

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

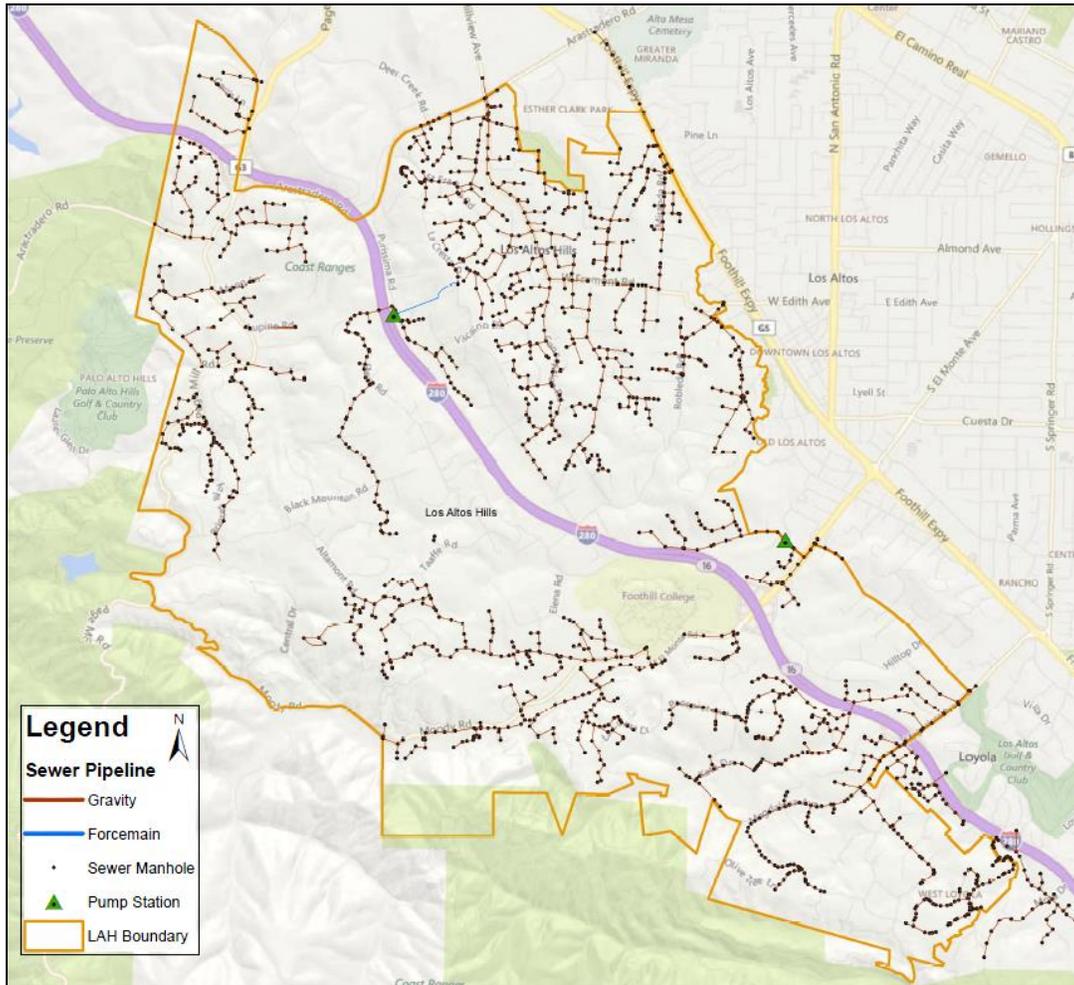
**Reporting Month: January 2016
Report Date: April 20, 2016**

I. INTRODUCTION

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

- Area served: 8.4 sq miles
- Miles of sewer pipelines: 55.78
- 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 January 2016, 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.

A summary of completed sewer maintenance 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 January 2016	Contract Year to Date	Compare to One Year Goal
Sewer Cleaning <ul style="list-style-type: none"> • 36-month and 24-month Schedule • High Frequency (12- and 6-month) • Other, Unscheduled Cleaning 	<ul style="list-style-type: none"> • 1.57 miles • 0.47 mile • 0 miles 	<ul style="list-style-type: none"> • 9.57 miles • 4.74 mile • 0 miles 	55.97% of Goal (50% of Time Elapsed)
Pump Station <ul style="list-style-type: none"> • Preventive Maintenance • Unscheduled repairs 	<ul style="list-style-type: none"> • 4X • 0X 	<ul style="list-style-type: none"> • 26X • 1X 	50% of Goal
CCTV Inspection <ul style="list-style-type: none"> • Routine Schedule (30 mos) • Other Unscheduled CCTV* 	<ul style="list-style-type: none"> • 1.96 miles • 0 miles 	<ul style="list-style-type: none"> • 10.18 miles • 0 miles 	57.77% of Goal
SSO Response <ul style="list-style-type: none"> • No. of SSOs – Sewer Main 	<ul style="list-style-type: none"> • 0 	<ul style="list-style-type: none"> • 4 	N/A

*Note: In the previous report, CCTV footage that was reported as “Other Unscheduled CCTV” was actually part of Routine Schedule based on discussions with West Bay. Therefore, CCTV footage in this month’s report has been corrected.

Cleaning

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, 64.28 percent of the pipes within the Town’s collection system has been cleaned. Cleaning results from the previous contract year are also shown in this chart.

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, 30.63 percent of the cleaned pipes had debris, 22.77 percent had roots, 2.09 percent had grease, and 43.98 percent had clear results. Small amounts of broken pipe debris were encountered by cleaning crews during this month.

Figure 2a. Cleaning Progress as of January 31, 2016

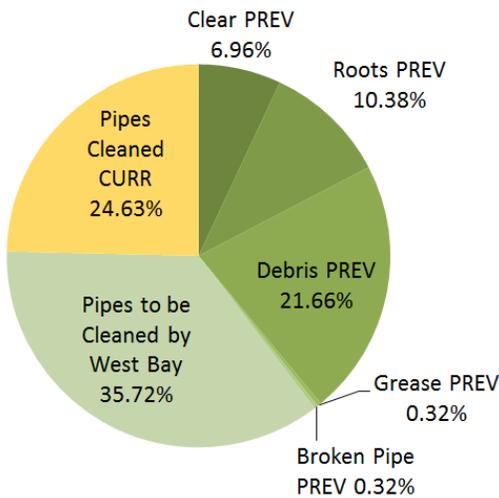
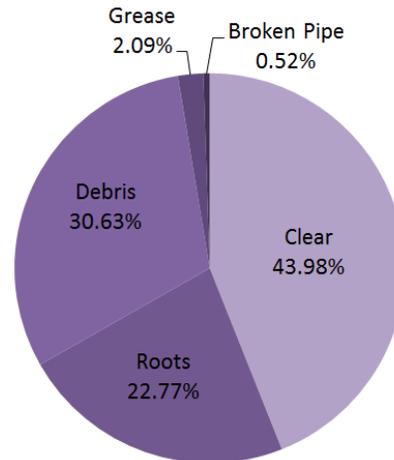


Figure 2b. Cleaning Results for the Current Year to Date. (Chart represents 24.63% of system).



During the previous contract year, West Bay had focused on cleaning pipes in the system that had high volumes of SSOs. As a result, there are fewer “Clear” pipe encountered in the system as shown in Table 2 and 3. In the current contract year, cleaning, which has occurred on a branch by branch basis, shows more “Clear” pipe and less “Debris”. However, roots in the pipes have remained an issue in the Town’s collection system.

Table 2. Cleaning Results PER CONTRACT YEAR by Percent

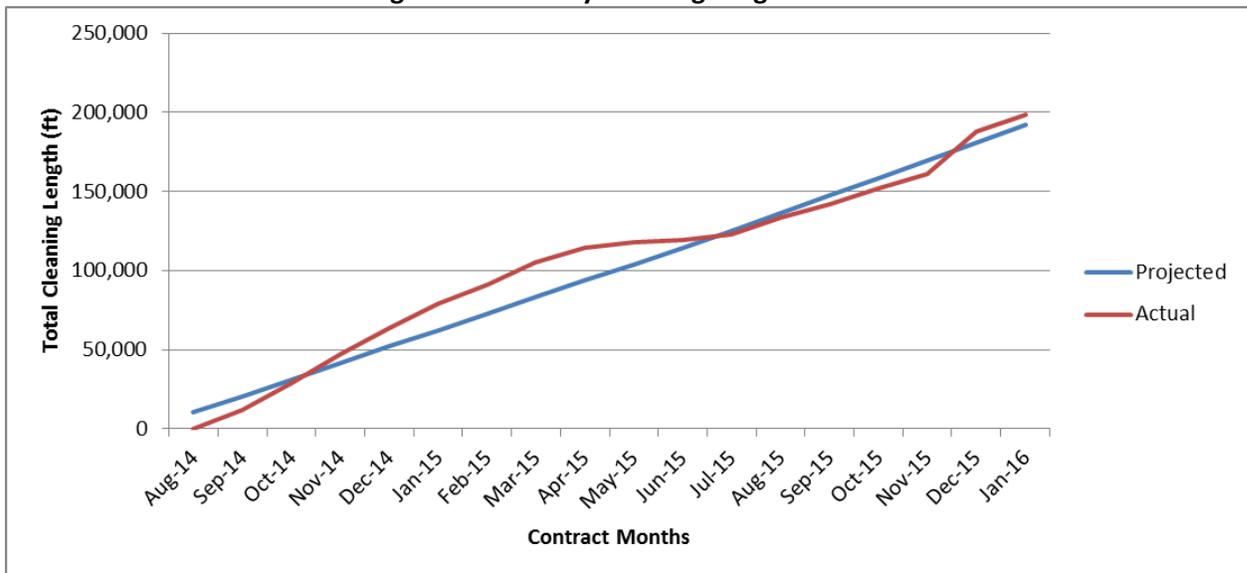
	Previous Contract Year (39.64% of System Cleaned)	Current Contract Year (24.63% of System Cleaned)
Clear	17.56%	43.98%
Roots	26.19%	22.77%
Debris	54.64%	30.63%
Other	1.61%	2.61%
Total	100% of Cleaned Pipes	100% of Cleaned Pipes

Table 3. Cleaning Results TO DATE by Percent

	Previous and Current Contract Year (64.27% of System CCTV'd)
Clear	27.68%
Roots	24.87%
Debris	45.44%
Other	2.01%
Total	100% of Cleaned Pipes

Figure 3 shows West Bay cleaning progress since it started maintaining the Town’s sanitary sewer collection system in August 2014. West Bay has been effective in meeting each year’s total cleaning footage goal as projected in the previous and current contract.

Figure 3. West Bay Cleaning Progress



CCTV Inspection

Figures 4a and 4b show CCTV inspection results for structural and O&M defects, respectively. As of January 2016, 42 percent of the system has been inspected. Of the 42 percent, 19.18 percent was inspected during the current contract year. Less than two percent of the inspected pipes have National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) Operations and Maintenance (O&M) Grade 4 or 5 defects. These defects are characterized by NASSCO as being likely to require action within 5 to 10 years.

Pipes with NASSCO PACP Grade 4 or 5 O&M defects have been placed on the hot spot list. Pipes on the hot spot list receive a more frequent cleaning schedule of 12 and 6 months. Pipes showing

Grade 4 or 5 O&M defects will remain on the hot spot list until the O&M issues are resolved. The remaining inspected pipes have O&M defects of 3 or below. 57.94 percent of pipes in the system have not been inspected by West Bay, and will be inspected on their contracted schedule.

Figure 4a. CCTV Inspection Results as of January 31, 2016 (Structural Defects)

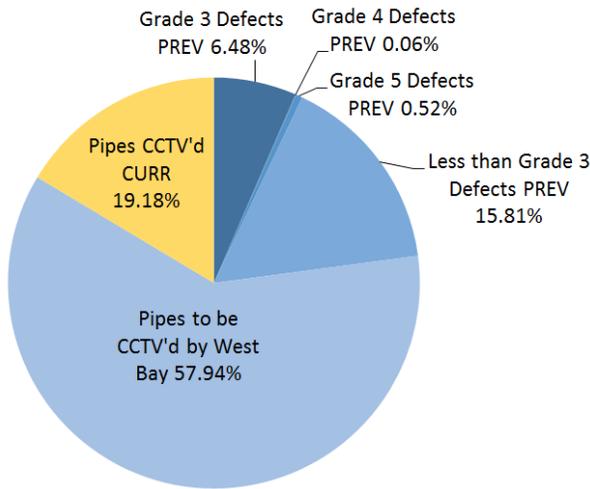
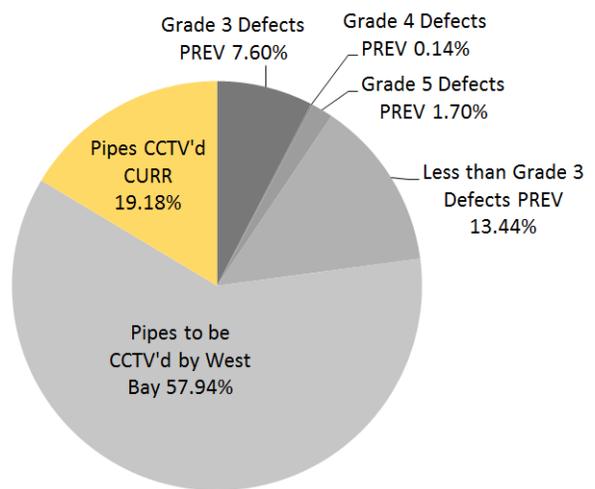


Figure 4b. CCTV Inspection Progress as of January 31, 2016 (O&M)



Figures 5a and 5b show structural and O&M defects found during the current contract year. These charts reflect results for 19.18 percent of the system. During this period, 52.85 percent of inspected pipes had no structural defects, 38.44 percent had Grade 3 or better structural defects, and 8.71 percent had Grade 4 or 5 structural defects.

Less than 3 percent of the pipes that were inspected in this new contract year have NASSCO PACP O&M Grade 4 and 5 defects. In addition, 60.42 percent of the inspected pipes have been recorded to have Grade 3 or lower defects.

Figure 5a. CCTV Inspection Results CURR August 2015 - Jan 31, 2016 (Structural). (Chart represents 19.18% of system).

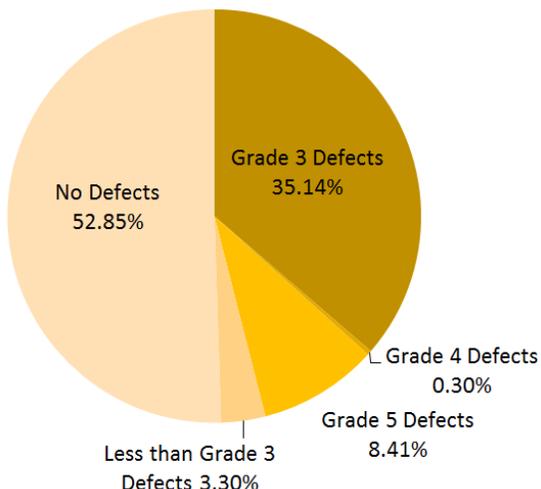
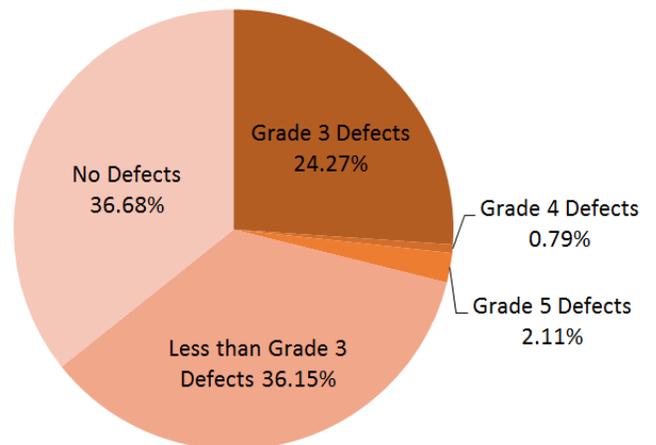


Figure 5b. CCTV Inspection Results CURR August 2015 - Jan 31, 2016 (O&M). (Chart represents 19.18% of system).



The current contract year focused CCTV operations on Branch 5 of the system, which had the largest number of prior SSO locations. As a result, West Bay encountered more pipes in the system having NASSCO PACP Structural Grade 5 defects compared to the previous year as shown in Table 4 and 5. The CCTV results to date, combined with West Bay’s field follow up notes, have been used to develop the 2016 Capital Improvement Program to address these pipes with structural issues.

Table 4. CCTV Results PER CONTRACT YEAR by Percent

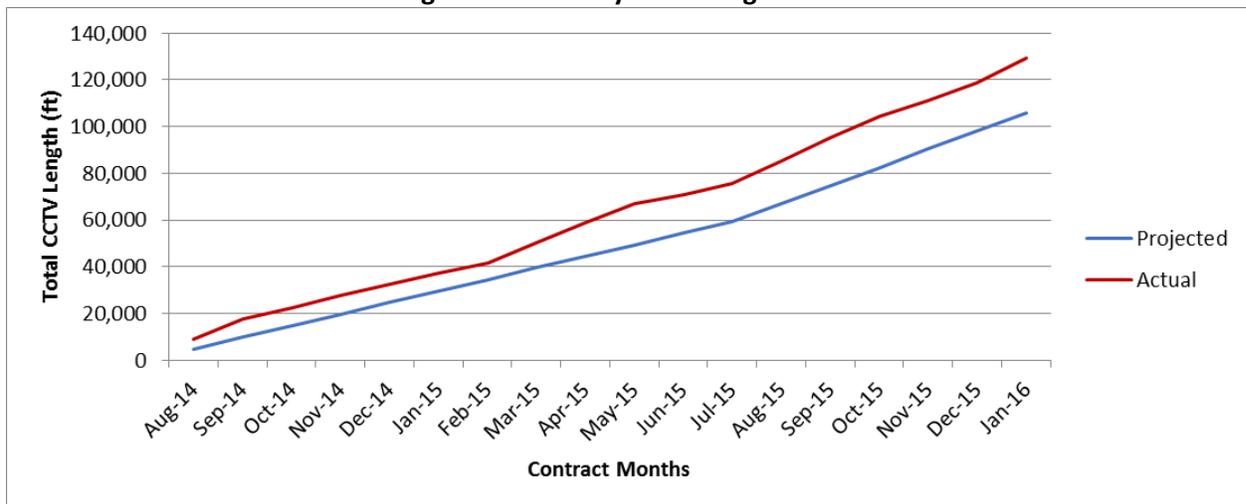
	Previous Contract Year (22.87% of System CCTV'd)	Current Contract Year (19.18% of System CCTV'd)
Grade 5	2.27%	8.46%
Grade 4	0.26%	0.30%
Grade 3 or Less	97.46% includes 64.89% with no defects	91.24% includes 52.57% with no defects
Total	100% of CCTV'd Pipes	100% of CCTV'd Pipes

Table 5. CCTV Results TO DATE by Percent

	Previous and Current Contract Year (42.05% of System CCTV'd)
Grade 5	4.80%
Grade 4	0.27%
Grade 3 or Less	94.93% (includes 49.07% with no defects)
Total	100% of CCTV'd Pipes

Figure 6 shows West Bay CCTV progress since it started maintaining the Town’s sanitary sewer collection system in August 2014. West Bay has consistently exceeded the CCTV inspection goal as projected in previous and current contract years.

Figure 6. West Bay CCTV Progress



Pump Station Maintenance

There were no substantial (i.e., non-routine maintenance) issues found in the Town’s pump stations during this reporting month. Routine maintenance was conducted for both Purissima and O’Keefe pump stations, as summarized in the WBSD monthly reports.

SSO Review

Table 6 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 January 2016, there were no reported SSO within the Town’s Sewer Collection System.

As an effort to address root related issues in the collection system, the Town is in the process of implementing a root foaming program. The Town, with the support of West Bay and VWHA, are identifying pipes with root related issues using both cleaning and CCTV maintenance records. Once a list has been developed and scope of the project has been identified, the Town is looking into implement root control activities beginning in May 2016.

Table 6. SSOs to January 31 2016, by Cause

Cause of SSOs	2016	2015	2014	2013	2012
Root Intrusion	0	5	16	9	10
Debris	0	1	1	2	0
Grease	0	0	0	0	0
Structural	0	0	1	0	1
Pump Station Failure	0	0	0	0	1
Other	0	1	0	1	2
Total SSOs/yr	0	7	18	12	14

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, routine input of cleaning and CCTV inspection progress to date was added to the CMMS.

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

West Bay collected GIS map changes that were identified during the first year of the contract, and incorporated these changes into the current maps. Since Lucity and GIS run on separate platforms, VWHA found discrepancies between the maintenance records and GIS map database. These discrepancies are expected and are being managed and corrected on an ongoing basis by West Bay and VWHA. After the entire system has been cleaned and all data issues identified and updated, the two databases will be more consistent.

e. Maintenance Planning

In December 2015, results from the prior year’s maintenance evaluation were discussed with West Bay. West Bay has continued to implement the agreed maintenance plan from previous discussions with the Town and VWHA.

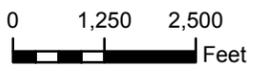
f. Other

Table 7 provides updates and progress on the Town’s sewer system management activities that are completed in addition to operations, maintenance, and SSO response.

Table 7. Staff Support Activities Summary of Progress

Staff Support Activities	Progress and Comments
2015 Sewer Capital Improvements	<ul style="list-style-type: none"> The 2015 Sewer Capital Improvement Project has been completed; final documentation by Town staff has been completed for City Council’s final acceptance of the contract. 2,735 lf of pipe were replaced, and 192 lf of pipe received spot repairs.
SSMP 3 rd Party Review	<ul style="list-style-type: none"> Humphrey Consulting completed their 3rd party review of the Town’s SSMP. VWHA is completing the SSMP update. The draft document has been reviewed and the final document will be presented to Council for action in May 2016.
2016 Sewer CIP	<ul style="list-style-type: none"> The Town’s risk model has been completed. Based on risk model results, a preliminary repair list was developed. The preliminary list will be provided to the City in April 2016. The CIP list will be refined during a field walk in February.
Cleaning and CCTV programs	<ul style="list-style-type: none"> VWHA reviewed maintenance results from the 2015 contract year and has received comments from the Town. The team will meet in February 2016 to discuss status and recommendations.
2015-16 Hot Spot program	<ul style="list-style-type: none"> This item is included in the cleaning and CCTV program discussion above.
Sanitary Sewer Master Plan	<ul style="list-style-type: none"> West Bay has received the list of manholes requiring data collection, and will begin this work in March/April 2016. Master Plan development will follow data collection, including flow monitoring described below. V&A is monitoring rainfall data – hard rain within a short period, after the ground is initially saturated, is required to obtain good flow data. The Town had coordinated with V&A to begin installing meters at the end of January 2016 in anticipation of storms to occur in February.

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

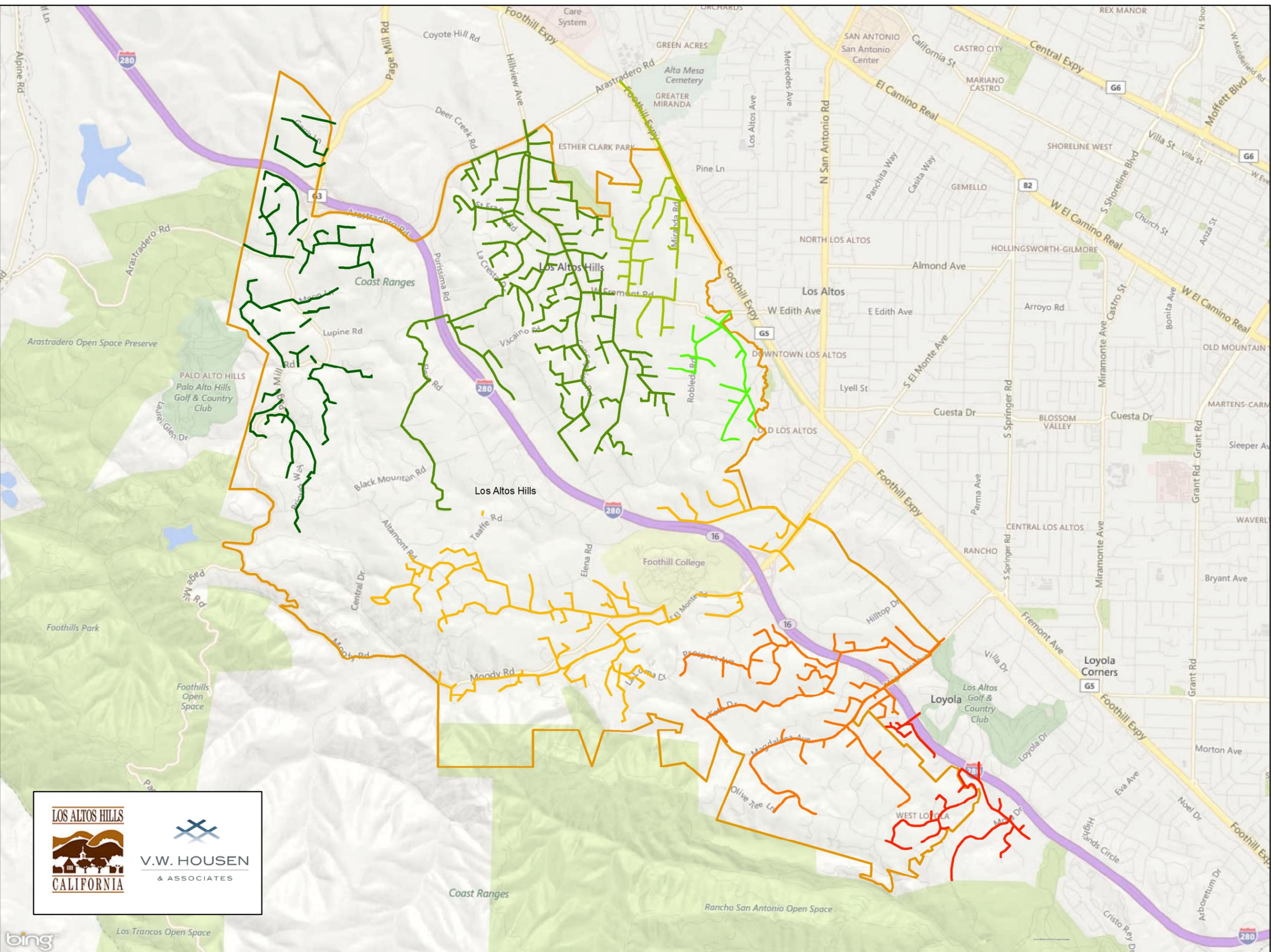


Legend

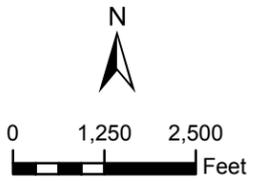
- Branch 1
- Branch 2
- Branch 3
- Branch 4
- Branch 5
- Branch 6
- Branch 7
- LAH Boundary

LOS ALTOS HILLS
CALIFORNIA

V.W. HOUSEN
& ASSOCIATES

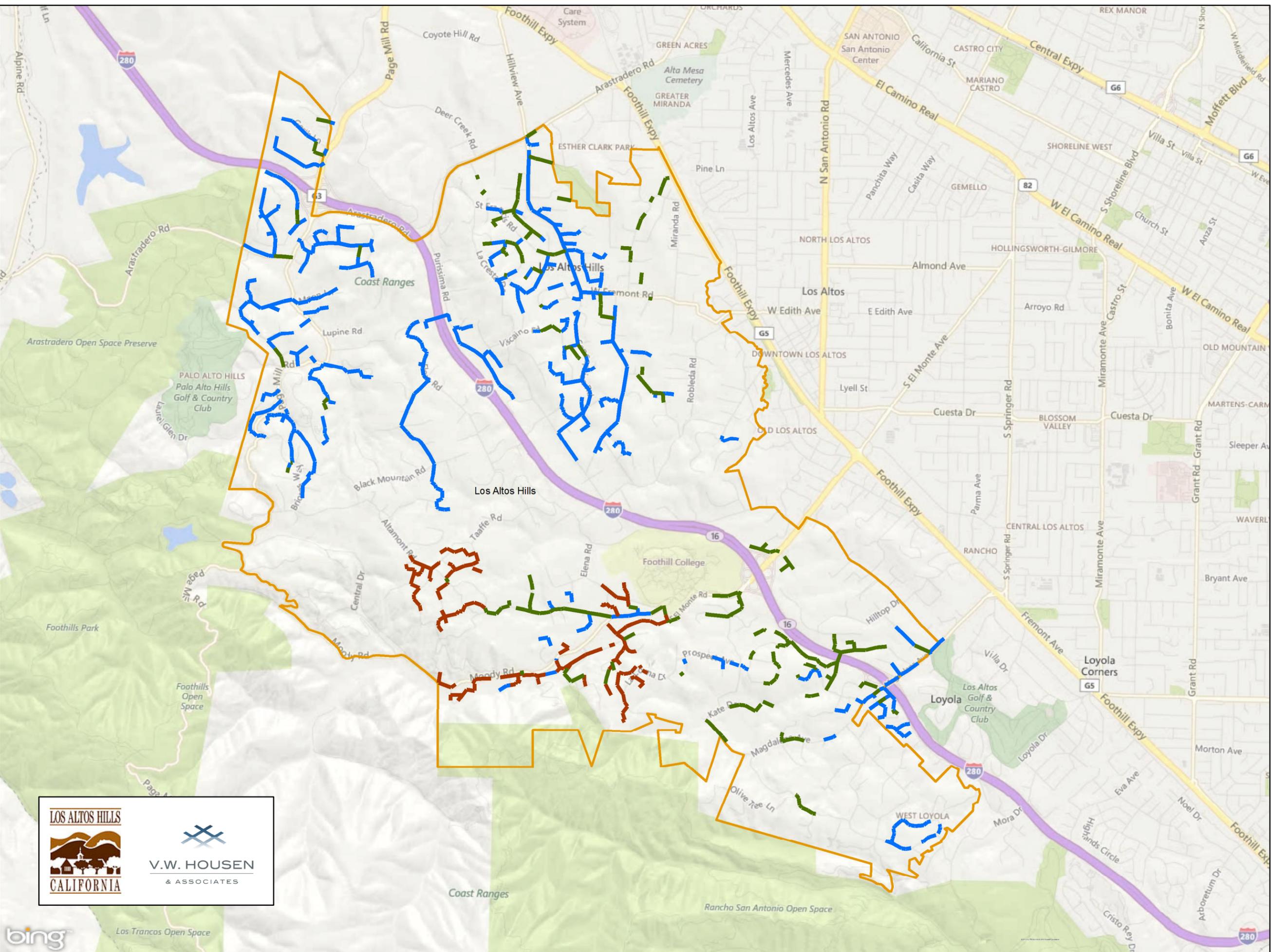


Town of Los Altos Hills Sanitary Sewer Collection System Map Pipes Cleaned from Aug 2014 - Jan 2016



Legend

- Prev Yr (Aug14 - Jul15)
- Qtr 1 (Aug15 - Oct15)
- Qtr 2 (Nov15 - Jan16)
- LAH Boundary

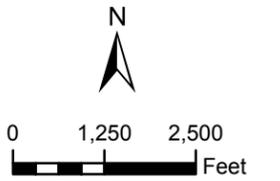


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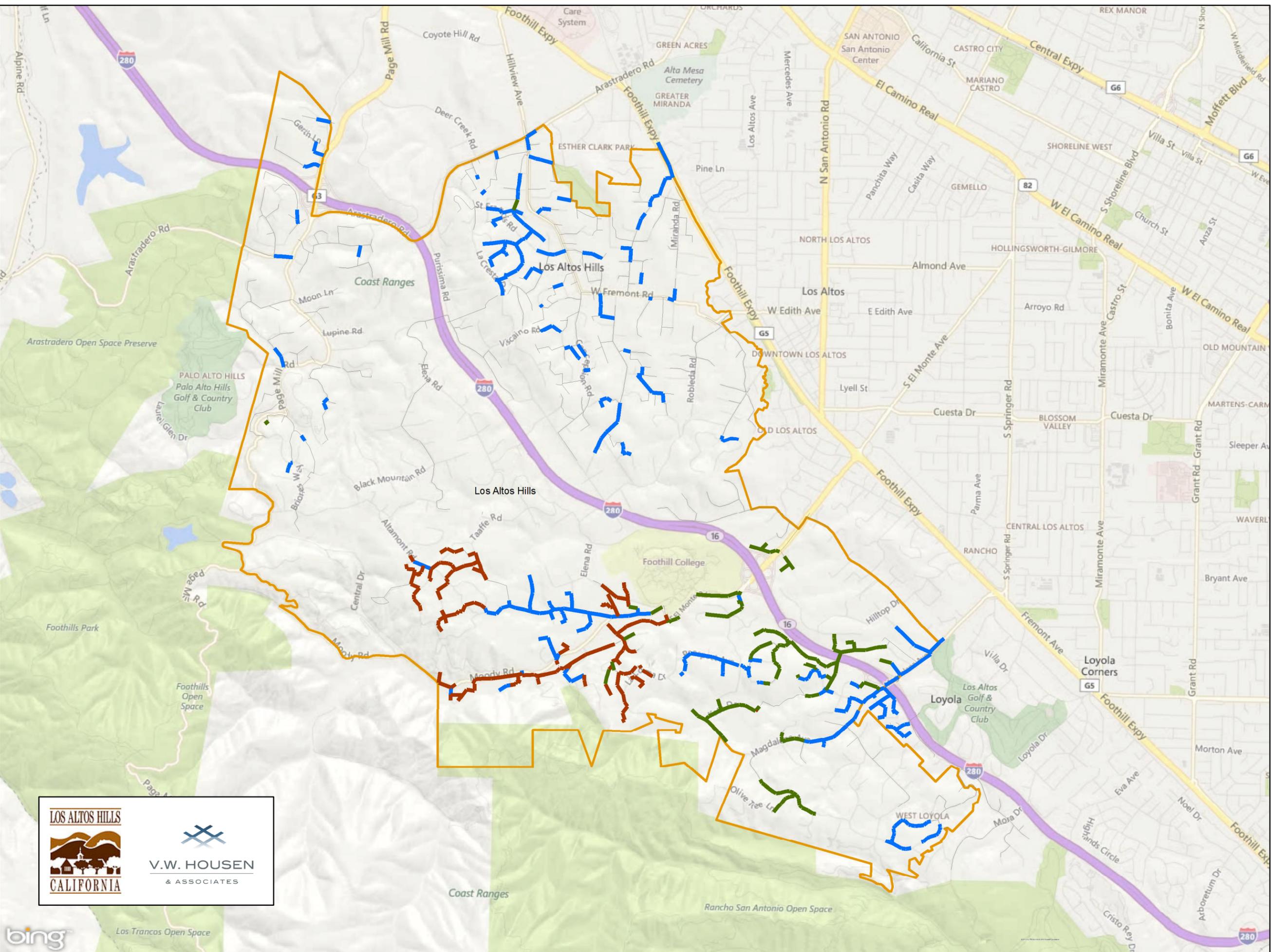


Town of Los Altos Hills
 Sanitary Sewer Collection System Map
 Pipes CCTV'd from Aug 2014 - Jan 2016

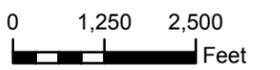


Legend

- Prev Yr (Aug14 - Jul15)
- Qtr 1 (Aug15 - Oct15)
- Qtr 2 (Nov15 - Jan16)
- Sewer Pipeline
- LAH Boundary

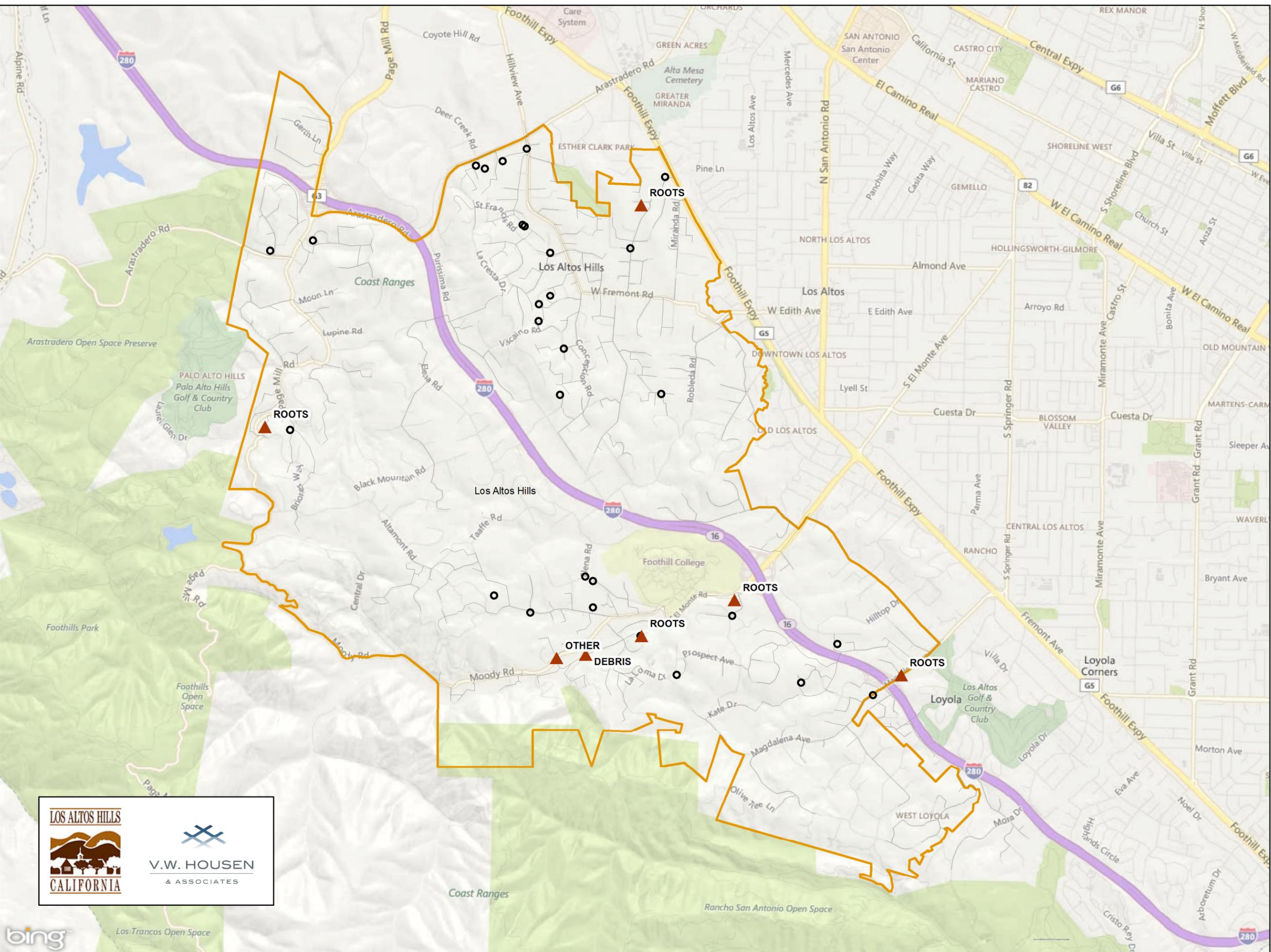



Town of Los Altos Hills Sanitary Sewer Collection System Map SSOs from 2013 - Jan 2016



Legend

-  2015-2016 SSOs (all Cat 3)
-  2013-2014 SSOs
-  Sewer Pipeline
-  LAH Boundary



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