THE CITY OF SAN DIEGO

MEMORANDUM

Date: March 1, 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 Cottonwood Channel (Emergency Permit PTS #462965; Job Order # 21003732)

This memorandum and attached documents are being submitted as supplements to the Cottonwood 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 December 26, 2015 following notification of the required regulatory agencies. Channel maintenance work was completed on January 2, 2016.

The project involved emergency repair and protection activities at the Cottonwood channel within the City. This channel (MMP Maps 120 & 121; Figures 3a & 3b) 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 during the first week of November 2015 and determined that overall vegetation build up combined with the large size of exotic vegetation within the channel and the high likelihood of this vegetation being dislodged from the concrete-lined channel bottom during predicted heavy flows, posed a high risk of clogging downstream sections causing severe flooding. The entire length of the Cottonwood channel abuts City roads and private residences; some of which have experienced and reported flooding during past rain events. In light of the condition of the concrete-lined 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 properties adjacent to the Cottonwood Channel were under imminent threat of severe damage from storm flows. Due

to the emergency nature of the project, individual technical studies were not 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 project was designed by City crews and the project biologist to conform 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 all existing vegetation and sediment within a portion of the trapezoidal concrete-lined channel extending approximately 2,216 feet with a bottom width of approximately 11 feet. On December 26, 2015, emergency maintenance crews began the removal work and the channel was fully cleared and cleaned on January 2, 2016.

A Skid-steer/Bobcat was the primary tool used to clear sediment and vegetation within the channel. This equipment was placed into the channel by the Gradall at the access/staging areas along: Nordica Ave., Cottonwood Street, and Osborn Street as shown on MMP Maps 120 and 121, Figures 3a and 3b. The Skid-steer/Bobcat then pushed material to an area within the channel where the Gradall, which was staged outside of the channel, was able to remove and load the material into dump trucks. Debris was then taken to an authorized landfill (Miramar) for disposal. All work was monitored by a qualified biologist and equipment was removed from the site at the end of the project.

During maintenance, downstream of 43rd Street, a sandbag berm and a bypass pump were used just east of the culvert at 42nd Street to bypass and prevent water and excess sediment from traveling downstream. No maintenance occurred in the channel west of Osborn St. because that section is relatively clear of material and does not pose an imminent threat to adjacent properties.

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, vegetation, and debris that had accumulated within the Cottonwood channel. Storm Water engineers had estimated that the channel was at a 2-year capacity prior to maintenance; however following maintenance the channel was restored to as-built conditions (i.e., 25 to 50-year capacity). 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 majority of the channel required clearing because it was determined that removing only the downstream portion of vegetation and sediment would have caused instability to the overall vegetative structure in the channel and encouraged sloughing. Sloughing of channel vegetation would have further increased the risk of flooding during what has been forecasted to be an above-average rainfall year caused by El Nino weather patterns.

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 Cottonwood Channel is presented here based on an evaluation of pre- and post-maintenance vegetation surveys, and BMPs implemented during maintenance.

The Cottonwood 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 0.06 acre of Riparian Scrub (disturbed southern willow scrub; concrete-lined), 0.06 acre of disturbed freshwater marsh (concrete-lined), and 0.03 acre of disturbed wetlands (palm-dominated; concrete-lined) vegetation removed as part of emergency maintenance activities.

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 Cottonwood Channel to uptake pollutants in the pre-maintenance condition is unknown; concrete-lined facilities would be expected to have more limited pollutant removal capability due to the impermeable substrate, and although a small amount was present, disturbed freshwater marsh vegetation

may provide some potential for pollutant uptake. 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 0.24 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 southern willow scrub and disturbed fresh water marsh vegetation. For emergency maintenance conducted in the Cottonwood 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 Cottonwood 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. The water diversion activities did not result in degradation of beneficial uses. Placement of temporary dams caused little or no siltation. Normal flows were restored to the stream upon completion of work.

6. 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.

7. The entire length of the channel is concrete-lined and 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 palm-dominated areas); the project removed approximately 195 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.

HISTORICAL ASSESSMENT

The entire length of the emergency maintenance section of the Cottonwood Channel is concrete-lined; therefore the potential for historical resources was very low and no technical historical records search or monitoring was conducted prior to or after the work. This is consistent with the requirements of the MMP PEIR, which does not require historical assessments for concrete-lined channels.

NOISE ASSESSMENT

Consistent with the requirements of the MMP PEIR, a noise assessment was not performed for the Cottonwood 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 10, 2016)
F – Regulatory Permits

cc:

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