

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

Introduction

The City of San Diego (City) Master Storm Water System Maintenance Program (Master Maintenance Program or MMP) is currently planning for implementation of channel maintenance activities in the Smuggler's Gulch (SG) and the Tijuana River Pilot (Pilot) Channels. This Individual Maintenance Plan (IMP) identifies the scope of work, maintenance methodology and procedures, equipment, and duration for maintenance activities planned in the two channels. The IMP also includes a list of Best Management Practices (BMPs), maintenance protocols and mitigation measures derived from applicable permits and regulations that will be implemented with the intent to avoid, minimize, and/or mitigate potential environmental effects to sensitive resources, such as water quality, biological and historical resources.

Scope of Work

The proposed maintenance of the SG and Pilot Channels includes the mechanized removal of sediment, vegetation and trash and debris from the channels using heavy equipment. In addition, pre-maintenance work in the eastern portion of the Pilot Channel includes the pumping of accumulated stagnant ponded water from winter and spring rains downstream in order to sufficiently dry out the channel and allow for mechanized excavation. If needed, the pumping of ponded water may be continued during the maintenance activities to transport ponded water to the western end of the Pilot Channel and sufficiently dry the work area.

The periodic maintenance of both channels is needed to restore the channels' flood conveyance capacity to their original design condition and to protect the Tijuana River National Estuarine Research Reserve from impacts due to downstream transport of accumulated sediment and trash and debris from the project area. The project incorporates removal of approximately 10,000–30,000 cubic yards of material, occupying a total of 4.31 acres. The SG Channel and Pilot Channel are depicted in the MMP Maps 138 and 139, and Maps 138a and 138c, respectively, and are shown on Sheet 1 of the Construction Plans.

Impact Area

The SG Channel and Pilot Channel are located in the Tijuana River Valley (Valley), within the jurisdiction of the City of San Diego (City) (Figure 1). The Tijuana River watershed covers an area of approximately 1,725 square miles, of which 73 percent is located in Mexico and 27 percent in the United States. The main Tijuana River flows in a northwesterly direction from the international border into the Valley and City

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

jurisdiction. Approximately 21.9 square miles of the watershed (~1% of the total watershed area) is within City jurisdiction.

The Tijuana River National Estuarine Research Reserve (TRNERR) and a portion of the City of Imperial Beach are generally west of the project area located adjacent to the Tijuana River's discharge to the Pacific Ocean. The Otay-Nestor community and the United States Naval Outlying Landing Field Imperial Beach are located north of the project area; and the community of San Ysidro is located to the east.

The Pilot Channel is included on MMP Maps 138a through 138c and the SG Channel is included on MMP Maps 138 and 139 (City of San Diego 2011a). The Pilot and SG Channels are generally located in the Valley roughly bordered by Hollister Street to the east and Monument Road to the south. The Tijuana River low flow channel splits into what are commonly referred to as the Tijuana River's Northern and Southern Channels approximately 800 feet east of Hollister Street. The Pilot Channel follows the Southern Channel.

The Valley, including the project area, is within the Federal Emergency Management Agency's (FEMA) Special Flood Hazard Areas Subject to Inundation by the 1-percent Annual Chance Flood (100-year floodplain). The project areas are zoned OF-1-1 (Open Space-Floodplain) and AR-1-1 (Agricultural/Residential); and are designated for Open Space and Agricultural land uses in the Tijuana River Valley Land Use Plan. In addition, the project area is within the boundaries of the County of San Diego's 2.7 square mile Tijuana River Valley Regional Park (Regional Park). The project area is also within the City's Multiple Species Conservation Program's Multi-Habitat Planning Area (MHPA).

The project consists of maintenance and dredging of the Pilot and SG channels to remove anthropogenic-derived sediment and trash that accumulates as a result of development and other practices in the upstream watershed. Recent maintenance efforts within the Pilot Channel and SG Channel include maintenance in fall 2009 through winter 2010, fall 2010, and fall 2013 through winter 2014. The removal of sediment and trash is conducted to maintain flow conveyance capacities and reduce the risk of flooding to public and private infrastructure in the Valley.

Pilot Channel

The Pilot Channel was originally excavated in 1993 within the Southern Channel. It has been irregularly maintained since that time as an earthen trapezoidal channel that is approximately 5 feet deep, with a 23-foot top width, and a 15-foot streambed width. According to the MMP, the Pilot Channel was constructed to divert wet-weather flows from 2- to 5-year storm events into the Southern Channel (City of San Diego 2011b). The

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

Pilot Channel stretches from 100 feet east to 5,300 feet west of Hollister Street for a total length of 5,400 feet and it flows roughly in an east-west direction.

Previous maintenance under the MMP has not included channel clearing in the project area east of the Hollister Street bridge due to the presence of stagnant ponded water. As the ponded water is removed, City maintenance staff will assess the amount of accumulated sediment, trash and debris present in the Pilot Channel east of the Hollister Street bridge within the project area. Based on the assessment, channel clearing to restore the approximate 5 feet deep, with a 23-foot top width, and a 15-foot streambed width of the Pilot Channel in this area may be conducted.

At the conclusion of maintenance activities, trail access from the area north of the Pilot Channel adjacent to the confluence of the Pilot Channel and Smuggler's Gulch channel to the area south of the Pilot Channel, west of Smuggler's Gulch will be repaired. The repair will include grading of an approximate 8 foot wide section within the 23-foot top width of the Pilot Channel using native soils to re-establish the trail connection using a maximum 3:1 slope with a 4:1 slope preferred.

Pre-maintenance pumping to dry the eastern portion of the Pilot Channel will likely occur in stages. The pumping process will begin with the placement of a suction hose within the Pilot Channel near Hollister Street Bridge, placing a pump adjacent to the channel, and the placing of temporary hoses along the channel bank to a discharge location, likely near the confluence of the Pilot Channel and SG Channel. The second stage would involve a similar set up of equipment placed further downstream to pump water from the confluence to the downstream (western) end of the Pilot Channel. Additional pumping may be required if rains occur during the project and result in ponded water pools within the work area.

SG Channel

The SG Channel is an existing historical agricultural channel with manufactured berms. The contributing sub-watershed area is approximately 6.7 square miles, primarily located south of the international border within Canon de los Mataderos. The SG Channel, as originally constructed, is an earthen channel approximately 20 feet wide and 15 feet deep. The SG Channel is tributary to the South Channel and flows in a northerly direction, from the international border past Monument Road until it conflues with the Pilot Channel. The portion of the SG Channel maintained by the City extends for a distance of approximately 3,040 feet.

Three equipment turnarounds (extending beyond the 23-foot wide Pilot Channel maintenance corridor an additional 25 feet in width for a length of approximately 30 feet

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

along the channel) are sited immediately adjacent to the Pilot Channel, and are required for maintenance activities. Two of the turnarounds are located west of the Pilot Channel confluence with the SG Channel and were constructed and utilized during the 2009 maintenance activities. The third turnaround is located east of this confluence and will be constructed as part of this project. All three turnarounds are necessary for equipment movements within the confined channel work area. It is expected that the turnarounds would remain at the same locations for future maintenance needs for the project.

Staging and Stockpiling Areas

Maintenance operations will remove a large volume of sediment and require the use of temporary stockpile sites to store and process excavated material prior to transport. Two temporary staging areas, Staging Areas B and D, will be used to store equipment and materials during maintenance operations, and will also be used as stockpile sites (refer to Figure 1).

Staging Area B is east of and adjacent to the SG Channel. There is a permanent earthen berm between this area and the SG Channel, protecting it from potential flooding. Permanent gated access to the staging area is from Monument Road. This staging area was initially used in 2001 and has been used during each maintenance event since that time, by both the City and County of San Diego. No excavation or grading would be necessary in this area other than minor trenching and clearing to install temporary silt fencing and BMPs.

Staging Area D is located east of the immediate channel area, adjacent to the South Bay International Wastewater Treatment Plant south of Monument Road (Figure 1). Staging Area D will be used in conjunction with Staging Area B for staging equipment and storing excavated materials. Excavated material will initially be stockpiled at Staging Area B, and then transferred to Staging Area D or to a legal disposal site. Manual and mechanical separation of excavated material to sort sediment, vegetation, trash, and tires will occur at Staging Area D. No excavation or grading would be necessary in this area other than minor trenching and clearing to install temporary silt fencing and BMPs.

This IMP identifies a suite of BMPs, maintenance protocols and mitigation measures that will be employed at the staging/stockpiling areas to avoid, minimize and/or mitigate potential impacts from the material stockpiles, such as erosion and off-site sediment transport.

Access Routes

For the SG Channel and Pilot Channel maintenance project, two public roadways would be used during maintenance activities, Monument Road and Hollister Street. Monument Road is south of the site, spanning between the two staging areas, and is used for hauling

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

excavated materials from Staging Area B to Staging Area D. Hollister Street is located east of the site and is traveled for transit between Staging Area B to the off-road access route (described below) in the Tijuana River Valley Regional Park (TRVRP). Throughout the project, there will be no construction-related road closures and both roads will remain open during construction activities.

Three out of four, access routes will be used during construction, and are shown on Sheet 1 of the construction plans. These access routes are located within existing trails and access areas that are established and identified in the Master Maintenance Program and previous permits. Route 1 and Route 2 may require some minimal maintenance (i.e., minor vegetation and/or sediment removal, as necessary) to allow access by construction vehicles and equipment.

Route 1 leads south from an unnamed road that runs in the east-west direction between Hollister Street and Saturn Boulevard. This route provides access to the confluence for personnel vehicles only; maintenance vehicles and equipment will not be permitted on this route.

Route 2 allows access into the SG Channel via an access ramp located on the east bank, immediately downstream (i.e., north) of the Disney Crossing. The access ramp was constructed in 2009, and is a maintained feature of the project that allows construction equipment access to the channels during maintenance. Route 2 also continues north along the eastern side of the SG Channel where the maintenance vehicles mobilize to remove excavated sediment from the northern portion of the channel.

The portion of SG Channel south of the Disney Crossing will be accessed from Route 3, an existing access route that runs along the eastern berm of the channel. Portions of the access route will be flagged off, due to environmentally sensitive areas.

Route 4 is parallel with Hollister Street to the east and allows access to the portion of the Pilot Channel east of the Hollister Street Bridge. The route is approximately 15 feet wide and is an existing dirt road, except for an approximately 45-foot-long section on the south bank of the Tijuana River Pilot Channel where existing wetlands vegetation would be impacted to allow access to the area. An erodible berm located east of Hollister Street Bridge and north of the Tijuana River Pilot Channel could also be used for small equipment and foot-traffic, if necessary. As a result of the IHHA, it was determined that there is not enough sediment deposition in the area for maintenance east of the Hollister Street Bridge to provide enough hydraulic benefit to outweigh the environmental impact to the local vegetation. Subsequently, Route 4 will not be used for this current maintenance period.

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

In addition, throughout implementation of the project the maintained channels (i.e., Smuggler's Gulch and Tijuana River Pilot Channel) would be used for construction access and for hauling excavated materials.

Pre-Maintenance Pumping, Maintenance Methods and Equipment

The maintenance methods and equipment that will be employed to perform the required maintenance at the SG Channel and the Pilot Channel are summarized below and described in detail in the attached construction plans (refer to Attachment 1a).

As stated above, pre-maintenance pumping to dry the eastern portion of the Pilot Channel will likely occur in stages. The pumping process will begin with the placement of a suction hose within the Pilot Channel near Hollister Street Bridge, placing a pump adjacent to the channel, and the placing of temporary hoses along the channel bank to a discharge location, likely near the confluence of the Pilot Channel and SG Channel. Critically silenced pumps will be used throughout the project. The second stage would involve a similar set up of equipment placed further downstream to pump water from the confluence to the downstream (western) end of the Pilot Channel. Additional pumping may be required if rains occur during the project and result in ponded water pools within the work area. If warranted, sound attenuation by placing the pumps within a 3-sided enclosure constructed on-site to block line of sight between the pump and any nearby critical occupied least Bell's vireo nests will be utilized. These measures are intended to comply fully with the U.S. Fish and Wildlife Service (USFWS) Biological Opinion (FWS-SDG-08B0600-10F001) required Conservation Measures (CM) related to noise generated for work to be conducted during the breeding season. USFWS CM-4 and CM-5 allow for project construction activities to occur during the breeding season, as long as noise levels at the edge of occupied least Bell's vireo nests is kept below 60 dBA Leq1-hr (A-weighted decibels over a 1-hour average). Additional necessary stages of pre-maintenance pumping work will involve a similar set up of equipment placed further downstream and shielded to reduce noise levels to any present least Bell's vireo nests to no more than 59 dBA at 100 feet.

Maintenance of the channels is anticipated to begin in the SG Channel, upstream (north) of the Disney Crossing, and continue north to the confluence with the Pilot Channel. Maintenance activities will then proceed to the eastern portion of the Pilot Channel. It is anticipated that once maintenance of the eastern segment of the Pilot Channel and the northern segment of the SG Channel are complete, maintenance will then proceed to the southern (south of Disney Crossing) segment of the SG Channel and the western segment (west of the confluence area) of the Pilot Channel. It should be noted that field conditions, equipment availability, and or biological resource mitigation measures may require the sequence of channel maintenance activities to be adjusted. Maintenance of the southern portion of the SG Channel will be performed in such a way as to avoid sensitive resources identified on the earthen berm between the channel and Staging Area

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

B (see Attachment 1a). The project would include excavation in the SG Channel within a 20-foot wide corridor, approximately 15-feet deep, for a total length of 3,040 linear feet. The Pilot Channel portion of the project would include sediment and vegetation removal within a 23-foot wide corridor centered on the channel (approximately 5-feet deep with a 15-foot wide channel bottom), for a total length of 5,300 linear feet. Equipment that will be utilized to perform maintenance activities includes bulldozers, excavators, loaders, rock trucks, bobcats, vactor, and water trucks.

Equipment will enter the SG Channel via the temporary access ramp located upstream of the Disney Crossing. The general maintenance procedure consists of earth-moving equipment within the facility (bulldozer) pushing the accumulated material with a bucket to a central site within the channel. Material will then be scooped up with an excavator (operating within the channel, or on the access routes along the channels), so that the excavated material can be deposited into a waiting rock truck. The loaded truck will then leave the facility and transport the material to the temporary stockpile area at Staging Area B. Excavated material stockpiled at Staging Area B will be transported to Staging Area D, as needed. Separation/sorting of excavated material will occur at Staging Area D. The relative locations of Staging Areas B and D are shown on Sheet 1 of the construction plans. Maintenance activities will generally be contained within smaller areas of the storm water facility itself, typically working in concert with several equipment crews operating at the same time in one location. Also incorporated within the SG Channel maintenance activities, is the cleaning of existing culverts under Monument Road (utilizing a vactor) and at the Disney Crossing (utilizing a bobcat and backhoe). In addition, the gabion rock mattress, located near the confluence of the SG and Pilot Channels, will be inspected and may require maintenance.

Best Management Practices, Maintenance Protocols and Mitigation Measures

A master list of the BMPs, maintenance protocols and mitigation measures (Master List) that will be implemented to avoid, minimize, and/or mitigate impacts to sensitive resources during and after maintenance is provided as Attachment 1b. Maintenance crews and technical personnel will implement the measures in the Master List as applicable to the specific maintenance activity being performed. Attachment 1b lists the source document/permit, BMP identifier, and description (i.e., specific permit or source document language) of the applicable BMP, maintenance protocol or mitigation measure. The master list is comprised of BMPs, maintenance protocols and mitigation measures derived from the following sources:

- Modified Master Maintenance Program (MMP)
- Coastal Development Permit, Special Conditions (CDP)
- Master Maintenance Program, Program Environmental Impact Report (PEIR)
- Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification (401)
- Army Corps of Engineers (ACOE) 404 Permit

Tijuana River Pilot Channel & Smuggler's Gulch Channel

Attachment 1 - Individual Maintenance Plan

- California Department of Fish and Game (CDFG) 1600 Streambed Alteration Agreement (1600)
- U.S. Fish and Wildlife Service (USFWS) Tijuana River Flood Control Biological Opinion (BO)
- USFWS and CDFW Protected Species Plan

Measures called out in the construction plans are noted in the Master List. Each plan note in the construction plans may refer to, or encompass more than one related BMP, maintenance protocol or mitigation measure.

Project Duration and Schedule

Maintenance (i.e., excavation) of the SG Channel and Pilot Channel, as described in the project Scope of Work, is anticipated to require 30-45 days for each channel to complete, resulting in total project duration of approximately 90 days. Field conditions, equipment availability and/or biological resource mitigation measures may impact the duration of maintenance activities. Pre-maintenance pumping is anticipated to require an additional approximately 30-45 days. Each channel will require a team of 15 or more workers to complete the maintenance activities within this timeframe. Maintenance excavation is anticipated to begin September 15 and anticipated to finish by March 15. Focused surveys to assess the presence of active vireo nests within a 500' buffer from where the pumps will be situated will be conducted between approximately July 15 and August 1, prior to the commencement of the pumping activity. Additional surveys will be completed weekly during the duration that project activities take place during the breeding season (estimated to be between August 1 and September 15). Pre-maintenance pumping is anticipated to begin as early as August 1 and finish by September 15. Additional bird/nesting surveys to detect potential raptor nests are required for work conducted between January 15 and March 15.

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Attachment 1 - Individual Maintenance Plan

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