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MEMORANDUM

To:	Helene Deisher – City of San Diego Development Services Department
From:	Vipul Joshi – Dudek
Subject:	Emergency Channel Maintenance Technical Studies Memorandum for the Parkside Channel (Emergency Permit PTS #462761; Job Order # 21003732)
Date:	February 22, 2016
Cc:	Christine Rothman, Gene Matter, Genene Lehotsky – City of San Diego Transportation and Storm Water Department.

This memorandum is being submitted as a supplement to the After-the-Fact Substantial Conformance Review (SCR) of the City of San Diego (City) Master Storm Water System Maintenance Program (MMP). The project involves emergency repair and protection activities at the Parkside Channel within the City. This channel (MMP Map 122; Figure 3) was maintained under emergency permit authorization and is also an identified channel under the City's MMP. Therefore, mitigation measures and reporting requirements within the MMP were followed as closely as was practical during the emergency maintenance.

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 north and western sides of the Parkside Channel abuts City roads and private residences. City Storm Water engineers had estimated that the channel was at a 2-year capacity prior to maintenance, whereas the as-built condition is a 100-year capacity. 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 wet season, the City determined that the properties and City infrastructure adjacent to the Parkside 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 trapezoidal concrete-lined channel that extends approximately 1,201 feet with a bottom width of 12 feet and a top width of 35 feet. On December 23, 2015, emergency maintenance crews began the removal work and the channel was fully cleared and cleaned on December 26, 2015.

During maintenance, a skid steer, bobcat, and loader were the primary tools used to push material within the channel to the Gradall, which was staged outside the channel on Parkside Ave., to be removed. Once removed, the material was loaded into dump trucks and taken to the Miramar Landfill for disposal. This equipment accessed the channel from 6512 Parkside Ave. No sandbag berms or pumping equipment were used during maintenance as the channel remained dry during all work. All work was monitored by a qualified biologist and equipment was removed from the site at the end of the project.

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

HYDROLOGIC AND HYDRAULIC ASSESSMENT

No quantitative hydrologic or hydraulic studies (e.g., modeling) were completed for this channel. Instead, the likelihood of flooding as observed by City crews and Engineers was investigated and determined to be the result of sediment and vegetation that had accumulated within the Parkside Channel. City Engineers estimated that the channel, prior to maintenance was at a 2-year capacity, whereas, the as-built capacity is a 100-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 entire reach 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 would have 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 Parkside Channel is presented here based on an evaluation of pre- and post-maintenance vegetation surveys, and BMPs implemented during maintenance.

The Parkside Channel is tributary to the Sweetwater River and part of 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 management area water quality improvement strategies identified in the Water Quality Improvement Plan (WQIP) for the San Diego Bay WMA. City projects identified in the Settlement Agreement that provide the opportunity for mitigation specific to the watershed's priority water quality issues.

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 0.02 acre of freshwater marsh, 0.03 acre of disturbed freshwater marsh, and 0.11 acre of disturbed wetlands (palm-dominated) 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 Parkside 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, freshwater marsh and disturbed wetland 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 0.10 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 freshwater marsh and disturbed fresh water marsh vegetation. For emergency maintenance conducted in the Parkside 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 Parkside 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. 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.

4. The work area was dry during maintenance, thus water diversions were not necessary and no potential degradation of beneficial uses through siltation or turbidity occurred.

5. 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 250 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, LID features such as vegetated swales, biofiltration systems, permeable pavement, or restored wetlands may be constructed and maintained. The restored wetlands option requires 200 square feet of wetlands restoration (0.005 acre).

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 Parkside 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 Parkside 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.