

INDIVIDUAL WATER QUALITY ASSESSMENT REPORT

Site Name/Facility: Montezuma Channel
Master Program Map No.: Map 66
Date: April 11, 2017
Civil Engineer (name, company, phone number): Jayne Janda-Timba
Rick Engineering Company
5620 Friars Road
San Diego, California 92110
(619) 688-1448
Register Civil Engineer Number & Expiration Date (place stamp here): RCE # 70649
Exp. 06/2017



Instructions: This form must be completed for each facility prior to the completion of the Individual Maintenance Plan and prior to any work being conducted in the facility. Attach additional sheets if needed.

EXISTING CONDITIONS

Introduction:

The City of San Diego developed the Master Storm Water System Maintenance Program to optimize its business processes and environmental protection practices related to channel operation and maintenance activities. The Master Maintenance Program (MMP) is intended to integrate operation and maintenance planning, implementation and assessment activities with its water quality protection programs. This document provides a summary of the Individual Water Quality Assessment (IWQA) Report activities conducted within Montezuma Channel (MMP Map 66) located east of Collwood Boulevard, south of Baja Drive and north of Maisel Way. For the location of Montezuma Channel, see Figure 1 – Regional Location Map, and Figure 2 – Project Vicinity Map attached.

The IWQA procedures are documented in the report titled, “Standard Operating Procedures (SOP) to Conduct Water Quality Assessment and Quantification Model for Flood Control Channel (Storm Water Facility) Maintenance,” written by Weston Solutions in March 2011 (herein referred to as SOP), located in Appendix A of the Water Quality Assessment and Quantification Model for Flood Channel Maintenance White Paper found in Appendix F of the report titled, “Master Storm Water System Maintenance Program Final Recirculated Programmatic Environmental Impact Report SCH. No. 2004101032, Project No. 42891,” prepared for the City of San Diego in October 2011.. The SOP identifies two criteria that must be met for IWQA component implementation: 1) the storm water facility must have fairly consistent dry weather flows, and 2) it must have vegetation capable of assimilation of pollutants. The first criteria listed above was not met by the section of Montezuma Channel designated for maintenance at this time. Site visits were performed by Rick Engineering Company on November 10, 2016 and January 25, 2017 and no dry weather flows were observed.

Description of Creek/Channel Geometry (length, width, and depth):

Pursuant to the MMP, the Individual Hydrologic and Hydraulic Assessment (IHHA) recommends the limits and amount of maintenance for each channel. The IHHA Report for Montezuma Channel consists of three reaches (Reach 1, 2, and 3). Pursuant to the IHHA, it should be noted that only Reach 2 is proposed for maintenance.

The reach to be maintained is indicated below and illustrated in Figure 4 – Hydraulic Workmap attached.

- Reach 2 – HEC-RAS Cross Sections 281.1765 to 618.9795

The limits of Reach 2 are identified in Figure 4 - Hydraulic Workmap attached. Reach 2 is mapped within the MMP.

Reach 2: (HEC-RAS Cross Sections 281.1765 to 618.9795) MMP Map 66

Reach 2 extends upstream from the upstream limit of Reach 1 where the channel transitions from concrete lined to earthen bottomed. The upstream limit of Reach 2 is the outfall of the existing 60-inch RCP culvert that extends underneath 54th Street. The majority of the reach consists of an earthen bottomed channel that varies in width from 10 to 15 feet. A 3.5 foot high 1.5H:1V concrete side slope extends along the right bank (looking downstream) of the channel. The left bank is formed by the graded slopes of adjacent subdivision and ranges from 1H:1V to 2H:1V. The upstream 50-feet of Reach 2 (HEC-RAS Cross Sections 588.9762 to 618.9795) consists of a concrete-lined trapezoidal channel. Pursuant to As-Built plan Sheet 10657-5-D for College Valley Improvement prepared by Byrl D. Phelps on December 10, 1964, the trapezoidal concrete lined channel is 20 feet wide with 3.5 foot high 1.5H:1V side slopes.

As observed during the site visit performed on November 6, 2016, the earthen bottomed section of Reach 2 contains dense areas of palm trees and freshwater marsh vegetation, as well as sediment deposited along the channel bottom. Dead palm trees have fallen down and have the potential to be carried into the existing 60-inch RCP under the Collwood Villa Apartment Complex, clogging the system and flooding the Apartment Complex. Damage was observed to the short section of concrete lined channel immediately downstream of the existing 60-inch RCP underneath 54th Street. At the downstream end, the foundation was undermined and sections of concrete were broken and missing. Where the concrete lining is missing, the channel is lined with gravel. Approximately 50 feet downstream of the outfall of the existing 60-inch RCP underneath 54th street, a single palm tree has established in a crack in the concrete lining. Small cracks were also observed along the right (looking downstream) concrete side slope throughout the reach. Reach 2 is proposed for partial vegetative maintenance.

Description of Sediment Sampling Activities (location(s), depth, shipment/deliverer to laboratory(s)):

Site visits were conducted on November 10, 2016 and January 25, 2017 to determine if dry weather flows exist. No dry weather flows were observed on either date. The field observation activities (described below) established that there are no negative water quality impacts associated with channel maintenance due to no dry weather flows in the channel, pursuant to the SOP. For this reason, sediment sampling activities are unnecessary, and would only serve to prove that channel maintenance has a greater positive impact on water quality than leaving the vegetation and sediment in place.

Description of Flow Measurement Activities (location(s) and equipment):

The flow chart (Figure A-1) found on page 2 of the SOP states that if there is no dry weather flow, it can be concluded that maintenance will have no negative impact on water quality, and no further water quality analysis is required.

Two field visits were made to the Montezuma Channel to determine if dry weather flows exist, on November 10, 2016 and January 25, 2017. During each of these visits, no dry weather flow was observed within the channel.

Description of Volume Measurement Activities (interval, total number, equipment):

No dry weather flows were observed in the Montezuma Channel. Therefore, there is no dry weather flow volume of water flowing through the channel and it cannot be measured.

Description of Water Quality Sampling Activities (location(s), shipment/delivery to laboratory(s)):

Water samples were not taken since there was no observed dry weather flow to be analyzed.

Description of Wetland Assessment (Existing) Activities (personnel, general conditions):

Wetland Assessment (existing) activities were not performed since the SOP explains that if there is no dry weather flow, then it can be concluded that maintenance will have no negative impact on water quality.

Description of Wetland Assessment (Recovery) Activities (personnel, general conditions):

Wetland Assessment (recovery) activities were not performed since the SOP explains that if there is no dry weather flow, then it can be concluded that maintenance will have no negative impact on water quality.

Sediment Pollutant Loading Estimates:

Field observations with no dry weather flows support the conclusion that there are no negative water quality impacts associated with channel maintenance. For this reason, sediment loading estimates are unnecessary, and would only prove that channel maintenance has a greater positive impact on water quality than leaving the vegetation and sediment in place.

MAINTENANCE IMPACTS

Evaluation of Benefits / Impacts:

Are there constituents that have potential impacts greater than benefits?

Yes No

After analyzing the channel pursuant to the SOP for preparation of an IWQA, it was determined that, due to no dry weather flow, there are no negative water quality impacts associated with channel maintenance.

If so, identify constituents here and compare measured concentrations to thresholds.

Not Applicable.

MITIGATION

If impacts are identified, list potential mitigation efforts (e.g., BMPs type(s) and number(s)) that may be implemented in the watershed:

The analysis for this IWQA has determined that there are no negative impacts to water quality associated with channel maintenance, due to no dry weather flows in the channel.

LIST OF ATTACHMENTS (Check All That Apply):

- Site Photos
- Chain of Custody Sheet(s) for Sediment Sampling
- Analytical Results of Sediment Sample(s)
- Chain of Custody Sheet(s) for Water Column Sampling
- Analytical Results of Water Column Sample(s)
- Flow Measurement Model
- Volume Measurement Model (Existing Condition)
- Wetland Land Assessment Scoring Sheet (Existing Condition)
- Wetland Land Recovery Assessment Scoring Sheet (Maintained Storm water facility)
- Sieve Analysis Laboratory Results
- Sediment Pollutant Loading Model (Load Removal in Sediment)
- Potential Water Quality Impacts Model and Comparison to Benefits
- Potential Mitigation Efforts Model
- Figures:
 - 1) Regional Location Map
 - 2) Project Vicinity Map
 - 3) IWQA Limits of Channel Maintenance for Montezuma Channel MMP Map 66
 - 4) Hydraulic Workmap
 - 5) Photo Locations Map

SITE PHOTOS

Date of Site Visit: 11/10/16

See notes below and Figure 5 – Photo Locations Map for picture location and orientation.

1.



Downstream end of Montezuma Channel Reach 3 with no dry weather flows observed (only pockets of standing water). Facing west along 54th Street.

SITE PHOTOS

Date of Site Visit: 1/25/17

See notes below and Figure 5 – Photo Locations Map for picture location and orientation.

2.



Upstream end of Montezuma Channel Reach 2 facing west. Standing water and dense vegetation was observed in Reach 2. No flowing water was observed.

3.



Upstream end of Montezuma Channel Reach 2 facing north. No dry weather flows and dense vegetation was observed in Reach 2.

SITE PHOTOS

Date of Site Visit: 1/25/17

See notes below and Figure 5 – Photo Locations Map for picture location and orientation.

4.



Downstream end of Montezuma Channel Reach 2 facing east. No dry weather flows and dense vegetation was observed in Reach 2.

5.

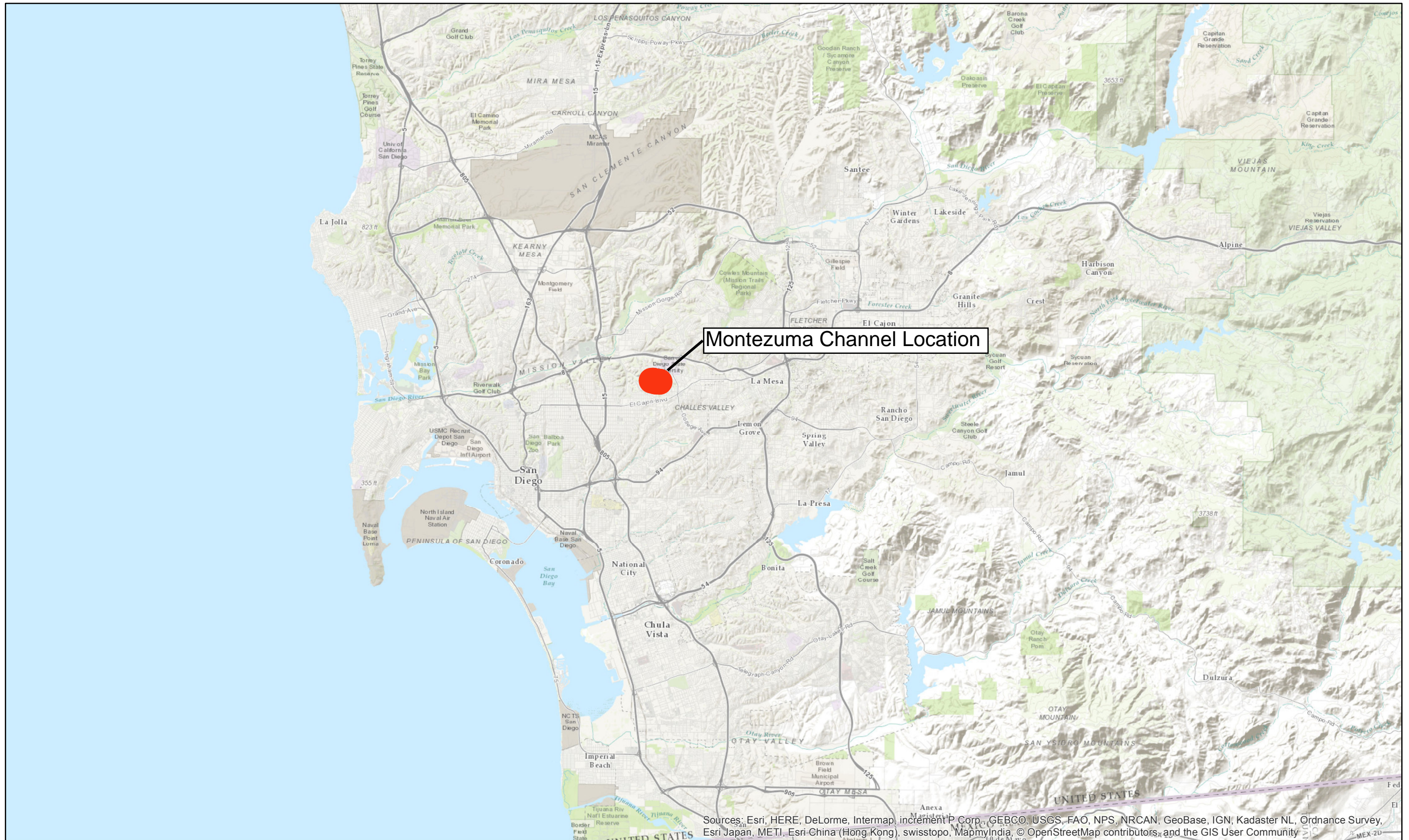


Upstream end of Montezuma Channel Reach 2 facing southeast. Standing water and dense vegetation was observed in Reach 2. No flowing water was observed.

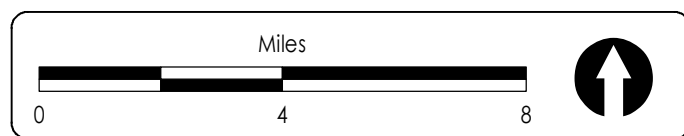
Figures:

- 1) **Regional Location Map**
- 2) **Project Vicinity Map**
- 3) **IWQA Limits of Channel Maintenance for Montezuma Channel MMP Map 66**
- 4) **Hydraulic Workmap**
- 5) **Photo Locations Map**

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Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri-China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



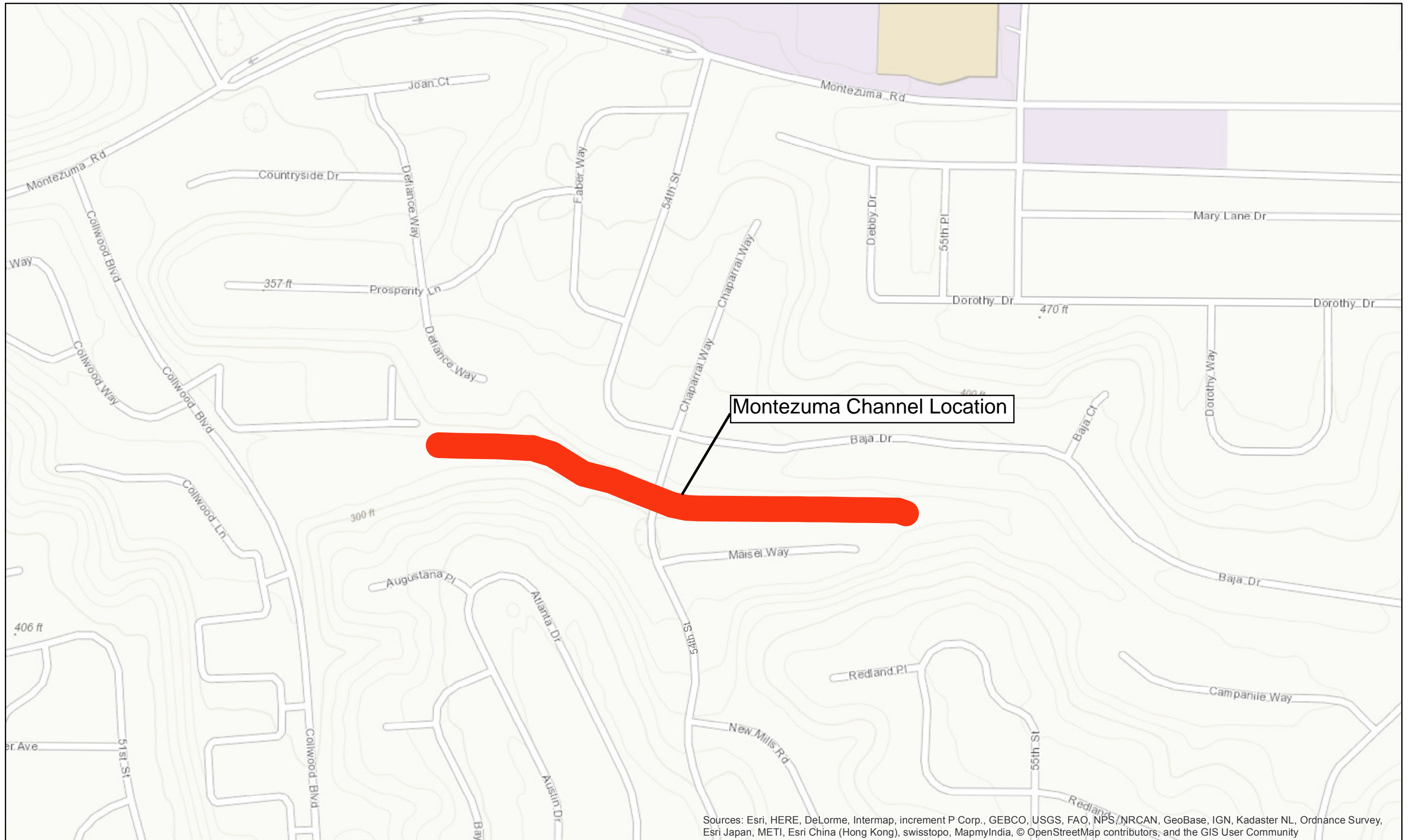
Date of Exhibit: 2/27/2017
DigitalGlobe Aerial Image: 04.2013

IWQA Report - Figure 1 - Regional Location Map

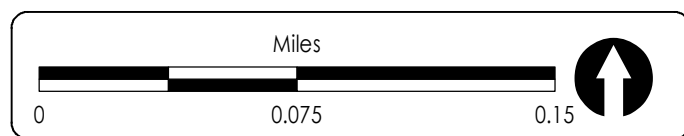
Montezuma Channel MMP Map 66

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Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



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IWQA Report - Figure 2 - Project Vicinity Map

Montezuma Channel MMP Map 66

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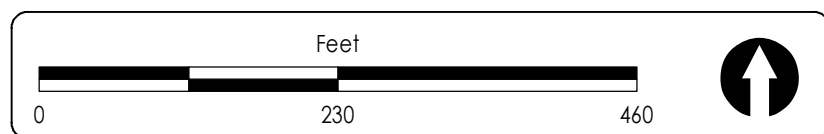
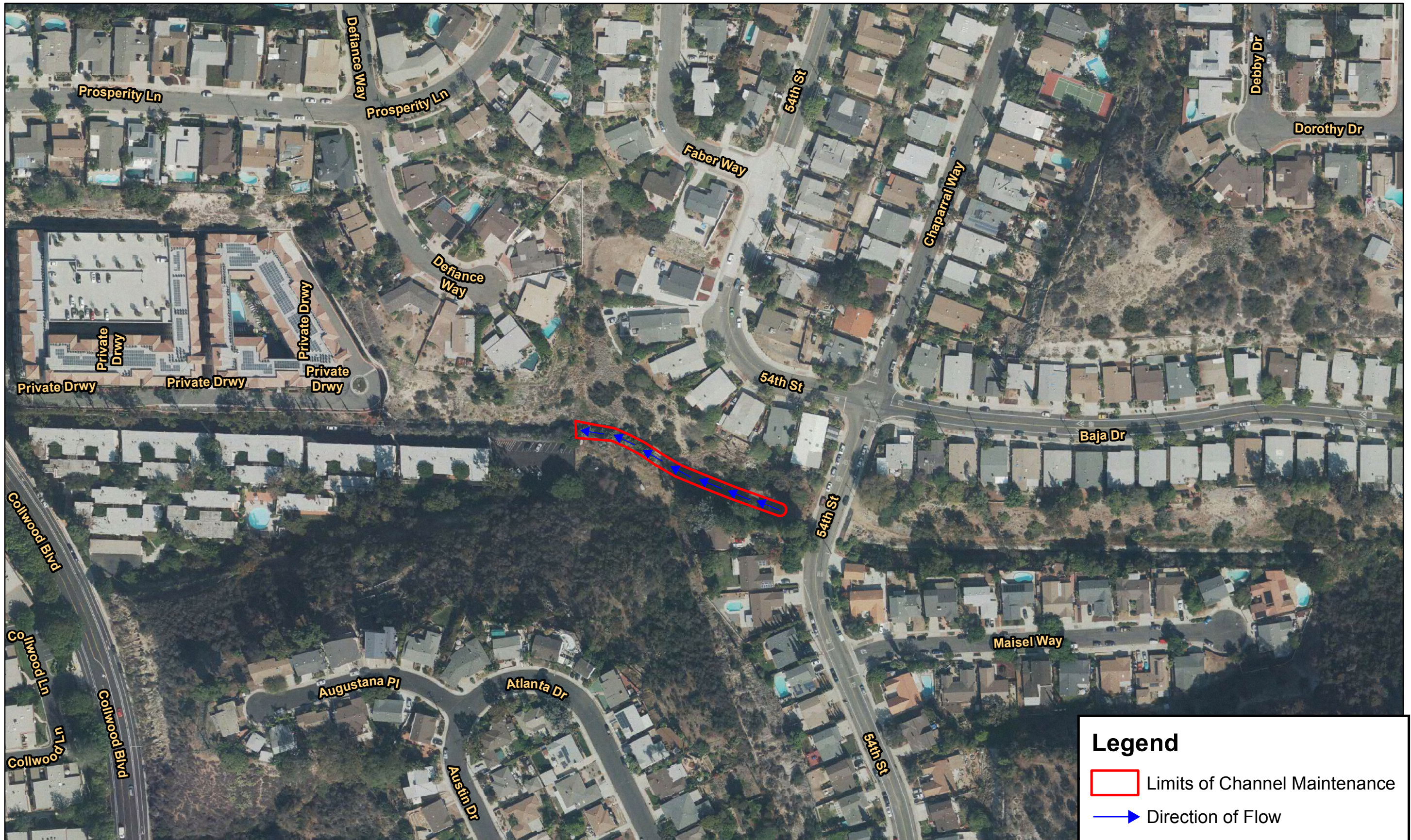
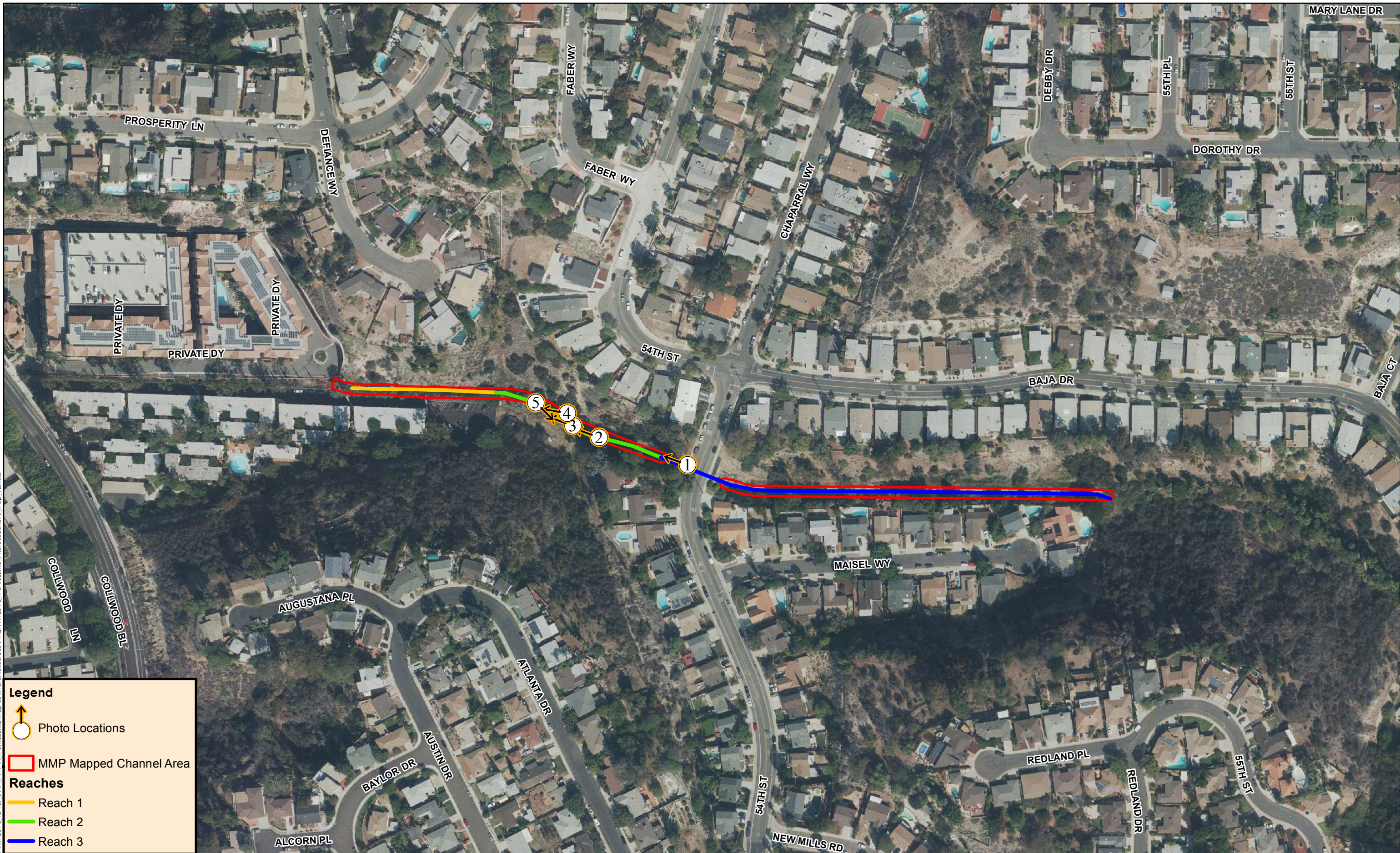


Figure 3 - IWQA Limits of Channel Maintenance for Montezuma Channel MMP Map 66



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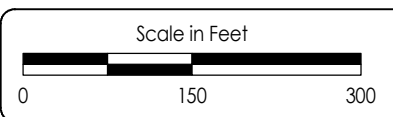


Legend

-  Photo Locations
-  MMP Mapped Channel Area

Reaches

-  Reach 1
-  Reach 2
-  Reach 3



Date of Exhibit: 2/28/2017
 DigitalGlobe Aerial Image: 04.2013

IWQA Report - Figure 5 - Photo Locations Map
 MMP Map No. 66 - Montezuma Channel