THE CITY OF SAN DIEGO

MEMORANDUM

Date: March 3, 2016

To: Helene Deisher, Development Project Manager II, Development Services Department

From: Genene Lehotsky, Senior Planner, Transportation & Storm Water Department

Subject: Emergency Maintenance Technical Studies Memorandum for the Jamacha Channel (Emergency Permit PTS #464428; Job Order # 21003732)

This memorandum and attached documents are being submitted as supplements to the Jamacha emergency channel maintenance project after-the-fact Substantial Conformance Review (SCR) of the City of San Diego (City) Master Storm Water System Maintenance Program (MMP) Program Environmental Impact Report (PTS# 42891/SCH 2004101032) and the associated Amended Site Development Permit 1134892. The maintenance began on January 3, 2016 following notification of the required regulatory agencies and was completed on the same day.

The project involved emergency repair and protection activities at the Jamacha channel within the City. This channel (MMP Map 115; Figure 3) was maintained under emergency permit authorization and is also an identified channel under the City MMP. Therefore, mitigation measures and other requirements of the MMP were followed however, certain requirements in the MMP could not be directly adhered to in order to conduct the work as quickly as possible and reduce the existing threat from flooding to adjacent properties.

Assessments by City crews were conducted on December 11, 2015 and December 18, 2015 and determined that sediment build up had narrowed the channel in several locations resulting in reduced flow and the channel had experienced a 50% reduction in flow capacity from its as-built capacity. This reduction in the flows, as well as accumulation of exotic vegetation (primarily Arundo), had caused flows to back-up upstream exaggerating the imminent flood risk to adjacent residences, as there have been repeated incidents of residential flooding adjacent to the channel during prior rain events. In light of the condition of the earthen bottom drainage channel observed during the November 2015 assessment, and with the prediction of El Nino storms and expected heavy rains during the 2015-2016 storm season, the City determined that the residential properties adjacent to Jamacha Channel were under imminent

threat of severe damage from storm flows. Due to the emergency nature of the project, individual technical studies could not be conducted for the project including an Individual Maintenance Plan (IMP), Individual Hydrologic and Hydraulic Assessment (IHHA), Individual Water Quality Assessment (IWQA), Individual Historic Assessment (IHA), or Individual Noise Assessment (INA); however, a site-specific analysis for each is given below.

INDIVIDUAL MAINTENANCE PLAN

In lieu of an IMP, please find the following description of the maintenance that was performed along with associated Best Management Practices (BMPs). The maintenance, performed by City crews with assistance from the project biologist, conformed with the MMP while allowing the work to be conducted in an expeditious manner to address the immediate emergency.

Emergency maintenance included the removal of accumulated sediment and vegetation from a portion (approximately 277 LF) of the earthen bottom drainage channel. Crews originally planned to reestablish the north bank of the channel at an average of 2:1 slope consistent with the as-builts, however a decision was made in the field during maintenance to keep the existing slope, which was steeper, but still able to maintain channel function. On January 3, 2016 emergency maintenance crews began work and channel maintenance was fully completed on the same day.

A mini Excavator and Gradall were the primary tools used to maneuver and clear sediment and vegetation from the channel. The mini excavator accessed the channel from the access and staging area adjacent to 69th street as shown on MMP Map 115; Figure 3. The Gradall was staged outside of the channel. The mini Excavator transported sediment and vegetation to the Gradall, which then loaded the material into dump trucks. The material was either temporarily stockpiled (BMPs were used at stockpiling location) on-site within the access/staging area or taken directly to Miramar Landfill for disposal. No sandbag berms or pumping equipment were used during maintenance as the channel remained dry during the work. All work was monitored by a qualified biologist and equipment was removed from the site at the end of the project. Following the first 2-year storm following maintenance, the earthen channel will be inspected for any sloughing or erosion that could reduce channel function.

Temporary construction-related BMPs were implemented by trained personnel to prevent/minimize impacts during performance of emergency maintenance activities such as access/staging, vegetation and sediment removal, temporary stockpiling, and post-maintenance clean-up of the project area. Additional BMPs/mitigation measures related to protection of water quality are described in the Water Quality Assessment section below. No work occurred during the breeding or nesting season of any sensitive species.

INDIVIDUAL HYDROLOGIC AND HYDRAULIC ASSESSMENT

No quantitative hydrologic or hydraulic studies (e.g., modeling) were completed for this channel. Instead, the evidence of flooding as reported by adjacent private residences and observed by City crews was investigated and determined to be the result of sediment and vegetation that had accumulated within the Jamacha Channel. This information, in lieu of an IHHA, was presented to the U.S. Army Corps of Engineers (ACOE) and Regional Water Quality Control Board (RWQCB) to supplement the application for use of Regional General Permit (RGP) 63 to conduct emergency channel maintenance to remove the immediate threat to property. The ACOE, with RWQCB concurrence, granted authorization under RGP 63.

The City's assessment revealed that sediment and exotic vegetation (primarily *Arundo*) were constricting flows in the channel, resulting in significantly reduced channel capacity. Transportation & Storm Water (T&SW) Department engineers estimated that the channel was at 50% capacity, resulting in a severe reduction in flow rates. There had been repeated incidents of residential flooding adjacent to the channel during prior rain events. One section near the center of the maintenance area had been completely blocked by *Arundo* that had fallen in the channel, and flows passed through this section only by slowly filtering through the fallen vegetation. These conditions caused an imminent flooding threat to properties adjacent to the channel, and further increased the risk of flooding during what has been forecasted to be an above-average rainfall year caused by El Nino weather patterns.

Emergency maintenance included the removal of accumulated sediment and vegetation from a portion (approximately 277 LF) of the channel. As described previously, crews initially planned to also re-establish the north bank of the channel at an average slope of 2:1, consistent with the as-built plans. During maintenance however, a decision was made in the field to keep the configuration of the existing slope, which was steeper, but still able to maintain channel function while minimizing impacts. Removal of the vegetation and sediment restored the minimum necessary channel capacity to prevent residential properties adjacent to this channel from being under imminent threat of severe damage from storm flooding.

INDIVIDUAL WATER QUALITY ASSESSMENT

Due to the emergency nature of the maintenance activities, a comprehensive water quality assessment was not conducted prior to work. The MMP provides a quantitative framework for assessing maintenance-related water quality impacts by evaluating the potential pollutant removal capacity of a channel (in the pre-maintenance condition) with the potential benefits or impacts resulting from channel maintenance (i.e., removal of sediment and vegetation). This quantitative framework however was subject to legal challenge, and can no longer be utilized as the basis to evaluate maintenance impacts. Since a full pre-maintenance water quality assessment could not be performed, and since the prior quantitative MMP framework can no longer be relied upon, a qualitative assessment of potential water quality impacts resulting from emergency maintenance activities in the Jamacha Channel is presented here based on an evaluation of pre- and post-maintenance vegetation surveys, and BMPs implemented during maintenance.

The Jamacha Channel is tributary to Chollas Creek and is part of the Pueblo Watershed within the San Diego Bay Watershed Management Area. A lawsuit was filed regarding the MMP (San Diegans for Open Government et al v. City of San Diego, San Diego Superior Court Case No. 37-2011-00101571), and the City entered into a settlement agreement (Settlement Agreement), which requires the City to implement one of four water quality improvement options for each channel maintained. Water quality mitigation for emergency maintenance-related impacts may be achieved through a combination of mitigation for wetland impacts and implementation of watershed-based water quality improvement strategies identified in the Settlement Agreement.

Evaluation of the existing wetlands and water quality services (prior to emergency maintenance) in the maintenance area was made on November 11, 2015 by Dudek biologist Scott Gressard. There were 0.005 acres of disturbed wetland vegetation, 0.05 acre of disturbed wetland (*Arundo*-dominated) vegetation, and 0.04 acre of natural flood channel affected as part of emergency maintenance activities. Total impacts to jurisdictional areas are 0.095 acres of wetland and non-wetland waters of the U.S.

The removal of vegetation and sediment as a result of maintenance may decrease the capacity of a channel to uptake pollutants. The capacity of the Jamacha Channel to uptake pollutants in the pre-maintenance condition is unknown; earthen-bottom facilities would be expected to have some potential pollutant removal capability due to the presence of vegetation and natural substrate, however the potential of the small amount of disturbed wetland and *Arundo*-dominated vegetation to uptake pollutants would be expected to limited, as compared to that of freshwater marsh vegetation. The capacity of the plant and sediment community to adsorb and retain pollutants is also a function of retention time. Pollutant uptake occurs when flows and velocities are low enough to allow for sufficient retention time. As velocities increase during storm events, retention times decrease and the capacity of the system to adsorb and retain pollutants may be significantly reduced. Vegetation can also act as a pollutant source when plants die off or are dislodged during high flow conditions and transported downstream along with the retained pollutants.

The MMP's Programmatic Environmental Impact Report (PEIR) identifies wetland mitigation implementation that is designed to offset not only biological impacts but also potential water quality and other impacts associated with wetland habitat values, functions and services. Mitigation for wetland impacts will be implemented in the form of wetland creation/establishment and wetland enhancement within the same watershed as the impacts but, in some cases, offsite. The mitigation ratios applied to the MMP include accounting for habitat, water quality, and other impacts. In general, these processes work to improve water quality by cycling of nutrients; removal of elements or compounds; retention of particulates; export of organic carbon; and/or maintenance of plant and animal communities (USACOE South Pacific Division, Standard Operations Procedure for Determination of Mitigation Ratios, 2012). The City is required by the RWQCB to perform at least 0.02 acre of compensatory mitigation for permanent impacts which resulted in a loss of functions in the ratio amount of 2:1 (area mitigated:area impacted) in wetland enhancement for the removal of disturbed wetland vegetation. For emergency maintenance conducted in the Jamacha Channel, and consistent with the MMP's PEIR, it is expected that mitigation for wetland impacts would result in water quality benefits and therefore offset water quality impacts.

The assessment of potential water quality impacts resulting from emergency maintenance activities in the Jamacha Channel may also be performed by evaluating the effectiveness of the BMPs implemented during maintenance. In addition to the specific construction-related BMPs discussed in the maintenance description section, the following BMPs were implemented during and following work in order to minimize impacts to water quality to the maximum extent practicable; there were no discharges or releases of sediment in the channel due to emergency maintenance activities.

1. Appropriate materials were kept on site to contain potential spills. No spills occurred.
2. Fueling, vehicle maintenance, storage, etc. were located outside of waters of the state and did not result in any discharges.
3. No spills occurred and therefore no notification to the RWQCB was required.
4. All construction materials and debris were removed following completion of the emergency action. The City performed street sweeping in the area after emergency maintenance work was complete.
5. All necessary BMPs to control erosion and runoff from staging and access areas were employed. No temporary impacts occurred and therefore no restoration is required.
6. No revegetation was required.

Additional water quality mitigation will be achieved through implementation of one of the four options under the Settlement Agreement in the Watershed Management Area, for each channel maintained. The options include: 1) landscape retrofits to reduce runoff in residential areas, 2) additional/modified street sweeping, 3) implementation of LID features, and 4) increased frequency of catch basin inspection and cleaning. Several of these options are based on the linear feet of vegetation removed as part of the project (not including areas of invasive species, such as Arundo-dominated areas); the project removed approximately 58 linear feet of vegetation (not including invasive species areas).

For each 100 linear feet of vegetation removed, the City may implement landscape retrofits at one residential property within the WMA, such as rainwater harvesting, replacement of grass turf, and irrigation equipment upgrades.

For every 400 linear feet of vegetation removed, the modified street sweeping option targets additional pollutant load removal through vacuum-assisted sweeping of medians and increased sweeping frequency. Under this option, sweeping within the drainage area where maintenance was performed would be increased to quarterly on commercial routes and median sweeping would target areas not regularly swept for one calendar year after maintenance.

For every 200 linear feet of vegetation removed, 100 square feet of LID features such as vegetated swales, biofiltration systems, permeable pavement, or restored wetlands may be constructed and maintained.

Under the fourth option, the City would increase the frequency of catch basin inspection and cleaning, if necessary, of every catch basin within 100 feet of the maintained segment every 3 months for a year after maintenance is performed.

Implementation of the specific water quality improvement strategy selected from the Settlement Agreement options will be finalized to satisfy the terms of the legal agreement and potentially improve water quality conditions entering the maintained channel area. Over time, these activities may also lead to reduced maintenance needs in downstream channel areas as sediment sources and other pollutants are reduced and/or eliminated in the upstream watershed.

INDIVIDUAL HISTORICAL ASSESSMENT

A records search was conducted at the South Coastal Information Center for the Jamacha Creek and a ¼-mile radius around the channel. The records search identified 21 studies which have been performed within ½ mile of the Jamacha Creek Map 130 channel, three of which addresses the channel. Two of the records include the Initial Study (Affinis 2008) and EIR for Storm Water System Maintenance Program. The third is a pedestrian survey with crossed a portion of the project and traversed the valley in which the channel sits. No cultural resources have been identified within ½ mile of the channel. Records search results are included separately as Attachment G.

This channel was rated as low sensitivity for cultural resources by Affinis in 2008. The MMP PEIR states that only channels with moderate to high sensitivity for historical (cultural) resources require preparation of an IHA. As this channel was rated as low sensitivity, and the recently completed records search did not identify any cultural resources within ¼ mile, no additional cultural resources work was performed. The Jamacha Channel is previously excavated earthen ditch. No ground disturbing activities occurred in previously undisturbed sediments; therefore there no monitoring was necessary as there was no potential to impact historical resources.

INDIVIDUAL NOISE ASSESSMENT

Consistent with the requirements of the MMP PEIR, a noise assessment was not performed for the Jamacha Channel. The PEIR identifies sensitive avian species as the only sensitive noise receptors for channel maintenance activities. The emergency maintenance work was conducted outside of the breeding season of any sensitive avian species; therefore impacts from noise were not expected and no technical studies for noise impacts from maintenance were conducted.

Attachments:

A –General Application Form (Form DS-3032) & Supplemental Discretionary Project Application (Form DS-3035)
B – Public Notice Figure & Parcel List
C – Storm Water Applicability Checklist (Form DS-560)
D – Substantial Conformance Review Checklist
E – Individual Biological Assessment (Dudek, February 16, 2016)
F – Regulatory Permits
G – Records Search Results

cc:

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