

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

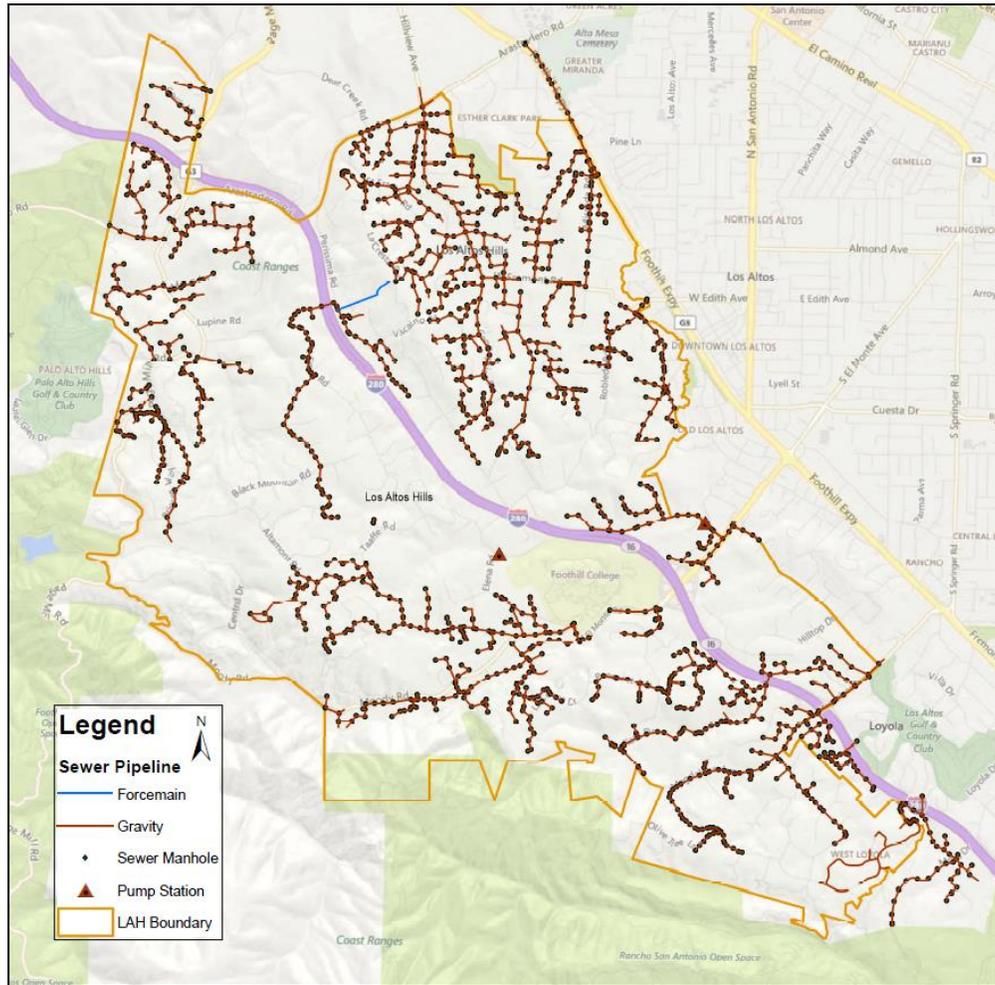
**Reporting Month: December 2015
Report Date: March 2, 2016**

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 December 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. However, there was 1 reported Category 3 SSOs during this month with a volume of 15.0 gallons. The sewage spilled from a lateral cleanout to a residential driveway and surrounding unpaved area. There was no surface water body affected from this overflow.

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 December 2015	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-month and 6-month) Schedule • Other, Unscheduled Cleaning 	<ul style="list-style-type: none"> • 1.29 miles • 3.81 mile • 0 mile 	<ul style="list-style-type: none"> • 7.97 miles • 4.29 mile • 0 mile 	47.96% of Goal (41.67% of Time Elapsed)
Pump Station <ul style="list-style-type: none"> • Preventive Maintenance • Unscheduled repairs 	<ul style="list-style-type: none"> • 5X • 1X 	<ul style="list-style-type: none"> • 22X • 1X 	41.67% of Goal
CCTV Inspection <ul style="list-style-type: none"> • Routine Schedule (30 mos) • Other Unscheduled CCTV 	<ul style="list-style-type: none"> • 0.48 mile • 1.01 mile 	<ul style="list-style-type: none"> • 3.45 miles • 4.61 miles 	45.75% of Goal
SSO Response <ul style="list-style-type: none"> • No. of SSOs – Sewer Main 	<ul style="list-style-type: none"> • 1 	<ul style="list-style-type: none"> • 4 	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, 61.06 percent of the pipes within the Town's collection system has 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 was comprised of gravel, rock, paper, rags, egg shells, ground, grit, mud, and other solids. During the previous year, 21.66 percent of the cleaned pipes had debris, 10.38 percent had roots, and 6.96 percent had clear results.

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

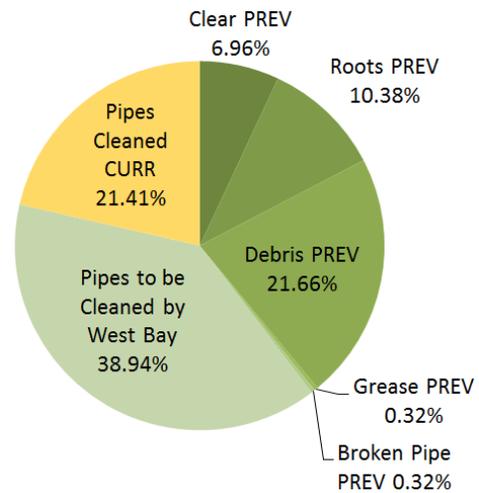
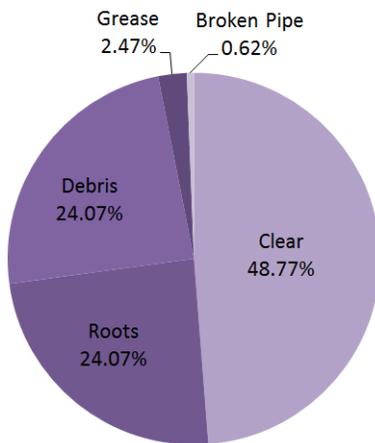


Figure 2b shows cleaning results for the Town's pipes for the current contract year only. Figure 2b expands the wedge shown in yellow in Figure 2a. In the new contract year, 24.07 percent of the cleaned pipes had debris, 24.07 percent had roots, 2.47 percent had grease, and 48.77 percent had clear results.

Note that in December, West Bay updated the collection system database. As a result, the cleaning and inspection charts reflect minor adjustments to the previous cleaning results percentages.

Figure 2b. Cleaning Results for the Current Year to Date. (Chart represents 21.41% of system).

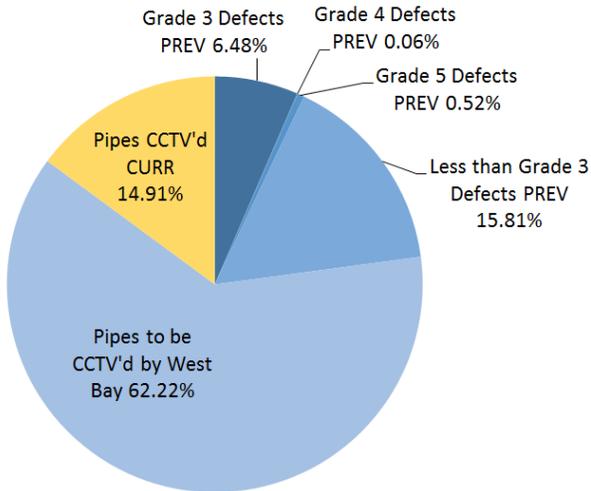


Figures 3a and 3b show CCTV inspection results for structural and O&M defects, respectively. As of December 2015, 37.78 percent of the system has been inspected. Of the 37.78 percent, 14.91 percent was inspected during the current contract year. During the previous contract year, 22.29 percent of the 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 0.58 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 two percent of the inspected pipes have NASSCO PACP Operations and Maintenance (O&M) Grade 4 or 5 defects. Almost all of these pipes have been placed on the hot spot list except for three pipes. VWHA will recommend that West Bay place the remaining pipes in the existing hot spot list. These pipes showing Grade 4 or 5 defects will remain in the hot spot list until the O&M issues are resolved. The remaining 21.04 percent of inspected pipes have O&M defects of 3 or

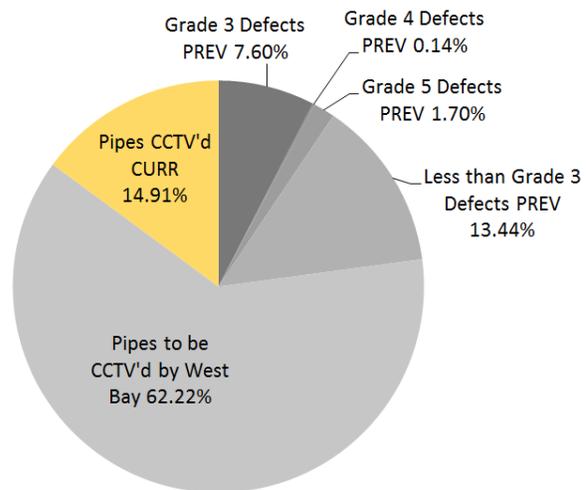
below. The remaining 62.22 percent of pipes in the system will be inspected by West Bay on their contracted schedule.

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



Figures 4a and 4b show structural and O&M defects found during the current contract year. These charts reflect results for 14.91 percent of the system. During this period, 47.17 percent of inspected pipes had no structural defects, 42.27 percent had Grade 3 defects or less, and 10.57 percent had Grade 4 or 5 defects.

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



Less than 4 percent of the pipes that were inspected in this new contract year have NASSCO PACP O&M Grade 4 and 5 defects. In addition, 62.92 percent of the inspected pipes have been recorded to have Grade 3 or lower defects.

Figure 4a. CCTV Inspection Results CURR August 2015 - Dec 31, 2015 (Structural). (Chart represents 14.91% of system).

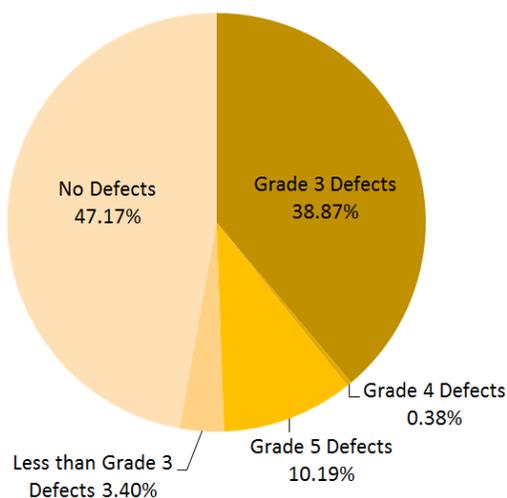
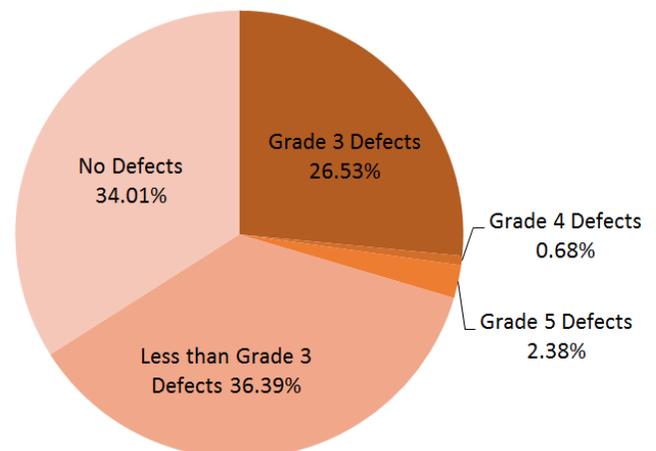


Figure 4b. CCTV Inspection Results CURR August 2015 - Dec 31, 2015 (O&M). (Chart represents 14.91% of system).



During this month, West Bay pump crew vacuumed out the wet well at the Purissima pump station to remove grease and debris. The grease and debris found were not of significant amount. In addition, the pump crew replaced and tested the soft start for dry well pump #2 at this station during their scheduled maintenance at the beginning of the month.

Table 2 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 December 2015, there was 1 reported SSO within the Town’s Sewer Collection System. This overflow resulted in 15 gallons of wastewater from a lateral cleanout to a residential driveway and surrounding unpaved surface located at a residential property along Via Ventana Way. The overflow was caused by root intrusion in the mainline. No surface water body was affected by the SSO.

Table 2. 2015 SSOs to December 31, by Cause

Cause of SSOs	2015	2014	2013	2012	2011
Root Intrusion	5	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	7	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 additional changes made 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. However, since Lucity and GIS run on

separate platforms, as a result, VWHA found discrepancies between the maintenance records and GIS map database. VWHA has provided a list of non-matching records to West Bay for correction in Lucity.

In December 2015, the Town provided West Bay with a list and map showing manholes that require data collection for use in the hydraulic model and master plan update.

e. Maintenance Planning

In December 2015, results from the prior year’s maintenance evaluation were discussed with West Bay. As a result, West Bay has adjusted their cleaning plan as follows:

- Complete cleaning and CCTV of Branch 5, which is in progress.
- Complete cleaning of Branch 2, which has received partial cleaning that was focused on prior SSO locations.
- Complete cleaning and CCTV of Branch 6, which has the next highest occurrence of SSOs and service calls.

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 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 submitted in March 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 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 early 2016 to discuss 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 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. To date, this level of rainfall has only occurred once in December, under low ground saturation conditions.

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



0 1,250 2,500
Feet

Legend

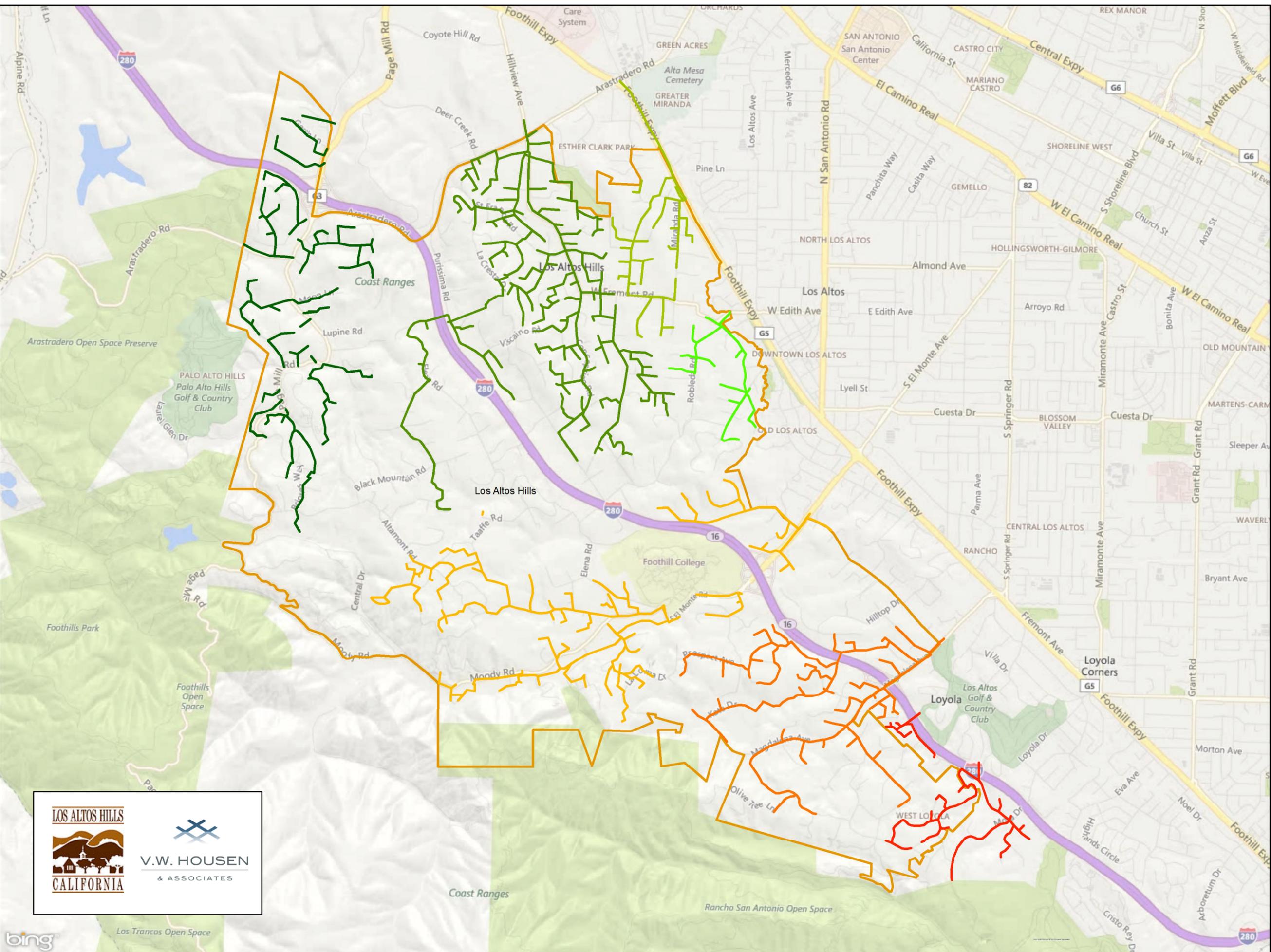
- Branch 1
- Branch 2
- Branch 3
- Branch 4
- Branch 5
- Branch 6
- Branch 7
- LAH Boundary



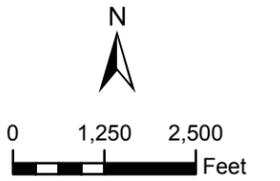
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& ASSOCIATES

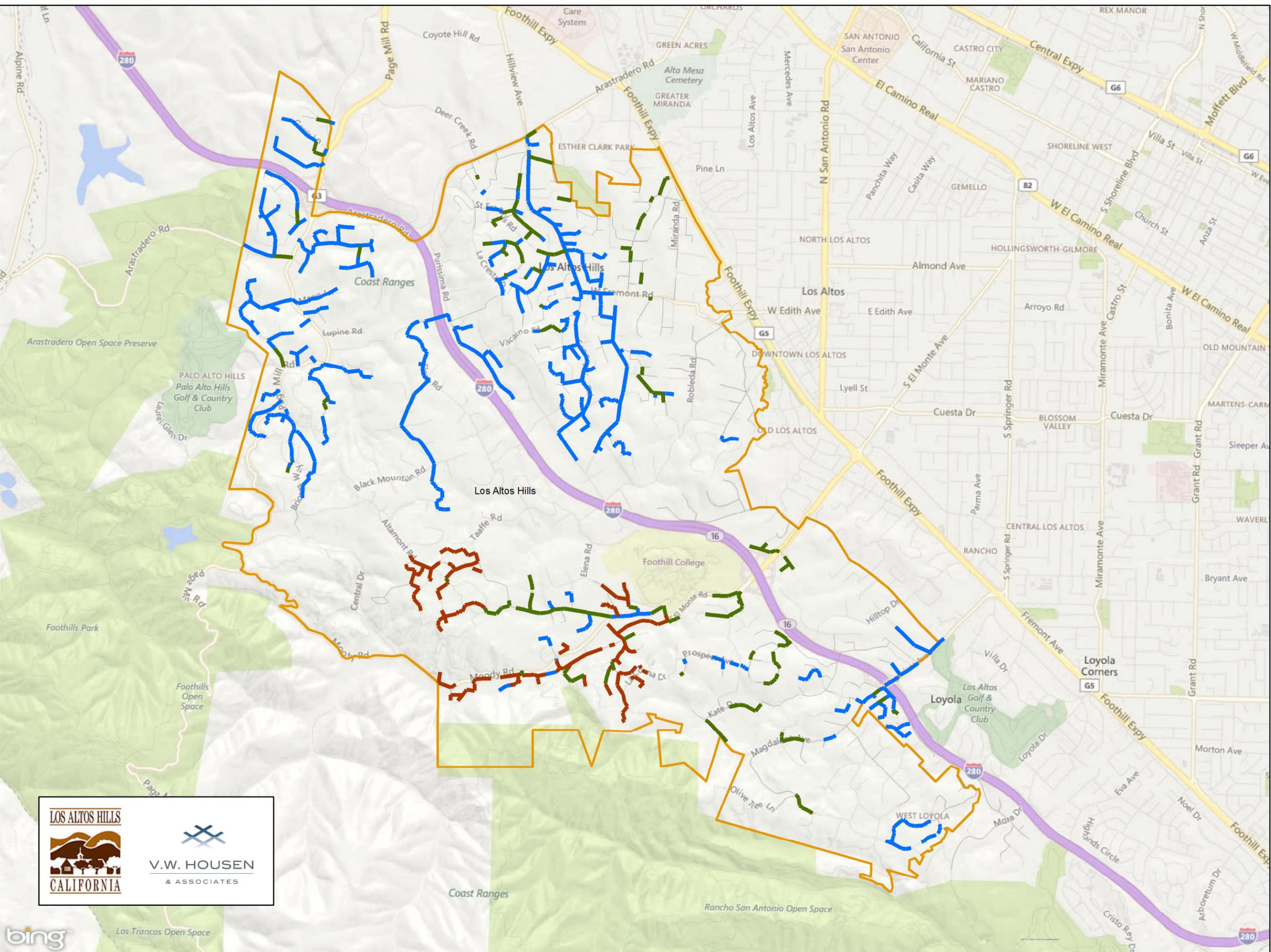


Town of Los Altos Hills
 Sanitary Sewer Collection System Map
 Pipes Cleaned from Aug 2014 - Dec 2015

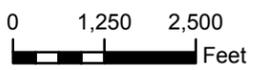


Legend

- Prev Yr (Aug14 - Jul15)
- Qtr 1 (Aug15 - Oct15)
- Qtr 2 (Nov15 - Dec15)
- Sewer Pipeline
- LAH Boundary

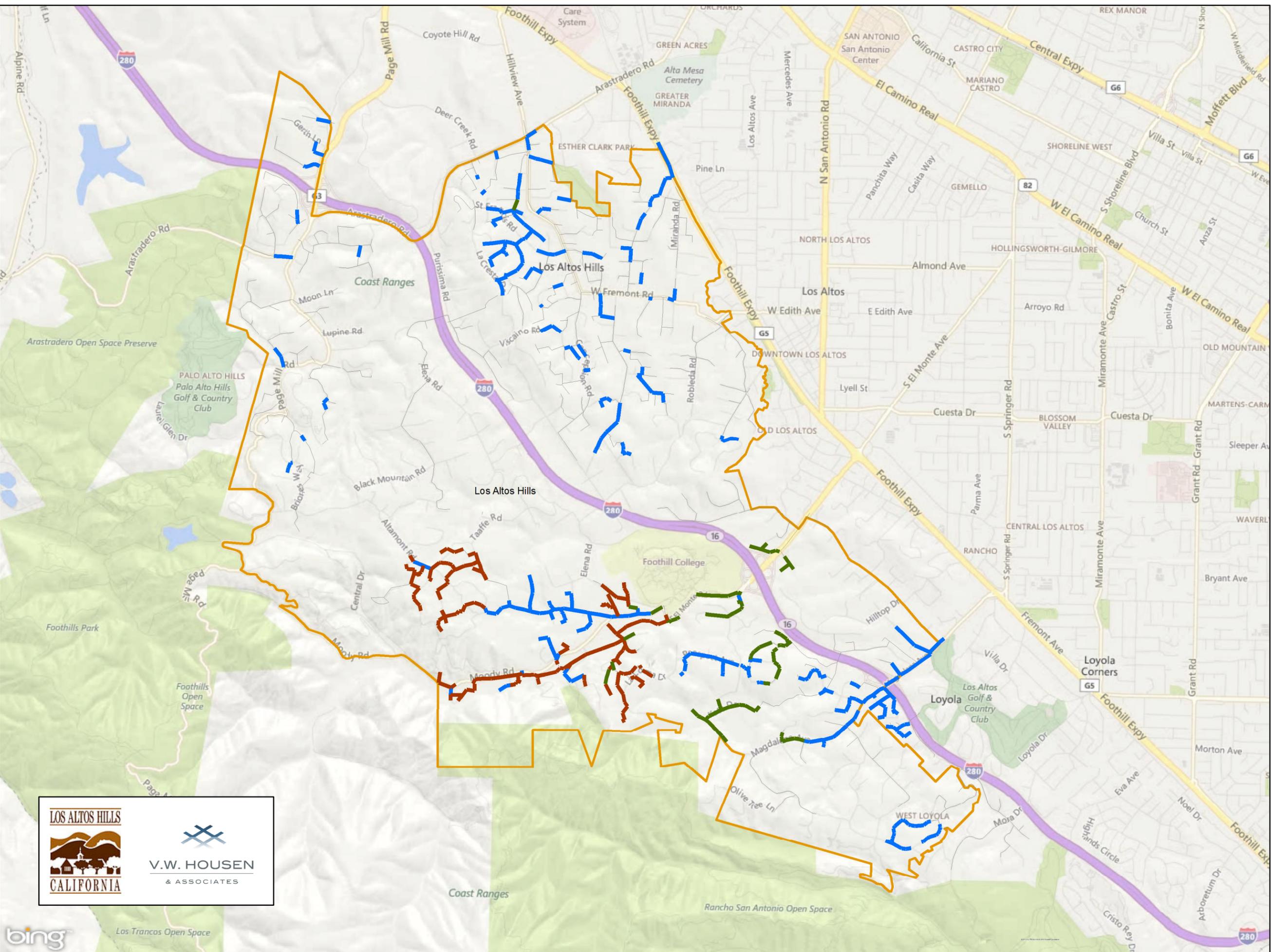



Town of Los Altos Hills
 Sanitary Sewer Collection System Map
 Pipes CCTV'd from Aug 2014 - Dec 2015



Legend

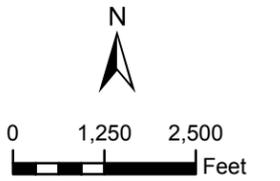
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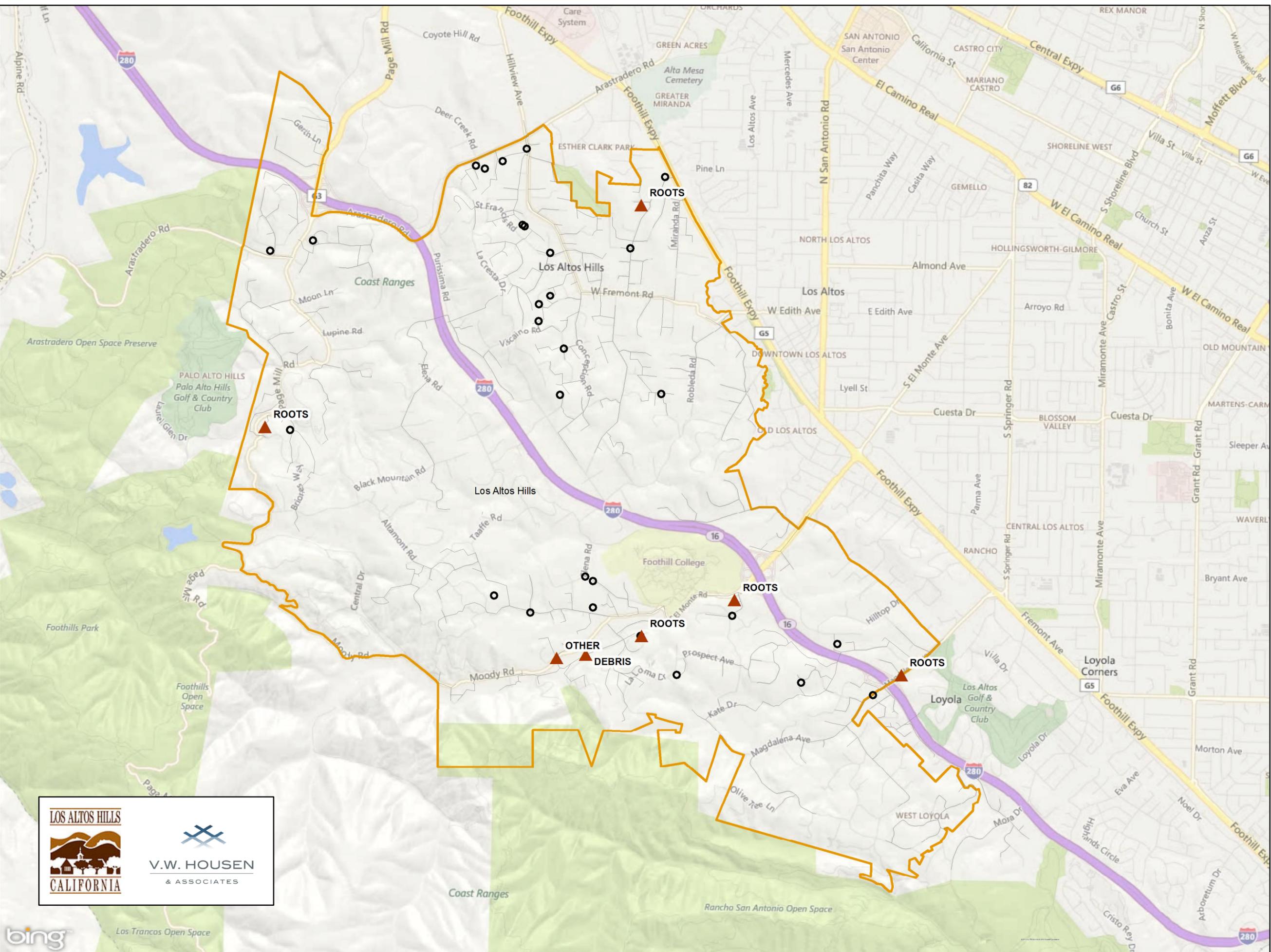


Town of Los Altos Hills Sanitary Sewer Collection System Map SSOs from 2013 - Dec 2015



Legend

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



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