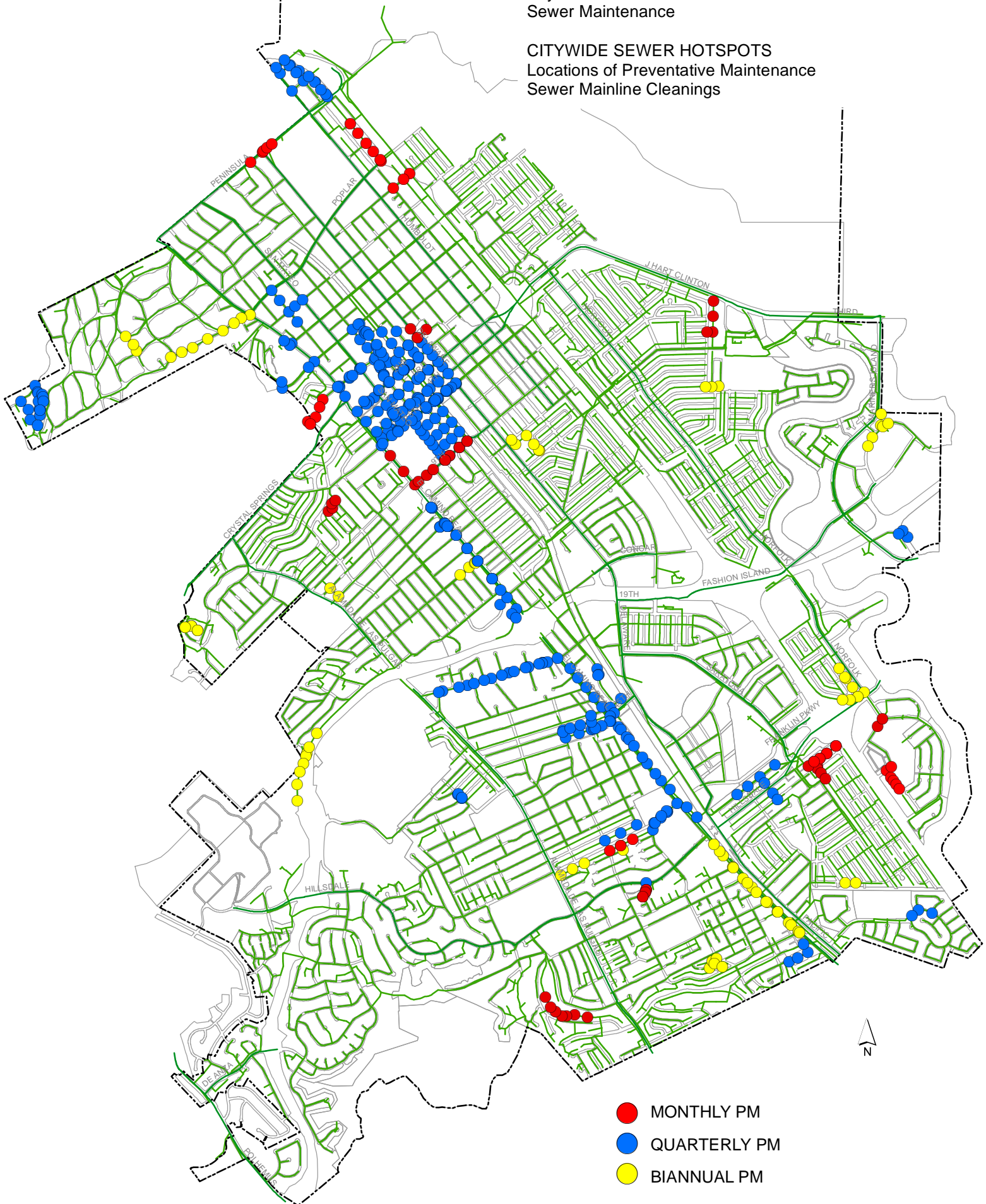


**SSMP
ELEMENT 4 – O & M Program
APPENDIX 4.7**

**Preventative Maintenance
Sewer Hot-Spot Program
&
Leak Detection Program**

CITYWIDE SEWER HOTSPOTS
Locations of Preventative Maintenance
Sewer Mainline Cleanings



SEWER PREVENTATIVE MAINTENANCE "HOT SPOTS" LIST

Last updated – August 15, 2014

| MONTHLY SEWER PM'S | | | | | | |
|--------------------|---|-------------|---------|----------|-----------------|--|
| | Location | Linear Feet | Avg Hrs | Avg Cost | Common Cond. | Reason for PM |
| 1 | 31 st & Hacienda | 603 | .75 | \$160 | Roots | Smartcover on MH492-13. Clean until repairs can be made by engineering. |
| 2 | El Camino Real @ Baywood | 263 | | | Solids | Referred to engineering for re-engineering of pipe where dips under utility junction box creating a siphon, & to replace broken ECR pipe. Baywood section removed 6-25-2012. |
| 3 | 3170 Casa de Campo | 661 | 1.3 | \$125 | FOG | Needs FOG education. |
| 4 | East Hillsdale Monthly (entire length each month as of 3/11) | 1,288 | 3 | \$310 | FOG | Needs FOG education & grease interceptor. |
| 5 | Idaho (1113 College) | 1132 | 2 | \$190 | FOG & Bad Grade | Pipe taps in below water level of trunk line. |
| 6 | Indian | 519 | 2 | \$185 | FOG | Continue PM's until Pipe upgraded under 101. |
| 7 | Peninsula Monthly Jet NOTE: Flail in Jan & July | 2,581 | 2.5 | \$300 | FOG | Keep on a monthly – but twice a year flail line instead of jet. Refer to Source Control for FOG control & checks of grease trap. |
| 8 | Norfolk & La Selva | 308 | 1.4 | \$125 | FOG | Added to PM's May, 2008. Jet main and 100' of Lateral into Marina Market. |
| 9 | 1 st & Delaware | 522 | .75 | \$85 | PAPER | Lines consistently plugged with paper. |
| 10 | 9 th Ave – RR to Palm Ave | 1,016 | 2 | \$190 | Grade Issues | Continue monthly cleaning until re-engineered. Extended to ECR & Central Park bathrooms flowing to ECR on 9-9-2011. |
| 11 | 315 Virginia – Monthly Flail | 338 | 1 | \$130 | Roots | Roots – Added to PM's March 2010 |
| 12 | Winway Powerrod | 173 | 1 | \$75 | Solids | A siphon MH |
| 13 | Shoreview | 853 | 1 | \$155 | Breaks/Roots | 2049 Shoreview – drop pipe (needs to be fixed in order to reach/cut protruding tap at 2045). Also nozzle |

| | | | | | | |
|----|--------------------------------|---------------|--|--|-------------|--|
| | | | | | | gets stuck at 2001 – 2005. |
| 14 | Kingridge | 1210 | | | FOG, Solids | Added 4-9-13. |
| 15 | Indian Additional Lines | 650 | | | FOG, Solids | Additional lines requested by Rick Pina 3-18-14. |
| | TOTAL LF: | 12,117 | | | | |

QUARTERLY SEWER PM'S

| | Location | Linear Feet | Avg Hrs | Avg Cost | Common Cond. | Reason for PM |
|----|--|--------------------|----------------|-----------------|---------------------|--|
| 1 | 20TH Avenue | | | | | Moved to Bi-Annual per Steve Camilleri 8-12-14 |
| 2 | 25th Avenue & Lula Belle Alley | 2,150 | 4 | \$380 | FOG | Restaurants. Needs FOG control. |
| 3 | 26th & Dolores | | | | | Added to PM's March 2010. Engineering fixed pipe 7-11-2012. Removed from PMs. |
| 4 | Bayswater & Idaho Qrtly | 3,214 | | | Heavy FOG | Added to PM's Feb 2011. Flat line – holds solids. |
| 5 | Bromfield / Fulton Qrtly Flail | 1733 | 4 | \$335 | Solids & Roots | Initially, change from Qrtly jet to Qrtly Flail. Refer to Engineering for pipe replacement & size upgrade. |
| 6 | Downtown Region 1 | 1,623 | 3.5 | \$330 | FOG / Solids | Restaurants & Apts |
| 7 | Downtown Region 2A | 1,406 | 2.7 | \$235 | FOG / Solids | Restaurants & Apts |
| 8 | Downtown Region 2B | 6,600 | 10.5 | \$940 | FOG / Solids | Restaurants & Apts |
| 9 | Downtown Region 3A | 3,165 | 6.6 | \$600 | FOG / Solids | Restaurants & Apts |
| 10 | Downtown Region 3B | 2,738 | 6.2 | \$540 | FOG / Solids | Restaurants & Apts |
| 11 | Downtown Region 4A | 5,183 | 5.2 | \$470 | FOG / Solids | Restaurants & Apts |
| 12 | Downtown Region 4B | 4,791 | 7.75 | \$680 | FOG / Solids | Restaurants & Apts |
| 13 | Downtown Region 5 (Starting July 2010) | 5,949 | 6 | \$1550 | FOG / Solids | Restaurants & Apts |
| 14 | Ellsworth / Baldwin (DT 6) | 2,830 | 6 | \$590 | FOG/Solids | Restaurants & Apts |
| 15 | El Camino Real – Seville to 16th | 2,718 | 5.2 | \$500 | FOG | Referred to Engineering for repair of sag. |
| 16 | El Camino Real 21st to 25th | 2,097 | 2.4 | \$235 | FOG | Restaurants & Apts. |

| | | | | | | |
|----|--|---------------|------|-------|--------|--|
| 17 | El Camino Real 25th to 31st | 3,080 | 5.8 | \$350 | FOG | Restaurants & Apts. |
| 18 | 31st Ave – El Camino to Edison | 870 | 2.25 | \$200 | FOG | Mall foodcourt grease. FOG Control. |
| 19 | 42nd Ave & Dumont | 709 | 1.3 | \$105 | FOG | Continue PM's & identify root control tactics. |
| 20 | Winway Jet & Vacuum MH | 163 | 2.5 | \$230 | Solids | A siphon MH |
| 21 | 1750 El Camino Real | 1,085 | 2.15 | \$205 | FOG | Added back in to PM's 1/2009 after backups. |
| 22 | El Camino & El Cerrito | 194 | | | | Added in 2011. Flat line – holds FOG. |
| 23 | Woodbridge | 535 | 2.25 | \$210 | FOG | FOG consistently crusted on top inside manholes |
| 24 | Palm Ave siphons | 166 | | | | Added 1-6-12. Siphon manholes – fill up with rags, etc. |
| 25 | Elm Street | | | | | Moved to Bi-Annual per Steve Camilleri 8-12-14 |
| 26 | Mariners Island 6 | 316 | | | SOLIDS | Added 3-14-12. Ongoing solids issues in area per pump and sewer crews. |
| 27 | 111 E Santa Inez | 228 | | | SOLIDS | Added 2-25-13. Solids issues in area per Steve Camilleri, SUPV |
| 28 | McLellan & Curtiss | 1803 | | | SOLIDS | Added 2-25-13. Solids issues in area per Steve Camilleri, SUPV |
| 29 | 177 N El Camino Real | 229 | | | SOLIDS | Added 4-30-13. Solids issues in area per Steve Camilleri, SUPV |
| 30 | 145 Sylvan | 835 | | | FOG | Added 8-1-13. Heavy FOG per Steve Camilleri, SUPV |
| 31 | Crystal Springs Road | 1145 | | | SOLIDS | Added 1-30-14. Solids issues in area per Steve Camilleri, SUPV |
| 32 | 37th and ECR | 472 | | | SOLIDS | Added 1-30-14. Solids issues in area per Steve Camilleri, SUPV |
| 33 | 6 Fair Oaks | 162 | | | SOLIDS | Added 1-30-14. Solids issues in area per Steve Camilleri, SUPV |
| | TOTAL LF: | 58,189 | | | | |

BI-ANNUAL SEWER PM'S

| | Location | Linear Feet | Avg Hrs | Avg Cost | Common Cond. | Reason for PM |
|----|--|-------------|---------|----------|--------------|--|
| 1 | Alder Easement MARCH/SEPT | 617 | 2.3 | \$150 | | Added to PM's May 2008. A Sept & March Bi-Annual. |
| 2 | Barneson & El Camino Real JAN/JULY | 439 | 1.5 | \$130 | Roots | Changed back to Jet from PR per Steve Camilleri. |
| 3 | 509 Castilian Powerrod JAN/JULY | 285 | 1.4 | \$80 | Roots | Refer to engineering to repair break and offset joint. |
| 4 | 515 Dorchester Powerrod JAN/JULY | | | | | PM removed per Steve Camilleri. 8-12-14. |
| 5 | El Camino Real – Hillsdale to 38th JAN/JULY | 3131 | | | FOG | Used to be ECR 36 th to 41 st . Split into 2 PM's & Added 15" lines. |
| 6 | El Camino Real – 38th to 41st JAN/JULY | 1347 | 6 | \$585 | FOG | Used to be ECR 36 th to 41 st . Split into 2 PM's & Added 15" lines. |
| 7 | Edison & Bayview JAN/JULY | 568 | .75 | \$200 | Roots | |
| 8 | Holland / Norfolk / Hosmer Hydrosaw JAN/JULY | 1,327 | 3.5 | \$285 | FOG | Hydrosaw to clear line. |
| 9 | Holland / Norfolk / Hosmer Jet APRIL/OCTOBER | 1,327 | 2.6 | \$245 | FOG | |
| 10 | 1865 Kehoe JAN/JULY | 309 | 1 | \$105 | FOG & Solids | |
| 11 | MI II PS to Bridgepointe Circle JAN/JULY – <i>Pumpstation Rehab Complete</i> | 1,210 | 1 | \$80 | Sag | Pumpstation rehabilitation project complete – repair of pipe sag unknown. |
| 12 | Murphy Easement | 1,752 | | | | Roots/breaks. Added in 2011 |
| 13 | Poplar – Crescent to El Camino JAN/JULY | 2,103 | 4 | \$425 | Roots | Refer to Engineering for pipe replacement & upsize – replace possibly past Crescent to where upper Poplar pipe was replaced w/in last few years. |
| 14 | Sunnybrae School Clean during Summer and Easter Break (July & March/April) | 938 | | | Debris | Added to PM's March 2010. Updated 12-29-11. Added line. |

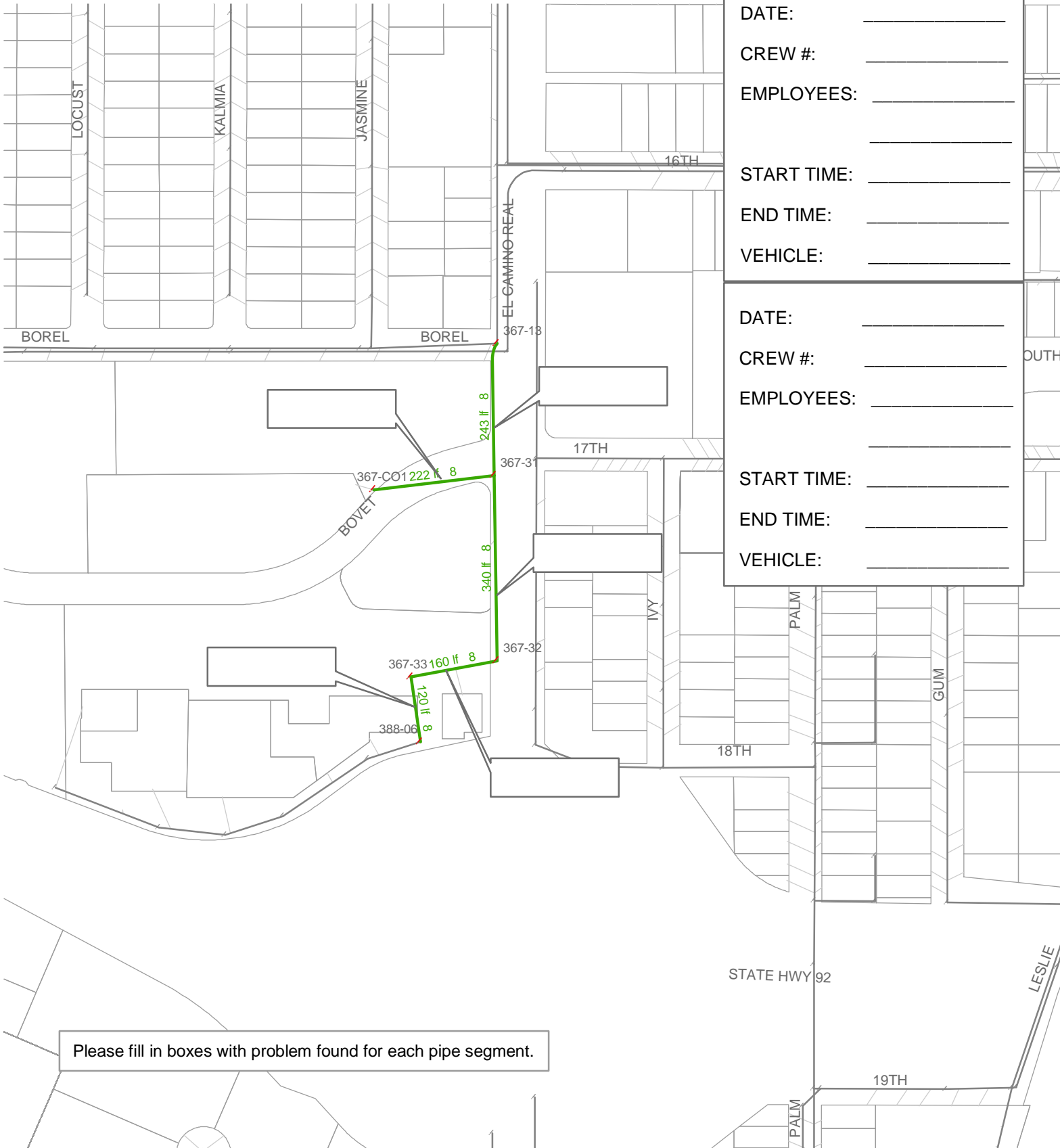
| | | | | | | |
|----|---|---------------|-----|-------|-------------|--|
| 15 | 19 Wildwood JAN/JULY | 342 | 2 | \$150 | Roots | Continue PM's. |
| 16 | 258 East 40th Ave JAN/JULY | 248 | 1 | \$80 | Sags | House 258 Backs Up if line not cleared regularly b/c of sags. |
| 17 | 139 Arbor JAN/JULY | 117 | | | SOLIDS | Added 3-14-12. Solids issues in area per sewer crew feedback. |
| 18 | Gramercy at El Cerrito (formerly 80 El Cerrito Quarterly) APRIL/OCT | 157 | | | | Added 12-29-2011. Sag in pipe. Clean until can be repaired. Moved to bi-annual April 2012. |
| 19 | Elm Street | 941 | 1 | \$125 | FOG | Added 3-14-12. Area notorious for FOG. Changed from Quarterly to Bi-Annual per Steve Camilleri 8-12-14. |
| 20 | 20TH Avenue | 2,950 | 5.5 | \$535 | Det & Roots | Det (from apts) & Roots (by Elks) below City Hall back up line – can overflow in City Hall. Changed from Quarterly to Bi-Annual per Steve Camilleri 8-12-14. |
| | TOTAL LF: | 20.108 | | | | |

TOTAL LINEAR FEET IN HOT-SPOT PROGRAM = 90,414 (as of 8-15-14)

NOTE: Additional Quarterly = Clean pipe and grate at Shellmound Gurgle (added 3-14-12)

Quarterly PM Map 1750 El Camino Real

Blocked mains with
MH holding water: _____



DATE: _____
CREW #: _____
EMPLOYEES: _____
START TIME: _____
END TIME: _____
VEHICLE: _____

DATE: _____
CREW #: _____
EMPLOYEES: _____
START TIME: _____
END TIME: _____
VEHICLE: _____

Please fill in boxes with problem found for each pipe segment.

Quarterly Inspections of Sewer Pipes Spanning Waterways
 Program Start: March 2012

| WOID | Description | Qrtly Schedule | Dispatch To | Address | Requested By | Comments |
|-------|------------------|-----------------------------------|-------------|--|---------------|---|
| 81910 | Inspect Mainline | March, June, Sept., Dec. | UTILITY05, | ARROYO COURT 24121X_26205X 8" MAIN | PREVNT MAINT, | 3/20/2012 1:43:43 PM No leaks. Pipe looks sound. |
| 81912 | Inspect Mainline | March, June, Sept., Dec. | UTILITY05, | 413 W HILLSDALE BLVD 51222X_51218X 6" MAIN | PREVNT MAINT, | 3/20/2012 1:47:46 PM No leaks. Pipe sound. |
| 81914 | Inspect Mainline | March, June, Sept., Dec. | UTILITY05, | CLEARVIEW OFFICE PARK - HILLSDALE/92 | PREVNT MAINT, | 3/20/2012 2:13:27 PM No leaks. Plastic pipe sagging as spans creek. |
| 81916 | Inspect Mainline | March, June, Sept., Dec. | UTILITY05, | 523 LA CASA - BELMONT BORDER | PREVNT MAINT, | 3/20/2012 2:22:59 PM Pipes from Belmont entering our Manhole #574-45X. No leaks. |
| 81922 | Inspect Mainline | March, June, Sept., Dec. | UTILITY05, | 809 BROMFIELD 154CO3_15401X 6" MAIN | PREVNT MAINT, | 3/20/2012 2:47:47 PM Cast iron pipe follows underneath bridge (attached to). No leaks. Pipe sound. |
| 81924 | Inspect Mainline | March, June, Sept., Dec. | UTILITY05, | 2629 MONTEREY CT 44811X_44810X 6" MAIN | PREVNT MAINT, | 3/20/2012 2:51:49 PM No leaks. Pipe sound. |
| 81918 | Inspect Lateral | March, June, Sept., Dec. | UTILITY05, | 400 HILLSBOROUGH LATERAL | PREVNT MAINT, | 3/20/2012 2:27:50 PM No Leaks. Pipe sound. |
| 81920 | Inspect Lateral | March, June, Sept., Dec. | UTILITY05, | 725 & 751 EDGEWOOD LATERALS | PREVNT MAINT, | 3/20/2012 2:39:05 PM No leaks. Pipes and support beams sound. |



**SEWER MAINTENANCE:
PM Request**

**SEWER PIPES OVER CREEKS
Quarterly Check for Leaks**

SUPERVISOR INSTRUCTIONS

| | |
|---|---|
| Supervisor: <u>Bob and Ed</u> | |
| Date of Request <u>June 1, 2012</u> | |
| Submitted To (crew): <u>June 1, 2012</u> | |
| Expected Completion Date: <u>June 15, 2012</u> | |
| LOCATION/ADDRESS: <u>413 W Hillsdale Blvd Mainline 51222X_51218X</u> | |
| RECENT CONDITION/ PROBLEM FOUND | Sewer Main spans creek |
| <u>REASON FOR DISPATCH</u> (PRIOR HISTORY) | PM – check for leaks/sewage entering waterway |
| <i>Instructions:</i> Please check for leaks/Report on condition of pipe | |

CREW ACTIONS

| | |
|--|---|
| START DATE: _____ | PIPE LEAKING? Y N |
| CLOSE DATE: _____ | CONDITION OF PIPE: |
| ARRIVAL TIME: _____ | <input type="checkbox"/> Sound |
| TIME COMPLETE: _____ | <input type="checkbox"/> Repair in future |
| EMPLOYEES: _____ | <input type="checkbox"/> Repair soon |
| _____ | <input type="checkbox"/> Broken/leaking |
| VEHICLES: _____ | |
| _____ | |
| MATERIALS: _____ | |
| _____ | |
| <i>Other Crew Comments if Necessary:</i> | |
| | |