TV-160	Medium		2010	Mineral Deposits	3	N/A
	470	5-10-12.9	TV Inspection	5-10	5-11	48th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration stain @ lateral connection	12.9	TV-158	Light		2010	Infiltration; Mineral Deposits	3	N/A
	471	5-10-13.1	TV Inspection	5-10	5-11	48th Ave W & 192nd St SW	Residential	Small spiral crack and infiltration dripper through crack; light mineral deposits	13.1	TV-159	Light		2010	Infiltration; Pipe Crack; Mineral Deposits	3	N/A
	472	5-10-131.5	TV Inspection	5-10	5-11	48th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration weeper @ lateral connection	131.5	TV-161	Light		2010	Infiltration; Mineral Deposits	3	N/A
	473	5-13-92.7	TV Inspection	5-13	5-12	48th Ave W & 190th St SW	Residential	Light mineral deposits @ pipe segment joint	92.7	TV-250	Light		2010	Mineral Deposits	3	N/A
	474	5-13-108.9	TV Inspection	5-13	5-12	48th Ave W & 190th St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	108.9	TV-251	Light		2010	Mineral Deposits; Infiltration	3	N/A
	475	5-13-258.6	TV Inspection	5-13	5-12	48th Ave W & 190th St SW	Residential	Infiltration dripper through pipe segment joint	258.6	TV-252	Light		2010	Infiltration	3	N/A
	476	5-13-295.2	TV Inspection	5-13	5-12	48th Ave W & 190th St SW	Residential	Infiltration dripper through pipe segment joint	295.2	TV-253	Light		2010	Infiltration	3	N/A
	477	5-24-93	TV Inspection	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Medium infiltration near both pipe inlets into manhole	93.0	TV-224	Medium		2010	Infiltration	3	N/A
	478	5-24-10	TV Inspection	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	10.0	TV-221	Light		2010	Mineral Deposits; Infiltration	3	N/A
	479	5-24-18	TV Inspection	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Light mineral deposits and infiltration @ pipe segment joint	18.0	TV-222	Light		2010	Mineral Deposits; Infiltration	3	N/A
	480	5-24-91.2	TV Inspection	5-24	5-23.1	46th Ave W & 192nd St SW	Residential	Light mineral deposits @ pipe outlet into manhole	91.2	TV-223	Light		2010	Mineral Deposits	3	N/A
	481	5-26-233.4	TV Inspection	5-26	5-25	46th Ave W & 191st St SW	Residential	Heavy mineral deposits and debris @ lateral joint- appears to be completely blocking potential flow- joint offset- light infiltration @ joint	233.4	TV-211	Heavy		2010	Mineral Deposits; Offset Joint; Infiltration	3	N/A
	482	5-26-164.3	TV Inspection	5-26	5-25	46th Ave W & 191st St SW	Residential	Light infiltration through lateral	164.3	TV-209	Light		2010	Infiltration	3	N/A
	483	5-26-229.1	TV Inspection	5-26	5-25	46th Ave W & 191st St SW	Residential	Root problem in lateral- minor tap problem	229.1	TV-210	Light		2010	Roots	3	N/A
	484	5-26-237.2	TV Inspection	5-26	5-25	46th Ave W & 191st St SW	Residential	Light infiltration and mineral deposits @ pipe segment joint	237.2	TV-212	Light		2010	Infiltration; Mineral Deposits	3	N/A
	485	3-108-39.4	TV Inspection	3-108	3-106	189th PI SW & 55th Ave W	Easement	70 ft sag	39.4	TV-492	Medium		2010	Sag	4	N/A
	486	3-108-120.4	TV Inspection	3-108	3-106	189th PI SW & 55th Ave W	Easement	Camera under water	120.4	TV-493	Medium		2010	Submerged Camera	4	N/A
	487	3-108-1.2	TV Inspection	3-108	3-106	189th PI SW & 55th Ave W	Easement	Light mineral deposits.	1.2	TV-490	Light		2010	Mineral Deposits	4	N/A
	488	3-108-5.0	TV Inspection	3-108	3-106	189th PI SW & 55th Ave W	Easement	Infiltration weeper.	5.0	TV-491	Light		2010	Infiltration	4	N/A
	489	3-109-130.9	TV Inspection	3-109	3-108	189th PI SW & 55th Ave W	Easement	Leak gushing from left side.	130.9	TV-486	Heavy		2010	Infiltration	4	N/A
	490	3-109-142.7	TV Inspection	3-109	3-108	189th PI SW & 55th Ave W	Easement	Grout at side sewer connection appears to be broken	142.7	TV-487	Light		2010	Bad Grout	4	N/A
	491	3-109-199.4	TV Inspection	3-109	3-108	189th PI SW & 55th Ave W	Easement	Infiltration weeper through hole in pipe on left side	199.4	TV-488	Light		2010	Infiltration	4	N/A
	492	3-109-199.6	TV Inspection	3-109	3-108	189th PI SW & 55th Ave W	Easement	Infiltration weeper through hole in pipe on right side	199.6	TV-489	Light		2010	Infiltration	4	N/A
	493	5-135-1-48	TV Inspection	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	24 ft sag	48.0	TV-524	Medium		2010	Sag	4	N/A
	494	5-135-1-169	TV Inspection	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	21 ft sag	169.0	TV-526	Medium		2010	Sag	4	N/A
	495	5-135-1-235	TV Inspection	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	16 ft sag	235.0	TV-527	Medium		2010	Sag	4	N/A
	496	5-135-1-72.8	TV Inspection	5-135.1	5-135	52nd Ave W & 188th St SW	Collector	12 ft sag	72.8	TV-525	Light		2010	Sag	4	N/A
	497	5-138-4	TV Inspection	5-138	5-137	194th St SW	Residential	Heavy mineral deposits in lateral	4 ft	TV-121	Heavy		2010	Mineral Deposits	4	N/A
	498	5-138-367	TV Inspection	5-138	5-137	194th St SW	Residential	Pipe flowing approx 50% full- 120 ft upstream of downstream manhole	367 ft	TV-124	Heavy		2010	Pipe Flow	4	N/A
	499	5-138-82	TV Inspection	5-138	5-137	194th St SW	Residential	Light infiltration in lateral	82 ft	TV-122	Light		2010	Infiltration	4	N/A
	500	5-138-142	TV Inspection	5-138	5-137	194th St SW	Residential	Light mineral deposits @ lateral joint	142 ft	TV-123	Light		2010	Mineral Deposits	4	N/A
	501	5-142-105	TV Inspection	5-142	5-141	South of 192nd St SW	Easement	Camera underwater (upstream manhole to 145 ft upstream)	105 ft	TV-115	Heavy		2010	Pipe Flow	4	N/A
	502	5-142-325	TV Inspection	5-142	5-141	South of 192nd St SW	Easement	Heavy infiltration inside downstream manhole	325 ft	TV-116	Heavy		2010	Infiltration	4	N/A
	503	5-142-3	TV Inspection	5-142	5-141	South of 192nd St SW	Easement	Joint offset in pipe (medium)	3 ft	TV-114	Medium		2010	Offset Joint	4	N/A
	504	5-142-N/A	Manhole Inspection	5-142	5-142	192nd St SW (near 49th PI W)	Residential	Lateral crack in pavement across entire roadway width jutting out laterally from manhole; inflow from crack in manhole cover; significant flow from west; manhole risers are wet;	N/A	M-20	Light		2010	Pavement Cracking Surrounding Manhole Rim; Heavy Flows	4	N/A
	505	5-172-1-37.3	TV Inspection	5-172.1	5-172	51st PI W & 188th St SW	Collector	Large crack with root intrusion; soil visible	37.3	TV-632	Medium		2010	Pipe Crack; Roots; Visible Soil	4	N/A
	506	5-172-1-162	TV Inspection	5-172.1	5-172	51st PI W & 188th St SW	Collector	Large circular crack and infiltration weeper	162.0	TV-634	Medium		2010	Pipe Crack; Infiltration	4	N/A
	507	5-172-1-233.1	TV Inspection	5-172.1	5-172	51st PI W & 188th St SW	Collector	Large circular crack and soil visible	233.1	TV-635	Medium		2010	Pipe Crack; Visible Soil	4	N/A
	508	5-172-1-44.8	TV Inspection	5-172.1	5-172	51st PI W & 188th St SW	Collector	Mineral deposits and infiltration at side sewer connection	44.8	TV-633	Light		2010	Mineral Deposits; Infiltration	4	N/A
	509	5-180-251	TV Inspection	5-180	5-179	186th PI W (W of 52nd Ave W)	Residential	Medium mineral deposits in lateral	251 ft	TV-138	Medium		2010	Mineral Deposits	4	N/A
	510	5-180-16	TV Inspection	5-180	5-179	186th PI W (W of 52nd Ave W)	Residential	Infiltration in joint- weeper	16 ft	TV-136	Light		2010	Infiltration	4	N/A
	511	5-180-76	TV Inspection	5-180	5-179	186th PI W (W of 52nd Ave W)	Residential	Light root problems in joint	76 ft	TV-137	Light		2010	Roots	4	N/A
	512	5-180-253	TV Inspection	5-180	5-179	186th PI W (W of 52nd Ave W)	Residential	Infiltration weeper @ pipe joint	253 ft	TV-139	Light		2010	Infiltration	4	N/A
	513	5-187-189.8	TV Inspection	5-187	5-185	47th PI W & 185th PI SW	Residential	Root ball in lateral; circular crack at connection	189.8	TV-617	Medium		2010	Roots; Pipe Crack	4	N/A
	514	5-187-272.2	TV Inspection	5-187	5-185	47th PI W & 185th PI SW	Residential	Circular crack with infiltration	272.2	TV-619	Medium		2010	Pipe Crack; Infiltration	4	N/A
	515	5-187-65.4	TV Inspection	5-187	5-185	47th PI W & 185th PI SW	Residential	Offset connection	65.4	TV-616	Light		2010	Offset Joint	4	N/A
	516	5-187-212.6	TV Inspection	5-187	5-185	47th PI W & 185th PI SW	Residential	Small hole; beginning of root intrusion	212.6	TV-618	Light		2010	Pipe Hole; Roots	4	N/A
	517	5-192-36.6	TV Inspection	5-192	5-191	183rd PI SW & 46th PI W	Residential	Root ball in lateral	36.6	TV-682	Medium		2010	Roots	4	210.9
	518	5-192-21.8	TV Inspection	5-192	5-191	183rd PI SW & 46th PI W	Residential	Roots in lateral	21.8	TV-680	Light		2010	Roots	4	97.7

Table H-1																
Multiple Problem Areas																
# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	519	5-192-11.0	TV Inspection	5-192	5-191	183rd Pl SW & 46th Pl W	Residential	Mineral deposits in joint	11.0	TV-681	Light		2010	Mineral Deposits	4	210.9
	520	5-192-15.1	TV Inspection	5-192	5-191	183rd Pl SW & 46th Pl W	Residential	Debris in lateral	15.1	TV-683	Light		2010	Debris	4	229.5
	521	5-23.1-29.4	TV Inspection	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Medium mineral deposits in lateral- infiltration weeper	29.4	TV-225	Medium		2010	Mineral Deposits; Infiltration	3	N/A
	522	5-23.1-71.8	TV Inspection	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Light mineral deposits @ pipe segment joint	71.8	TV-226	Light		2010	Mineral Deposits	3	N/A
	523	5-23.1-224.8	TV Inspection	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Light infiltration @ lateral joint	224.8	TV-227	Light		2010	Infiltration	3	N/A
	524	5-23.1-241.2	TV Inspection	5-23.1	5-23	46th Ave W & 194th St SW	Residential	Light mineral deposits and infiltration @ lateral joint	241.2	TV-228	Light		2010	Mineral Deposits; Infiltration	3	N/A
	525	5-51.1-15.1	TV Inspection	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Medium joint separation and light infiltration through joint separation	15.1	TV-364	Medium		2010	Joint Separation; Infiltration	3	N/A
	526	5-51.1-119.6	TV Inspection	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Medium longitudinal crack and light infiltration through crack	119.6	TV-365	Medium		2010	Pipe Crack; Infiltration	3	N/A
Four	527	5-51.1-234	TV Inspection	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Medium joint separation and light infiltration through joint separation- light stain @ joint	234.0	TV-366	Medium		2010	Joint Separation; Infiltration	3	N/A
	528	5-51.1-379.4	TV Inspection	5-51.1	5-51	44th Ave W & 184th St SW	Minor Arterial	Rat in sewer system in downstream manhole	379.4	TV-367	Light		2010	Rat	3	N/A
	529	5-77.1-10	TV Inspection	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Medium mineral deposits @ lateral joint	10.0	TV-414	Medium		2010	Mineral Deposits	3	N/A
	530	5-77.1-19.2	TV Inspection	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Medium offset joint- infiltration weeper @ lateral joint	19.2	TV-664	Medium		2010	Offset Joint	3	10.2
	531	5-77.1-191.4	TV Inspection	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Heavily grouted joint- survey abandoned	191.4	TV-415	Heavy		2010	Grouted Joint	3	N/A
	532	5-77.1-0	TV Inspection	5-77.1	5-78	40th Ave W & 191st St SW	Residential	Heavily grouted joint- survey abandoned	0.0	TV-665	Heavy		2010	Grout	3	189.6
Three	533	3-41-0	TV Inspection	3-41	3-40	Easement in Scriber Lake Park	Easement	Pipe flowing approximately 90% full, debris hanging from ceiling	0.0	TV-446	Medium		2010	Pipe Flow; Debris	4	N/A
	534	3-41-12.5	TV Inspection	3-41	3-40	Easement in Scriber Lake Park	Easement	Camera submerged	12.5	TV-447	Medium		2010	Submerged Camera	4	N/A
	535	3-41-N/A	Smoke Testing	3-41	3-41	MH 3-41 in Lynnwood, WA	Easement	Smoke emanating from base of manhole frame and cover.	N/A	S-40	Light		1992	Maintenance Issue	4	N/A
	536	3-45-0	TV Inspection	3-45	3-44	Easement in Scriber Lake Park	Easement	Heavy infiltration in upstream manhole	0.0	TV-567	Heavy		2010	Infiltration	4	N/A
	537	3-45-149.7	TV Inspection	3-45	3-44	Easement in Scriber Lake Park	Easement	Small hole in manhole; infiltration weeper	149.7	TV-568	Light		2010	Pipe Hole; Infiltration	4	N/A
	538	3-45-N/A	Smoke Testing	3-45	3-45	MH 3-45 in Lynnwood, WA	Easement	Brick and mortar missing in manhole neck.	N/A	S-39	Light		1992	Maintenance Issue	4	N/A
	539	5-50-263.8	TV Inspection	5-50	5-51	44th Ave W & 186th St SW	Minor Arterial	Medium offset joint, light infiltration and stain @ joint	263.8	TV-369	Medium		2010	Offset Joint; Infiltration	3	N/A
	540	5-50-260.0	TV Inspection	5-50	5-51	44th Ave W & 186th St SW	Minor Arterial	Light infiltration @ pipe segment joint	260.0	TV-368	Light		2010	Infiltration	3	N/A
	541	3-51-N/A	Smoke Testing	3-51	3-50	5512 Firwood Drive, Lynnwood, WA	Residential	Unsatisfactory cleanout cover.	N/A	S-36	Light		1992	Maintenance Issue	4	N/A
	542	3-58-2	TV Inspection	3-58	3-54	56th Ave W	Residential	Large circular crack- light roots in pipe crack	2 ft	TV-74	Medium		2010	Pipe Crack; Roots	4	N/A
	543	3-58-41	TV Inspection	3-58	3-54	56th Ave W	Residential	Medium amounts of infiltration	41 ft	TV-75	Medium		2010	Infiltration	4	N/A
	544	3-58-65	TV Inspection	3-58	3-54	56th Ave W	Residential	Medium longitudinal crack- infiltration stain inside pipe	65 ft	TV-76	Light		2010	Pipe Crack; Infiltration	4	N/A
	545	3-68-377	TV Inspection	3-68	3-67	198th St SW	Residential	Heavy root problem in lateral	377 ft	TV-72	Heavy		2010	Roots	4	N/A
	546	3-68-7	TV Inspection	3-68	3-67	198th St SW	Residential	Aggregate visible on surface of inside pipe- surface erosion	7 ft	TV-70	Light		2010	Pipe Corrosion	4	N/A
	547	3-68-55	TV Inspection	3-68	3-67	198th St SW	Residential	55 ft sag in pipe	55 ft	TV-71	Light		2010	Sag	4	N/A
	548	5-73-216.3	TV Inspection	5-73	5-72	40th Ave W & 192nd St SW	Residential	Heavy infiltration in downstream manhole	216.3	TV-438	Heavy		2010	Infiltration	3	N/A
	549	5-73-26.0	TV Inspection	5-73	5-72	40th Ave W & 192nd St SW	Residential	Medium root problem in joint	26.0	TV-659	Medium		2010	Roots	3	190.1
	550	5-73-8.9	TV Inspection	5-73	5-72	40th Ave W & 192nd St SW	Residential	Capped end- infiltration weeper through cap	8.9	TV-660	Light		2010	Infiltration	3	202.5
	551	5-74-110.6	TV Inspection	5-74	5-75	44th Ave W & 192nd St SW	Residential	Infiltration weeper through joint with cap	110.6	TV-436	Light		2010	Infiltration	3	N/A
	552	5-74-263.7	TV Inspection	5-74	5-75	44th Ave W & 192nd St SW	Residential	Infiltration weeper @ pipe segment joint	263.7	TV-437	Light		2010	Infiltration	3	N/A
	553	5-75-N/A	Manhole Inspection	5-75	5-75	192nd St SW & 44th Ave W	Residential	Labeled "Drain" on cover- however identified as sewer manhole on basemap; appears to be catch basin- could be surcharged	N/A	M-15	Light		2010	Sewer Manhole Labeled as Storm "Drain"; Structure is Catch Basin, not Manhole	3	N/A
	554	2-76-N/A	Smoke Testing	2-76	2-75	6208 202nd St. SW, Lynnwood, WA	Residential	Uncapped pipe in empty lot of trailer park on the southeast corner.	N/A	S-82	Light		2009	Maintenance Issue	8	N/A
	555	2-76-N/A	Smoke Testing	2-76	2-75	6208 202nd St. SW, Lynnwood, WA (Unit 62 or 64)	Residential	Smoke seen in back yard from an unknown source at or below grade.	N/A	S-83	Unknown		2009	Unknown	8	N/A
	556	3-78-359	TV Inspection	3-78	3-77	56th Ave W & 194th St SW	Residential	Large circular crack- soil visible through crack	359 ft	TV-48	Medium		2010	Pipe Crack	4	N/A
	557	3-78-360	TV Inspection	3-78	3-77	56th Ave W & 194th St SW	Residential	Manhole surcharged- water still flowing however	360 ft	TV-49	Medium		2010	Pipe Flow	4	N/A
	558	3-78-350	TV Inspection	3-78	3-77	56th Ave W & 194th St SW	Residential	Joint deflection down in joint	350 ft	TV-47	Light		2010	Offset Joint	4	N/A
	559	5-90-57.3	TV Inspection	5-90	5-89	41st Pl W & 188th St SW	Residential	Pipe damaged @ lateral connection- light infiltration	57.3	TV-388	Light		2010	Infiltration	3	N/A
	560	5-90-113.8	TV Inspection	5-90	5-89	41st Pl W & 188th St SW	Residential	Infiltration stain @ pipe segment joint	113.8	TV-389	Light		2010	Infiltration	3	N/A
	561	5-90-120.0	TV Inspection	5-90	5-89	41st Pl W & 188th St SW	Residential	Medium mineral deposits and light infiltration inside lateral	120.0	TV-390	Light		2010	Infiltration; Mineral Deposits	3	N/A
	562	5-99-396.7	TV Inspection	5-99	5-98	41st Pl W & 186th Pl SW	Residential	Heavy infiltration- hole in manhole- water pouring out of hole	396.7	TV-379	Heavy		2010	Infiltration	3	N/A
	563	5-99-390.9	TV Inspection	5-99	5-98	41st Pl W & 186th Pl SW	Residential	Medium offset joint	390.9	TV-377	Medium		2010	Offset Joint	3	N/A
	564	5-99-393.9	TV Inspection	5-99	5-98	41st Pl W & 186th Pl SW	Residential	Infiltration runner @ pipe segment joint- medium mineral deposits	393.9	TV-378	Medium		2010	Infiltration; Mineral Deposits	3	N/A
	565	5-99-33.8	TV Inspection	5-99	5-100	41st Pl W & 186th St SW	Residential	Medium mineral deposits @ lateral connection	33.8	TV-171	Medium		2010	Mineral Deposits	3	N/A
	566	5-99-133.0	TV Inspection	5-99	5-100	41st Pl W & 186th St SW	Residential	Infiltration runner @ lateral joint	133.0	TV-173	Medium		2010	Infiltration	3	N/A
	567	5-99-102.2	TV Inspection	5-99	5-100	41st Pl W & 186th St SW	Residential	Infiltration weeper @ lateral joint	102.2	TV-172	Light		2010	Infiltration	3	N/A
	568	3-26-72.9	TV Inspection	3-26	3-25	201st Pl SW	Residential	Side sewer protrudes into main.	72.9	TV-451	Medium		2010	Pipe Protrusion	4	N/A
	569	3-26-158.1	TV Inspection	3-26	3-25	201st Pl SW	Residential	Pipe protrudes into the main, circular crack all the way around the pipe	158.1	TV-452	Light		2010	Pipe Protrusion; Pipe Crack	4	N/A
	570	3-26-158.4	TV Inspection	3-26	3-25	201st Pl SW	Residential	Lateral crack at side sewer connection joint	158.4	TV-453	Light		2010	Pipe Crack	4	N/A
	571	5-16-48.2	TV Inspection	5-16	5-15	48th Ave W & 188th St SW	Residential	Root ball in pipe	48.2	TV-650	Medium		2010	Roots	3	115.3
	572	5-16-24.1	TV Inspection	5-16	5-15	48th Ave W & 188th St SW	Residential	Medium circular crack & medium roots in pipe through crack	24.1	TV-651	Medium		2010	Pipe Crack; Roots	3	237.2
	573	5-16-33.3	TV Inspection	5-16	5-15	48th Ave W & 188th St SW	Residential	Infiltration weeper @ lateral joint	33.3	TV-649	Light		2010	Infiltration	3	115.3
	574	5-23-348.4	TV Inspection	5-23	5-22	46th Ave W & 194th St SW	Residential	Medium mineral deposits in lateral flow channel	348.4	TV-231	Medium		2010	Mineral Deposits	3	N/A
	575	5-23-105	TV Inspection	5-23	5-22	46th Ave W & 194th St SW	Residential	Light mineral deposits @ pipe segment joint	105.0	TV-229	Light		2010	Mineral Deposits	3	N/A
	576	5-23-288	TV Inspection	5-23	5-22	46th Ave W & 194th St SW	Residential	Infiltration dripper @ pipe segment joint	288.0	TV-230	Light		2010	Infiltration	3	N/A
	577	5-31-4	TV Inspection	5-31	5-29	46th Ave W & 188th St SW	Collector	Medium circular crack- infiltration weeper through pipe crack and light mineral deposits	4.0	TV-187	Medium		2010	Pipe Crack; Infiltration	3	N/A
	578	5-31-202.9	TV Inspection	5-31	5-29	46th Ave W & 188th St SW	Collector	Medium infiltration near pipe outlet into manhole and medium mineral deposits	202.9	TV-189	Medium		2010	Infiltration; Mineral Deposits	3	N/A
	579	5-31-23.4	TV Inspection	5-31	5-29	46th Ave W & 188th St SW	Collector	Infiltration weeper through pipe segment joint	23.4	TV-188	Light		2010	Infiltration	3	N/A
	580	16-30-103.7	TV Inspection	16-30	16-29.2	40th Ave W & 192nd Pl SW	Collector	Medium mineral deposits @ pipe segment joint	103.7	TV-185	Medium		2010	Mineral Deposits	3	N/A
	581	16-30-40.7	TV Inspection	16-30	16-29.2	40th Ave W & 192nd Pl SW	Collector	Light mineral deposits @ lateral joint	40.7	TV-183	Light		2010	Mineral Deposits	3	N/A
	582	16-30-87.4	TV Inspection	16-30	16-29.2	40th Ave W & 192nd Pl SW	Collector	Infiltration weeper @ pipe segment joint	87.4	TV-184	Light		2010	Infiltration	3	N/A
	583	3-101-N/A	Smoke Testing	3-101	3-100	5521 190th St SW Lynnwood, WA	Residential	Downspout connected to sanitary sewer.	N/A	S-26	Heavy		1992	Maintenance Issue	4	N/A
	584	3-101-161	TV Inspection	3-101	3-100	55th Ave W & 190th St SW	Residential	Infiltration weeper @ pipe segment joint	161 ft	TV-28	Light		2010	Infiltration	4	N/A

Table H-1
Multiple Problem Areas

# of Problems	Problem Number	Problem Number	Type of Testing	Upstream MH	Downstream MH	Location	Roadway Type	Description	Distance to Reading	Reference	Severity	Cost	Year Tested	Category	Basin	Distance To Lateral
	585	3-101-206	TV Inspection	3-101	3-100	55th Ave W & 190th St SW	Residential	Light mineral deposits inside manhole	206 ft	TV-29	Light		2010	Mineral Deposits	4	N/A
	586	3-104-71	TV Inspection	3-104	3-103	190th St SW	Residential	Light infiltration & medium mineral deposits @ joint	71 ft	TV-21	Light		2010	Mineral Deposits; Infiltration	4	N/A
	587	3-104-130	TV Inspection	3-104	3-103	190th St SW	Residential	Light infiltration & light mineral deposits @ joint	130 ft	TV-22	Light		2010	Mineral Deposits; Infiltration	4	N/A
	588	3-104-143	TV Inspection	3-104	3-103	190th St SW	Residential	Light mineral deposits in manhole channel	143 ft	TV-23	Light		2010	Mineral Deposits	4	N/A
	589	5-129-59.0	TV Inspection	5-129	5-128	52nd Ave W & 194th St SW	Collector	56 ft sag	59.0	TV-553	Light		2010	Sag	4	N/A
	590	5-129-151.0	TV Inspection	5-129	5-128	52nd Ave W & 194th St SW	Collector	69 ft sag	151.0	TV-554	Light		2010	Sag	4	N/A
	591	5-129-220.3	TV Inspection	5-129	5-128	52nd Ave W & 194th St SW	Collector	8 ft sag	220.3	TV-555	Light		2010	Sag	4	N/A
	592	5-130-199.5	TV Inspection	5-130	5-129	52nd Ave W & 192nd St SW	Collector	Infiltration weeper and light mineral deposits	199.5	TV-550	Light		2010	Infiltration; Mineral Deposits	4	N/A
	593	5-130-303.4	TV Inspection	5-130	5-129	52nd Ave W & 192nd St SW	Collector	Light mineral deposits and infiltration weeper @ side sewer connection	303.4	TV-551	Light		2010	Mineral Deposits; Infiltration	4	N/A
Three	594	5-130-340.3	TV Inspection	5-130	5-129	52nd Ave W & 192nd St SW	Collector	Light mineral deposits and infiltration weeper @ side sewer connection	340.3	TV-552	Light		2010	Mineral Deposits; Infiltration	4	N/A
	595	5-133-185.6	TV Inspection	5-133	5-132	52nd Ave W & 189th Pl SW	Collector	Circular crack at side sewer connection	185.6	TV-543	Light		2010	Pipe Crack	4	N/A
	596	5-133-229.2	TV Inspection	5-133	5-132	52nd Ave W & 189th Pl SW	Collector	9 ft sag	229.2	TV-544	Light		2010	Sag	4	N/A
	597	5-133-236.3	TV Inspection	5-133	5-132	52nd Ave W & 189th Pl SW	Collector	Light mineral deposits and infiltration at lateral joint	236.3	TV-545	Light		2010	Mineral Deposits; Infiltration	4	N/A
	598	5-139-181	TV Inspection	5-139	5-138	194th St SW	Residential	Pipe flowing greater than 3/4 full- surcharge from downstream manhole	181 ft	TV-120	Heavy		2010	Pipe Flow	4	N/A
	599	5-139-19	TV Inspection	5-139	5-138	194th St SW	Residential	Infiltration @ pipe joint- weeper & light mineral deposits	19 ft	TV-118	Light		2010	Mineral Deposits; Infiltration	4	N/A
	600	5-139-115	TV Inspection	5-139	5-138	194th St SW	Residential	Light mineral deposits @ lateral joint	115 ft	TV-119	Light		2010	Mineral Deposits	4	N/A
	601	5-169.1-72.0	TV Inspection	5-169.1	5-170	188th St SW & 48th Ave W	Collector	Light mineral deposits at lateral connection	72.0	TV-517	Light		2010	Mineral Deposits	4	N/A
	602	5-169.1-294.0	TV Inspection	5-169.1	5-170	188th St SW & 48th Ave W	Collector	Pipe segment joint deflection on right side of pipe	294.0	TV-518	Light		2010	Offset Joint	4	N/A
	603	5-169.1-325.6	TV Inspection	5-169.1	5-170	188th St SW & 48th Ave W	Collector	Light mineral deposits at lateral connection	325.6	TV-519	Light		2010	Mineral Deposits	4	N/A
	604	5-169.1-14.6	TV Inspection	5-169.1	5-169	188th St SW & 51st Pl W	Collector	12 ft sag	14.6	TV-520	Light		2010	Sag	4	N/A
	605	5-169.1-26.3	TV Inspection	5-169.1	5-169	188th St SW & 51st Pl W	Collector	8 ft sag	26.3	TV-521	Light		2010	Sag	4	N/A
	606	5-169.1-120.0	TV Inspection	5-169.1	5-169	188th St SW & 51st Pl W	Collector	12 ft sag	120.0	TV-523	Light		2010	Sag	4	N/A
	607	5-182-153.5	TV Inspection	5-182	5-183	49th Pl W & 185th Pl SW	Residential	Infiltration at joint and offset joint; light mineral deposits	153.5	TV-631	Light		2010	Infiltration; Offset Joint; Mineral Deposits	4	N/A
	608	5-183-13.9	TV Inspection	5-183	5-182	49th Pl W & 185th Pl SW	Residential	Heavy mineral deposits	13.9	TV-707	Heavy		2010	Mineral Deposits	4	70.4
	609	5-183-19.2	TV Inspection	5-183	5-182	49th Pl W & 185th Pl SW	Residential	Light mineral deposits @ joint	19.2	TV-708	Light		2010	Mineral Deposits	4	70.4
	610	5-190-74.5	TV Inspection	5-190	5-189	47th Pl W & 184th Pl SW	Easement	Mineral deposits at joint, infiltration weeper	74.5	TV-590	Light		2010	Mineral Deposits	4	N/A
	611	5-190-78.2	TV Inspection	5-190	5-189	47th Pl W & 184th Pl SW	Easement	Infiltration at joint	78.2	TV-591	Light		2010	Infiltration	4	N/A
	612	5-190-81.4	TV Inspection	5-190	5-189	47th Pl W & 184th Pl SW	Easement	Circular crack, visible infiltration	81.4	TV-592	Light		2010	Pipe Crack; Infiltration	4	N/A
	613	5-36.1-96	TV Inspection	5-36.1	5-37	48th Ave W & 192nd St SW	Residential	Heavy debris in pipe- mineral deposits @ joint- blocking flow if there is any- infiltration runner through deposits @joint	96.0	TV-293	Heavy		2010	Debris; Mineral Deposits; Infiltration	3	N/A
	614	5-36.1-73.9	TV Inspection	5-36.1	5-37	48th Ave W & 192nd St SW	Residential	Infiltration stain @ pipe segment joint	73.9	TV-292	Light		2010	Infiltration	3	N/A
	615	5-36.1-153.1	TV Inspection	5-36.1	5-37	48th Ave W & 192nd St SW	Residential	Infiltration dripper through lateral joint	153.1	TV-294	Light		2010	Infiltration	3	N/A

APPENDIX I

CITY CODES

CITY OF LYNNWOOD CODE

Chapter 14.12 USE

Sections:

- 14.12.010 *Repealed.*
- 14.12.015 Waste disposal.
- 14.12.020 *Repealed.*
- 14.12.030 Privies, cesspools, septic tanks prohibited.
- 14.12.040 *Repealed.*
- 14.12.042 Connection to public system required.
- 14.12.043 Authority to compel connection.
- 14.12.045 Service of notice to connect.
- 14.12.050 Prohibited use of sanitary sewer.
- 14.12.060 Discharging unpolluted waters.
- 14.12.070 *Repealed.*

14.12.010 Repealed.

Repealed by Ord. 1706.

14.12.015 Waste disposal.

Unless otherwise provided for, all domestic and industrial wastewater shall be discharged to the POTW. (Ord. 1945 § 3, 1993; Ord. 1706, 1989)

14.12.020 Repealed.

Repealed by Ord. 1706.

14.12.030 Privies, cesspools, septic tanks prohibited.

Except as hereinafter provided, it is unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of sewage. (Ord. 147 § 3.03, 1963)

14.12.040 Repealed.

Repealed by Ord. 1706.

14.12.042 Connection to public system required.

Every residence, apartment house, motel, hotel, factory, store, commercial establishment, or other building in which plumbing fixtures have been or are to be placed shall be required to connect with the municipal sanitary sewerage system within 90 days of written notice from the city whenever the Snohomish County Board of Health determines that a failing on-site wastewater system threatens public health or, for any public sewer installed after March 1, 2007, within 90 days after written notice that sewer service is available to said building; and provided, that any such building or part of building, or any exterior drainage facility, is within 200 feet of a public sewer. (Ord. 2665 § 2, 2007; Ord. 1706 § 14.90.910, 1989; Ord. 127 § 4, 1962)

14.12.043 Authority to compel connection.

The administrative authority is empowered to compel a connection to the public sewer when such connection is authorized by this chapter. (Ord. 2665 § 3, 2007; Ord. 1706, 1989; Ord. 127 § 5, 1962)

14.12.045 Service of notice to connect.

Prior to completion of construction of the sanitary sewage system, whenever any land, building or premises is required to be connected with the public sewer as

provided in this chapter, the administrative authority shall serve upon the owner of record of said land, building or premises a notice in writing specifying the time within which such connection must be made, which time shall not be more than 90 days from the date of delivery of such notice. Service of such notice shall be deemed sufficient if mailed to the owner of record. (Ord. 1706 § 14.90.910, 1989; Ord. 781 § 21, 1975; Ord. 127 § 6, 1962)

14.12.050 Prohibited use of sanitary sewer.

No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water or untreated industrial process waters into any sanitary sewer. (Ord. 781 § 8, 1975)

14.12.060 Discharging unpolluted waters.

Storm, surface, ground waters, or any other unpolluted drainage shall be discharged only into such sewers as are specifically designated as storm sewers or to a natural outlet approved by the director of public works. Industrial cooling water or unpolluted process waters may be discharged, upon approval of the director of public works, to a storm sewer or natural outlet. (Ord. 781 §§ 2, 10, 1975; Ord. 147 § 9.02, 1963)

14.12.070 Repealed.

Repealed by Ord. 1706.

This page of the Lynnwood Municipal Code is current through Ordinance 2839, passed June 14, 2010.

Disclaimer: The City Clerk's Office has the official version of the Lynnwood Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

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Chapter 14.60
WASTEWATER PRETREATMENT

Sections:

Article I. Regulations

- 14.60.010 –
- 14.60.110 *Repealed.*
- 14.60.200 Purpose.
- 14.60.300 General prohibitions.
- 14.60.3015 Specific prohibitions.
- 14.60.312 Tampering with monitoring device – Prohibited.
- 14.60.3183 Federal categorical pretreatment standards.
- 14.60.3186 State requirements.
- 14.60.319 Local limits.
- 14.60.3195 pH effluent limitations under continuous monitoring.
- 14.60.320 Upset provisions.
- 14.60.325 Bypass.
- 14.60.330 Accidental discharge facilities.
- 14.60.335 Accidental discharge.
- 14.60.340 Dilution prohibited.
- 14.60.350 Pretreatment facilities.
- 14.60.352 F.O.G. pretreatment required.
- 14.60.354 Grease removal system required – When.
- 14.60.355 F.O.G. control plans – Contents.
- 14.60.356 Washing facilities, grease rack – Pretreatment.
- 14.60.358 F.O.G. pretreatment facilities – Installation and maintenance.
- 14.60.3582 Grease removal system additives.
- 14.60.3584 Grease removal system sizing.
- 14.60.3586 Recordkeeping/reporting requirements.
- 14.60.359 Permit to be obtained for installation of grease interceptor.
- 14.60.3593 Compliance with applicable pretreatment requirements.
- 14.60.3596 Additional pretreatment measures.
- 14.60.360 Right of revision.
- 14.60.365 Special agreement.
- 14.60.370 Septage and holding tank sewage.

Article II. Administration

- 14.60.400 Purpose.
- 14.60.500 Disclosure forms.
- 14.60.503 Industrial wastewater discharge permits – Application.
- 14.60.5032 Wastewater discharge permitting – Extrajurisdictional users.
- 14.60.5034 Wastewater discharge permitting – Zero discharge permits.
- 14.60.5036 Wastewater discharge permitting – Middle tier categorical industrial user.
- 14.60.5038 Wastewater discharge permitting – Nonsignificant categorical industrial user.
- 14.60.504 Industrial discharge permit – Requirements.
- 14.60.505 Industrial wastewater discharge permit – Duration.
- 14.60.506 Industrial wastewater discharge permit – Transfer.
- 14.60.507 Industrial wastewater discharge permit – Modification.

<u>14.60.508</u>	Industrial wastewater discharge permit – Reporting required.
<u>14.60.509</u>	Signatory and certification requirement.
<u>14.60.510</u>	Limited permits – Required when.
<u>14.60.512</u>	Limited permits – Criteria.
<u>14.60.513</u>	Limited permits – Special conditions.
<u>14.60.514</u>	Limited permits – Issuance, revocation, transfer.
<u>14.60.515</u>	Limited permits – Upgrade to discharge permit when.
<u>14.60.516</u>	Public notice for industrial wastewater discharge permits.
<u>14.60.520</u>	Public hearing.
<u>14.60.525</u>	Monitoring facilities.
<u>14.60.530</u>	Sampling and analysis requirements.
<u>14.60.533</u>	Resampling required when violation occurs.
<u>14.60.535</u>	Compliance monitoring.
<u>14.60.5355</u>	Noncompliance reporting.
<u>14.60.536</u>	Compliance schedules for meeting applicable pretreatment standards.
<u>14.60.537</u>	Notification of significant production changes.
<u>14.60.538</u>	Sampling and analysis frequencies.
<u>14.60.540</u>	Inspection of facilities.
<u>14.60.545</u>	Right to enter.
<u>14.60.550</u>	Accidental spill prevention plan.
<u>14.60.553</u>	Notification of changes in discharge.
<u>14.60.554</u>	Hazardous waste notification.
<u>14.60.555</u>	Discontinuance of discharge.
<u>14.60.556</u>	TTO reporting.
<u>14.60.557</u>	Reports from unpermitted users.
<u>14.60.558</u>	Timing.
<u>14.60.560</u>	Confidential information.
<u>14.60.565</u>	Preemption of limitations, standards or requirements.
<u>14.60.570</u>	Publication of violators.
<u>14.60.575</u>	Records retention – Required.

Article III. Enforcement

<u>14.60.605</u>	Violations – Remedies.
<u>14.60.610</u>	Violations.
<u>14.60.611</u>	Maximum daily concentration allowed.
<u>14.60.613</u>	Temperature limitation.
<u>14.60.614</u>	Maximum allowable poundage limitations.
<u>14.60.615</u>	Reporting requirements.
<u>14.60.616</u>	F.O.G. pretreatment facility maintenance – Compliance with control plan.
<u>14.60.617</u>	Discharge of dangerous waste.
<u>14.60.618</u>	Explosion meter readings.
<u>14.60.619</u>	Pass-through or interference.
<u>14.60.620</u>	Emergency suspension of service and industrial wastewater discharge permit or limited permit.
<u>14.60.623</u>	Termination of treatment services – Permit revocation.
<u>14.60.624</u>	Wastewater discharge permit re-issuance.
<u>14.60.625</u>	Notice of violation and administrative order.
<u>14.60.630</u>	Administrative hearing.
<u>14.60.635</u>	Civil penalties.
<u>14.60.640</u>	Civil liability for expenses and fines.
<u>14.60.645</u>	Criminal penalties.
<u>14.60.660</u>	Judicial review.
<u>14.60.665</u>	Right to written interpretation of chapter.

14.60.900 Severability.**Article I. Regulations****14.60.010 – 14.60.110 Repealed.**

Repealed by Ord. 1706.

14.60.200 Purpose.

This chapter sets forth uniform requirements for users of the publicly owned treatment works (POTW) for the city of Lynnwood, and enables the city to comply with all applicable state and federal laws, including the Clean Water Act (33 USC 1251 et seq.) and the General Pretreatment Regulations (40 CFR Part 403). The objectives of this chapter are:

A. To prevent the introduction of pollutants into the POTW that will interfere with the operation of the POTW;

B. To prevent the introduction of pollutants into the POTW which will pass through the POTW, inadequately treated, into receiving waters or otherwise be incompatible with the POTW;

C. To ensure that the quality of the wastewater treatment plant biosolids is maintained at a level which allows its use and disposal in compliance with applicable statutes and regulations;

D. To protect POTW personnel who may be affected by wastewater, wastewater solids, and biosolids in the course of their employment and to protect the general public;

E. To improve the opportunity to recycle and reclaim wastewater and biosolids from the POTW.

This chapter shall apply to all users of the POTW. This chapter authorizes the issuance of wastewater discharge permits and discharge authorizations; authorizes monitoring, compliance, and enforcement activities; establishes administrative review procedures; requires user reporting; and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein. (Ord. 2742 § 2, 2008)

14.60.300 General prohibitions.

No user shall introduce or cause to be introduced into the POTW any pollutant or wastewater which causes pass-through or interference. These general prohibitions apply to all users of the POTW whether or not they are subject to categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.3015 Specific prohibitions.

No user shall introduce or cause to be introduced into the POTW the following pollutants, substances, or wastewater:

A. Pollutants which create a fire or explosive hazard in the POTW, including, but not limited to, wastestreams with a closed-cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees centigrade using the test methods specified in 40 CFR 261.21;

B. Wastewater having a pH less than five or more than 11.0 (unless in compliance with LMC 14.60.319 or otherwise causing corrosive structural damage to the POTW or equipment;

C. Solid or viscous substances in amounts which will cause obstruction of the flow in the POTW resulting in interference but in no case solids greater than one-quarter inch;

D. Pollutants, including oxygen-demanding pollutants (BOD, COD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants, will cause interference with the POTW;

E. Wastewater having a temperature which will inhibit biological activity in the treatment plant resulting in interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 104 degrees Fahrenheit or 40 degrees centigrade, or the temperature exceeds 150 degrees Fahrenheit or 65 degrees centigrade at the point of discharge to the public sewers unless the approval authority, upon the request of the POTW, approves alternate temperature limits;

F. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass-through;

G. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

H. Trucked or hauled pollutants (except domestic sewage or septic tank wastes) unless authorized by the director, and at discharge points designated by the city;

I. Noxious or malodorous liquids, gases, solids, or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or a hazard to life, or to prevent entry into the sewers for maintenance or repair;

J. Wastewater which imparts color which cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts color to the treatment plant's effluent, thereby violating the city's NPDES permit. Color (in combination with turbidity) shall not cause the treatment plant effluent to reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonably established norm for aquatic life;

K. Wastewater containing any radioactive wastes or isotopes except as specifically approved by the director in compliance with applicable state or federal regulations;

L. Storm water, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, noncontact cooling water, and unpolluted wastewater, unless specifically authorized by the director;

M. Any sludges, screenings, or other residues from the pretreatment of industrial or commercial wastes or from industrial or commercial processes, except as authorized by the director;

N. Medical wastes, except as specifically authorized by the director;

O. Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail a toxicity test;

P. Detergents, surface-active agents, or other substances in amounts which may cause excessive foaming in the POTW;

Q. Any liquids, solids, or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the POTW or to the operation of the POTW. At no time shall two successive readings on an explosion meter, at the point of discharge into the system (or at any point in the system), be more than five percent nor any single reading over 10 percent of the lower explosive limit (LEL) of the meter;

R. Animal entrails, bones, hair, hides or fleshings, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dusts, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas, tar asphalt residues, residues from refining or processing of fuel or lubricating oil, mud, or glass grinding or polishing wastes in amounts that cause interference in the POTW;

S. Any substance which will cause the POTW to violate its NPDES and/or other disposal system permits;

T. Any wastewater, which in the opinion of the director can cause harm either to the sewers, sewage treatment process, or equipment; have an adverse effect on the receiving stream; or can otherwise endanger life, limb, public property, or constitute a nuisance, unless allowed under special agreement by the director (except that no special waiver shall be given from categorical pretreatment standards);

U. The contents of any tank or other vessel owned or used by any person in the business of collecting or pumping sewage, effluent, septage, or other wastewater unless said person has first obtained testing and approval as may be generally required by the city of Lynnwood and paid all fees assessed for the privilege of said discharge;

V. Any hazardous or dangerous wastes as defined in rules published by the state of Washington (Chapter 173-303 WAC) and/or in EPA rules 40 CFR Part 261;

W. Persistent pesticides and/or pesticides regulated by the Federal Insecticide Fungicide Rodenticide Act (FIFRA);

X. Any slug load;

Y. Any substance which may cause the POTW's effluent or treatment residues, sludges, or scums to be unsuitable for reclamation and reuse, or to interfere with the reclamation process;

Z. Fats, oils and grease in amounts that may cause obstructions or maintenance problems in the collection/conveyance system, or interference in the POTW;

AA. The use of the treatment and controls located at the POTW for wastewater treatment required by a National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP) under 40 CFR Part 63 is prohibited. The discharge of any untreated wastewater regulated by a NESHAP also is prohibited. The POTW does not and will not accept a NESHAP regulated wastestream nor provide treatment or controls as an agent for any industrial user within the meaning of 40 CFR Part 63, including but not limited to 40 CFR Part 63.1595.

Pollutants, substances, or wastewater prohibited by this section shall not be processed or stored in such a manner that they are likely to be discharged to the POTW unless the user has in place an accidental spill prevention plan (ASPP)/slug control plan. (Ord. 2742 § 2, 2008)

14.60.312 Tampering with monitoring device – Prohibited.

No discharger shall tamper with, damage or render inaccurate any wastewater monitoring device required by this chapter. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.3183 Federal categorical pretreatment standards.

The National Categorical Pretreatment Standards found at 40 CFR Chapter I, Subchapter N, Parts 405 through 471 are incorporated herein by reference as if set forth in full in this chapter. (Ord. 2742 § 2, 2008)

14.60.3186 State requirements.

State requirements and limitations on discharges to the POTW shall be met by all users which are subject to such standards in any instance in which they are more stringent than federal requirements and limitations, or those in this chapter or other applicable ordinances. (Ord. 2742 § 2, 2008)

14.60.319 Local limits.

The following pollutant limits are established to protect against pass-through and interference. No person shall discharge wastewater containing in excess of the following daily maximum allowable discharge limits:

Ammonia	33 mg/L
Arsenic	0.5 mg/L
BOD5	300 mg/L
Cadmium	0.5 mg/L
Chromium	2.0 mg/L
Copper	2.0 mg/L
Cyanide	1.0 mg/L
Lead	1.5 mg/L

Mercury	0.05 mg/L
Molybdenum	3.0 mg/L
Nickel	1.5 mg/L
Nitrogen	50 mg/L
Total Phenols	10 mg/L
Selenium	0.5 mg/L
Silver	0.5 mg/L
Zinc	1.5 mg/L
Fats, oils and grease (polar or nonpolar)	200 mg/L
pH	5.0 to 11.0

In addition to the above concentration limits and those contained in the categorical standards, the director may also impose mass limits if it is necessary for the protection of the city's treatment facilities and/or sludge disposal. Such poundage limits shall be derived using the following formula:

$$\text{pounds/day} = (\text{conc. in mg/L}) \times (\text{gal. discharge/day}^*) \times 8.34$$

*In million gallons discharged per day, i.e., 100 gallons is represented by 0.000100 in million gallons.

The above limits apply at the point where the wastewater is discharged to the POTW (end of the pipe). Categorical pretreatment standards apply at the end of the process. However, the director may elect to have local limits apply after pretreatment and/or prior to mixing with dilution flows.

All concentrations for metallic substances are for "total" metal unless indicated otherwise. The director may impose mass limitations in addition to (or in place of) the concentration based limitations above.

Where a user is subject to a categorical pretreatment standard and a local limit for a given pollutant, the more stringent limit or applicable pretreatment standard shall apply.

The city council authorizes the director to revise local limits. (Ord. 2742 § 2, 2008)

14.60.3195 pH effluent limitations under continuous monitoring.

A. Where a permittee continuously monitors the pH of wastewater discharged to the city's sewer system pursuant to a requirement in their discharge permit, the permittee shall maintain the pH of such wastewater within the range set forth in the permit, except excursions from the range are permitted subject to the following limitations:

1. The total time during which the pH values are outside the required range of pH values shall not exceed two hours in any calendar month; and
2. No individual excursion from the allowable range of pH values shall exceed 15 minutes.

B. At no time will the pH value be outside the allowable range of pH values by more than one pH unit.

C. At no time shall the pH be less than five pH units nor more than 11 pH units.

D. All batch discharges shall be in compliance with the allowable pH range.

E. For the purposes of this chapter, an excursion is an unintentional and temporary incident in which the pH value of the discharged wastewater exceeds the range set forth in the user's discharge permit.

F. Temporary pH value excursions that comply with the provisions of this section of this chapter will not be considered violations of the user's discharge permit but shall be reported in the pretreatment self-monitoring report with copies of the associated pH recorder charts. (Ord. 2742 § 2, 2008)

14.60.320 Upset provisions.

Each discharger shall be subject to the following provisions in the event of an upset condition. An upset can be used as an affirmative defense to an action brought for noncompliance with categorical pretreatment standards or noncompliance with this chapter provided the discharger demonstrates through properly signed, contemporaneous operating logs or other relevant evidence that:

- A. The upset occurred and the specific cause can be identified.
- B. At the time of the upset, the facility was being operated in a prudent and workmanlike manner according to all appropriate operation and maintenance procedures.
- C. The discharger has submitted the following information to the city within 24 hours of discovering the upset:
 1. A description of the discharge and the cause of noncompliance;
 2. The period of noncompliance including exact dates and times or, if the noncompliance has not been corrected, the anticipated time the noncompliance is expected to continue;
 3. The steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

If this information is provided orally, a written submission must be sent within five days.

The discharger has the burden of proof to establish the occurrence of an upset in any enforcement proceeding.

The discharger has the responsibility to control production or cease discharges as necessary to maintain compliance with pretreatment standards upon reduction, loss, or failure of the facility until the facility is restored or an alternative method of treatment is provided. This requirement also applies where the primary source of power of the facility is reduced, lost or fails. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.325 Bypass.

- A. For the purposes of this section:
 1. "Bypass" means the intentional diversion of wastestreams from any portion of a user's treatment facility.
 2. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- B. A user may allow any bypass to occur which does not cause applicable pretreatment standards or requirements to be violated, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of subsections (C) and (D) of this section.
- C.
 1. If a user knows in advance of the need for a bypass, it shall submit prior notice to the POTW, at least 10 days before the date of the bypass, if possible.
 2. A user shall submit oral notice to the city of an unanticipated bypass that exceeds applicable pretreatment standards within 24 hours from the time it becomes aware of the bypass. A written submission shall also be provided within five days of the time the user becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass. The POTW may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
- D. 1. Bypass is prohibited, and the POTW may take an enforcement action against a user for a bypass, unless:

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - c. The user submitted notices as required under subsection (C) of this section.
2. The POTW may approve an anticipated bypass, after considering its adverse effects, if the POTW determines that it will meet the three conditions listed in subsection (D)(1) of this section. (Ord. 2742 § 2, 2008)

14.60.330 Accidental discharge facilities.

Each discharger shall provide protection from accidental discharges of prohibited or regulated materials. Facilities to prevent accidental discharges of these materials into the city POTW shall be provided for and maintained by the discharger at the owner's expense. Detailed plans and specifications of such facilities shall be submitted as a part of the waste management report required by the wastewater discharge permit or limited permit. Review and approval of plans and operation procedures does not relieve the discharger from the responsibility to comply with discharge limitations or to modify his treatment facilities in the future to meet subsequent standards, regulations or requirements. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.335 Accidental discharge.

Any discharge that meets the criteria of a slugload shall be considered a reportable accidental discharge. In the event of an accidental discharge, it is the responsibility of the discharger to notify the POTW at the time of the discharge. The notifications shall include the location, time, volume, substance(s), concentrations, corrective actions and the persons to be contacted concerning the accident. Within five days the discharger must submit a written report to the director explaining all the details of the spill, what procedures were taken to mitigate the effects of the spill, and the manner in which the waste was disposed. This report shall also include a description of the measures taken by the company to prevent future occurrences. Notification does not relieve the discharger of any expense, loss, damage, or other liability which may have been incurred as a result of damage to the POTW, to person(s) or personal property; nor does such notification relieve the discharger of any fines, penalties incurred by this chapter or other regulatory authority. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.340 Dilution prohibited.

No discharger shall ever increase the use of process water or, in any other way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with categorical pretreatment standards or any limitations set by this chapter. The city may impose mass limitations on dischargers where the imposition of mass limitations is appropriate. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.350 Pretreatment facilities.

The discharger shall provide all known, available, and reasonable methods of prevention, control, and pretreatment as required to comply with this chapter and state and federal regulations, and shall achieve compliance with all applicable pretreatment standards within the time limitations as specified by appropriate statutes, regulations, chapters, and ordinances. Any facilities required to pretreat wastewater to a level acceptable to the city shall be provided, properly operated and maintained at the discharger's expense. Detailed plans showing the pretreatment facilities shall be submitted to the city for review and must be accepted by the city and the state

Department of Ecology before construction of the facility. The review of such plans by the city shall in no way relieve the discharger from the responsibility of modifying its facility as necessary to produce an effluent acceptable to the city under the provisions of this chapter. The discharger shall obtain all necessary construction-operating permits from the city. Prior to completion of the wastewater treatment facility, the discharger shall furnish its plan of operations and maintenance procedures for the city to review. Such pretreatment facilities shall be under the control and direction of a qualified operator.

Any subsequent proposal for significant changes in the pretreatment facilities or method of operation shall be reported to and be accepted by the state Department of Ecology and city prior to the discharger's initiation of the changes.

Pretreatment facilities shall comply with the applicable requirements of WAC 173-216-110, Chapter 173-240 WAC, and RCW 90.48.010. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.352 F.O.G. pretreatment required.

All food service establishments that serve or prepare food or any other establishment from which a considerable amount of F.O.G. may be introduced to the sewer system shall have an adequate grease removal system installed and/or exercise proper kitchen best management practices to ensure that excess concentrations of F.O.G. are not discharged to the POTW. Take-out food establishments or other establishments that prepare food, but do not cook in oil or grease, and who serve food only in disposable containers, may be exempted from this requirement, provided their discharges will not violate the general discharge prohibitions of this chapter.

These pretreatment facilities must be grease interceptors or other approved grease removal systems installed in the waste line leading from sinks, drains, or other fixtures where F.O.G. may be discharged. The grease interceptors and other grease removal systems must meet, at a minimum, the specifications of the current Uniform Plumbing Code as adopted by the city at the time of construction. Dischargers must maintain these systems in a manner that will always prevent fat waste, oil or grease from being carried into the sewer system. Fat waste, oil or grease removed from such a system shall not be disposed of in sanitary or storm sewers.

Containment of fats, oils and grease shall be in approved containers and the surrounding area clean of any residue. Containers shall be inside a covered enclosure that is kept clean and capable of containing any and all spillage from the containers. The director may grant a variance on the type or size of grease removal system required as deemed appropriate under extraordinary circumstances. (Ord. 2742 § 2, 2008; Ord. 2031 § 6, 1995; Ord. 1831 § 13, 1991; Ord. 1705, 1989)

14.60.354 Grease removal system required – When.

If any food service establishments where F.O.G. may be introduced to the sewer system are sold or leased, and the new owners or operators must apply for a new business license, they shall be required to install or hook up to a grease removal system within six months. In the event that an existing business is not capable of fully utilizing the existing grease removal system due to faulty or incomplete plumbing, or the existing grease removal system is inadequate, the business shall, within 12 months of notification, make whatever corrections or upgrades necessary to bring their system into compliance.

The city shall approve of all control plans or installations of grease removal systems. The cost of grease interceptor permits shall be as shown in Chapter 3.104 LMC. (Ord. 2742 § 2, 2008; Ord. 2656 §§ 1, 2, 2006; Ord. 2031 § 7, 1995; Ord. 1705, 1989)

14.60.355 F.O.G. control plans – Contents.

The goal of the F.O.G. control plan is to implement reasonable and technically feasible controls of visible or free-floating F.O.G. The basic components of the F.O.G. control plan should include:

- A. A written policy articulating management and corporate support for the plan and a commitment to implement planned activities and achieve established goals;
- B. A description of the facility type and a summary of the products made and/or service provided;
- C. Quantities of F.O.G. brought into the facility as raw product, amounts contained in products and quantities discharged to the sewer;
- D. Schematics of process areas illustrating drains and discharge points connected to the sewer;
- E. A description of current reduction, recycling and treatment activities;
- F. Identification of a full range of potentially feasible reduction opportunities;
- G. Specific performance goals and implementation schedule;
- H. Signature of owner. (Ord. 2742 § 2, 2008; Ord. 2031 § 8, 1995)

14.60.356 Washing facilities, grease rack – Pretreatment.

Dischargers who operate automatic and coin-operated laundries, car washes, filling stations, commercial garages or similar businesses having any type of washing facilities or grease racks and any other dischargers producing grit, sand, oils, or other materials which have the potential of causing partial or complete obstruction of the building sewer or other areas in the sewer system shall install approved interceptors or tanks in accordance with the latest specifications adopted by the city of Lynnwood such that excessive amounts of oil, sand and inert solids are effectively prevented from entering the POTW sewer. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.358 F.O.G. pretreatment facilities – Installation and maintenance.

All pretreatment facilities to prevent the discharge of fat waste, oil, or grease shall be installed, maintained and operated by the discharger at his own expense. The installation shall be kept in continuous operation at all times, and shall be maintained to provide efficient operation. Cleaning of an interceptor-style grease removal system (or "GRS") must be performed by a service contractor qualified to perform such cleaning. Trap-style GRS may be maintained by the establishment as long as all the proper procedures for the cleaning and disposing of all waste materials are done in the proper manner.

At a minimum, interceptor-style GRSs shall be cleaned at least once every 90 days and trap-style GRSs cleaned at least biweekly. These required frequencies may be extended with the approval of the director. GRSs must be cleaned whenever the combined thickness of the floating greases and settled solids is equal to, or greater than, 25 percent of the total liquid depth in the GRS. When cleaned, an interceptor-style GRS must be completely pumped out, all solids removed, solidified grease scraped from the interior and the structure and all internal plumbing inspected for damage and corrosion. The GRS shall be refilled with cold water prior to being placed back into operation. If repairs are required, they shall be performed within seven days.

When cleaned, the trap-style GRS must have surface grease and oil removed, settled solids removed, all sides scraped, removable parts removed and cleaned, be inspected for damage and corrosion, and be properly reassembled. If repairs are required, they shall be performed within seven days.

Material that is removed in the process of cleaning a GRS shall not be discharged back into the GRS, any part of the POTW, any private sewer, any drainage piping, or storm sewer system. All materials removed shall be handled and disposed of in accordance with federal, state, county and local laws, rules and regulations. In addition to the maintenance required above, automatic grease removal systems shall be maintained in accordance with the manufacturers' guidelines.

If a failure to maintain settling tanks, grit traps, grease interceptors, or oil/water separators or any other grease pretreatment facility results in partial or complete blockage of the building sewer or other parts of the POTW, adversely affects the treatment or transmission capabilities of the POTW, or requires excessive maintenance by the city, the discharger responsible for the facilities shall be subject to the remedies, including enforcement and penalties, in Article III of this chapter. (Ord. 2742 § 2, 2008; Ord. 2031 § 9, 1995; Ord. 1945 § 4, 1993; Ord. 1705, 1989)

14.60.3582 Grease removal system additives.

The use of any additive, such as enzymes, chemicals, or bacteria, as a substitute for grease traps or interceptors or the maintenance of grease traps or interceptors is prohibited. In no case shall any additive that emulsifies fats, oils or grease be used. Any use of additives as a supplement to grease interceptors shall first be authorized in writing by the director prior to their use by the facility owner. MSDS sheets and any other applicable information concerning the composition, frequency of use and mode of action of the proposed additive shall be sent to the city together with a written statement outlining the proposed use of the additive. Based on the information received and any other information solicited from the potential user or supplier, the city shall allow or deny the use of the additive in writing. Permission to use any specific additive may be withdrawn by the city at any time if violations of this chapter occur that can be demonstrated to be due to the use of the additive. (Ord. 2742 § 2, 2008)

14.60.3584 Grease removal system sizing.

The type (grease trap or grease interceptor) and size of the grease removal system shall be based on the sizing of grease interceptors formula as defined in the currently adopted Uniform Plumbing Code.

In no case shall a grease trap smaller than 20 gallons per minute or larger than 55 gallons per minute be installed without approval of the director. In no case shall a grease interceptor smaller than 1,500 gallons be installed without prior approval of the director. The maximum size for an interceptor shall be 4,000 gallons. If the calculated minimum size is larger than this, two interceptors of approximately equal size shall be installed in series. If the calculated minimum size is larger than 8,000 gallons, two 4,000-gallon interceptors shall be installed in series. (Ord. 2742 § 2, 2008)

14.60.3586 Recordkeeping/reporting requirements.

Users subject to this chapter shall document all cleaning and maintenance activities performed on their grease removal system. These records shall be maintained for a minimum of three years and be available for inspection and copying by the director or his representative. This period shall be automatically extended for the duration of any litigation concerning the user or the POTW, or where the user has been specifically notified of a longer retention period required by the director. Where the director has determined that a user must provide written reports, these reports shall be submitted in accordance with the requirement of the director. Written reports will be deemed to have been submitted on the date postmarked. For reports which are not mailed, postage prepaid, into a mail facility serviced by the United States Postal Service, the date of receipt of the report by the city shall govern. (Ord. 2742 § 2, 2008)

14.60.359 Permit to be obtained for installation of grease interceptor.

A permit application for the installation of a grease interceptor shall be submitted to the department of public works for processing as required by LMC 2.44.040. (Ord. 2742 § 2, 2008; Ord. 2241 § 16, 1999)

14.60.3593 Compliance with applicable pretreatment requirements.

New source dischargers, and new users that are determined to be significant industrial users (SIUs), are required to comply with applicable pretreatment standards within the shortest feasible time (not to exceed 90 days from the beginning of

discharge). New sources, and new users that are determined to be significant industrial users (SIUs), shall install and have in operating condition, and shall "start-up" all pollution control equipment required to meet applicable pretreatment standards before beginning to discharge.

Any wastewater discharge permit issued to a categorical user shall not contain a compliance date beyond any deadline date established in EPA's categorical pretreatment standards. Any other existing user that is considered to be an SIU, or a categorical user that must comply with a more stringent local limit, which is in noncompliance with any local limits shall be provided with a compliance schedule to ensure compliance within the shortest time feasible. (Ord. 2742 § 2, 2008)

14.60.3596 Additional pretreatment measures.

Whenever deemed necessary, the director may require users to restrict their discharge during peak flow periods, designate that certain wastewater be discharged only into specific sewers, relocate and/or consolidate points of discharge, separate sewage wastestreams from industrial waste-streams, and such other conditions as may be necessary to protect the POTW and determine the user's compliance with the requirements of this chapter.

When determined necessary by the director, each user discharging into the POTW shall install and maintain, on his property and at his expense, a suitable storage and flow-control facility to ensure equalization of flow. The director may require the facility to be equipped with alarms and a rate of discharge controller, the regulation of which shall be determined by the director. A wastewater discharge permit may be issued solely for flow equalization. Users with the potential to discharge flammable substances may be required to install and maintain an approved combustible gas detection system.

Grease, oil, and sand interceptors shall be provided when, in the opinion of the director, they are necessary for the proper handling of wastewater containing excessive amounts of grease and oil, or sand; except that such interceptors shall not be required for residential users. All interception units shall be of type and capacity approved by the director and shall be so located as to be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned, and repaired regularly, as needed, by the user at his expense.

When a new building is constructed without a tenant, and has any sewers which are intended to serve wastes other than sanitary or domestic waste, a three-compartment interceptor approved by the director shall be installed. (Ord. 2742 § 2, 2008)

14.60.360 Right of revision.

The city reserves the right to amend this chapter, and any permits issued under it, to provide for more stringent limitations or requirements on discharges to the POTW if such amendments are deemed necessary to comply with the objectives set forth in LMC 14.04.005, or are otherwise in the public interest. No vested right shall be created by the issuance of any permit under this chapter. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.365 Special agreement.

The city reserves the right to enter into special agreements with users setting out special terms under which they may discharge to the POTW. In no case will a special agreement waive compliance with a categorical pretreatment standard or federal pretreatment requirement. However, the user may request a net gross adjustment to a categorical standard in accordance with 40 CFR 403.15. They may also request a variance from the categorical pretreatment standard from the approval authority in accordance with 40 CFR 403.13. (Ord. 2742 § 2, 2008)

14.60.370 Septage and holding tank sewage.

Any trucked or hauled pollutants, septage or holding tank sewage from any source are prohibited from being discharged into the POTW. (Ord. 2742 § 2, 2008; Ord. 1831 § 15, 1991; Ord. 1705, 1989)

Article II. Administration**14.60.400 Purpose.**

Except as otherwise provided herein, the director shall administer, implement, and enforce the provisions of this chapter. Any powers granted to or duties imposed upon the director may be delegated by the director to other city of Lynnwood personnel. The director may create administrative guidelines to implement the provisions of this chapter. (Ord. 2742 § 2, 2008)

14.60.500 Disclosure forms.

All existing and new businesses that discharge or have the potential to discharge wastes regulated by this chapter shall be required to complete an industrial waste disclosure form. The disclosure to be made by the discharger shall be made on written forms provided by the city and shall include such data, information and drawings as may be identified by the director. The disclosure forms must be returned to the director no later than within 30 days (except as noted below) of the occurrence of any of the following:

- A. Receipt by the user of a disclosure form with a request for completion and submittal of same from the director;
- B. Modification of any of the processes regulated by an existing permit which results in any changes in characteristics, volume, or point of discharge from those specified in the existing permit. The disclosure form must be submitted no later than 60 days prior to the expected modifications;
- C. Addition of a process which is regulated by national categorical pretreatment standards or addition of a discharge which is subject to local discharge regulations;
- D. Application for a building permit for initial construction, expansion, or remodeling. The disclosure form must be submitted for review before the building permit is issued.

Disclosure forms shall be reviewed by the city, and if the director makes the determination that a wastewater discharge permit is required, the disclosure form shall serve as a permit application and must be accompanied by the fee designated in Chapter 14.40 LMC.

Disclosure forms must be completed and signed by a principal executive officer of the company. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.503 Industrial wastewater discharge permits – Application.

All dischargers of industrial wastewater to the sewer system who are required to have an industrial wastewater discharge permit shall submit an application to the director. The industrial sewer discharge permit application shall be submitted to the department of public works for processing as required by LMC 2.44.040, unless federal rules and regulation require otherwise. New industrial users subject to federal categorical standards or local limitations as determined by the director shall apply 60 days prior to connecting to the city sanitary sewer. The director shall review applications, determine appropriate requirements, restrictions and limitations for the applicant and issue an industrial wastewater discharge permit as needed. Where a discharger becomes subject to a national categorical pretreatment standard, and has not previously submitted an application for a wastewater discharge permit, the discharger shall apply for a wastewater discharge permit from the city within 90 days after the promulgation of the applicable categorical pretreatment standards by the EPA. All permittees shall apply for renewal of their wastewater permit no later than 90 days prior to the expiration of their present permit.

All dischargers who are subject to federal categorical standards must submit a baseline monitoring report within 180 days of the promulgation of appropriate categorical standards. The report shall follow the rules provided in 40 CFR 403.12(b).

For new sources the discharger may provide estimates of production, flow and quality and presence of regulated pollutants in its wastestream.

A new source may be required to submit an engineering report to the director and comply with Chapter 173-240 WAC; the report should explain the method of pretreatment a new source intends to use to meet applicable categorical standards. A new source shall give estimates of its anticipated flow and quantity of pollutants discharged.

The cost of industrial wastewater discharge permits shall be as shown in Chapter 3.104 LMC. (Ord. 2742 § 2, 2008; Ord. 2656 §§ 1, 2, 2006; Ord. 2076 § 17, 1996; Ord. 1705, 1989)

14.60.5032 Wastewater discharge permitting – Extrajurisdictional users.

New sources, and new users that are determined to be significant industrial users (SIUs), located beyond the city limits required to obtain a wastewater discharge permit shall comply with LMC 14.60.508(A) through (E). (Ord. 2742 § 2, 2008)

14.60.5034 Wastewater discharge permitting – Zero discharge permits.

Any categorical user that operates its regulated processes so that no industrial waste is discharged to the POTW may request that a zero discharge permit (ZDP) be issued by the city. To be eligible for a ZDP the user shall demonstrate to the director's satisfaction that no industrial waste will be discharged and shall either permanently seal all accesses to the POTW other than those required for disposal of domestic sewage or install shutoff devices that will accept city-installed, tamper-evident seals. Breaking this seal without prior authorization by the director shall be a violation of the ZDP and this chapter. (Ord. 2742 § 2, 2008)

14.60.5036 Wastewater discharge permitting – Middle tier categorical industrial user.

Any categorical user that operates its regulated processes so that it complies with the requirements in LMC 14.06.130, middle tier categorical industrial user, may request that it be designated a middle tier categorical industrial user. If the director agrees with that request, the user's discharge permit will be modified to incorporate the applicable provisions of 40 CFR 403. If, at any time, the user no longer complies with the requirements in LMC 14.06.130, middle tier categorical industrial user, it shall immediately notify the director and comply with the backup reporting requirements contained in the permit. (Ord. 2742 § 2, 2008)

14.60.5038 Wastewater discharge permitting – Nonsignificant categorical industrial user.

Any categorical user that operates its regulated processes so that it complies with the requirements in LMC 14.06.190(C), significant industrial user, may request that it be designated a nonsignificant categorical industrial user. If the director agrees with that request, the user will be issued a nonsignificant CIU permit and shall comply with the requirements of that permit. If, at any time, the user no longer complies with the requirements in LMC 14.06.190(C), significant industrial user, it shall immediately notify the director and comply with the backup reporting requirements contained in the permit. (Ord. 2742 § 2, 2008)

14.60.504 Industrial discharge permit – Requirements.

Wastewater permits shall specify no less than all of the following:

A. Limits on the average and maximum discharge of wastewater constituents and characteristics regulated thereby;

- B. Limits on average and maximum flow rate and time of discharge and/or requirements for flow control and equalization;
- C. Requirements for installation and maintenance of inspection and sampling facilities;
- D. Special Conditions. The city may reasonably require under particular circumstances of a given discharger, including but not limited to sampling locations, frequency of sampling, number, types, and standards for tests and reporting schedule;
- E. Compliance self-monitoring;
- F. Requirements for submission of discharge compliance monitoring reports or special technical reports;
- G. Requirements for submittal of an accidental spill prevention plan (ASPP);
- H. Requirements for immediate reporting of noncompliance, accidental spills, or upsets by the discharger;
- I. Requirements equivalent to the applicable Washington State waste discharge permit system requirements;
- J. Requirements for payment of fees pursuant to Chapter 14.40 LMC;
- K. Requirement that the director or designee shall have reasonable access to the discharger's premises to accomplish any required inspection, sampling or flow monitoring;
- L. A statement of applicable civil, criminal, and administrative penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.505 Industrial wastewater discharge permit – Duration.

All wastewater discharge permits shall be issued for a period of no greater than five years, subject to amendment or revocation as provided in this chapter. A permit may be issued for a shorter period or may be stated on its face to expire on a specific date. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.506 Industrial wastewater discharge permit – Transfer.

Wastewater discharge permits are issued to a specific discharger for a specific operation and are not assignable to another discharger without prior written approval of the city, and are not transferable to any other location. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.507 Industrial wastewater discharge permit – Modification.

The city reserves the right to amend any wastewater discharge permit issued hereunder in order to assure compliance or continued compliance by the city with applicable laws and regulations. Within nine months of the promulgation of a national categorical pretreatment standard, the wastewater discharge permit of each discharger subject to such standards shall be revised to require compliance with such standards within the time frame prescribed by such standards. In addition, the discharger with an existing wastewater discharge permit shall submit to the city within 90 days after the promulgation of an applicable national categorical pretreatment standard, information regarding the nature and concentrations of any pollutants or materials discharged that are prohibited or restricted by this chapter and information pertaining to additional pretreatment and/or operation and maintenance activities which will be required to comply with this chapter. The discharger must include a schedule of compliance, with a time schedule of completion of each activity. In no case shall a time frame be any longer than six months. The discharger shall be informed of any proposed changes in its permit at least 30 days prior to the effective date of change. Any changes or new conditions upon the discharger may require modification of the wastewater discharge permit, as well as include a reasonable time schedule for compliance. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.508 Industrial wastewater discharge permit – Reporting required.

All dischargers subject to national categorical pretreatment regulations must submit a 90-day compliance report within 90 days after the date the final national categorical pretreatment compliance must be achieved or, in the case of a new discharger, 90 days after the discharger starts to discharge to the POTW. The information provided in this report shall contain the same information as required by the baseline monitoring report as found in 40 CFR 403.12(b).

A. Identifying Information. The user shall submit the name and address of the facility including the name of the operator and owners.

B. Permits. The user shall submit a list of any environmental control permits held by or for the facility.

C. Description of Operations. The user shall submit a brief description of the nature, average rate of production, and standard industrial classification of the operation(s) carried out by such industrial user, including a list of all raw materials and chemicals used or stored at the facility which are, or could accidentally or intentionally be, discharged to the POTW; number and type of employees; hours of operation; each product produced by type, amount, process or processes, and rate of production; type and amount of raw materials processed (average and maximum per day) and the time and duration of discharges. This description should also include a schematic process diagram which indicates points of discharge to the POTW from the regulated or manufacturing processes. Disclosure of site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, inspection manholes, sampling chambers and appurtenances by size, location and elevation.

D. Flow Measurement.

1. Categorical User. The user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from each of the following:

a. Regulated or manufacturing process streams; and

b. Other streams as necessary to allow use of the combined wastestream formula of 40 CFR 403.6(e).

2. Noncategorical User. The user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from each of the following:

a. Total process flow, wastewater treatment plant flow, total plant flow or individual manufacturing process flow as required by the director.

The city may allow for verifiable estimates of these flows where justified by cost or feasibility considerations.

E. Measurements of Pollutants.

1. Categorical User.

a. The user shall identify the applicable pretreatment standards for each regulated or manufacturing process.

b. In addition, the user shall submit the results of sampling and analysis identifying the nature and concentration (or mass) where required by the categorical pretreatment standard or as required by the city of regulated pollutants (including standards contained in LMC 14.60.300 through 14.60.3015, specific prohibitions, as appropriate in the discharge from each regulated or manufacturing process. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of daily operations and shall conform to sampling and analytical procedures outlined in LMC 14.60.530.

c. The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this subsection.

d. Where an alternate concentration or mass limit has been calculated in accordance with 40 CFR 403.6(e) for a categorical user covered by a categorical pretreatment standard, this adjusted limit along with supporting data shall be submitted as part of the application.

2. Noncategorical User.

a. The user shall identify the applicable pretreatment standards for its wastewater discharge.

b. In addition, the user shall submit the results of sampling and analysis identifying the nature and concentration (or mass where required by the city) of regulated pollutants contained in LMC 14.60.300 through 14.60.3015, specific prohibitions, as appropriate in the discharge. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of daily operations and shall conform to sampling and analytical procedures outlined in LMC 14.60.530.

c. The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this subsection.

d. Where the director developed alternate concentration or mass limits because of dilution, this adjusted limit along with supporting data shall be submitted as part of the application.

F. Certification. A statement, reviewed by an authorized representative of the user and certified by a qualified professional as outlined in LMC 14.60.509, indicating whether the applicable pretreatment standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required for the user to meet the applicable pretreatment standards and requirements.

G. Compliance Schedule. If additional pretreatment and/or O&M will be required to meet the applicable pretreatment standards, the city will establish the shortest schedule by which the user will provide such additional pretreatment and/or O&M. The schedule shall conform with the requirements of LMC 14.60.3593, Compliance with applicable pretreatment requirements.

1. Where the user's categorical pretreatment standard has been modified by a removal allowance (40 CFR 403.7), the combined wastestream formula (40 CFR 403.6 (e)), and/or a fundamentally different factors variance (40 CFR 403.13) at the time the user submits the report required by this subsection, the information required by subsections (D) and (E) of this section shall pertain to the modified limits.

2. If the categorical pretreatment standard is modified by a removal allowance (40 CFR 403.7), the combined wastestream formula (40 CFR 403.6(e)), and/or a fundamentally different factors variance (40 CFR 403.13) after the user submits the report required by subsections (D) and (E) of this section, then a new report shall be submitted by the user within 60 days after the modified limit is approved.

H. Any other information as may be deemed necessary by the director to evaluate the wastewater discharge permit application. Incomplete or inaccurate applications will not be processed and will be returned to the user for revision.

For users subject to equivalent mass or concentration limits established by the city in accordance with procedures established in 40 CFR 403.6(c), this report shall contain a reasonable measure of the user's long-term production rate. For all other users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the user's actual production during the appropriate sampling period.

All permit holders are required to submit wastewater discharge monitoring reports to the pretreatment office at the frequencies and times designated in the discharge permit, but in no event less frequent than semi-annually. The report forms shall be furnished by the city. Submitted forms must contain all the results of analyses of the wastewater discharge performed by the permittee, even if the analyses are not required by the permit, and any other information required by the permit or requested on the form itself. The reports must be complete, accurate, and signed by an authorized representative of the discharger.

If any violation has occurred during the reporting period, the discharger must repeat the sampling and analyses and submit the results to the city. The resampling data

must be submitted to the city within 30 days after the discharger becomes aware a violation has occurred. Resampling analyses shall not be used for satisfying regular compliance monitoring requirements. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.509 Signatory and certification requirement.

All wastewater discharge permit applications and user reports must be signed by an authorized representative of the user and contain the following certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Ord. 2742 § 2, 2008)

14.60.510 Limited permits – Required when.

The director may issue limited permits to cover categories of dischargers which shall include businesses that collectively may cause pass-through or interference with the POTW. These categories include, but are not limited to, gas stations, auto/boat service stations, radiator shops, photo finishing, restaurants, fleet services, x-ray labs, car wash, printing and publishing, welding and repair, schools, pest control, wrecking yards, auto body and paint shops. Limited permits may be issued to categories of industries that meet the following requirements:

- A. Involve the same or substantially similar types of operations;
- B. Discharge the same types of wastes;
- C. Require the same effluent limitations or operating conditions; may require similar monitoring; and
- D. In the opinion of the director, are more appropriately controlled under a limited permit than under a wastewater discharge permit.

Industries that have been identified as needing limited permits are required to make application to the department of public works for such permits. The industrial waste limited discharge permit shall be processed by the department of public works as required by LMC 2.44.040, unless federal rules and regulation require otherwise. The cost of such permit shall be as shown in Chapter 3.104 LMC. (Ord. 2742 § 2, 2008; Ord. 2656 §§ 1, 2, 2006; Ord. 2076 § 18, 1996; Ord. 1705, 1989)

14.60.512 Limited permits – Criteria.

Limited permits shall specify no less than all of the following as determined applicable by the city:

- A. Fees and charges to be paid upon initial permit issuance;
- B. Requirements for immediate reporting of noncompliance by the discharger;
- C. Requirement for submittal of an accidental spill prevention plan;
- D. Requirements for a best management practices plan;
- E. Limits on the average and maximum discharge wastewater constituents and characteristics;
- F. Limits on the average and maximum flow rate and/or requirements for flow control and equalization;
- G. Compliance schedules for implementing permit conditions. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.513 Limited permits – Special conditions.

Special conditions as the city may reasonably determine under particular circumstances may be required of a given discharger, including but not limited to sampling frequency, number, and type; proof of maintenance on oil/water interceptors or grease interceptors; documentation of maintenance schedules and/or proof of recycled products such as used oil, antifreeze, or substances containing designated dangerous wastes; inspection and sampling facilities; statement of no discharge to the city POTW other than domestic usage only and/or no discharge of contaminated wastewaters to natural outlets. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.514 Limited permits – Issuance, revocation, transfer.

Sections of this chapter that pertain to modification, issuance, revocation, termination, application and monitoring for industrial wastewater discharge permits shall also apply to limited permits. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.515 Limited permits – Upgrade to discharge permit when.

The director may require any discharger authorized by a limited permit to apply for and obtain an industrial wastewater discharge permit. Cases where a wastewater discharge permit may be required include, but are not limited to, the following:

- A. The discharger is not in compliance with conditions of the limited permit;
- B. A change occurs in the technology or practices for control or abatement of pollutants for this discharger;
- C. Effluent limitation guidelines are promulgated for the discharger under the categorical pretreatment regulations, 40 CFR 403;
- D. Information obtained from POTW testing indicates that cumulative effects on the POTW from dischargers covered under the limited permit are unacceptable.

In cases where the director requires any discharger to apply for an industrial wastewater discharge permit, the discharger must be notified in writing that an industrial wastewater discharge permit is being required, an application form and a time limit for submitting the application. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.516 Public notice for industrial wastewater discharge permits.

Public notice shall be given in accordance with WAC 173-216-090. The city may initiate the public notice rather than requiring it of the discharger. The discharger shall pay the costs of the notification. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.520 Public hearing.

Public hearings may be requested in accordance with WAC 173-216-100. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.525 Monitoring facilities.

Whenever required by the director, a discharger shall provide, maintain and operate, at the discharger's own expense, a monitoring facility to allow inspection, sampling, and flow measurement of all discharges into the sewer system, as required by the city to assure compliance with this chapter. Each monitoring facility shall be situated on the discharger's premises, except that if such a location would be impractical or cause undue hardship on the discharger, the city may allow such facility to be constructed in an accessible public street or sidewalk area, located so that it will not be obstructed by landscaping or parked vehicles.

There shall be ample room in or near such sampling facility to allow accurate sampling and preparation of samples for analysis by the discharger and the city. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the discharger.

All monitoring facilities shall be constructed and maintained in accordance with all applicable construction standards and specifications. Construction of monitoring facilities for existing dischargers shall be completed within 180 days of receipt of notice

to do so by the director. Construction of monitoring facilities shall be completed by a new discharger prior to discharging wastewater into the POTW. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.530 Sampling and analysis requirements.

Sample types, measurements, analyses and sample frequency required for each discharger shall be determined by the director and included in the discharge permit. All measurements, tests and analyses of characteristics of water and wastes to which reference is made in this chapter, or in a discharge permit issued under this chapter, shall be in accordance with procedures established by the EPA pursuant to Section 304(H) of the Federal Clean Water Act as contained in 40 CFR 136, as now existing or hereafter amended, one copy of which shall be on file with the city clerk and which is adopted by this reference. All sampling, measurements and analyses done for satisfaction of the requirements of the permit shall be the responsibility of the discharger or his designee. All analyses performed to establish compliance and used in compliance reporting shall be performed by a laboratory accredited by the Washington State Department of Ecology, Quality Assurance Division in accordance with Chapter 173-50 WAC. Laboratories must be accredited for the analyses for which they are performing. All samples taken of permitted discharges must be reported to the city whether or not they are required by a permit. Detection limits for required tests must be equal to or less than permit limitations. The wastewater discharge amount shall be measured using either a flow measurement device, or, at the discretion of the director, the metered water supply to the discharger's facility. (Ord. 2742 § 2, 2008; Ord. 1831 § 16, 1991; Ord. 1705, 1989)

14.60.533 Resampling required when violation occurs.

If the sampling performed by an industrial user indicates a violation, the user shall notify the city within 24 hours of becoming aware of the violation. The user shall also repeat the sampling and analysis and submit the results of the repeat analyses to the city within 30 days after becoming aware of the violation, except the industrial user is not required to resample if:

- A. Sampling frequency is at least once per month; or
- B. The city samples between the time the industrial user collected the initial sample and the time the user receives the results of this sampling. (Ord. 2742 § 2, 2008)

14.60.535 Compliance monitoring.

The city may conduct compliance monitoring at such times and frequencies as are deemed necessary to carry out the purposes and intentions of this title. Compliance monitoring for categorical industries shall be performed at least once per year. The city reserves the right to verify methods of sampling, flow measurements and analyses, and to inspect records pertaining to all requirements of the discharger's permit. The city also reserves the right to collect and analyze samples of compliance status.

Each user shall provide and operate at its own expense a monitoring facility to allow inspection, sampling, and flow measurements of each sewer discharge to the city. Each monitoring facility shall be situated on the user's premises. In those situations where such a location would be impractical or cause undue hardship on the user, the city may concur with the facility being constructed in the public street or sidewalk area, providing that the facility is located so that it will not be obstructed by landscaping or parked vehicles. The director, whenever applicable, may require the construction and maintenance of sampling facilities at other locations (for example, at the end of a manufacturing line, wastewater treatment system).

There shall be ample room in or near such sampling facility to allow accurate sampling, flow measurement and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the user. All monitoring facilities shall be

constructed and maintained in accordance with all applicable local construction standards and specifications.

The director may require the user to install monitoring equipment as necessary. All devices used to measure wastewater flow and quality shall be maintained and calibrated in accordance with manufacturers' recommendations to ensure their accuracy.

At such time that the city collects a sample, a representative split of the sample shall be offered to the discharger for analysis. All costs incurred in the performance of measurements, tests and analyses done by the city as verification of the discharge compliance shall be charged to the discharger in accordance with Chapter 14.40 LMC. (Ord. 2742 § 2, 2008; Ord. 1831 § 18, 1991; Ord. 1705, 1989)

14.60.5355 Noncompliance reporting.

If sampling performed by a user indicates a violation, the user shall notify the city within 24 hours of becoming aware of the violation. The user shall also repeat the sampling within five days and submit the results of the repeat analysis to the city within 30 days after becoming aware of the violation, except the user is not required to resample if:

A. The city performs sampling at the user at a frequency of at least once per month; or

B. The city performs sampling at the user between the time when the user performs its initial sampling and the time when the user receives the results of this sampling. (Ord. 2742 § 2, 2008)

14.60.536 Compliance schedules for meeting applicable pretreatment standards.

A. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

B. No increment referred to in subsection (A) of this section shall exceed nine months.

C. Not later than 14 days following each date in the schedule and the final date for compliance, the user shall submit a progress report to the city including, at a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the user to return the construction to the schedule established. In no event shall more than nine months elapse between such progress reports. (Ord. 2742 § 2, 2008)

14.60.537 Notification of significant production changes.

Any user operating under a wastewater discharge permit incorporating mass or concentration limits based on production levels shall notify the city within two business days after the user has a reasonable basis to know that the production level will significantly change within the next calendar month. Any user not providing a notice of such anticipated change will be required to comply with the existing limits contained in its wastewater discharge permit. (Ord. 2742 § 2, 2008)

14.60.538 Sampling and analysis frequencies.

All significant industrial users must sample their effluent at least once every six months. (Ord. 2742 § 2, 2008; Ord. 1831 § 19, 1991)

14.60.540 Inspection of facilities.

The POTW may inspect the wastewater facilities and equipment of any POTW user at any time during normal business hours to ascertain whether the applicable city

ordinances, rules and regulations, industrial discharge permit requirements and applicable national categorical pretreatment standards are being met. Persons or occupants of premises where industrial wastewater is produced or discharged shall allow any authorized representative of the director ready access at all reasonable times to all parts of the premises for the purpose of inspection, sampling, record examination or in the performance of his official duties as a POTW employee. The POTW shall have the authority to set up, on the user's property, such devices as are necessary to conduct sampling, inspection, compliance monitoring or flow metering operations. Where a discharger has security measures in force which would require proper identification and clearance before entry onto their premises, the discharger shall make all necessary arrangements with their security personnel so that upon suitable and proper identification, authorized wastewater management personnel, including but not limited to employees of the city, the Washington State Department of Ecology, and the U.S. Environmental Protection Agency, will be permitted to enter the premises without delay for the purpose of performing their specific responsibilities and duties. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.545 Right to enter.

In the event that the director or his designee is refused admission to the discharger's premises, the director may cause water service to the premises in question to be discontinued until the POTW agents have been afforded reasonable access to the premises to accomplish any required inspection, sampling or flow monitoring. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.550 Accidental spill prevention plan.

All industrial dischargers, and those minor dischargers specified by the city in their industrial wastewater discharge permits or limited permits, shall prepare accidental spill prevention plans (ASPP) showing facilities and operating procedures necessary to provide the protection required by LMC 14.60.330. These plans shall be submitted to the city's department of public works for review and approval. The plan shall include but not be limited to:

- A. An ongoing inventory of the types and quantities of pollutants used or stored by the industrial user;
- B. A diagram of the process and storage location(s) at the facility;
- C. A diagram of the location(s) of floor drains to sanitary or storm sewers;
- D. A description of the measures used to prevent discharge to sanitary or storm sewers;
- E. An outline or list of the emergency response and notification procedures to be followed in case of accidental spills;
- F. An outline of the spill prevention procedures followed by the industrial user;
- G. A description of spill containment, treatment, and disposal methods;
- H. A description of the training procedures and training frequencies for personnel involved in handling, sorting, and disposing of toxic or hazardous pollutants.

Review and approval of such plans and operating procedures by the city shall not relieve the discharger from the responsibility to modify its facility as necessary to meet the requirements of this chapter nor relieve the discharger from fines, civil penalties, or other liabilities which may be imposed in the event of violations of this code or other applicable ordinances or laws. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.553 Notification of changes in discharge.

All industrial users shall promptly notify the POTW in advance of any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous waste for which the industrial user has submitted initial notification as required by 40 CFR 403.12(p), as now existing or hereafter amended,

one copy of which shall be on file with the city clerk and which is adopted by this reference. (Ord. 2742 § 2, 2008; Ord. 1831 § 20, 1991)

14.60.554 Hazardous waste notification.

Any user that is discharging 15 kilograms of hazardous wastes as defined in 40 CFR 261 (listed or characteristic wastes) in a calendar month or any facility discharging any amount of acutely hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e) is required to provide a one-time notification in writing to the city, EPA Regional Waste Management Division Director, and the Hazardous Waste Division of the North West Regional Office of the Washington State Department of Ecology. Any existing user exempt from this notification shall comply with the requirements contained herein within 30 days of becoming aware of a discharge of 15 kilograms of hazardous wastes in a calendar month or the discharge of acutely hazardous wastes to the city sewer system.

Such notification shall include:

- A. The name of the hazardous waste as set forth in 40 CFR Part 261;
- B. The EPA hazardous waste number; and
- C. The type of discharge (continuous, batch, or other).

D. If an industrial user discharges more than 100 kilograms of such waste per calendar per month to the sewer system, the notification shall also contain the following information to the extent it is known or readily available to the industrial user:

1. An identification of the hazardous constituents contained in the wastes;
2. An estimation of the mass and concentration of such constituents in the wastestreams discharged during that calendar month; and
3. An estimation of the mass of constituents in the wastestreams expected to be discharged during the following 12 months.

These notification requirements do not apply to pollutants already reported under the self-monitoring requirements.

Whenever the EPA publishes final rules identifying additional hazardous wastes or new characteristics of hazardous waste, a user shall notify the city of the discharge of such a substance within 90 days of the effective date of such regulations.

In the case of any notification made under this subsection, an industrial user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical. Discharging hazardous waste to the sewer system is prohibited as per LMC 14.60.300. (Ord. 2742 § 2, 2008; Ord. 1831 § 21, 1991)

14.60.555 Discontinuance of discharge.

In the event a permitted discharger intends to cease to discharge from a regulated process or plans to disconnect from the wastewater system, the director shall be notified no later than 30 days prior to any action by the discharger. The notification shall provide a closure management plan that includes the following information, as a minimum:

- A. Date of planned disconnect;
- B. Methods of disposal of regulated process tanks, chemicals, sludges, plating wastes, cleaning solutions;
- C. Methods of cleaning tanks, barrels, or other vessels containing regulated pollutants;
- D. Names of carriers and ultimate disposal site(s) of the regulated pollutants and the EPA permit numbers for transportation of the wastes, if a permit is required by the EPA.

The discharger shall be responsible for all discharges to the wastewater system and shall not be disconnected until the director has determined the discharger has disposed of the regulated wastes in a proper and safe manner and has requested termination of the discharge permit in writing. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.556 TTO reporting.

Categorical users which are required by the EPA to eliminate and/or reduce the levels of toxic organics (TTOs) discharged into the sewer system must follow the categorical pretreatment standards for that industry. Those users must also meet the following requirements:

A. Must sample, as part of the initial application requirements, for the organics listed under the TTO limit reasonably expected to be present;

B. May submit a statement that no TTOs are used at the facility and/or develop a solvent management plan in lieu of continuously monitoring for TTO, if authorized by the director:

If allowed to submit a statement or develop a solvent management plan, the user must routinely submit a certification statement as part of its self-monitoring report that there has been no dumping of concentrated toxic organics into the wastewater and that it is implementing a solvent management plan as approved by the city. The director may require the development and implementation of a solvent management plan in addition to monitoring for TTO. (Ord. 2742 § 2, 2008)

14.60.557 Reports from unpermitted users.

All users not required to obtain a wastewater discharge permit shall provide appropriate reports to the city as the director may require. (Ord. 2742 § 2, 2008)

14.60.558 Timing.

Written reports will be deemed to have been submitted on the date postmarked. For reports which are not mailed, postage prepaid, into a mail facility serviced by the United States Postal Service, the date of receipt of the report shall govern. (Ord. 2742 § 2, 2008)

14.60.560 Confidential information.

The city may respond to public requests for information gathered pursuant to this chapter in accordance with Chapter 42.12 RCW. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.565 Preemption of limitations, standards or requirements.

Limitations, standards or requirements that differ from or are more stringent than those in this chapter may be imposed on a discharger under the following conditions:

A. The federal government promulgates federal categorical pretreatment standards for an industrial category that are more stringent than the standards prescribed in this chapter. Such federal standards shall immediately supersede the standards prescribed by this chapter. The director shall notify all affected users of applicable reporting requirements.

B. State requirements and limitations on discharges are more stringent than federal requirements and limitations or those in this article.

C. The director establishes limitations or requirements which are more stringent than federal and state requirements or the limitations in this chapter in order to comply with the purposes and objectives of this chapter.

D. Federal or state regulations pertaining to dangerous or hazardous wastes require a substance(s) to be discharged by some other means because they are listed dangerous or hazardous substances. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.570 Publication of violators.

Pursuant to the requirements of 40 CFR 403.8 the city shall publish in its official daily newspaper, not less than annually, a list of those dischargers which during the previous 12 months were determined to be responsible for significant violations of the limitations established by this chapter and applicable pretreatment standards or other requirements pursuant to this chapter. This notification shall summarize enforcement action by the city during the same 12 months. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.575 Records retention – Required.

All dischargers subject to this chapter shall retain and preserve for no less than three years any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analysis made by or in behalf of a discharger in connection with its discharge. All records which pertain to matters which are the subject of administrative adjustment or any other enforcement or litigation involving the discharger must be retained until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

Article III. Enforcement**14.60.605 Violations – Remedies.**

Whenever the director or his designee finds that any person has violated or is violating any of the provisions of this chapter, he may take one or more of the following actions:

- A. Emergency suspension of service and permit;
- B. Termination of treatment services and permit revocation;
- C. Notice of violation and administrative order;
- D. Assess civil penalties;
- E. Seek criminal penalties;
- F. Seek any other legal or equitable remedy. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.610 Violations.

For the purposes of enforcement of the provisions of this chapter and of discharge limitations, the rules establishing what constitutes a violation for general dischargers are set forth in LMC 14.60.611 through 14.60.619. Those dischargers subject to national pretreatment standards will be subject to enforcement action in accordance with this chapter for any violations of the criteria and limitations specified in the categorical standard or the general pretreatment standards set forth in 40 CFR 403. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.611 Maximum daily concentration allowed.

Unless otherwise provided in this chapter, the maximum daily allowable concentration for dischargers not regulated under national pretreatment standards is violated under the following circumstances:

- A. The arithmetic mean of concentrations for eight consecutive samples collected within a 24-hour time period over intervals of 15 minutes or greater is in excess of the limitation.
- B. The concentration value obtained from a composite sample that is representative of the 24-hour discharge is in excess of the limitation.
- C. The concentration of any single sample (whether as single grab sample or a sample within a series) exclusive of any fats, oils, and grease exceeds the limitation by a factor of two and one-half times.
- D. The arithmetic mean of the concentration of fats, oils, or greases for three grab samples, taken no more frequently than at five-minute intervals, exceeds the limitation. (Ord. 2742 § 2, 2008; Ord. 2031 § 10, 1995; Ord. 1705, 1989)

14.60.613 Temperature limitation.

The temperature limitation is exceeded for any single sample. (Ord. 2742 § 2, 2008)

14.60.614 Maximum allowable poundage limitations.

A violation shall occur if the maximum allowable effluent poundage limitation as established in the wastewater discharge permit is exceeded. The daily poundage discharged shall be calculated using the volume of effluent discharged that day times

the concentration for that day either reported by the discharger or obtained through sampling by the city. The poundage shall be determined utilizing the formula:

$$\text{pounds/day} = (\text{conc. in mg/L} \times \text{gal. discharge/day}) \times 8.34$$

*In million gallons discharged per day, i.e., 100 gallons is represented by 0.000100 in million gallons.

(Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.615 Reporting requirements.

A violation shall occur if any reporting requirements established by permit, accidental discharges, upset conditions, written request of the director or his authorized representative, or as specified by general pretreatment standards, 40 CFR 403.12, are not complied with. A violation shall occur when any person knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this chapter, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this chapter. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.616 F.O.G. pretreatment facility maintenance – Compliance with control plan.

A violation shall occur if:

A. There are any discharges of any substance or F.O.G. in excess of the provisions or restrictions of this chapter.

B. There is any failure to maintain grease or grit interceptors or oil/water separators which causes maintenance on any POTW sewer line to be greater than once every two years caused by excessive oil, grease, or fat buildup in the sewer lines; or excess buildup of sand, gravel or other materials clogging the sewer lines. The lack of any device to prevent discharge of grease, oil, fats, sand, gravel or any other materials which will cause excessive maintenance of the sewer lines shall not relieve the discharger of the responsibility of liability for any costs to the city for excessive maintenance and/or other costs incurred by the city.

C. A discharger does not comply with their approved F.O.G. control plan. (Ord. 2742 § 2, 2008; Ord. 2031 § 11, 1995; Ord. 1705, 1989)

14.60.617 Discharge of dangerous waste.

A violation shall occur if any material listed on the Discharge Chemical Products List of the State of Washington, WAC 173-303-9903, is discharged into any public sewer, or building sewer tributary. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.618 Explosion meter readings.

A violation shall occur if the reading on an explosion meter at any point in the POTW is greater than 10 percent for a single reading or greater than five percent for two successive readings. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.619 Pass-through or interference.

A user shall have an affirmative defense to an enforcement action brought against it for noncompliance with the prohibitions in LMC 14.60.300, General prohibitions, and LMC 14.60.3015, Specific prohibitions, if it can prove that it did not know, or have reason to know, that its discharge, alone or in conjunction with discharges from other sources, would cause pass-through or interference and that either: (A) a local limit exists for each pollutant discharged and the user was in compliance with each limit directly prior to, and during, the pass-through or interference; or (B) no local limit exists, but the discharge did not change substantially in nature or constituents from the user's prior discharge when the city was regularly in compliance with its NPDES permit, and in the case of interference, was in compliance with applicable sludge use or disposal requirements. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.620 Emergency suspension of service and industrial wastewater discharge permit or limited permit.

A. The city may, without advance notice, order the suspension of all or some portion of the wastewater treatment service and any applicable industrial wastewater discharge permit or limited permit to a discharger when it appears to the city that an actual or potential discharge:

1. Presents or threatens a substantial danger to the health or welfare of persons or to the environment; or
2. Threatens or interferes with the operation of the POTW; or
3. Causes pass-through to the environment.

B. Any discharger notified of the city's suspension order shall cease immediately all discharges. In the event of failure of the discharger to comply with the suspension order, the city may commence judicial proceedings immediately thereafter to compel the discharger's specific compliance with such order and/or to recover civil penalties. The city shall reinstate the wastewater treatment service upon proof by the discharger of the elimination of the noncomplying discharge or of the conditions creating the threat as set forth in this section.

C. In addition to all other rights and remedies, the city shall have the authority to discontinue water service to a discharger if the city determines that such action is reasonably necessary to suspend service as authorized by subsection (A) of this section. The city shall have the right of access on to the discharger's private property to accomplish such termination of the water service. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.623 Termination of treatment services – Permit revocation.

The city shall have the authority to terminate wastewater treatment services and to revoke the industrial wastewater discharge permit or limited permit of the discharger if it determines that the discharger has:

- A. Failed to accurately report wastewater constituents and characteristics; or
- B. Failed to report significant changes in wastewater constituents, characteristics, flow volumes or types of discharge to the POTW; or
- C. Refused reasonable access to the discharger's premises for purposes of inspection or monitoring; or
- D. Violated conditions of the wastewater discharge permit; or
- E. Violated any of the provisions of this chapter or regulations promulgated hereunder; or
- F. Violated any lawful order of the city issued with respect to the discharger's permit or this chapter; or
- G. Tampered with, disrupted, damaged or rendered inaccurate any wastewater monitoring device required by this chapter. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.624 Wastewater discharge permit re-issuance.

A user, required to have a wastewater discharge permit, shall apply for wastewater discharge permit re-issuance by submitting a complete wastewater discharge permit application, in accordance with LMC 14.60.503, a minimum of 90 days prior to the expiration of the user's existing wastewater discharge permit. A user, whose existing wastewater discharge permit has expired and has submitted its re-application in the time period specified herein, shall be deemed to have an effective wastewater discharge permit until the city issues or denies the new wastewater discharge permit. A user, whose existing wastewater discharge permit has expired and who failed to submit its reapplication in the time period specified herein, will be deemed to be discharging without a wastewater discharge permit. (Ord. 2742 § 2, 2008)

14.60.625 Notice of violation and administrative order.

The director, upon finding a discharger has violated or is violating any of the provisions of this chapter or of any permit issued under this chapter, may serve upon such discharger a written notice of violation and administrative order stating the nature of the violation(s) and providing a reasonable time, not to exceed 45 days, except as otherwise provided for herein, for the satisfactory correction thereof. The order shall establish specific actions in a compliance schedule to be taken and/or procedures to be implemented by the discharger to assure compliance with this chapter and with the permit to discharge. The notice and order shall be sent to the user via certified mail or perfected pursuant to personal service. The discharger may request a meeting with the director to discuss the violation(s) and compliance schedule within 10 days following issuance of the administrative order. The order may be modified following the written response or meeting to include a revised schedule to correct the violations, if the discharger demonstrates to the director that just cause exists for such modification. The final date of compliance in any modified compliance schedule shall not extend beyond 180 days from date of issuance of the original administrative order.

Failure to comply with any terms or requirements of a compliance schedule order by the discharger shall be an additional and independent grounds for civil or criminal penalties and/or termination of wastewater treatment services and revocation of the wastewater discharge permit. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.630 Administrative hearing.

A. A discharger shall have the right to an administrative hearing before the director or his designee to contest the city's determination:

1. To suspend the discharger's wastewater services and/or to suspend the discharger's wastewater discharge permit;
2. To terminate the discharger's wastewater services and to revoke the discharger's wastewater discharge permit;
3. To impose civil penalties against the discharger; or
4. That the discharger has violated a compliance schedule order.

B. Any hearing pursuant to this section must be requested by the discharger in writing within 14 days after the discharger receives notice of the city's determination. The discharger's written request for hearing shall be filed with the director. The city shall conduct the hearing within 15 business days of the receipt of the request (or within five business days if the discharger is contesting suspension of wastewater services and wastewater discharge permit).

C. The administrative hearing authorized by this section shall be conducted by the rules established in Chapter 2.22 LMC. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.635 Civil penalties.

Any person who violates any of the provisions of this chapter specifically listed in subsections (A) through (D) of this section, or any permit or administrative order issued under this chapter which contains such provisions, shall be subject to a civil penalty for each violation. Nothing in the section shall prevent the city from taking action or seeking relief under any other sections of this chapter for any violations of the provisions of this chapter or any permit issued hereunder.

A. If reports required by permit, this chapter or federal pretreatment regulations are submitted later than 30 days after they are due the discharger shall be subject to civil penalties of \$25.00 per day for a maximum of 20 working days. The penalty shall then be increased to \$100.00 per day with a maximum fine of \$1,000. In the event the reports have not been submitted at the time the maximum penalty is imposed, the city shall seek remedies under LMC 14.60.645.

B. If any of the actions prescribed in any compliance schedule established by permit or administrative order are not complete within 30 days of the time they are required to be complete, the discharger shall be subject to civil penalties of \$100.00 per day for a

maximum of 60 days for each day the action(s) have not been completed. In the event the actions have not been completed 90 days after the date scheduled in the permit or order, the city shall seek remedies under LMC 14.60.645.

C. If a discharger fails to maintain grease, oil and/or sand removal systems or has no system to remove grease, oil or sand which results in excessive maintenance by the city or the POTW, the discharger shall be subject to a civil penalty of \$500.00 which shall be added to the costs incurred by the city to perform the maintenance. If excessive maintenance is required a second time within a three-year period, the penalty shall be \$1,000 which shall be added to the costs of maintenance by the city. In the event excessive maintenance continues, the city shall seek remedies under LMC 14.60.645. A discharger shall be subject to a civil penalty of \$100.00 for discharge of any substance or F.O.G. in excess of the provisions or restrictions of this chapter, or for failure to comply with an approved F.O.G. control plan, for each and every day that the violation continues.

D. Failure to provide accurate or complete information on any wastewater discharge reports pursuant to LMC 14.60.504(F) or the requirements of a discharge permit shall result in a civil penalty of \$100.00 for the first offense. Thereafter the discharger shall be subject to remedies under LMC 14.60.645.

In addition to the assessments described above, any costs incurred by the city, including attorneys' fees, due to violations subject to civil penalty shall be added to the total amount of the civil penalty assessment pursuant to LMC 14.60.640. (Ord. 2742 § 2, 2008; Ord. 2031 § 12, 1995; Ord. 1705, 1989)

14.60.640 Civil liability for expenses and fines.

Any discharger violating provisions of this chapter shall be liable for any expense, loss or damage caused to the POTW by reason of such violation, including increased costs for sewage treatment, sludge treatment and disposal and POTW operation and maintenance expenses when such increased costs are the result of the discharger's discharge. If the discharger discharges pollutants that cause the city to violate any condition of its NPDES permit and to be fined by the United States Environmental Protection Agency or the state for such violation, the discharger shall be liable to the city for the total amount of the fine assessed against the city, including, without limitation, all legal, sampling, analytical and other associated costs and expenses. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.645 Criminal penalties.

Except as provided for in LMC 14.60.635, any person who willfully violates any of the provisions of this chapter or any of the requirements contained in a discharge permit issued under this chapter, or continues any violation(s) beyond the time limit(s) specified in LMC 14.60.635 shall be guilty of a gross misdemeanor, and upon conviction thereof, shall be fined in an amount not exceeding \$5,000 or by imprisonment in the city jail for a period not exceeding one year, or both such fine and imprisonment. Each day's violation of the provisions of this chapter may be deemed a separate offense. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.660 Judicial review.

Any decision of the hearing examiner rendered pursuant to LMC 14.60.630 may be reviewed only by superior court. The review shall be initiated by a petition filed by the discharger. Such review shall be filed no later than 14 days after the discharger has received notice of the decision of the hearing examiner. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.665 Right to written interpretation of chapter.

Any discharger or any interested party shall have the right to request an interpretation or ruling by the city on any matter covered by this chapter. The request must be in writing and must be addressed to the city's director of public works. The city

shall provide a written response within 10 working days. A request pursuant to this section shall not stay or otherwise affect enforcement proceedings. (Ord. 2742 § 2, 2008; Ord. 1705, 1989)

14.60.900 Severability.

If any section, subsection, sentence, clause, phrase or word of this chapter should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality thereof shall not affect the validity or constitutionality of any other section, subsection, sentence, clause, phrase or word of this chapter. (Ord. 2742 § 3, 2008; Ord. 1705, 1989)

This page of the Lynnwood Municipal Code is current through Ordinance 2839, passed June 14, 2010.

Disclaimer: The City Clerk's Office has the official version of the Lynnwood Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

City Website: <http://www.ci.lynnwood.wa.us/>
(<http://www.ci.lynnwood.wa.us/>)
City Telephone: (425) 670-5000
Code Publishing Company
(<http://www.codepublishing.com/>)
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(<mailto:CPC@codepublishing.com>)

CITY OF BAINBRIDGE ISLAND CODE

Chapter 13.14
SIDE SEWER STORM AND SURFACE WATER INFILTRATION AND INFLOW
REDUCTION PROGRAM

*CURRENT THROUGH ORDINANCE 2010-17
PASSED 6/9/2010*

Sections:

- 13.14.010 Purpose.
- 13.14.020 Storm and surface water – Discharge into sanitary sewer prohibited.
- 13.14.030 Testing for infiltration and inflow.
- 13.14.040 Repair of defective side sewer.
- 13.14.050 Notice of corrective work.
- 13.14.060 Notice of violation.
- 13.14.070 Extension of deadline in which to complete corrective work.
- 13.14.080 Appeal of notice of violation.
- 13.14.090 Failure to comply with notice of violation – Penalty.
- 13.14.100 Financing of corrective work by city.
- 13.14.110 Reimbursement for “low-flush” commodes.

13.14.010 Purpose.

The city has determined that it is in the public’s best interest to more efficiently utilize the sewer capacity of the city’s current sewer plant and to conserve water resources. The purpose of this chapter is to create a cooperative program between the city and the users of the city’s sanitary sewer system, which program is designed to reduce storm and surface water infiltration and inflow from private side sewers into the city’s sanitary sewer system. (Ord. 99-23 § 1, 1999)

13.14.020 Storm and surface water – Discharge into sanitary sewer prohibited.

A. No person shall discharge, cause to be discharged or allow to be discharged any storm water, surface water, ground water, roof runoff or subsurface drainage into any sanitary sewer.

B. No person shall connect, cause to be connected, or continue to connect a roof drain or drains to any private sanitary side sewer lines. Any person who has connected a roof or ground drain to any private side sewer line shall disconnect the roof drain or drains within 90 days from the effective date of the ordinance codified in this chapter.

C. Storm water and other unpolluted drainage shall be discharged to such drains as are specifically designated as storm sewers, or to a natural outlet approved by the city engineer or designee. (Ord. 99-23 § 1, 1999)

13.14.030 Testing for infiltration and inflow.

A. The city engineer and/or the city engineer’s designee shall test various areas within the city’s jurisdiction for infiltration and inflow in accordance with a testing plan to be established by the public works director. To the extent that the city engineer and/or designee must enter private property to conduct the testing provided by this section, the city engineer and/or designee shall first obtain the permission of the owner of the property to be tested prior to entering the property. The city shall restore any private property tested for excessive infiltration or inflow to the condition of the property prior to the testing.

B. The city engineer and/or the city engineer’s designee may utilize any means available for testing for infiltration or inflow, including, but not limited to, the “smoking” test, closed circuit TV equipment, and flow charts of various lift stations. (Ord. 99-23 § 1, 1999)

circuits, TV equipment, and flow charts of various lift stations. (Ord. 99-23 § 1, 1999)

13.14.040 Repair of defective side sewer.

A. Whenever any side sewer line connected with the public sanitary sewer system becomes inadequate or unable to prevent infiltration and/or inflow from entering into the public sewer due to damage, deterioration, improper installation or substandard materials of the side sewer line, the owner of the property served by the defective side sewer shall repair, replace or disconnect the side sewer line as deemed necessary by the city engineer to remove or reduce further infiltration and inflow from entering into the side sewer line. The owner of the property served by the side sewer line shall be responsible for all costs associated with the repair, replacement or disconnection of defective side sewer lines.

B. In cases where the city is replacing or repairing a public sewer main to which an identified defective side sewer line is connected, the city and the owner of the property served by the side sewer line may enter into an agreement by which the city shall also repair or replace the side sewer line; provided, that all costs incurred by the city in repairing or replacing the defective side sewer line shall be borne by the owner of the property served by the side sewer line; and provided further, that the owner of the property served by the side sewer line shall grant the city all easements necessary for the repair or replacement construction of the defective side sewer line. (Ord. 99-23 § 1, 1999)

13.14.050 Notice of corrective work.

A. If the city engineer and/or the city engineer's designee determines that a side sewer line is inadequate or unable to prevent infiltration and/or inflow from entering into the public sewer from the side sewer line, the city engineer and/or designee shall issue to the record owner of the property served by the defective side sewer line a notice of corrective work. The notice shall identify the nature of the defect and the corrective work necessary to remedy the defect. The notice shall further inform the owner that the owner shall have 45 days from the date of the issuance of the notice of corrective work to respond to the notice and to provide the city with satisfactory proof that the required corrective work has been completed or that the required corrective work has been commenced and shall be completed within a reasonable time thereafter.

B. The notice of corrective work shall be personally served or mailed, via certified mail, return receipt requested, to the record property owner. If the notice is sent via certified mail, service of the notice shall be deemed effective three days after the notice was placed in the mail. (Ord. 99-23 § 1, 1999)

13.14.060 Notice of violation.

A. If the record owner of the property served by the defective side sewer line fails to comply with the notice of corrective work as provided in BIMC 13.14.050, the city shall issue a notice of violation to the record owner of the property served by the defective side sewer line.

B. The notice shall be served on the property owner by personal service or by certified mail, return receipt requested. If the notice is sent via certified mail, service of the notice shall be deemed effective three days after the notice was placed in the mail. The notice shall provide the following information:

1. The street address or legal description of the real property served by the defective side sewer:

2. A statement of the nature of the violation;
3. A statement of the required corrective work to be performed to remedy the violation;
4. A statement that the owner has 60 days to complete the required corrective work;
5. A statement that failure to complete the work within the 60-day time period shall constitute a civil infraction, punishable by a fine of up to \$500.00 per day;
6. A statement that the property owner may, for good cause, request an extension of the time period in which to complete the required corrective work;
7. Notice that the property owner may apply for financing from the city for the required corrective work. (Ord. 99-23 § 1, 1999)

13.14.070 Extension of deadline in which to complete corrective work.

Any property owner who is ordered to complete corrective work to the owner's side sewer under this chapter may submit to the city engineer, at any time prior to the expiration of the deadline for completion of the corrective work, a written request for an extension of the deadline. The city, in its discretion, may extend the deadline for compliance based on the following considerations:

- A. Type and degree of violation;
- B. The property owner's intent to comply;
- C. Procedural requirements for obtaining a permit to carry out the corrective action;
- D. The complexity of the corrective action;
- E. Whether an appeal of the notice of violation has been timely filed; and
- F. Any other circumstances beyond the control of the property owner. (Ord. 99-23 § 1, 1999)

13.14.080 Appeal of notice of violation.

A. Any person affected by a notice of violation under this chapter may file a written notice of appeal with the city clerk within 20 days from the date upon which the notice of violation was served. Any notice of appeal filed under this section shall include a statement by the property owner as to why the notice is erroneous.

B. All appeals of notices of violations under this section shall be heard by the hearing examiner. The city shall have the burden of proving that the side sewer line is inadequate or unable to prevent infiltration or inflow into the city's sanitary sewer system. The results of any testing performed by the city engineer or designee pursuant to BIMC 13.14.030 may be introduced as prima facie evidence of the defectiveness of the subject side sewer line. If the city meets its burden of proof, the hearing examiner may reverse the notice of violation only upon a clear and convincing showing by the property owner of one or more of the following:

1. That the testing of the engineer and/or designee is inaccurate or erroneous and that the side sewer line is not defective;
2. That the property owner is not the responsible party for the defective side sewer line;
3. That the corrective work required by the city to remedy the defective side sewer line is not reasonable. In establishing that the required corrective work is unreasonable, the property owner must conclusively prove that a more cost-effective alternative to the required corrective work exists, and that this alternative will reduce and prevent infiltration or inflow as efficiently as the required corrective work. (Ord. 99-23 § 1, 1999)

13.14.090 Failure to comply with notice of violation – Penalty.

Failure to comply with the requirements of a notice of violation issued pursuant to BIMC 13.14.060 shall constitute a civil infraction, which shall be enforced as provided in Chapter 1.26 BIMC. (Ord. 99-23 § 1, 1999)

13.14.100 Financing of corrective work by city.

The city may use public moneys or credit derived from operating revenues from the sale of its sewer services to assist property owners in making any corrective work to defective side sewers ordered pursuant to this chapter. Any property owner wishing to obtain financing from the city to assist the owner in making ordered corrective work shall apply in writing to the city for such assistance, on a form provided by the city. The city shall evaluate each request for assistance on a need basis, and may award any amount which the city, in its discretion, deems an appropriate financing of the corrective work. Except for those cases in which the city determines the financing is necessary support for the poor and infirm, an appropriate charge-back, to be established by resolution, shall be imposed for any financing extended pursuant to this section. (Ord. 99-23 § 1, 1999)

13.14.110 Reimbursement for “low-flush” commodes.

A. Any private property owner who is connected to the city’s sewer main, who is using one or more “high-flush” commode(s) as of the effective date of the ordinance codified in this chapter and who subsequently replaces the high-flush commode with a low-flush commode may be reimbursed by the city, in its discretion, \$100.00 or one-half of the cost of a new “low-flush” commode, whichever is less.

B. To qualify for the reimbursement provided by this section, a private property owner must provide the city with a valid receipt evidencing the purchase price of the low-flush commode and the date of the purchase. The private property owner must further provide to the city evidence which the city deems to be reliable proof that the low-flush commode for which the owner seeks reimbursement has been installed and is in working condition.

C. For the purposes of this section, a “high-flush” commode shall mean a commode which uses between five to seven gallons of water per flush. A “low-flush” commode shall mean a commode which uses no more than 1.6 gallons of water per flush. (Ord. 99-23 § 1, 1999)

15.04.120 PROHIBITED ACTS.

Violations under this section shall be punishable as a misdemeanor unless otherwise indicated:

(a) **Unlawful Tampering.** It shall be unlawful for any person, unless duly authorized by the Department, to disturb, interfere with, or damage any stormwater facilities, including pipe, machinery, tools, buildings, improvements, or other appurtenances belonging to, connected with, or under the control of the Department.

(b) **Prohibited Discharges.** It shall be unlawful for any person to discharge or cause the discharge into any stormwater manhole, pipe, drain, ditch or natural water course any of the following materials and substances:

(1) Any garbage, rubbish, dead animals, or any substance which will obstruct, or have a tendency to obstruct, the flow of any sewer, drain, ditch or natural water course.

(2) Erosion, debris, and sediments from construction or excavation.

(3) Any pollution, as defined in this chapter, into the stormwater system, gases in sufficient quantity, either singly or by interaction with other wastes to constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters.

(4) Any strong acid (pH lower than 5.5) or alkaline (pH higher than 8.5) or any other corrosive waste capable of causing damage or hazard to the structures, equipment or personnel of the City.

(5) Any septage or wastewater. (Ord. 4454 §1 (in part), 1994)

15.04.130 ELIMINATION OF IMPROPER STORMWATER INFLOW TO THE WASTEWATER SYSTEM.

(a) **Purpose.**

The purpose of this section is to significantly reduce improper stormwater inflow to the wastewater system in order to eliminate or reduce instances of combined sewer overflow events and surcharged sanitary sewers due to the improper inflows, which are detrimental to public health and welfare; and to maximize efficient operation of the wastewater collection system and treatment plant.

(b) **Disconnection Required by 2005.**

Disconnection of all improper stormwater inflow to the wastewater system shall be made by January 1, 2005, unless continued connection is authorized by the Director where no practicable alternative for elimination of the improper stormwater inflow is available.

(c) **Director's Authority to Order Early Disconnection.**

(1) **Purpose.** The Director has the authority to order the disconnection of improper stormwater inflow to the wastewater system prior to January 1, 2005, where that disconnection is necessary to meet combined sewer overflow reduction plans and for elimination of sanitary sewer surcharging. The Order of Early Disconnection will generally be in target areas as defined elsewhere in this section.

(2) **Notice.** Notice of a Director's Order for Early Disconnection will be provided in writing. The notice will establish an effective date by which the improper stormwater inflow shall be discontinued. The effective date shall be no sooner than ninety (90) days from the date of the letter. The effective date may be extended in writing by the Director.

(d) **Target Areas.**

The Director may identify target areas within the wastewater service area (sewer or storm drainage basins or subbasins) which have the highest priority for reduction of improper stormwater inflow to the wastewater system based upon combined sewer overflow events and sanitary sewer surcharge problems.

(e) **Residential Disconnection Assistance Program.**

(1) **Program Overview.** The Director shall establish a program to assist

(1) **Program Overview.** The Director shall establish a program to assist residential property owners in the elimination of improper stormwater inflow to the wastewater system (the Program). The Program may include, but not be limited to: technical assistance to residential property owners, provision of supplies for incorporation of work upon residential property, work in the right-of-way that supports the residential property improvements and funding of residential property improvements through grants and loans.

(2) **Program Funding.** The City Council shall periodically establish funding for the program, as well as setting limits and terms for loans and grants to participating residential property owners. If additional work is required beyond the limits established, it shall be performed by the owner at his/her expense.

(3) **Eligible Participants.** This Program may be utilized only by the owners of single family or duplex (2 or less units) residences with improper stormwater inflow to the wastewater system, which were in existence prior to January 1, 1995. The Program participants must eliminate all practicable improper stormwater inflow to the wastewater system from the property.

(4) **Target Areas.** The Director may implement and make available this Program throughout the wastewater service area, or instead only in target areas within the wastewater service area. When the Director issues an Order for Early Disconnection of improper stormwater inflow in an area where the Program is being implemented, the Director shall inform the owner of the availability of the Program. Participation in the Program shall be voluntary; owners declining to participate shall be required to proceed with removal of the improper private stormwater inflow to the wastewater system by the established effective date at the owner's expense.

(5) **Scope of Work.** The Director shall determine for each participating property the scope of work for reduction of improper stormwater inflow to the wastewater system which may be paid for with Program funds, with the goal of achieving the most cost-effective and timely reductions.

(6) **Application and Agreement**

Owners who wish to participate in the Program must make application to the Department. The application will include the name of the applicant, property location, scope of work, estimate of cost, method of performing the work (contractor or owner) and other data as the Director deems appropriate. Applications will be accepted, evaluated and funded on a first come/first served basis subject to prioritization of target areas. Once an application is approved for funding the applicant will enter into an agreement with the City that will include the scope of work, eligible amount and loan or grant terms.

(7) **Residential Property Work Funded by the City.**

i. (a) **Contractor performed work.** Participating owners shall select a contractor in accordance with a competitive process established by the Director. After City review and verification of the contractor selection process and contract price, the owner shall contract with the selected contractor for performance of the approved scope of work. The City shall not be a party to such contract. The owner's contract shall require the contractor to secure any building, right-of-way, or other permits as may be necessary, if the owner has not separately secured such permits.

(b) **Owner Performed Work.** The Director may establish rules authorizing reimbursement or partial reimbursement for owner-performed work. The owner shall secure any building, right-of-way or other permits as may be necessary.

ii. **Release.** As a condition to participation in the Program, the owner shall release the City and its officers and employees from all liability relating to the work.

iii. **Payment.** After the work is inspected and approved for conformance with the scope of work by the City, the Director shall authorize payment of the eligible amount provided in the agreement from funds appropriated to the Program. Partial payments will not be made.

iv. **Deferred Reimbursement.** The Director may establish a deferred reimbursement program whereby a residential property owner who performs the work necessary to discontinue the improper stormwater inflows from the property for which the Program does not have funds immediately available can have the eligible amount reimbursed at a later date when funds are available.

v. **Maintenance.** Participating owners shall be responsible for maintaining any improvements constructed under this Program.

vi. **Director Rules.** The Director may establish policies, procedures and such further criteria as are required to implement this Program.

(f) **Abatement of Improper Stormwater Inflow.**

Whenever an improper stormwater inflow to the wastewater system exists subsequent to the disconnection requirements specified elsewhere in this section, the Director may abate the condition including; reconstruction, replacement or removal on public or private property as specified elsewhere in this chapter. (Ord. 4734, Reaffirmed, 11/30/2000; Ord. 4684, Added, 12/28/1999)

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Chapter 18.10**SEWERS**

*CURRENT THROUGH ORDINANCE 3792
PASSED 4/20/2010*

Sections:

- 18.10.000 Latecomer agreements (water and/or sewer).
- 18.10.010 Sewer connections.
- 18.10.020 Prohibitions.
- 18.10.030 Unlawful connections.
- 18.10.040 Defective private drain pipes.
- 18.10.050 Draining of swimming pools.

18.10.000 Latecomer agreements (water and/or sewer).

Latecomer agreements shall be agreements executed pursuant to the laws of the state of Washington as codified under Chapter 35.91 RCW, where the city may contract with owners of real estate for the construction of water and sewer facilities serving the property, which property is located within the city or within 10 miles from the corporate limits and where the city may provide a fair pro rata share of reimbursement to the owners from persons who subsequently share in the use of such facilities after they are dedicated to the city.

18.10.010 Sewer connections.

A. When Required. The owner of any building within 200 feet of any trunk or lateral sewer must connect to the sewer within 60 days of acquiring the property and must pay to the city a connection fee as set forth in Chapter 15.00 ECDC. All connection fees shall be paid to the city before connecting to the sewer.

B. Future Connection. The owners of any house or home not within 200 feet of any trunk or lateral sewer within the city must connect to the sewer within 60 days of the completion of any future trunk or lateral sewer upon which the homeowner may then abut or be within 200 feet, as required by the regulations set forth in this chapter. Any owner or owners who become subject to these regulations and charges as a result of a latecomer agreement shall be required to connect for a period of two years after the acceptance date by the city council of the sewer subject to such agreement.

C. Restriction of Water Service. If a property owner or owners within an area served by sewerage systems of the city, including those property owners on streets and alleys within 200 feet along which sanitary sewers have been constructed, have not connected their private sanitary drain and sewers with the city system, the city may restrict water service to the property to the minimum necessary to insure health and safety of the inhabitants, or where a health hazard exists or is threatened the city may shut off the city water supply to the premises.

D. Connection. The city council may order connection to the sewer, and the director of public works shall report to the city council as soon as possible, an assessment roll showing the description of the property connected, and the cost of each connection.

E. Hearing. The city clerk shall notify the owner of each property in the same manner as notice is provided in a local improvement district of each proposed assessment. The city council shall hold a hearing under the procedures applicable to a Type V legislative process. The city council shall, by ordinance after the hearing, assess the cost of making the connection against the property connected. The assessment shall become a lien

the connection against the property connected. The assessment shall become a lien against each property, shall be collected in the manner provided by law for the collection of local improvement assessments, and shall bear interest at the rate of interest established by ordinance from the date of the approval of the assessment.

F. Permit Required. It shall be unlawful for any person to make any sort of connection to the city sewer line without a permit from the public works director. [Ord. 3788 § 2, 2010].

18.10.020 Prohibitions.

A. Injuries. No person shall injure, break or remove any portion of any manhole, lamphole, flush tank or any part of the trunk or lateral sewer of the city of Edmonds.

B. Obstructions. No person shall deposit any garbage, rubbish, dead animals or any substance or thing having a tendency to obstruct the flow of any sewer in any manhole, lamphole, flush tank or sewer opening.

C. Connections and Smoke Testing. No person shall connect, permit the connection, or allow to be maintained any connection, any downspout drain, storm drain or drainage of any kind or description whatsoever other than sanitary sewerage connections as authorized by the city of Edmonds into the sanitary sewerage system of the city of Edmonds. The public works director is authorized to conduct smoke testing of the city sewer system to detect illegal connections to the city sewerage system.

18.10.030 Unlawful connections.

A. Notice. If any land or structure contains an unauthorized connection to the sewerage system as prohibited by this chapter, such connection or the maintenance of such connection shall constitute a misdemeanor subject to the penalties provided for in Chapter 5.50 ECC. In addition, and not by way of limitation, the public works director or his designee may send notice to correct such violation to the owner of the premises addressed to the street address of the premises. Where the records of the water/sewer utility show a different address for the owner, a copy of the notice shall be mailed to that street address shown for billing purposes.

B. Administrative Hearing. The property owner may request an administrative hearing regarding the unauthorized connection, the maintenance of the connection and/or the property owner's failure to connect to the sewerage system (hereinafter "condition"). Such request may be made in writing within 30 days of the date of the mailed notice specified in subsection (A) of this section. Such hearing shall be conducted before the hearing examiner as a Type II procedure pursuant to the procedures set forth in Chapter 20.06 ECDC.

C. Charge. If the condition has not been corrected within the period specified by the public works director, not less than 60 days from the date of mailing of the notice, there shall be added to the utility bill prescribed by the Edmonds City Code for such premises an additional utility charge of \$20.00 per month for each month of violation after the expiration of the specified period. The additional is not a fine or penalty but rather is reflective of the additional burdens placed on the city's utility system and is assessed as a utility charge. The additional charge shall continue and be collected along with the full sewerage rate until such time as the owner of the premises corrects such condition. Upon correction, an additional utility charge of \$20.00 per month shall cease. [Ord. 3788 § 3, 2010].

18.10.040 Defective private drain pipes.

A. Notice. If any private drain pipe connected with the trunk and lateral sewer becomes obstructed, broken or out of order,

the public works director may notify in writing the owner, agent or occupant of such premises, and order the repair of the pipe within a specified period.

B. Correction. If the pipe is not corrected within the specified period, the failure to correct shall be a misdemeanor subject to penalty as provided in this code. In addition, but not by way of limitation, the public works director may cause the drain pipe to be removed, reconstructed, replaced or altered, as he deems best, at the expense of the owner, agent or occupant of such premises. The cost of correction shall be a lien upon the premises. The assessment shall be collected and the lien enforced by legal action.

18.10.050 Draining of swimming pools.

A. No Building Permit to Issue. No building or construction permit shall issue for the construction of any facility used in or as a part of any swimming pool, hot tub, jacuzzi, bathing facility, stock watering trough, holding tank, or any other facility designed and intended for the storage of water in quantities in excess of 50 gallons where such facility is designed and intended to drain into the city sewerage system through any city owned grinder pump.

B. Prohibition. It shall be unlawful for any individual to drain any swimming pool, hot tub, jacuzzi, stock water trough, or any other facility designed or intended to hold more than 50 gallons of water through any city owned grinder pump or to do so without the permit required in subsection C of this section.

C. Permit Required. No person shall drain any of the facilities described in subsections A and B of this section without first having obtained a current city permit. The permit shall be posted on the building or premises where the drainage is to occur and, unless revoked, shall not be removed until such work has been finally approved by the public works director.

1. Fee. The fee for a drainage permit shall be \$10.00.

2. Approval Criteria. The public works director shall only approve an application if it is in his judgment that the drainage of the facility herein described can be done through the city's sanitary and/or public sewer system directly in a manner which will not endanger the grinder pump nor shall it overload the sanitary or storm sewerage systems in such a way as to threaten the public's health, safety and welfare.

3. Term – Permits. Each permit shall be issued with respect to one drainage and shall be good for a period of 30 days from the date of issue. [Ord. 2470, 1984].

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to the affected property owners. (Ord. 27502 § 1; passed Jun. 27, 2006)

12.08.720 Inflow and Infiltration Removal from Private Side Sewers

A. Purpose. The purpose of this section is to prescribe rules and regulations for private side sewer inspection requirements at the time of sale, major building remodel or additions to properties within the City of Tacoma, to educate property owners on the conditions of their private side sewers, and to encourage the reduction in quantity of inflow and infiltration from the sanitary sewer system. The inspection requirements take effect on December 1, 2010.

B. Definitions. As used in this section, the terms listed below shall be defined as follows:

“Certificate of Inspection” means the certificate issued by the City of Tacoma to an owner indicating that the owner has performed an acceptable inspection for sources of inflow and infiltration on their private side sewer.

“Cleanout” means a section of pipe that extends from the underground private side sewer to the ground surface which is used to access the private side sewer for the purposes of cleaning and inspecting the private side sewer.

“Condominium” means real property, portions of which are designated for separate ownership and the remainder of which is designated for common ownership solely by the owners of those portions. Real property is not a condominium unless the undivided interests in the common elements are vested in the unit owners and unless a declaration and a survey map and plans have been recorded, pursuant to RCW 64.34.020.

“Direct Connection” means any piped connection to the private side sewer that conveys stormwater or surface water to the sanitary sewer system. Examples of direct connections include roof drains, sump pumps, footing drains, area drains, yard drains, and driveway drains.

“Director” means the Director of Public Works or his or her designated representative.

“Infiltration” means any groundwater that makes its way into the private side sewer via defects in the pipe, such as cracks, holes, unsealed joints, and root penetrations.

“Inflow” means any water that is dumped or conveyed into the sanitary sewer system through improper or direct connections. Examples of improper or direct connections include roof drains, footing drains, area drains, yard drains, and driveway drains.

“Inspection Report” means the full and accurate inspection results recorded on a City form including a

copy of the closed-circuit television camera (“CCTV”) video inspection.

“Private Side Sewer” means the sewage conveyance pipe owned by the property owner that extends from approximately two feet outside of a building or structure to the connection at the public sanitary sewer main. In most circumstances, a portion of the private side sewer extends into public streets or alleys connecting to the public sewer main.

“Public Sewer Main” means the network of common sewage conveyance pipes that are owned, maintained, and operated by the City of Tacoma.

“Sell or Transfer of Title” means the sale or transfer of an entire real property estate or the fee interest in that real property estate and does not include the sale or transfer of a partial interest, including a leasehold.

“Owner” means any private individual or corporation that holds the title to a real property as shown by the Pierce County Assessor’s records.

“Video Inspection” means a visual recorded inspection of a private side sewer performed by inserting a flexible video camera into the private side sewer for the purposes of determining the condition of the interior of the pipe.

C. Conditions Requiring Private Side Sewer Inspections for Sources of Inflow & Infiltration.

1. Effective December 1, 2010, properties shall be required to be inspected for sources of inflow and infiltration in the following circumstances:

a. Prior to the sale or transfer of title for a real property that contains any building or structure with a private side sewer connecting to the public sewer main.

b. Prior to the issuance of a building permit for a substantial building renovation. A substantial building renovation shall be defined as meaning remodeling, alteration of, and/or addition to an existing building within a two-year period, the cost of which exceeds 60 percent of the value of the building as calculated using the latest Building Valuation Data as published by the International Code Council.

c. Prior to the issuance of a building permit for any new buildings or additions to existing buildings in which the new structures or additions may be constructed over the top of the existing private side sewer. If the location of a private side sewer is unknown, it shall be located prior to issuance of building permit.

2. This section shall not apply to any of the following:

a. Properties that have been issued a Certificate of Inspection within the past five-year period.

Tacoma Municipal Code

- b. Transfer of title from one co-owner to one or more other co-owners.
- c. Transfer of title made to a spouse or to a person or persons in the lineal line of consanguinity of one or more of the transferors.
- d. Transfer of title between spouses resulting from a decree of dissolution of marriage or a decree of legal separation or from a property settlement agreement incidental to a decree.
- e. Condominiums, as defined in TMC 12.08.720.B.
- 3. Properties that have City permit records detailing that the entire private side sewer from the cleanout at the building to the connection at the public sewer main is constructed with water-tight materials meeting current Tacoma Municipal Code requirements will not be required to inspect for infiltration, but will require inspections for sources of inflow.
- 4. Except as otherwise provided in this section or as allowed by the Director, the owner of the property is responsible for compliance with this section and obtaining an inspection. The owner shall be responsible for disclosing to prospective purchasers the requirements of this section and a copy of the inspection report of the real property in question.
- 5. Property owners are solely responsible for the construction, maintenance, operations, repairs, or replacement of the private side sewer and any surface reconstruction requirements when performing said repairs.
- 6. Sources of inflow and infiltration found through inspections required by this section will be permitted by the Director to remain; however, this section shall not be construed to allow any new sources of inflow or infiltration into the sanitary sewer system. The City encourages owners to be proactive in making private side sewer or building repairs to eliminate infiltration and inflow to the sanitary sewer system. The City offers financial assistance to qualified customers through the Environmental Services Conservation Loan Program, per TMC 12.08.640, to aid with the cost of performing private side sewer repairs or replacement.

D. Inspection Requirements.

- 1. Video Inspection. All private side sewers shall be inspected via an internal video inspection for the full length of the private side sewer from the building sewer to the public sewer main, utilizing a video inspection camera. Video inspections shall be recorded with a current date/time stamp and display the property address visible on-screen.
- 2. Direct Connection Inspection. All buildings with a connection to the public sewer main shall be inspected to

determine if any direct stormwater or surface water connections to the sanitary sewer exist, including, but not limited to, roof drains, sump pumps, area drains, foundation/footing drains, and yard drains.

3. Inspections shall be performed by a Washington State licensed plumbing contractor or a sanitation sewer contractor who performs video inspections.

E. Inspection Report and Certificate of Inspection.

1. Inspection results shall be recorded on the City form titled Private Side Sewer Inflow and Infiltration Inspection Report and submitted by the inspector to the City within 14 calendar days of inspection. A digital copy of the video inspection shall also be submitted with the written report. Any incomplete forms or videos will be rejected and required to be resubmitted after correction.

2. The City will issue a Certificate of Inspection for properties having a thorough and complete inspection. Copies of the Inspection Report, Certificate of Inspection, and the video inspection will be kept on file at the City as a matter of public record.

F. Violation – Penalties. Persons who violate this section are subject to the enforcement provisions set forth in TMC 12.08.675, including a Notice of Violation and issuance of a corrective order under TMC 12.08.675.A and civil penalties assessed under TMC 12.08.675.D. (Ord. 27934 Ex. A; passed Sept. 28, 2010; Ord. 27901 Ex. A; passed Jun. 29, 2010; Ord. 27857 Ex. A; passed Dec. 8, 2009)



ORDINANCE NO. 27857

1 AN ORDINANCE relating to wastewater and surface water management;
2 amending Chapter 12.08 of the Tacoma Municipal Code to implement a
3 private property inflow and infiltration removal program.

4 WHEREAS this proposed ordinance would implement a program that will
5 provide methods for reducing inflow and infiltration ("I/I") into the City's
6 wastewater sewer system by requiring private residential side sewer
7 inspections at the time of sale of real property and at the time of major building
8 remodels or additions thereby educating property owners on the condition of
9 their private side sewers, and

10 WHEREAS I/I removal is necessary to reduce the occurrence and
11 effects of sanitary sewer overflows, reduce future capital costs to convey and
12 treat clean stormwater in the wastewater system, and to provide for capacity
13 and opportunity for future wastewater customers when clean stormwater is
14 removed from the wastewater collection system, and

15 WHEREAS the City has developed this program with a committee of
16 stakeholders over the previous two years and has solicited input from other
17 affected outside stakeholders, and

18 WHEREAS the City, as a result of excessive flows measured in its
19 wastewater collection system, most specifically during and after rainfall events,
20 has reason to believe that properties using the City's wastewater collection
21 system have surface water connections to the wastewater system and that
22 defective private side sewers exist, allowing groundwater to infiltrate the
23 collection system which both contribute to sanitary sewer overflows, and
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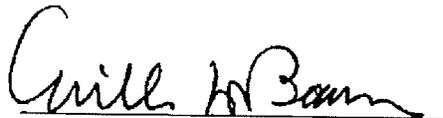
WHEREAS, in the City, all existing septic systems are currently required by the Tacoma-Pierce County Health Department to have an inspection at the time of sale, and

WHEREAS, in the interest of promoting the health, welfare, and public safety of its residents, the City desires to institute and enforce an ordinance requiring inspections of all private side sewers, including commercial buildings, to determine whether surface water and groundwater drain to the wastewater collection system; Now Therefore,

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That Chapter 12.08 of the Tacoma Municipal Code is amended, as set forth in the attached Exhibit "A."

Passed DEC 08 2009


Mayor

Attest:


City Clerk

Approved as to Form:

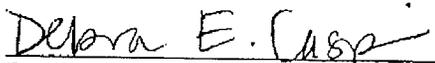

Deputy City Attorney



EXHIBIT "A"

1
2 **12.08.030 Prohibitions on storm drainage, ground water and unpolluted water –**
3 **Sanitary.**

4 Stormwater, groundwater, rainwater, street drainage, subsurface drainage, yard drainage, roof drainage, or
5 unpolluted water, including, but not limited to, cooling water or process water, shall not be discharged
6 through direct or indirect connection to any sanitary sewer unless approved by the Director or as allowed
7 under TMC 12.08.720. The Director may, but shall not be required to, approve such discharge only when
8 no reasonable alternative method of disposal is available. If approval is granted for the discharge of such
9 water into a sanitary sewer, the user shall pay the applicable charges and fees and meet such other
10 conditions as required from time to time by the Director.

11 **12.08.720 Inflow and Infiltration Removal from Private Side Sewers**

12 A. Purpose. The purpose of this section is to prescribe rules and regulations for private side sewer inspection
13 requirements at the time of sale, major building remodel or additions to properties within the City of Tacoma,
14 to educate property owners on the conditions of their private side sewers, and to encourage the reduction in
15 quantity of inflow and infiltration from the sanitary sewer system.

16 B. Definitions. As used in this section, the terms listed below shall be defined as follows:

17 "Certificate of Inspection" means the certificate issued by the City of Tacoma to an owner indicating that the
18 owner has performed an acceptable inspection for sources of inflow and infiltration on their private side
19 sewer.

20 "Cleanout" means a section of pipe that extends from the underground private side sewer to the ground
21 surface which is used to access the private side sewer for the purposes of cleaning and inspecting the
22 private side sewer.

23 "Condominium" means real property, portions of which are designated for separate ownership and the
24 remainder of which is designated for common ownership solely by the owners of those portions. Real property
25 is not a condominium unless the undivided interests in the common elements are vested in the unit owners and
26 unless a declaration and a survey map and plans have been recorded, pursuant to RCW 64.34.020.

"Direct Connection" means any piped connection to the private side sewer that conveys stormwater or
surface water to the sanitary sewer system. Examples of direct connections include roof drains, sump
pumps, footing drains, area drains, yard drains, and driveway drains.

"Director" means the Director of Public Works or his or her designated representative.

"Infiltration" means any groundwater that makes its way into the private side sewer via defects in the pipe,
such as cracks, holes, unsealed joints, and root penetrations.

"Inflow" means any water that is dumped or conveyed into the sanitary sewer system through improper or
direct connections. Examples of improper or direct connections include roof drains, footing drains, area
drains, yard drains, and driveway drains.

"Inspection Report" means the full and accurate inspection results recorded on a City form including a copy of
the closed-circuit television camera ("CCTV") video inspection.

"Private Side Sewer" means the sewage conveyance pipe owned by the property owner that extends from
approximately two feet outside of a building or structure to the connection at the public sanitary sewer main.
In most circumstances, a portion of the private side sewer extends into public streets or alleys connecting to
the public sewer main.

"Public Sewer Main" means the network of common sewage conveyance pipes that are owned, maintained,
and operated by the City of Tacoma.

"Sell or Transfer of Title" means the sale or transfer of an entire real property estate or the fee interest in that
real property estate and does not include the sale or transfer of a partial interest, including a leasehold.

"Owner" means any private individual or corporation that holds the title to a real property as shown by the
Pierce County Assessor's records.



1 "Video Inspection" means a visual recorded inspection of a private side sewer performed by inserting a
2 flexible video camera into the private side sewer for the purposes of determining the condition of the
3 interior of the pipe.

4 C. Conditions Requiring Private Side Sewer Inspections for Sources of Inflow & Infiltration.

5 1. Properties shall be required to be inspected for sources of inflow and infiltration in the following
6 circumstances:

7 a. Prior to the sale or transfer of title for a real property that contains any building or structure with a
8 private side sewer connecting to the public sewer main.

9 b. Prior to the issuance of a building permit for a substantial building renovation. A substantial
10 building renovation shall be defined as meaning remodeling, alteration of, and/or addition to an
11 existing building within a two-year period, the cost of which exceeds 60 percent of the value of the
12 building as calculated using the latest Building Valuation Data as published by the International
13 Code Council.

14 c. Prior to the issuance of a building permit for any new buildings or additions to existing buildings
15 in which the new structures or additions may be constructed over the top of the existing private side
16 sewer. If the location of a private side sewer is unknown, it shall be located prior to issuance of
17 building permit.

18 2. This section shall not apply to any of the following:

19 a. Properties that have been issued a Certificate of Inspection within the past five-year period.

20 b. Transfer of title from one co-owner to one or more other co-owners.

21 c. Transfer of title made to a spouse or to a person or persons in the lineal line of consanguinity of
22 one or more of the transferors.

23 d. Transfer of title between spouses resulting from a decree of dissolution of marriage or a decree of
24 legal separation or from a property settlement agreement incidental to a decree.

25 e. Condominiums, as defined in TMC 12.08.720.B.

26 3. Properties that have City permit records detailing that the entire private side sewer from the cleanout
at the building to the connection at the public sewer main is constructed with water-tight materials
meeting current Tacoma Municipal Code requirements will not be required to inspect for infiltration, but
will require inspections for sources of inflow.

4. Except as otherwise provided in this section or as allowed by the Director, the owner of the property is
responsible for compliance with this section and obtaining an inspection. The owner shall be responsible
for disclosing to prospective purchasers the requirements of this section and a copy of the inspection
report of the real property in question.

5. Property owners are solely responsible for the construction, maintenance, operations, repairs, or
replacement of the private side sewer and any surface reconstruction requirements when performing said
repairs.

6. Sources of inflow and infiltration found through inspections required by this section will be permitted
by the Director to remain; however, this section shall not be construed to allow any new sources of inflow
or infiltration into the sanitary sewer system. The City encourages owners to be proactive in making
private side sewer or building repairs to eliminate infiltration and inflow to the sanitary sewer system.
The City offers financial assistance to qualified customers through the Environmental Services
Conservation Loan Program, per TMC 12.08.640, to aid with the cost of performing private side sewer
repairs or replacement.

D. Inspection Requirements.

1. Video Inspection. All private side sewers shall be inspected via an internal video inspection for the
full length of the private side sewer from the building sewer to the public sewer main, utilizing a video
inspection camera. Video inspections shall be recorded with a current date/time stamp and display the
property address visible on-screen

2. Direct Connection Inspection. All buildings with a connection to the public sewer main shall be
inspected to determine if any direct stormwater or surface water connections to the sanitary sewer exist,
including, but not limited to, roof drains, sump pumps, area drains, foundation/footing drains, and yard
drains.



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3. Inspections shall be performed by a Washington State licensed plumbing contractor or a sanitation sewer contractor who performs video inspections.

E. Inspection Report and Certificate of Inspection.

1. Inspection results shall be recorded on the City form titled Private Side Sewer Inflow and Infiltration Inspection Report and submitted by the inspector to the City within 14 calendar days of inspection. A digital copy of the video inspection shall also be submitted with the written report.

Any incomplete forms or videos will be rejected and required to be resubmitted after correction.

2. The City will issue a Certificate of Inspection for properties having a thorough and complete inspection. Copies of the Inspection Report, Certificate of Inspection, and the video inspection will be kept on file at the City as a matter of public record.

F. Violation – Penalties. Persons who violate this section are subject to the enforcement provisions set forth in TMC 12.08.675, including a Notice of Violation and issuance of a corrective order under TMC 12.08.675.A and civil penalties assessed under TMC 12.08.675.D.



Private Side Sewer Inspections for Sources of Inflow & Infiltration

Frequently Asked Questions

As of Oct. 1, 2010, Tacoma property owners are required to have a certified inspection of their private side sewers and other sources of inflow and infiltration prior to **the sale or transfer of a home or business, major remodel** or any **construction over an existing side sewer**. This requirement is detailed in Tacoma Municipal Code 12.08.720.

ABOUT THE PROGRAM

Q. Why does the City care about the condition of my side sewer?

The City of Tacoma's side sewer inspection requirements are part of Wastewater Management's Inflow & Infiltration Removal Program. The program is designed to:

- **Eliminate backups of sewage into homes, businesses and streets** caused by surface water (rainwater) and groundwater getting into the wastewater collection system through breaks and cracks in the City mains or private side sewers, or from direct surface water connections such as roof drains, basement sump pumps, floor drains, etc.
- **Eliminate overflows of partially treated wastewater into Commencement Bay.** When inflow and infiltration inundate the wastewater collection system in storm events, the treatment plants are unable to fully treat the wastewater resulting in overflows to the bay.
- **Eliminate sources of sewage leaking into the ground from broken side sewers**, which can be a public health issue.
- **Avoid using the treatment plant for treating clean groundwater and rainwater**, which is expensive and unnecessary.
- **Make property owners aware of the condition of their side sewer.** As with onsite septic systems, side sewer maintenance is the responsibility of the property owner.

Knowing the condition of a building's side sewer means that property owners can better plan and prepare for repairs or replacements just as they would for roofs, furnaces, and other major working systems of the building rather than discovering the problem when the sewer suddenly backs up into the building.

A BRIEF GLOSSARY

Side sewer: Also known as a lateral or private connection, the side sewer carries waste from a home or business' toilets and drains to the City's main sewer line, where it continues to a wastewater treatment plant. Property owners are responsible for maintaining and repairing the side sewer.

Inflow: Rainwater that gets into the wastewater system through direct connections such as roof drains, basement sump pumps and floor drains.

Infiltration: Groundwater that gets into the wastewater system through cracks or breaks in the City main or private side sewer.

FOR MORE INFO

City of Tacoma
Environmental Services
Science & Engineering Division
(253) 591-5588
[www.cityoftacoma.org/
sewerinspection](http://www.cityoftacoma.org/sewerinspection)

Q. Why is rainwater and groundwater getting into our wastewater system a problem?

The City of Tacoma has a separated sewer system. The wastewater system collects water that leaves homes and businesses through sinks, showers and toilets. It flows through sewer pipes to a wastewater treatment plant where it is treated before being released into Commencement Bay. The stormwater system collects water that runs off of our streets, roofs, yards and driveways. It then flows through catch basins, storm sewer pipes, pump stations and/or detention ponds and flows directly -- untreated -- into lakes, streams, rivers, Commencement Bay and Puget Sound.

During heavy rains, stormwater getting into the wastewater system can cause “peak flows” that can be as much as seven times the normal flow in the system. This can overwhelm the City’s wastewater sewers and treatment facilities, resulting in untreated or partially treated wastewater overflowing into basements, streets or Commencement Bay.

Q: When am I required to get a Certificate of Inspection for my side sewer?

A Certificate of Inspection for private side sewer inspections and sources of inflow and infiltration is required in the following circumstances:

- **If a property is being sold**, the certificate must be obtained prior to the close of escrow. The City of Tacoma requires an inspection and disclosure of the findings only. Any repair work is at the discretion of the buyer and seller; it is not required for certification. Condos and certain title transfers are exempt from this requirement. See TMC 12.08.720 for details.
- **If a planned remodeling project exceeds 60 percent of the value of the original building**, the property owner must have a Certificate of Inspection on file with the City before a building permit will be issued.
- **If any new buildings or additions to existing buildings will be constructed over the top of an existing private side sewer**, the property owner must have a certificate on file with the City before a building permit will be issued. If the location of a private side sewer is unknown, it will need to be located before the City will issue a building permit.

Q. How long is a Certificate of Inspection good for?

Five years from the date of inspection.

Q. Who does the inspection? What’s required?

Hire a licensed plumber or licensed side sewer contractor to inspect the private side sewer and look for any sources of inflow and infiltration as well as damage to the pipe. Inspection requirements include:

1. **Video Inspection.** All private side sewers need an internal video inspection for the full length of the private side sewer (from the building to the public sewer main). *Please refer to the inspection requirements form for details on what needs to be submitted.*
2. **Direct Connection Inspection.** All buildings connected to the public sewer main need to be inspected to determine if there are any direct stormwater connections to the sanitary sewer. This could include roof drains, sump pumps, area drains, foundation/footing drains, and yard drains.

Q. What if my sewer is brand new?

A property is exempt from a video inspection if permit records show that a home has a side sewer made of water-tight materials, such as PVC, from the building drain to the City sewer main. Property owners are still required to have an inspection for sources of inflow to obtain a Certificate of Inspection.

Q. How much should I expect to pay for an inspection?

The cost of an inspection can vary depending on the length of the side sewer and how easy or difficult it is to access the side sewer. An average side sewer inspection costs \$200 to \$400. Costs may vary greatly from one company to the next. We recommend that property owners contact at least three companies for written bids before selecting the contractor. Property owners may also check with the Better Business Bureau at (206) 431-2222 to find reputable companies.

Q. What is the penalty for not complying with these requirements prior to the sale of a property?

The City will routinely compare property sales records in the City of Tacoma with the submitted inspection reports to determine which properties are not in compliance. All properties found not to have complied with TMC 12.08.720 may be subject to penalties as stated in TMC 12.08.720F, which includes a Notice of Violation, issuance of corrective order, and civil penalties.

Q. What happens after the inspection is done?

The contractor will provide a copy of the inspection report and video to the City of Tacoma. The City will issue a Certificate of Inspection for any property having a complete and thorough inspection. Copies of the report will be kept on file by the City for future reference.

Q. Where will I (or my contractor) submit my inspection report and video?

The inspection report and video should be submitted to City of Tacoma Environmental Services, located in the Center for Urban Waters at 326 East D St., Tacoma, WA 98421.

Q. How quickly will the City review my inspection report once it is turned in to the City?

The City will review inspection reports within five business days of receiving a completed report at the Center for Urban Waters building. A Certificate of Inspection will be issued for inspections meeting the standards and requirements set forth by the City. If an inspection report does not meet the standards and requirements identified, the property owner will be notified of deficiencies with a request for a revised inspection report and/or video. The City will review the revised inspection report within five business days of receiving the revised report at the Center for Urban Waters building.

Q. How can I check whether a Certificate of Inspection is on file with the City so I can go ahead with my home sale and/or project?

The City began issuing Certificates of Inspection on July 1, 2010, for property owners who are voluntarily complying with this program prior to its effective date of Oct.1, 2010. You may contact Environmental Services at 591-5588 to see if the City has a Certificate of Inspection on file for a property.

Q. OK, so I got the inspection, my side sewer is certified. What now?

The City of Tacoma requires the inspection of side sewers in the above-mentioned circumstances so the property owner (and potential buyer in the case of home sales) is fully aware of the condition of the side sewer. Repair or replacement is at the discretion of the property owner (or may be negotiated between buyer and seller in the event of a sale).

IF THERE IS A PROBLEM

Q. The inspection showed some cracks/breaks/roots, but the sewer line has been working. Why should I fix it if it's not required?

A side sewer with cracks or breaks can more easily become blocked by dirt, rocks or root clusters. A blocked side sewer line can back sewage up into a building and potentially cause property damage. Being aware of the condition of your side sewer means that property owners can be proactive with planned maintenance and repairs rather than being surprised with a big mess and a hefty repair bill. Property owners are responsible for the repair and maintenance of their side sewer.

Q. OK, so I'm going to fix it. Who do I call?

Companies offer a full range of services, including unblocking, repairing and replacing side sewers, but some specialize in certain areas. Make sure to ask which services are provided. Ask friends and relatives for recommendations. Property owners may also check with the Better Business Bureau at (206) 431-2222 to find reputable companies.

All repairs performed in the City right-of-way, even if they're on part of the private side sewer system, must be done by a contractor licensed and bonded to work in Tacoma. *(Please note: Permits are always required, on both private property and in the right-of-way, when performing repair work on side sewers or plumbing fixture. Permits are not required for root removal or unclogging services.)*

Companies can be found listed in the local telephone directory under "Sewer Contractors." Since companies offer a wide range of prices, it's a good idea to get at least three written bids before choosing a company.

- **Rooter services** unclog plumbing and private side sewers using water pressure or mechanical "snakes." Make sure the roofer service's snake cable is long enough to reach from a property's side sewer to the City's main sewer line (typically underneath the street or alley). Rooter companies also might repair and/or replace side sewers.
- **Side sewer contractors** repair and/or replace structural problems, such as breaks or holes, in side sewers. Some contractors also might unclog lines.
- **Plumbers** repair leaky or broken fixtures, and they install systems in new construction and remodeling. If only some fixtures are not draining, or if pipes are leaking, a plumber might be able to remedy the problem.

Q. Can I fix the problem myself?

All repairs performed in the City right-of-way, even if they're on the property owner's private side sewer system, must be done by a contractor licensed and bonded to work in Tacoma. If the property owner chooses to unclog the side sewer or make repairs to portions of the side sewer located only on private property, please keep the following in mind:

- **Unclogging a line:** A variety of tools and products can be found at local home improvement stores. Portable roofer machines are available at many rental companies. Make sure to measure the distance between the side sewer and the main line to determine what size machine to rent.
- **Repairing or replacing a broken or leaky side sewer line:** Property owners may work on their own private sewer system if repairs are located only on private property and not in the right-of-way, but a permit must be obtained from the Public Works Department so construction inspectors can inspect work and ensure it

meets City standards. Permits are available 8 a.m. to 5 p.m. Monday through Friday at Public Works Building & Land Use Services, 747 Market St., Room 345, Tacoma, WA 98402. For more information about permit requirements or how to apply, call (253) 591-5030.

(Please note: Permits are always required, on both private property and in the right-of-way, when performing repair work on side sewers or plumbing fixture. Permits are not required for root removal or unclogging services.)

Q. What if my side sewer looks great, but I have a source of inflow (such as a sump pump, roof drains, or floor drain) that is connected to my side sewer? Do I have to fix it?

Repairs are not mandated, but are encouraged. Properly directed stormwater keeps clean water out of the sanitary sewer, which allows more room for the sewage that belongs in the wastewater system, and reduces the City's costs for treating any clean water that is mixed in with the wastewater. For guidance in determining how you could redirect clean water sources to the street or infiltrate (soak in) on site, call Environmental Services at (253) 591-5588.

Q. What if I can't afford to replace or fix my side sewer?

The City offers low-interest sewer loans to qualified homeowners and business owners for side sewer repair or replacement. For information or how to apply for the Sewer Conservation Loan, call (253) 591-5588.

Low-income households can also inquire into the City's Major Home Repair Program, which offers no-interest loans for qualified homeowners within a certain income level. For questions about this program, call (253) 591-5236.

ABOUT YOUR SIDE SEWER

Q. What is a private side sewer?

The side sewer, also known as a lateral sewer or private connection, carries waste from a home or business's toilets and drains to the City's main sewer line, where it continues to a wastewater treatment plant. Property owners are responsible for maintaining and repairing any problems that occur in the side sewer line serving the property.

Q. How do I know where my side sewer is located?

To find the location of a home or business' side sewer, check building plans, ask the previous owner, or look for cleanouts in the yard or landscaping. You can also check permit records kept by Building & Land Use Services by calling (253) 591-5030. (The City has more information about homes built after 1950, and has records only of work done with permits.)

Q. What is a cleanout, and how do I find it?

A cleanout is a pipe that extends vertically from a side sewer to the ground surface or close to the ground surface that is used for access to clean and inspect a side sewer. Most cleanouts are located within 2 feet from the building where the side sewer comes out or at the right-of-way line. Most are covered with a plastic or metal lid, but sometimes there is just a 4- to 6-inch pipe extending out of the ground with a screw on cap. Not every property has a cleanout. If you can't locate your cleanout, you can check permit records kept by Building and Land Use Services by calling (253) 591-5030 or checking www.cityoftacoma.org/mygovme. (The City has more information about homes built after 1950, and has records only of work done with permits.)

Q. What are common problems associated with side sewers?

Most homes in Tacoma were built before 1950, and the original side sewers have rarely been replaced. Over time, these pipes, generally made of clay or concrete, can crack, shift out of place, and/or be subjected to intrusion by roots, all of which can cause leakage and blockage. In addition, some side sewers lack the right kind of cleanouts, which provides access for clearing blockages.

Q. Who is responsible for the maintenance of the side sewers?

The maintenance of the side sewer, up to the connection to the City main, is the responsibility of the private property owner. The City's responsibility is the maintenance of the sewer main, including the tee (T), wyes (Y), and risers at the main.

Q. At what point(s) am I required to repair or replace my sewer lateral?

If a property's side sewer problem gets to the point where sewage won't flow at all and backs up into a building, yard or elsewhere outside the plumbing system, it is considered a Sanitary Sewer Overflow, which is illegal and a health hazard. If this happens, the City notifies the property owner and gives a fixed amount of time to make repairs. In the event that repairs aren't made in the time provided, the property owner may face fines or water shut-off by the health department.

July 2, 2010

CITY OF BELLINGHAM CODE

City of Bellingham
CITY COUNCIL AGENDA BILL

SUBJECT	FOR AGENDA OF	COUNCIL ASSIGNMENT	BILL NUMBER
Discussion Regarding Implementation of a Comprehensive Inflow and Infiltration Program	04-12-10	PUBLIC WORKS/SAFETY	018826
	TIME REQUIRED	DEPART. CONTACT	RECEIVED IN COUNCIL OFFICE
ATTACHMENTS Staff Report Map of Central Sewer Collection Basin Sample Ordinance from City of Tacoma	30 minutes	B.Bandarra / T. Carlson	
	CLEARANCES	INITIAL	DATE
	Ted Carlson, PW Director	TAC	4/5/10
CATEGORY			
<input type="checkbox"/> Public Hearing <input type="checkbox"/> Other <input type="checkbox"/> Evening Presentation <input type="checkbox"/> Special Meeting <input checked="" type="checkbox"/> Committee Briefing Ordinance: <input type="checkbox"/> Mayor's Report <input type="checkbox"/> Briefing/Discussion <input type="checkbox"/> Consent Agenda <input type="checkbox"/> Introduction or Expedited			
	Legal	JH	4-6-10
	Mayor or CAO	TAC	4-6-10
SUMMARY STATEMENT:			
<p>On February 16, 2010 the City Council held a special work session to discuss the status of several on-going projects to improve the City's wastewater collection system. One of the three main elements of the work session included peak flow management to control Combined Sewer Overflows (CSO). Staff at that time discussed with Council that they would be bringing back for Council's review a comprehensive Inflow and Infiltration (I & I) Program that would reduce flow from entering into the sewer collection system.</p>			
<p>Previous Council Action: 2/16/10 Council Meeting, Council directed staff to bring back an I & I Program for discussion</p>			
FISCAL IMPACT:			
<p>Total Fiscal Impact: Will depend on policy/strategy direction given by Council.</p>			
<p>Source of Funds: Sewer and Storm Water Funds</p>			
RECOMMENDED ACTION:			
<input type="checkbox"/> Information only; no action required <input type="checkbox"/> Move to adopt ordinance or resolution <input type="checkbox"/> Other		<input checked="" type="checkbox"/> Provide direction to staff <input type="checkbox"/> Move to approve appointment <input type="checkbox"/> Award Bid to lowest bidder	
COMMITTEE RECOMMENDATION / ACTION:			
COUNCIL ACTION:			

Memorandum

Department of Public Works

Operations Division

2221 Pacific Street – Bellingham, Washington 98229
(360) 778-7700 – Fax (360) 778-7701

To: Ted Carlson, Public Works Director

From: Bob Bandarra, Superintendent of Operations
Chad Bedlington, Superintendent of Maintenance

Date: April 1, 2010

Subject: Inflow and Infiltration (I & I) Program

We have been working on development of a comprehensive program to address ways to reduce Inflow and Infiltration (I & I) into the sewer collection system, thereby increasing the availability of flow capacity in both the sewer collection system and at Post Point WWTP. This memo will discuss some of the key aspects of the program which will be part of the broader comprehensive program that should allow for the success of the overall reduction of flows into the sewer collection system. This memo may be used as background for an agenda bill to the City Council Public Works Committee with subsequent power point slides to highlight the key strategy components for immediate implementation and a proposed draft ordinance directed at private side sewer inspections at the time of sale.

Recommendations for Short-Term I & I Reduction:

- Identify cost-effective I & I reduction projects on a project-specific basin, rather than on a Citywide approach or by the need to meet specific I & I reduction targets.
- Suggest using the Central Basin Area as a targeted project area. I & I flows noted for this basin area are 10.69 MDG during a ten-year storm event.
- Select two or three initial I & I reduction projects for implementation using smoke testing and CCTV inspection of sewer mains and side sewer laterals to identify areas in need of downspout disconnection, sewer main and lateral replacement and manhole repair.
- Over the next 2 years, construct the selected initial projects to test planning assumptions and to gain more information about costs.
- Proceed with work on private property when a project calls for it. Experiences on initial projects would be documented in terms of public involvement activities, private property participation rates, costs, neighborhood impacts, groundwater effects, and special construction issues that arise.
- Fund initial projects through sewer revenue bond proceeds designated to fund proposed wet weather facility.

- Delay wet weather facility until completion of pilot demonstration project in order to assess cost benefit ratio using Triple Bottom Line analysis and approval from the Department of Ecology.
- If pilot demonstration project is shown to be successful, other projects could be designated for similar improvements, options for supplemental funding could be considered such as a surcharge for I & I projects. Sewer revenue bonds could be sold and the proceeds used to replace and repair those areas of the collection system which contribute the largest quantity of I & I. Those projects would include replacement of private sewer laterals at no expense to the property owner. The debt service would be repaid from the collected surcharge. In accordance with an August 27, 2009 Attorney General decision: "Municipal sewer districts have statutory authority to use public funds to repair or replace side sewers located on private property if doing so will increase sewer capacity by reducing infiltration and inflow. Use of public funds in this case does not constitute an unconstitutional gift or loan of public funds if the district (municipality) acts without donative intent and can demonstrate that the action will result in significant benefit to the public." (Copy of opinion attached).
- Letter to the Department of Ecology requesting an indefinite extension of the 2016 deadline for construction of the Wet Weather Facility noted in the Sewer Comprehensive Plan due to the positive results verified in the Pilot Demonstration Project.

Recommendations for Long-Term I & I Control:

- Make use of existing City regulations to ensure that new development and redevelopment within the wastewater service area meet up-to-date construction standards for sewer conveyance lines and connections.
- Apply the standards, guidelines, procedures, and policies in final draft form to the initial I & I reduction projects.
- Conduct a system flow audit of the sewer systems every 10 years to monitor I & I levels. Conduct the audits and use the information to cooperatively make decisions about how to adjust I & I control measures as may be necessary.

Recommendations for Program Administration and Policy:

- Adopt an ordinance that requires home owners selling their homes in the City limits of Bellingham to inspect side sewer is in need of repair, then a repair must be made as a condition of sale.
- Potentially create a program where the City partially funds the replacement of side sewers (up to a certain dollar amount.)



SEWER DISTRICTS -- PUBLIC FUNDS -- GIFT OF PUBLIC FUNDS -- GIFTS -- LOANS -- Use of public funds to repair or replace side sewers.

Municipal sewer districts have statutory authority to use public funds to repair or replace side sewers located on private property if doing so will increase sewer capacity by reducing infiltration and inflow. Use of public funds to do so does not constitute an unconstitutional gift or loan of public funds if the district acts without donative intent and can demonstrate that the action will result in significant benefit to the public.

August 27, 2009

Representative Ruth Kagi
State Representative, 32nd District
P. O. Box 40600
Olympia, WA 98504-0600

Cite As:
AGO 2009 No. 5

Dear Representative Kagi:

By letter previously acknowledged, you have requested our opinion with respect to the following question:

May a municipal sewer district repair or replace private side sewers as part of a district-wide infiltration and inflow reduction program where (a) aging and inadequate side sewers are the most significant contributor to infiltration and inflow in the district's entire system; (b) the purpose of the program is to benefit the district and the public through lower long-term capital and maintenance costs, not private property owners; (c) repair or replacement would be subject to a right of entry from the private property owner; and (d) the program costs will be paid back through the district's bi-monthly sewer rates?

BRIEF ANSWER

Municipal sewer districts have statutory authority to maintain or operate the sewer system by repairing or replacing side sewers if doing so results in increased sewer capacity by reducing infiltration and inflow into the sewer system. The exercise of this statutory authority does not constitute a gift of public funds if the municipal sewer district does not have a donative intent and it is able to demonstrate that the expense will result in sufficient benefit to the public.

BACKGROUND

Your question concerns a municipal sewer district that owns and operates sewer mains and lift stations that transport wastewater and sewage to treatment plants. [1] Side sewer lines [original page 2] collect waste and stormwater from individual homes and buildings and connect to the sewer district's system of pipes and pumps. The side sewer lines are owned by individual property owners, not the sewer district.

The sewer district is experiencing infiltration and inflow from the side sewer lines. Infiltration takes place when groundwater enters the side sewers through deteriorated or damaged side sewer pipes. U.S. Envtl. Prot. Agency, *Sewer System Infrastructure Analysis and Rehabilitation* 91 (1991). Inflow occurs when stormwater is discharged into side sewers or the sewer system through direct connections, such as downspouts, foundation drains, and driveway drains. *Id.* Infiltration and inflow "is the major deterrent to the successful performance of a wastewater conveyance or treatment system." *Sewer System Infrastructure* at 19 (citing *Technology and Design Deficiencies at Publicly Owned Treatment Works*, Water Env't & Tech., (Dec. 1989)). It can cause excessive wear on pumping station equipment, high power costs, and the need for construction of new or additional sewer facilities earlier than the date projected. *Id.* Infiltration and inflow can also cause overloaded sewer systems and treatment plants to flood streets and basements and release untreated wastewater into waterways. *Id.*

ANALYSIS

A municipal sewer district may repair or replace private sewers if it has statutory authority to do so, and if paying for such repairs or replacements would not violate the state constitutional prohibition against the gifting or lending of public funds. We conclude that municipal sewer districts have the necessary authority and that its exercise would not transgress the state constitution.

We begin by briefly considering the statutory authority of municipal sewer districts. RCW 57.08.005(5) provides authority to municipal wastewater districts "to construct, condemn and purchase, add to, maintain, and operate" sewer systems for a variety of purposes, including provision of "an adequate system of sewers" and "control of pollution from wastewater." In addition to possessing the authority granted by RCW 57.08, municipal sewer districts are authorized to exercise any of the powers granted to cities and counties with respect to the maintenance and operation of waterworks and systems of sewage and drainage. RCW 57.08.005(21). Cities and towns have authority to "construct, condemn and purchase, acquire, add to, maintain, conduct, and operate" sewer systems "together with additions, extensions, and betterments thereto, within and without its limits." RCW 35.67.020(1). Counties have similar authority to "establish . . . operate, and maintain" a sewer system. RCW 36.94.020.

The statutory authority of a municipal corporation is limited to the power conferred by statute and the constitution, necessarily implied or incident to the powers expressly granted, or essential to the declared objects and purposes of the corporation. *Okeson v. City of Seattle*, 159 Wn.2d 436, 445, 150 P.3d 556 (2007). The Washington Supreme Court has explained that "if municipal utility actions come within the purpose and object of the enabling statute and no express limitations apply, [the] court leaves the choice of means used in operating the utility to the discretion of municipal authorities." *City of Tacoma v. Taxpayers of Tacoma*, 108 Wn.2d 679, 695, 743 P.2d 793 (1987).

[original page 3] The Washington Supreme Court considered the scope of similar municipal utility authority in *Taxpayers of Tacoma*. That case involved RCW 35.92.050, which provides cities authority to "maintain and operate" electrical facilities, and purchase and sell power to its residents. Tacoma's electric utility invested in energy conservation audits and paid for the installation of conservation measures on the private property of its ratepayers. *Taxpayers of Tacoma*, 108 Wn.2d at 683. The evidence in the record demonstrated that that "investment in conservation is considered the equivalent of purchasing electricity or of purchasing an electric generating facility." *Id.* at 693. In determining whether the expenditures were permitted, the Court considered whether the conservation program bore a "sufficiently close nexus to the purpose and object" of the city's statutory authority to operate the electrical utility. *Id.* at 696. The Court found that "the policy underlying legislative authorization of municipal utilities was the belief that municipalities could provide lower cost and more efficient electrical service." *Id.* Noting the "heavy environmental and financial costs" of generating additional power, the Court stated conservation "offers the cheapest and cleanest alternative for meeting future electrical supply needs." *Id.* at 696-97. The Court concluded that Tacoma had not exceeded its authority "to own and manage an electric utility and to purchase and sell power". *Id.* at 700.

As with the conservation measures considered in the Tacoma case, expending funds to repair side sewers that are causing infiltration or inflow is within the statutory authority to construct, maintain, and operate a sewer system. RCW 57.08.005(5); RCW 35.67.020(1); RCW 36.94.020. In addition, repair and replacement falls within the sewer district's statutory authority to control "pollution from wastewater" if it prevents an overloaded system from polluting streets, waterways, and private property with untreated wastewater. RCW 57.08.005(5).

In exercising its statutory authority, a municipality may not act contrary to constitutional limitations. *Okeson*, 159 Wn.2d at 447. The Washington Constitution prohibits state and local governments from giving or loaning public funds to private individuals, companies, or associations. Article VIII, section 5 states: "The credit of the state shall not, in any manner be given or loaned to, or in aid of, any individual, association, company or corporation." Article VIII, section 7 states:

No county, city, town or other municipal corporation shall hereafter give any money, or property, or loan its money, or credit to or in aid of any individual, association, company or corporation, except for the necessary support of the poor and infirm, or become directly or indirectly the owner of any stock in or bonds of any association, company or corporation.

Although sections 5 and 7 are worded differently, the Washington Supreme Court has held that they have the same meaning and are to be analyzed in the same manner. *CLEAN v. State*, 130 Wn.2d 782, 797, 928 P.2d 1054 (1996). The purpose of the provisions is "to prevent state funds from being used to benefit private interests where the public interest is not primarily served." *Id.* (quoting *Japan Line, Ltd. v. McCaffree*, 88 Wn.2d 93, 98, 558 P.2d 211 (1977)). The question of whether a gift of public funds has occurred is resolved by (1) determining whether the governmental body had a donative intent and (2) examining the consideration

received by the public. *CLEAN*, 130 Wn.2d at 798.

[original page 4] The Washington Supreme Court's analysis of these factors in the *Taxpayers of Tacoma* case is closely analogous to the question you have presented. In *Taxpayers of Tacoma*, the Court found that despite the fact that the conservation measures benefitted individuals by decreasing their utility bills, the city did not act with donative intent. "Aid to individuals is not absolutely prohibited under our law but is only improper where public money is used solely for private purposes." *Taxpayers of Tacoma*, 108 Wn.2d at 705 (quoting *State v. Ralph Williams' N. W. Chrysler Plymouth, Inc.*, 82 Wn.2d 265, 277, 510 P.2d 233 (1973)). The Court found that any benefit received by individuals was incidental to the public benefit of meeting future power needs by using the energy saved through the conservation measures. As in the *Taxpayers of Tacoma* case, private property owners may benefit from the repair or replacement of side sewers. However, if the private benefit is merely incidental to the public benefit of increasing sewer capacity, there would not be a donative intent.

In determining whether the consideration received by the public as a result of the energy savings was acceptable, the Court applied a legal sufficiency test. *Taxpayers of Tacoma*, 108 Wn.2d at 703; see also *King Cy.*, 133 Wn.2d at 597. The Court stated that if the consideration received is not "grossly inadequate," the courts will not analyze whether the public received consideration that was equal to the expenditure. *Taxpayers of Tacoma*, 108 Wn.2d at 703. In *Taxpayers of Tacoma*, the Court found that the consideration was not grossly inadequate, because the city demonstrated the number of kilowatts of electricity that were likely to be saved in the first year after installation of the conservation measures. *Id.* at 703-4. As in the *Taxpayers of Tacoma* case, a municipal sewer district could demonstrate the adequacy of consideration by analyzing the amount of increased sewer capacity it predicts will be obtained through the repair or replacement of side sewers. If the sewer district does not have a donative intent, and it is able to provide an analysis of the predicted increased sewer capacity, we do not believe the repairs or replacement would constitute a gift of public funds.

Our analysis of whether the repairs would constitute a gift of public funds is not affected by article VIII, section 10 of the state constitution. Section 10 contains an exception to the state constitution's prohibition on gifts of public funds. It states:

Notwithstanding the provisions of section 7 of this Article, any county, city, town, quasi municipal corporation, municipal corporation, or political subdivision of the state which is engaged in the sale or distribution of water, energy, or stormwater or sewer services may, as authorized by the legislature, use public moneys or credit derived from operating revenues from the sale of water, energy, or stormwater or sewer services to assist the owners of structures or equipment in financing the acquisition and installation of materials and equipment for the conservation or more efficient use of water, energy, or stormwater or sewer services in such structures or equipment. Except as provided in section 7 of this Article, an appropriate charge back shall be made for such extension of public moneys or credit and the same shall be a lien against the structure benefited or a security interest in the equipment benefited. Any financing for energy conservation authorized by this article shall only be used for conservation purposes in existing structures and shall not be used for any purpose which results in a conversion from one energy source to another.

[original page 5] In *Taxpayers of Tacoma*, the Washington Supreme Court examined a prior version of section 10. Const. art. VIII, § 10 (as originally adopted as Amendment 70 (1979)). Like the current version of section 10, it permitted loans of public money to help property owners acquire equipment for energy conservation, but it did not include sewer systems or sewer equipment. The Court found that section 10 was proposed by the Legislature, and ratified by the people, for "the limited purpose of carving out an exception to the lending of credit prohibition" in the state constitution. *Taxpayers of Tacoma*, 108 Wn.2d at 688. The Court held that the question of whether Tacoma could purchase conservation measures from private parties was a question "totally separate from, and uninfluenced by" the exception in article VIII, section 10 for the provision of loans to private parties for conservation measures.

In 1997, section 10 was amended to add municipal sewer services and sewer equipment. Const. amend. 91 (H.J.R. 4209 (1997)). The legislative history of amendment 91 indicates that the Legislature's intent was to permit lending of public credit to finance sewer improvements, not to address the use of public funds for the purchase of improvements. H.B. Rep. on H.J.R. 4209, 55th Leg. (1997). The voters pamphlet reflects the same intent. The ballot title submitted to the voters asked: "Shall the Constitution be amended to permit local governments to make loans for the conservation or the more efficient use of stormwater or sewer services?" Voters Pamphlet for State General Election 18 (1997). As with the original enactment of section 10, there is no indication that amendment 91 was intended to create a negative implication that the purchase of conservation equipment would be prohibited. Accordingly, the amendment does not affect a municipal sewer district's authority to use public funds to repair or replace side sewers.

We trust that the foregoing will be useful to you.

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[1] Treatment plants may or may not be owned and operated by the municipal sewer system. They may be operated by other governmental entities.