Town of Los Altos Hills
Sanitary Sewer Collection System Progress Report
Contract Year 2015

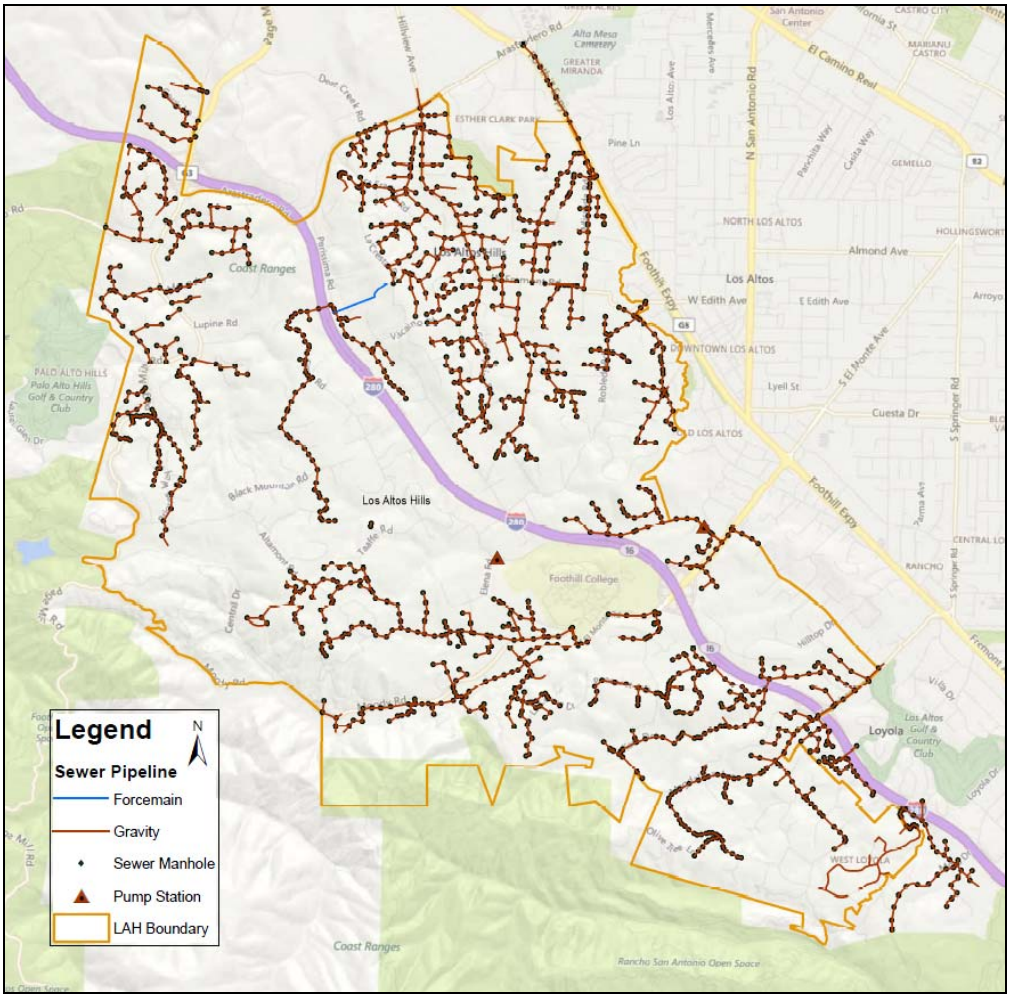
Reporting Month: October 2015
Report Date: December 22, 2015

I. INTRODUCTION

Figure 1 shows the Town of Los Altos Hills sewer system.

- Area served: 8.4 sq miles
- Miles of sewer pipelines: 56
- Number of residential parcels: 1,750
- Number of non-residential connections: 8

Figure 1. Town of Los Altos Hills Sewer System



II. PUBLIC WORKS DIRECTOR/CITY ENGINEER HIGHLIGHTS

a. SEWER SYSTEM MAINTENANCE HIGHLIGHTS

During the month of October 2015, the Town's sewer maintenance contractor, West Bay Sanitary District (West Bay), completed all contract tasks on schedule. No significant issues were noted during cleaning, CCTV inspection, or pump station inspections. In addition, there were no records of SSOs during this reporting period.

A summary of completed tasks is provided in Table 1, below. More detailed information is provided later in this report, and is also shown in the attached maps.

Table 1. Summary of Completed Tasks (Contract Year August 2015 – July 2016)

Task	Month of October 2015	Contract Year to Date	Compare to One Year Goal
Sewer Cleaning • Biennial (24-month) and Annual (12-month) Schedule • High Frequency (< 12-month) • Other, Unscheduled Cleaning	• 1.85 miles • 0 miles • 0 miles	• 5.45 miles • 0 miles • 0 miles	21.33% of Goal (25% of Time Elapsed)
Pump Station • Preventive Maintenance • Unscheduled repairs	• 4X • 0	• 12X • 0	25% of Goal
CCTV Inspection • Routine Schedule (30 mos) • Other Unscheduled CCTV	• 1.52 miles • 0.18 mile	• 2.57 mile • 2.85 miles	30.80% of Goal
SSO Response • No. of SSOs – Sewer Mains • No. of SSOs – Manholes	• 0 • 0	• 0 • 1	N/A

Figure 2a shows previous contract year (PREV) cleaning results and current contract year (CURR) cleaning progress for the Town's pipes. Since August 1, 2014, 49.22 percent of the pipes within the Town's collection system have been cleaned. Cleaning results from the previous contract year are shown in this chart. The two primary maintenance issues found in the pipes within the system from the previous year were debris and roots. Debris found in pipes comprised of gravel, rock, paper, rags, egg shells, ground, grit, mud, and other solids. During the previous year, 21.85 percent of the cleaned pipes had debris, 9.99 percent had roots, and 7.07 percent had clear results.

Figure 2a. Cleaning Progress as of October 31, 2015

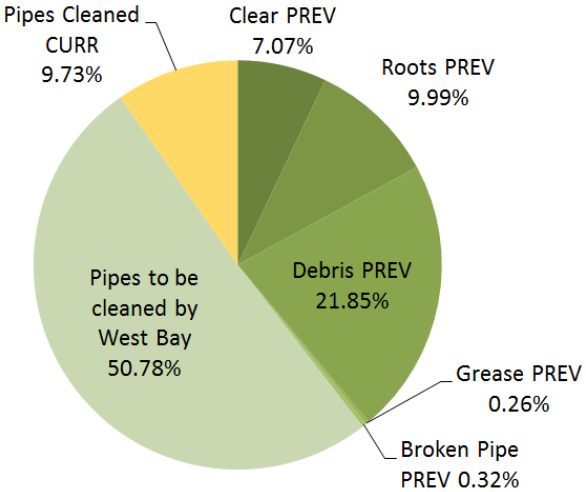
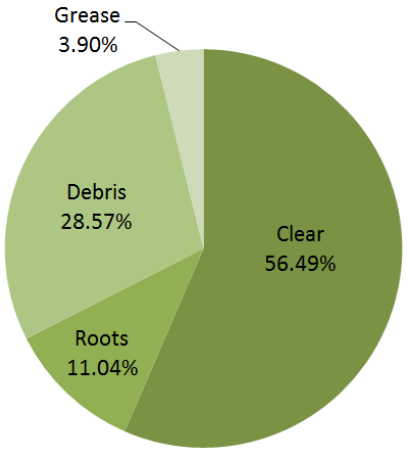


Figure 2b shows cleaning results for the Town's pipes for the current contract year only. Figure 2b expands the wedge shown in yellow in Figure 2a. In the new contract year, 28.57 percent of the cleaned pipes had debris, 11.04 percent had roots, 3.90 percent had grease, and 56.49 percent had clear results. There was no mention of broken pipe debris found during the October cleaning period.

In the previous contract year, records indicate that 9 pipes that were cleaned did not match the existing pipeline asset list. By comparison, the current contract year cleaning record shows that 5 pipes did not match the asset list. VWHA has provided the lists of unmatched pipes to West Bay for review.

Figure 2b. Cleaning Results for the Current Year to Date. (Chart represents 9.73% of system).



Based on discussions with West Bay, the crews are encountering discrepancies between manhole/pipe information in the database and actual field information. Some manholes are either missing in some areas or are found in other areas. The crews also found manholes in locations where clean outs are supposed to be located and vice versa. In these cases, West Bay makes a note of the observed discrepancies and records information gathered in the field which is then included in the quarterly update made on the Town's map and database. West Bay will provide the latest map and database updates to VWHA in early 2016 for review and to address lists of unmatched pipes.

Figures 3a and 3b show CCTV inspection results for structural and O&M defects, respectively. As of October 2015, 31.91 percent of the system has been inspected. Of the 31.91 percent, 9.94 percent was inspected during the current year. During the previous year, 21.14 percent of the pipes that were inspected had National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) Structural Grade 3 defects or less. NASSCO PACP characterizes Structural Grade 3 defects as requiring action in 10 or more years. The remaining 0.83 percent of pipes inspected in the prior year had structural Grade 4 or 5 defects, which are characterized by NASSCO as being likely to require action within 5 to 10 years.

Less than three percent of the inspected pipes have NASSCO PACP Operations and Maintenance (O&M) Grade 4 or 5 defects. These pipes have been or will be placed on the hot spot list until the O&M issues are resolved. The remaining 19.66 percent of inspected pipes have O&M defects of 3 or below. The remaining 68.09 percent of pipes in the system require inspection by West Bay.

Figure 3a. CCTV Inspection Results as of October 31, 2015 (Structural Defects)

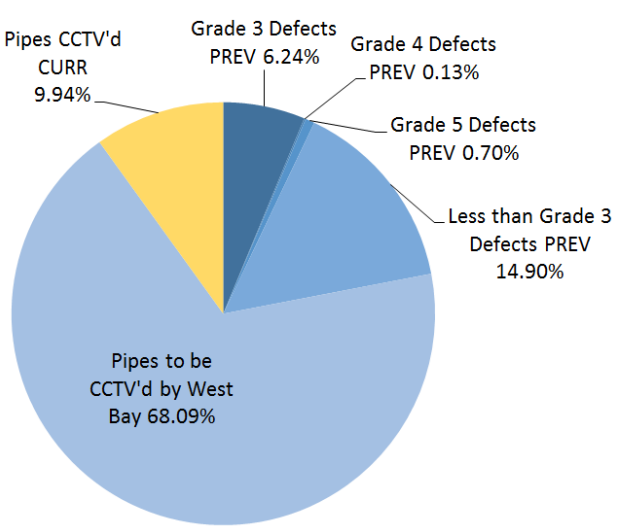
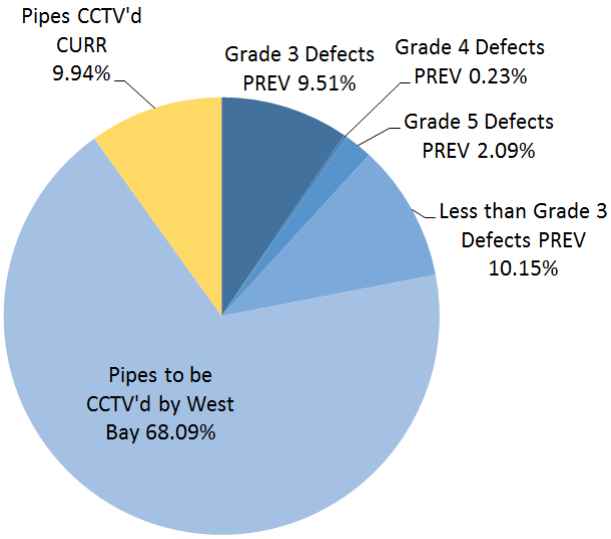


Figure 3b. CCTV Inspection Progress as of October 31, 2015 (O&M)



Figures 4a and 4b show structural and O&M defects found as of the October 2015 inspections for the current contract year only. These charts reflect results for 9.94 percent of the system. During this period, 36.70 percent of inspected pipes had no structural defects, 50.01 percent had Grade 3 defects or less, and 13.30 percent had Grade 4 or 5 defects. Less than 5 percent of the pipes that were inspected in this new contract year have NASSCO PACP O&M Grade 4 and 5 defects. In addition, 35.64 percent have been recorded to have less than Grade 3 defects.

Figure 4a. CCTV Inspection Results CURR August 2015 – October 2015 (Structural). (Chart represents 9.94% of system).

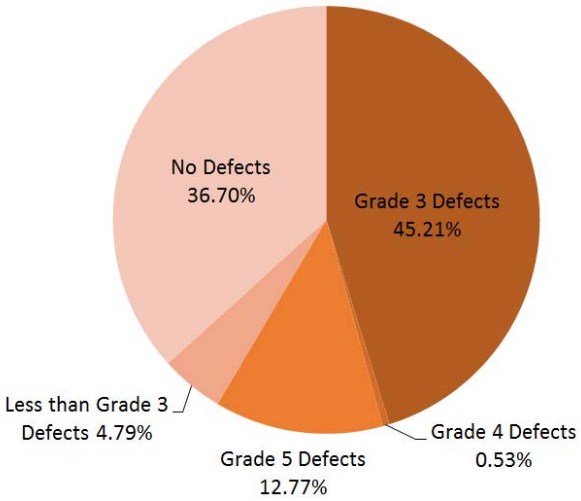
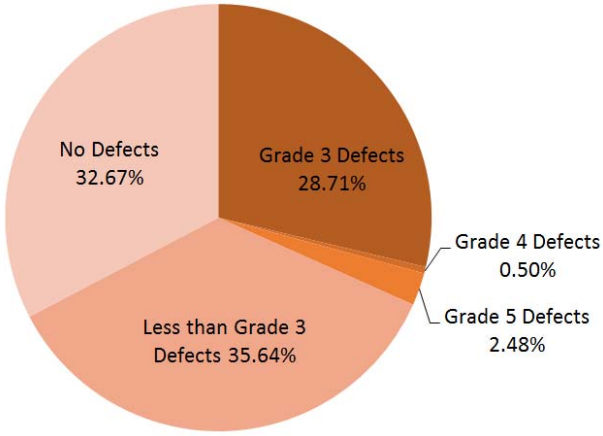


Figure 4b. CCTV Inspection Results CURR August 2015 – October 2015 (O&M). (Chart represents 9.94% of system).



In the previous contract year, records indicate that 20 pipes that were CCTV'd did not match the existing pipeline asset list. By comparison, the current contract year CCTV record shows that 11 pipes did not match the asset list.

Similar to cleaning operations, the CCTV crews are encountering discrepancies between manhole/pipe information in the database and actual field information. See above for a discussion on data differences.

Table 2 on the following page shows SSOs to date by cause. Over the past 5 years, the predominant cause of SSOs has been roots. However, as indicated by the reduced number of SSOs in 2015, the use of chemical root control, combined with improved sewer maintenance methods in place by West Bay, have reduced root-related issues within the Town's sewer system. During this month, there were no reported SSOs within the Town's Sewer Collection System.

Table 2. 2015 SSOs to October 31, by Cause

Cause of SSOs	2015	2014	2013	2012	2011
Root Intrusion	2	16	9	10	18
Debris	1	1	2	0	1
Grease	0	0	0	0	0
Structural	0	1	0	1	1
Pump Station Failure	0	0	0	1	0
Other	1	0	1	2	1
Total SSOs/yr	**4**	**18**	**12**	**14**	**21**

Attachment I includes maps providing additional information on cleaning and CCTV inspection results.

b. Summary of Meetings Held during Reporting Month

There were no meetings held during this reporting month.

c. Computerized Maintenance Management System (CMMS) Updates

During the reporting month, aside from routine input of cleaning and CCTV inspection progress to date, there were no further changes made to the CMMS.

d. Geographic Information System (GIS) and Progress on Manhole Data Collection

During the reporting month, West Bay made no changes to the Town's sewer GIS maps. West Bay collected GIS map changes during work completed in the first year of the contract, and will incorporate these changes into the current maps by December 2015. As mentioned above, VWHA have submitted a list of unmatched pipes between West Bay's maintenance records and the existing database. West Bay is reviewing the list and will include necessary changes on their scheduled update.

VWHA had compiled manholes that will be important for development of the hydraulic model. A map and a list of manholes will be provided to West Bay needed for data collection by mid November 2015.

e. Maintenance Planning

During the reporting month, no issues were identified to warrant changes to the Town's cleaning or CCTV inspection program. West Bay will continue to clean basins that have the highest risk for maintenance-related SSOs, including Branch 5 and the remainder of Branch 2, as defined by the Town's GIS maps. VWHA is finalizing the preliminary review of maintenance activities and records of all branches in the system as part of maintenance planning, and will provide recommendations to the Town on the first week of November 2015.

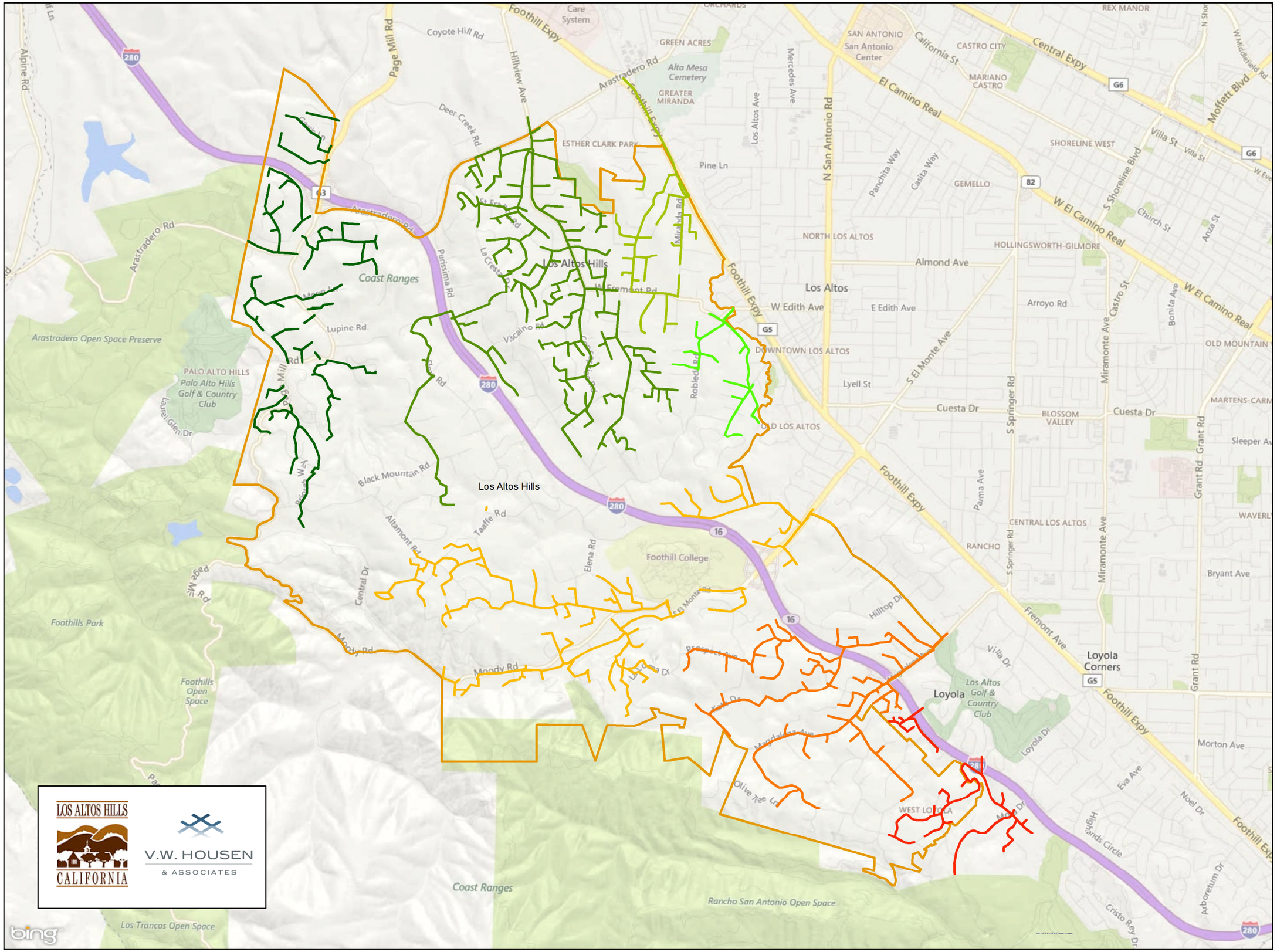
f. Other

This section provides updates on the Town's sewer system management activities that are completed in addition to operations, maintenance, and SSO response.

Staff Support Activities	Progress	Comments
2015 Sewer Capital Improvements • Percent Completion • Line replacement • Spot repairs	• 100% • 2,735 LF • 192 LF	• The 2015 Sewer Capital Improvement Project has been completed; final documentation by Town staff is under development.
SSMP 3rd Party Review	• Humphrey Consulting completed their 3rd party review of the Town's SSMP. • VWHA is updating the SSMP based on these comments	• Expected completion of SSMP update is scheduled for February 2016.
2016 Sewer CIP	• VWHA has developed a risk model for use in prioritizing capital project needs. Results are being compiled into a preliminary CIP.	• A draft pipeline and pump station CIP will be provided to Town staff for discussion in early 2016.
Cleaning and CCTV programs	• VWHA is reviewing current cleaning program to prioritize basins to receive cleaning in the latter part of 2016.	• Recommendations will be developed in collaboration with West Bay and included in the 2015-16 West Bay sewer maintenance program. • VWHA is finalizing the review of current cleaning program and will provide preliminary results by the first week of November 2015.
2015-16 Hot Spot program	• VWHA is reviewing the current hot-spot	• VWHA and LAH will discuss the hot spot program with West

Staff Support Activities	Progress	Comments
	cleaning program. Due to the small number of SSOs that have occurred in 2015, substantive changes to the program are not anticipated.	Bay in early 2016.
Sanitary Sewer Master Plan • Manhole data collection	• VWHA will provide an initial list of recommended manholes requiring data to West Bay in mid November 2015.	• After LAH and West Bay have reached agreement on the list of manholes, WBSD will start collecting manhole rim elevations, as well as depth-to-invert measurements for all pipes entering/leaving each manhole.
• 2015-16 wet weather flow data	• The Town has contracted with V&A Consulting to obtain system flow data	• VWHA and V&A Consulting are working together to determine the best time to install the flow meters and initiate LAH's flow monitoring program. The most advantageous period will likely be towards the end of January 2016. • After the flow monitoring program has been initiated and the required data is collected, Town staff will move forward with consultant procurement for the Sewer System Master Plan update.

Town of Los Altos Hills
Sanitary Sewer Collection System Map
Sewer Basins (Branches)



LOS ALTOS HILLS CALIFORNIA

V.W. HOUSEN & ASSOCIATES

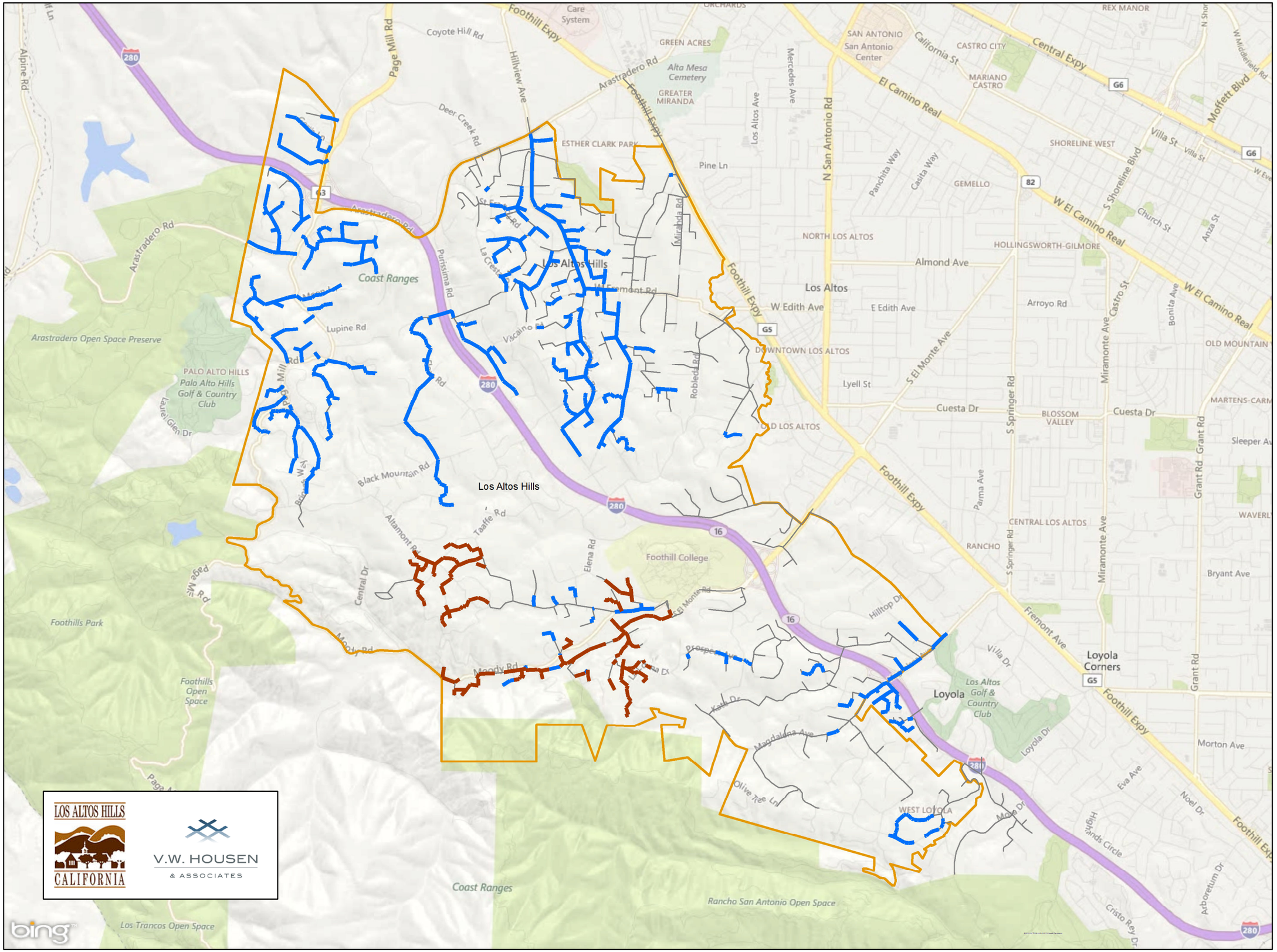
N

0 1,250 2,500 Feet

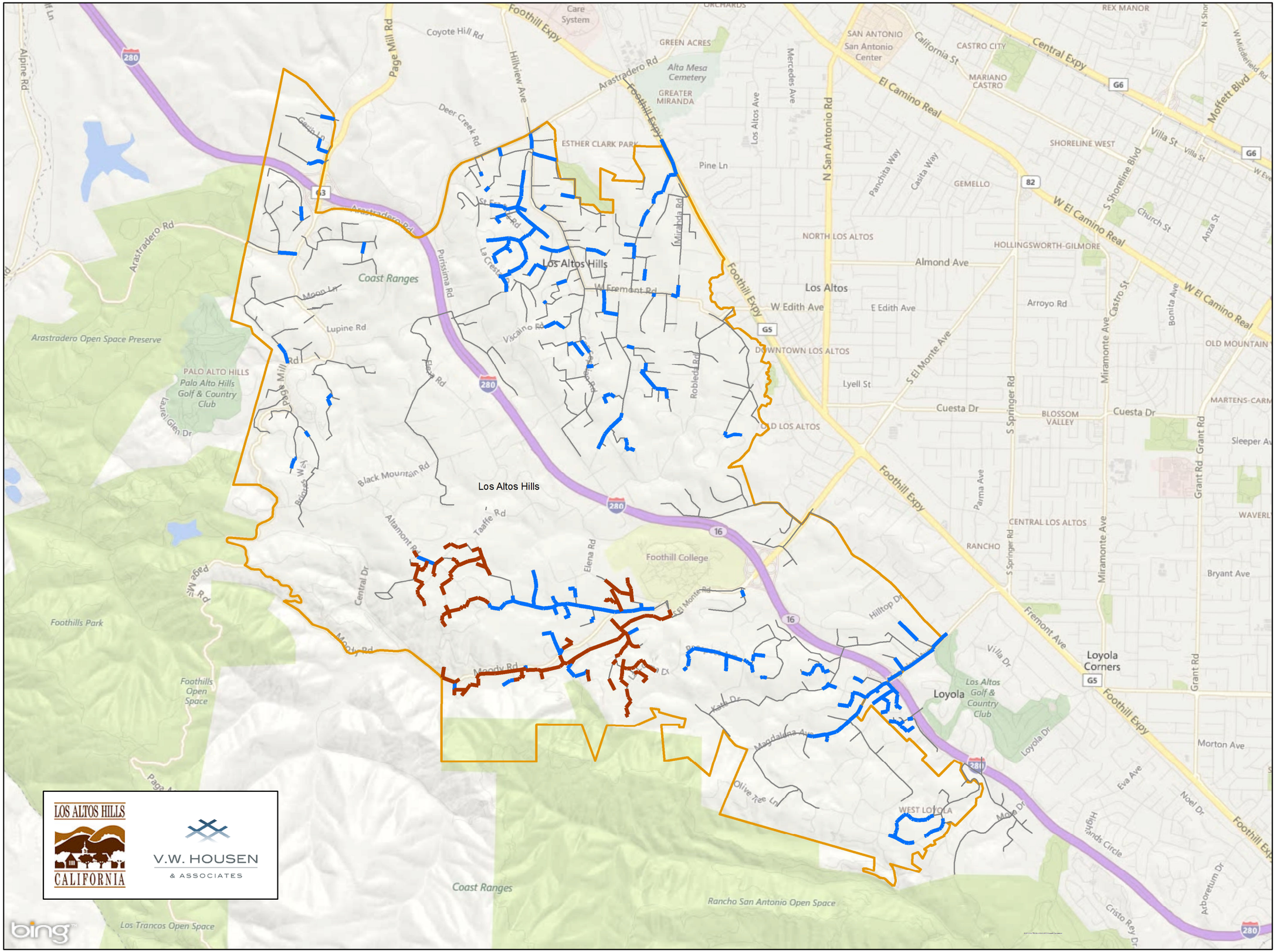
Legend

- Branch 1
- Branch 2
- Branch 3
- Branch 4
- Branch 5
- Branch 6
- Branch 7
- LAH Boundary

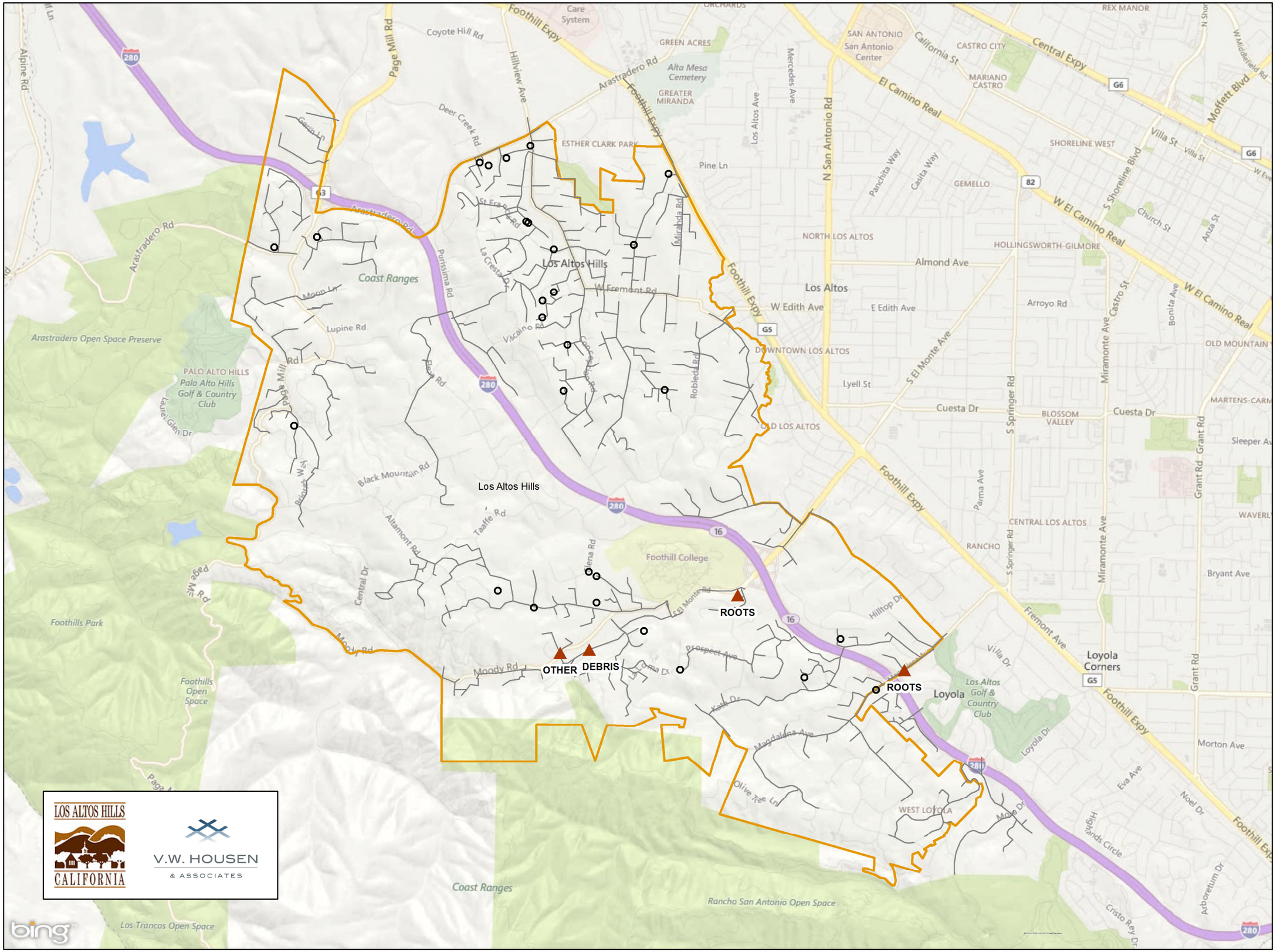
Town of Los Altos Hills
Sanitary Sewer Collection System Map
Pipes Cleaned from Aug 2014 - Oct 2015



Town of Los Altos Hills
Sanitary Sewer Collection System Map
Pipes CCTV'd from Aug 2014 - Oct 2015


Los Altos Hills
Los Altos
Foothill College
Loyola
Loyola Corners
Coast Ranges
Arastradero Open Space Preserve
Foothills Park
Foothills Open Space
Los Trancos Open Space
Rancho San Antonio Open Space
Palo Alto Hills Golf & Country Club
Los Altos Golf & Country Club
Alta Mesa Cemetery
Foothill Expy
El Camino Real
W El Camino Real
Central Expy
Moffett Blvd
Page Mill Rd
Arastradero Rd
Purissima Rd
Black Mountain Rd
Taaffe Rd
Elena Rd
Moody Rd
Fremont Ave
Almond Ave
Arroyo Rd
Cuesta Dr
Lyell St
Hillview Ave
Deer Creek Rd
Coyote Hill Rd
Lupine Rd
Moon Ln
Viscaino Rd
Robleda Rd
Miranda Rd
Pine Ln
Hilltop Dr
Villa Dr
Loyola Dr
Mora Dr
Olive Tree Ln
Magdalena Ave
Kathy Dr
Central Dr
Alamont Rd
Alpine Rd
Tarai Glen Dr
Bruce Way
Page Mill Rd
Grant Rd
Miramonte Ave
Castro St
Bonita Ave
Anza St
Church St
Villa St
Bryant Ave
Morton Ave
Eva Ave
Noel Dr
Arboretum Dr
Highlands Circle
Cristo Rey Dr
Sleeper Av
W Fremont Rd
Foothill Expy
Los Altos Ave
Mercedes Ave
N San Antonio Rd
S Springer Rd
Parma Ave
S El Monte Ave
Panchita Way
Casita Way
S Shoreline Blvd
Grant Rd
Page Mill Rd
Arastradero Rd
Alpine Rd
Coyote Hill Rd
Deer Creek Rd
Hillview Ave
Foothill Expy

Town of Los Altos Hills
Sanitary Sewer Collection System Map
SSOs from 2013 - 2015



0 1,250 2,500 Feet

N

Legend

- 2015 SSOs (all Cat 3)
- 2013-2014 SSOs
- Sewer Pipeline
- LAH Boundary