THE CITY OF SAN DIEGO

M E M O R A N D U M

DATE: August 10, 2016

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

FROM: Catherine Rom, Senior Planner, Transportation & Storm Water Department

SUBJECT: Soledad (Sorrento) Creek MMP Maps 11 & 12 (Reaches 2 & 3) Emergency Maintenance Substantial Conformance Review Submittal

REFERENCE: Emergency Permit PTS #483881 Permit # 1695138; Job Order # 21003732

This memorandum is being submitted as a supplement to the Substantial Conformance Review (SCR) of the City of San Diego (City) Master Storm Water System Maintenance Program (MMP) Program Environmental Impact Report (SCH 2004101032) and the associated Amended Master Coastal Development Permit (CDP) No. A-6-NOC-11-086. The project involved emergency sediment and vegetation removal at the confluence of Reaches 2 & 3 in MMP Map 11 (Attachment 5 – Individual Biological Assessment, Figure 3a; Area 1) as well as repair of a degraded section of the concrete channel lining in the southeastern end of the concrete-lined Reach 3 channel (Attachment 5 – Individual Biological Assessment, Figure 3a; Area 2) and installment of a temporary earthen diversion berm in the earthen channel upstream of Reach 3 (Attachment 5 – Individual Biological Assessment, Figure 3a; Area 3) within the City.

The impacts from channel maintenance and concrete repair that occurred within Reach 3 (concrete-lined portion of Area 1 and all of Area 2) were within the same geographic footprint as routine maintenance that had previously occurred, which was authorized by a previous SCR submittal approved by California Coastal Commission (CCC) staff in December 2013 and by Developmental Services Department (DSD) staff in February 2014. The impacts that occurred in the earthen Reach 2 portion of Area 1 were within the same geographic footprint as maintenance that was previously authorized through an emergency permit in 2011 and previous Mitigated Negative Declaration (MND) (LDR No. 96-7762; SCH No. 200004113). Mitigation for impacts within Reach 2 were completed in 2006 and mitigation

for Reach 3 routine maintenance has already been initiated. Therefore, impacts that occurred to these sections during the 2016 emergency maintenance and concrete repair in Areas 1 and Area 2 will not require additional mitigation. The impacts that occurred in Area 3, upstream of the concrete-lined Reach 3 channel as part of the installation of the temporary earthen diversion berm, are outside of any previously authorized maintenance area and will require mitigation as described in Attachment 5, Individual Biological Assessment (IBA).

An assessment of Area 1 by City staff was conducted on February 5, 2016. This assessment noted significant sediment and vegetation build up within the proposed emergency maintenance area, particularly within Reach 2 & Reach 3 transition area where the Reach 3 concrete-lined channel meets the Reach 2 earthen bottom channel (Attachment 5 - IBA, Figure 3). There was severe flooding of these channel sections, the surrounding businesses, and City infrastructure during heavy storms on January 7, 2016. This flooding overran several cars in the area and flooded Roselle St. up to 4 feet in height (property owner video evidence). In an analysis conducted by ESA of the projected flooding risk before and after this proposed emergency maintenance, it was concluded that the removal of this sediment and vegetation (Figure 3) would minimize the risk of overtopping and flooding of the channel, whereas the current conditions and channel capacity would likely result in additional flooding of adjacent properties during future forecasted storm events. With the prediction of continued El Nino patterns and heavy winter storms, the City determined that the commercial properties and City infrastructure adjacent to this channel were under imminent threat of further damage from storm flows, given the current condition of the channel.

Land cover and vegetation removed during maintenance in Reach 2 included 0.08 acre of disturbed freshwater marsh (earthen bottom), 0.02 acre of open water (earthen bottom), and 0.06 acre of riparian scrub (southern willow scrub). Total impacts to jurisdictional areas in the Reach 2 channel were 0.16 acre (213 linear feet) of wetland and non-wetland waters of the U.S.

Land cover and vegetation removed during maintenance in Reach 3 included 0.14 acre of developed concrete-lined channel, 0.28 acre of freshwater marsh (concrete-lined). Total impacts to jurisdictional areas in the Reach 3 channel were 0.42 acre (311 linear feet) of wetland and non-wetland waters of the U.S.

An assessment of Areas 2 and 3 was conducted on March 8, 2016. This assessment determined the concrete-lining in Area 2 had been compromised by past storm events and was causing a severe reduction of channel capacity. This reduction in capacity was increasing after each storm event through the erosion of sediment beneath the channel that had been exposed and by further degradation of the channel. This compromise of the concrete-lining, combined with flooding events that occurred downstream in January 2016 and the El Nino pattern present during the 2015-2016 storm season, resulted in a high risk of flooding of adjacent businesses and property. During the initiation of construction activities, it became necessary to clear vegetation upstream of the new cut off wall location within Area 3 in order

to install the temporary earthen diversion berm and allow enough space for crew members to access and replace the existing cut off wall.

Land covers and vegetation impacted within Areas 2 and 3 during concrete repair activities and earthen diversion berm installment included 0.006 acre of natural flood channel, 0.003 acre of disturbed wetland (Arundo-dominated), 0.57 ac of developed concrete-lined channel, and 0.03 acre of riparian scrub (southern willow scrub). Total impacts to jurisdictional areas are 0.609 acre (424 linear feet) of wetland and non-wetland waters of the U.S.

Due to the emergency nature of this project, many individual technical studies could not be performed, 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. An Individual Biological Assessment is provided as an attachment.

Individual Maintenance Plan

Emergency maintenance and concrete repair consisted of components within three Areas in Reach 2 and within and upstream of Reach 3 (described above). Due to the urgent nature of the required maintenance and concrete repair, this memorandum is intended to serve as a modified IMP, and provides a detailed description of the maintenance methods, maps and figures showing work areas, and a list of the construction-related Best Management Practices (BMPs) and mitigation measures (MMs) (see SCR Checklist). The project was designed by City staff and the project biologist to conform with the MMP, while allowing the work to be conducted in an expeditious manner to address the immediate concerns regarding safety and prevention of further damage to the channel. It should be noted that the work that occurred in the Reach 3 concrete-lined channel is within the area already approved for channel maintenance (i.e., vegetation and sediment removal) under the CDP, for which there is a valid SCR approved by CCC staff in December 2013.

In Area 1, crews removed approximately 535 linear feet of sediment and vegetation from the transitional section of MMP Map 11 where the concrete-lined Reach 3 channel transitions to the earthen-bottom Reach 2 channel (IBA – Figure 3a). The earthen transition channel section in Reach 2 has an average bottom width of approximately 49 feet and the concrete-lined Reach 3 section has an average bottom width of approximately 63 feet. This work was necessary in order to alleviate the constriction of channel capacity in this Area and prevent additional flooding to surrounding properties and infrastructure. As part of this work, a diversion berm was installed at the downstream extent of the maintenance within Reach 2 (IBA - Figure 3a) to prevent sediment and incidental flow from the project site from travelling downstream. An earthen berm was also built from existing sediment within the channel at the upstream end of the work area in order to prevent downstream flows from

entering the work area. Flows were diverted around the work area from above the upstream earthen berm using a highline pump system and filter bag.

In Area 2, crews replaced approximately 397 linear feet of concrete within the channel at the southeastern end of the Reach 3 (MMP Map 12; IBA - Figure 3b). As part of this work, an additional 27 linear feet of earthen channel and vegetation was impacted (Area 3) upstream of the Reach 3 channel, as described above. This work was necessary in order to restore the integrity of the concrete lining ahead of expected heavy storms. It was crucial that the concrete be repaired within the shortest possible timeframe, to avoid further damage and undermining of additional lined areas, to protect adjacent infrastructure and property from potential damage and flooding related to the loss of the channel's structural integrity, and to prevent broken concrete debris within the channel from coming loose and damaging downstream facilities and infrastructure during future storm events. As part of this repair work, steel plates and a temporary access ramp were installed from the southeastern Access/Staging area to the bottom of the channel to allow concrete repair equipment to enter the Reach 3 channel. The primary equipment used for this work were concrete saw, Backhoe, Bulldozer, Bobcat/Tracksteer, Excavator, concrete laser screed, Concrete Conveyor truck, and dump trucks. The existing reinforced concrete floor panels were removed, appropriate soil substrate was approved and installed, and new concrete forms were set and a wire mesh welded together in the previously existing panel locations. New concrete panels were then installed. Also, concrete slurry was used to backfill voids behind the existing concrete slope walls, which were created by erosion from runoff from the adjacent parking lot. All equipment and debris, including the temporary sediment access ramp, was removed from the channel following this work. In addition, a temporary upstream diversion berm was installed 27 feet upstream of the cut-off wall in Area 3 and was utilized, along with pumps, to bypass water around the work area and create dry working conditions. Gravel bags were installed at the downstream end of the maintenance area and a filtration bag was also installed at the downstream end of the pump diversion system in order to prevent potential sediment/materials transport to areas downstream.

Temporary construction-related BMPs and appropriate mitigation measures were implemented and maintained by trained personnel throughout the emergency maintenance and concrete repair activities. Due to the urgent nature of the repair work, a formal Water Pollution Control Plan was not developed, however the City and its Contractors were committed to implementing appropriate BMPs and mitigation measures to prevent/minimize impacts during repair activities such as access/staging, concrete removal and replacement, and post-maintenance clean-up and restoration of the project area. In general, the BMPs are derived from the WPCP developed as part of the 2013 SCR submittal.

Sediment, vegetation, and debris from each of the Areas was taken to the Miramar Landfill for disposal. Any work with potential to expose or disturb cultural resources was monitored by a qualified archaeologist and native American monitor. All maintenance and concrete-repair work was monitored by a qualified biologist and equipment was removed from the site

at the end of the project. Adjacent access/staging areas were located in existing developed or disturbed areas. Adequate BMPs (i.e. steel plates, fiber rolls, etc…) were placed in those areas in order to prevent sedimentation and erosion.

Hydrologic and Hydraulic Assessment

Hydrologic and hydraulic analyses (e.g., modeling) were completed for Areas 1 and 2. A quantitative hydrologic and hydraulic study was completed for Reach 3 as part of the November 2013 SCR submittal [Appendix A - Individual Hydrologic & Hydraulic Assessment Report, Sorrento Creek-Flintkote-Soledad-Los Penasquitos Channel (Reach 3 and 7), June 14, 2013 (2013 IHHA)]. Also, a hydraulic scenario analysis for Reach 3, incorporating the Reach 2/Reach 3 transition area, was performed in March 2016 (ESA unpublished data).

Table 1 summarizes the storm flows used in the hydraulic analyses of the channels in the 2013 IHHA. The table presents the peak flow rates and return frequencies for Sorrento Creek Reach 3.

Table 1. Sorrento Creek Reach 3 Hydrologic Data Summary

River Station	Storm Event						Calculated Design Capacity
	2-year	5-year	10-year	25-year	50-year	100-year	15-year to 20-year[2]
8438.74[1]	220	730	1,500	3,100	4,500	6,700	1,900

[1] Peak storm flows conveyed by Reach 2 and Reach 3, in cubic feet per second (cfs)
2This flow corresponds to approximately the 15- to 20-yr storm event.

The hydraulic analysis performed for the 2013 IHHA indicated that Reach 3 will convey the 15- to 20-year storm event in the maintained condition.

In addition to hydrologic and hydraulic analyses, field investigations were conducted by City staff to observe and evaluate hydrologic and hydraulic conditions in the channel areas. Observations by City staff indicated an imminent flood risk to properties located adjacent to the channel areas. Preliminary modeling results from ESA and observed conditions, combined with the heavy storm flows anticipated for the 2015-2016 El Niño winter, led the City to conclude that there was an imminent threat to public health and safety that constituted an emergency situation requiring immediate action. This information 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. Specific hydrologic

and hydraulic information and observations related to the different project areas is provided below.

Area 1

In January 2016, City crews were called out to clean up sediment and debris that had overflowed from the channel onto Roselle Street during heavy storms on January 7, 2016. There had been severe flooding of the channel sections, surrounding businesses, and City infrastructure; video evidence from an adjacent property owner showed that flooding overran several cars in the area and flooded Roselle Street up to 4 feet in height. Observations conducted by City staff on February 5, 2016 noted significant accumulation of sediment and vegetation within the Reach 2 & Reach 3 transition (Area 1), where the Reach 3 concrete-lined channel meets the Reach 2 earthen-bottom channel, which appeared to be causing a reduction in channel capacity. Reach 2 in the earthen transition section has an average bottom width of approximately 49 feet. Reach 3 is concrete-lined and has an average bottom width of approximately 63 feet.

A hydraulic scenario analysis was performed by ESA to compare the projected flood risk in the existing and maintained (sediment and vegetation removed)condition in the proposed maintenance area, utilizing design capacity flows derived from the 2013 IHHA (see Table 1). The results of the analysis indicated that removal of accumulated sediment and vegetation (Figure 3a) would minimize the risk of overtopping and flooding of the channel, whereas the current condition and decreased channel capacity would likely cause additional flooding of adjacent properties during future storm events. In light of the prediction of continued El Niño pattern and heavy winter storms, the City determined that commercial properties and City infrastructure adjacent to the channel were under imminent threat of further damage from storm flows, given the current condition of the channel. Therefore, it was determined that removal of all existing vegetation and sediment in the channel was required to restore the minimum channel capacity necessary to reduce flood risk to the adjacent properties. This emergency activity met the criteria set forth in CEQA Section 21080(b)(4) and Section 15269 of the CEQA Guidelines which allows for actions necessary to prevent or mitigate an emergency.

Area 2

Table 1 above summarizes the storm flows used in the hydraulic analyses of the channels in the 2013 IHHA.

The hydraulic analysis performed for the 2013 IHHA indicated that Reach 3 will convey the 15- to 20-year storm event in the maintained condition. Erosive conditions are present in a channel when the shear stress is above the critical shear stress of the bank and bed materials. An increase in velocity of water corresponds to an increase in shear stress. The flow that corresponds to the critical shear is known as the critical flow; for a given cross-section, flows that are below the value for critical flow do not initiate bed movement (i.e., erosion), while flows above this value do. A site-specific determination of the critical flow for Reach 3 was not performed, however channel observations made by City staff indicated that sediment/bed material below cracked and dislodged concrete may have been exposed to potentially erosive flows. Cracking in the concrete led to unstable conditions which allowed

lower flows to potentially further erode and undermine the concrete because the sediment below the concrete was partially exposed.

Observations made by City staff during inspections related to emergency maintenance for Area 1 (Reaches 2 and 3), indicated that immediate action was necessary to address concerns regarding prevention of further damage to the channel, and protection of downstream resources. Concrete fragments had become dislodged, and had contributed to flow constriction in the channel and flooding of adjacent downstream roadways and properties during past rain events. Assessments by City crews conducted on March 8, 2016 determined that the channel's concrete-lining had been severely compromised and was causing a severe reduction of channel capacity, that increased after each subsequent storm event due to ongoing degradation of the channel. It was critical that concrete repairs be performed in the upstream section of Reach 3 within the shortest possible timeframe to minimize the potential for undermining of additional concrete sections. Undermining of additional sections may have led to potential increased risk of erosion in the channel and related sedimentation as a result of heavy storms anticipated for the remaining El Niño season. The potential risk of increased sedimentation was also of concern in the Los Peñasquitos watershed, due to the Total Maximum Daily Load (TMDL) for sediment in the Los Peñasquitos Lagoon, to which the channel is tributary. The TMDL focuses on reducing watershed sediment loads to restore estuarine habitat and provides for long-term protection of the Lagoon's beneficial uses. The TMDL has identified exposed sediment and scouring of stream banks as sources of sediment contributing to excessive sedimentation in the Lagoon.

Further support for the need for expedited concrete repair in Area 2 was provided by a comparison of photographic evidence of channel conditions before and after the early January 2016 storm events. Photos taken before and after these events indicated that heavy storms had caused channel sections to become undermined to the point of breaking and dislodging. Therefore, it was proposed that approximately 300 linear feet of concrete repair work within the channel at the southeastern end of Reach 3 be performed in order to restore the integrity of the concrete lining ahead of still-anticipated heavy storms.

Area 3

Hydrologic and hydraulic analyses were performed for Areas 1 and 2; no specific analyses were performed for the area upstream of Reach 3 (Area 3). Construction of the upstream earthen diversion berm in Area 3 was performed to facilitate the concrete repairs downstream in Area 2.

Water Quality Assessment

Due to the emergency nature of the maintenance activities in Areas 1, 2 and 3, a comprehensive water quality assessment was not conducted prior to work. An Individual Water Quality Assessment [Individual Water Quality Assessment Report, Sorrento Creek-Flintkote-Soledad-Los Penasquitos Channel (Reach 3 and 7), October 15, 2013 (2013 IWQA)] was submitted as part of the November 2013 SCR. The 2013 IWQA was prepared to analyze the effects of sediment and vegetation removal from Reach 3. This analysis was deemed to be still currently valid as it relates to water quality conditions for Area 2 and a portion of Area 1 (i.e., Reach 3), where the concrete-lined channel does not support vegetation or soils.

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 while it provides information regarding water quality impacts/benefits of maintenance, it 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 Areas 1, 2 and 3 of Sorrento Creek Channel is presented here, based on an evaluation of pre- and post-maintenance vegetation surveys, and BMPs implemented during maintenance. As discussed previously in the maintenance description, appropriate BMPs were implemented and maintained by the City and its contractors in all Areas, to prevent/minimize impacts during performance of maintenance activities such as access/staging, sediment and vegetation removal, concrete removal and replacement, and post-maintenance clean-up and restoration of the project area.

Sorrento Creek Channel is tributary to the Los Peñasquitos Lagoon, and is part of the Los Peñasquitos 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 MMP 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 for MMP channels (i.e., for Areas 1 and 2; Area 3 is not included in the MMP). Specific water quality-related information for the different project areas is provided below.

Area 1

Evaluation of the existing wetlands and water quality functions they provide (prior to maintenance) in emergency maintenance Area 1 was made by Dudek on February 5, 2016. In the Reach 2 portion of Area 1, there were 0.08 acre of disturbed freshwater marsh (earthen bottom), 0.02 acre of open water (earthen bottom), and 0.06 acre of riparian scrub (southern willow scrub) impacted as part of emergency maintenance activities. Total impacts to jurisdictional areas in the Reach 2 channel were 0.16 acre (213 linear feet) of wetland and non-wetland waters of the U.S. In the Reach 3 portion of Area 1, there were 0.14 acre of developed concrete-lined channel, and 0.28 acre of freshwater marsh (concrete-lined) impacted as part of emergency maintenance activities. Total impacts to jurisdictional areas in the Reach 3 channel were 0.42 acre (311 linear feet) of wetland and non-wetland waters of the U.S.

The capacity of the Sorrento Creek Channel in Area 1 to uptake pollutants in the pre-maintenance condition is unknown. Generally, earthen facilities such as the Reach 2 portion of Area 1 may be expected to have some potential pollutant removal capability due to the presence of vegetation and some natural substrate. The presence of disturbed freshwater marsh (earthen bottom) and riparian scrub (southern willow scrub) vegetation may provide some potential for pollutant uptake. Concrete-lined facilities, such as the Reach 3 portion of Area 1, would be expected to have more-limited pollutant removal capability due to the impermeable substrate. However, the presence of some fresh water marsh (concrete-lined) vegetation within this section (0.28 acre) 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. Reach 2 generally exhibits perennial flow/stading water during normal climactic conditions; Reach 3 generally supports a small amount of perennial urban flow, with storm events causing ephemeral increases in channel flows. 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 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 regulates wetland impacts and requires compensatory mitigation pursuant to the mitigation ratios specified in Site Development Permit (SDP) 1134892 for the MMP. The SDP incorporates mitigation language from the Coastal Development Permit (CDP) 714392. As discussed previously, maintenance performed within Area 1 was limited to sediment and vegetation removal within the Reach 2 and Reach 3 channels. This maintenance was previously authorized within both reaches, with associated mitigation requirements. The City issued permits for emergency maintenance in Reach 2 in 2011. The current impacts to 0.08 acre of disturbed freshwater marsh (earthen bottom), 0.06 acre of riparian scrub (southern willow scrub), and 0.02 acre of open water are within the same footprint as the emergency maintenance performed in 2011. Vegetation conditions are similar to those conditions identified in the previous approvals. Previous approvals required mitigation for impacts in this reach through completion of the El Cuervo del Sur Wetland Mitigation Project. The

attached Current Condition Verification Report (Dudek, September 2013) is provided for reference.

Mitigation for impacts within Reach 3 was established by emergency maintenance that occurred in 2011, and by the January 2014 SCR approval for the initial maintenance conducted under the MMP. The current impacts to 0.14 acre of developed concrete-lined channel and 0.28 acre of freshwater marsh (concrete-lined) are within the same footprint as the original approval. Only minor regrowth of freshwater marsh had occurred since the last channel maintenance event in March 2015. Mitigation for Reach 3 impacts is currently being implemented at the El Cuervo del Sur Wetlands Establishment Project and the Los Penasquitos Canyon Wetlands Enhancement Project.

These mitigation projects provide mitigation for USACE/RWQCB/CDFW/CCC/City jurisdictional wetlands in accordance with various permit requirements.

In addition to water quality benefits associated with the wetlands mitigation described above, additional water quality mitigation for MMP channels is achieved through implementation of one of the four options under the Settlement Agreement in the Watershed Management Area (WMA), 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. The first three options are based on the linear feet of vegetation removed as part of the maintenance performed (not including areas of invasive species, such as Arundo-dominated areas); maintenance for Area 1 included the removal of approximately 423 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.

In addition to the 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 Area 1 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 or stockpiled outside of the waters of the state 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 (e.g., fiber rolls) were employed. No temporary impacts occurred and therefore no restoration is required.

7. No revegetation is required. Channel maintenance was conducted within the channel bed which cannot be revegetated and will naturally recruit where areas are suitable for vegetation. Areas of invasive species which were cut to grade will continue (for up to 2 years) to be re-treated to control re-sprouts.

Area 2

Evaluation of the existing wetlands and water quality functions they provide (prior to maintenance) in emergency maintenance Area 2 was made by Dudek on March 8, 2016. Land cover impacted within Area 2 of Reach 3 during maintenance included 0.57 acre of developed concrete-lined channel. In Area 2, there was no vegetation within the proposed concrete repair work area.

The capacity of the Sorrento Creek Channel in Area 2 to uptake pollutants in the pre-maintenance condition is unknown. Generally, concrete-lined facilities lacking vegetation would be expected to have limited pollutant removal capability due to the impermeable substrate and lack of potential plant 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. Reach 3 generally supports a small amount of perennial urban flow, with storm events causing ephemeral increases in channel flows. 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 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 regulates wetland impacts and requires compensatory mitigation pursuant to the mitigation ratios specified in Site Development Permit (SDP) 1134892 for the MMP. The SDP incorporates mitigation language from the Coastal Development Permit (CDP) 714392. As discussed previously, the impacts within Reach 3 (Area 2) are within areas previously authorized for maintenance. Concrete repair activities in Area 2 were conducted within developed concrete-channel and did not impact any vegetation communities, and therefore do not require mitigation.

Additional water quality mitigation for MMP channels under the Settlement Agreement is also not required for Area 2, since those options are based on the linear feet of vegetation removed during maintenance. No vegetation was removed as part of emergency maintenance activities conducted for Area 2. It should be noted that the concrete repairs in Area 2 have the potential to provide a water quality benefit by reducing the potential for erosion in the channel section and related downstream sedimentation.

In addition to the construction-related BMPs discussed in the maintenance description section, the following BMPs were implemented for Area 2 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 Area 2 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 or stockpiled outside of the waters of the state 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 (e.g., fiber rolls) were employed. No temporary impacts occurred and therefore no restoration is required.

Area 3

As part of the concrete repair work performed in Area 2 (Reach 3), impacts were necessary in the earthen channel directly upstream of Reach 3 (Area 3) in order to remove the existing cut off wall, install the new wall, and construct the temporary earthen diversion berm. Evaluation of the existing wetlands and water quality functions they provide (prior to maintenance) in emergency maintenance Area 3 was made by Dudek on March 8, 2016. In Area 3, there were 0.006 acre of natural flood channel, 0.003 acre of disturbed wetland (Arundo-dominated) and 0.03 acre of riparian scrub (southern willow scrub) impacted as a result of emergency maintenance activities. Total impacts to jurisdictional areas are 0.039 acre (27 linear feet) of wetland and non-wetland waters of the U.S

The capacity of the Sorrento Creek Channel in Area 3 to uptake pollutants in the pre-maintenance condition is unknown. Generally, earthen facilities such as the channel in Area may be expected to have some potential pollutant removal capability due to the presence of vegetation and some natural substrate. The presence of a small amount of disturbed wetland (Arundo-dominated) and riparian scrub (southern willow scrub) 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. Sorrento Creek in Area 3 is likely to have perennial flows during normal climactic conditions, but is subject to intermittent high flows during storm events which generally have relatively low retention times. 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.

Installation of the diversion berm in Area 3 resulted in permanent impacts to native riparian scrub (southern willow scrub) and disturbed wetland (Arundo-dominated), which is an exotic community. Impacts to vegetation communities that occurred through the

installation of the diversion berm will be restored in place to their pre-project conditions. Permanent impacts to native vegetation (riparian scrub – southern willow scrub; approximately 0.03 acre) will be mitigated at a ratio of 3:1, in accordance with SDP and CDP requirements. The remaining 2:1 mitigation (estimated as 0.06 acre) will occur either onsite through the removal and control of Arundo, or offsite through the purchase of mitigation credits or mitigation project acreage allocation. Impacts to natural flood channel may be considered temporary and, if so, would be mitigated at a ratio of 1:1 through onsite restoration. However, should these impacts to the natural flood channel be considered permanent, they would be mitigated at a ratio of 2:1 in accordance with SDP and CDP requirements. A portion of natural flood channel mitigation would occur onsite through restoration of the natural flood channel in the project area (0.004 acre), and the remaining mitigation (an additional 0.004 acre) would be added for removal of Arundo onsite or added to the mitigation credit purchase or acreage allocation.

Water quality mitigation for Area 3 would be provided through the wetlands mitigation described above. Additional water quality mitigation under the Settlement Agreement is not applicable for Area 3, since this area is outside of the MMP.

In addition to the construction-related BMPs discussed in the maintenance description section, the following BMPs were implemented for Area 3 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 Area 3 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 or stockpiled outside of the waters of the state 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 (e.g., fiber rolls) were employed. No temporary impacts occurred and therefore no restoration is required.

7. Revegetation is planned in-place where impacts occurred upstream of Reach 3 to riparian scrub (southern willow scrub) within areas suitable for vegetation. Revegetation

efforts will use a native cutting installation method for this work using cuttings from the remaining trees in the channel. Areas of invasive species which were cut to grade will continue (for up to 2 years) to be re-treated to control re-sprouts.

Historical Assessment

Area 1

A records search was conducted by staff at the South Coastal Information Center for Sorrento Creek Reach 1 (Map 7) and Soledad Creek Reach 2 (Map 11) and a 1/2-mile radius around the channels. The records search identified 105 studies which have been performed within 1/2-mile of the channels, of which numerous have addressed each channel in whole or in part. Sixteen cultural resources have been identified within 1/2-mile of the channel. No cultural resources were identified within the channel. Two prehistoric sites (one lithic scatter, one unknown type) were identified within approximately 150 m of the channel, although both were destroyed by previous development. Records search results are included separately as Confidential Attachment A.

This channel was rated as moderate (Map 7) and high (Map 11) 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. URS Corporation prepared an IHA for these two channels in 2013 (Zalarvis-Chase 2013). URS did not identify any cultural resources within either channel. However, due to the number of cultural resources in the vicinity, the high sensitivity of the area, and poor ground visibility at the time of the survey, URS recommended monitoring within both reaches. Any work within Reach 3, would have no potential to affect historic resources, due to the concrete-lining of this reach.

Both Reach 1 and Reach 2 area earthen ditch channels. A City of San Diego approved archaeological monitor from Dudek and a Native American monitor from Red Tail Monitoring and Research, Inc. were present on March 4 and 5 for channel maintenance activities, which included vegetation removal and excavation of sediments which have accumulated in the channels. No cultural resources were discovered during monitoring. Additional maintenance activities are expected in Reach 1 and 2 which will require additional archaeological and Native American monitoring.

Area 2

Any work within Reach 3, would have no potential to affect historic resources, due to the concrete-lining of this reach. However,during removal of sediments in the concrete portion of Area 2, the contractor determined that the concrete has deteriorated and required replacement. Replacement of the concrete channel required removal of the existing concrete, re-contouring and excavating the sediments underneath concrete, and pouring new

concrete. As this activity would impact sediments in a high sensitivity area and could potentially impact historical resources.

A City of San Diego approved archaeological monitor from Dudek and a Native American monitor from Red Tail Monitoring and Research, Inc. were present on nine days between March 3 and June 16 for channel maintenance activities, which included vegetation removal and excavation of sediments which have accumulated in the channels, as well as removal of concrete and excavation of sediments underlying the concrete section of the channel. Approximately one foot of sediment was removed and transported off site from underneath the concrete channel. No cultural resources were discovered during monitoring. All sediments impacted by maintenance activities were previously disturbed fill which were placed to support the original concrete channel.

Area 3

As part of the concrete repair, impacts were necessary in the earthen channel directly upstream of Reach 3 (Area 3) in order to remove the old cut off wall and install the new wall as well as to install the temporary earthen diversion berm. No excavation was done, except to create the earthen berm and it was temporary. All sediments impacted by maintenance activities were previously disturbed fill which were placed to support the original concrete channel.

Noise Assessment

URS Corporation prepared an INA for earthen reaches within Sorrento Valley in 2013 (Storm 2013). The equipment used to to accomplish the emergency maintenance and concrete repair in all three Areas is substantially similar to the equipment proposed to be used for channel maintenance, as analyzed in the 2013 INA. The INA identifies ambient noise levels near the Reach 2 emergency maintenance area and the Reach 3 concrete repair as 64 dBA Leq (survey location ST6) and states that the work would generate noise near this ambient at a distance of 275 feet (i.e., areas within 275 feet of the work would be subject to noise greater than ambient levels). The INA and attached SCR checklist identify mitigation measures that would apply to the project given the potential for significant noise impacts. These measures include identification of occupied vireo, clapper rail, and/or gnatcatcher habitat and protection of these areas to ambient noise levels. No sensitive species were observed in or adjacent to any of the three Areas during the focused surveys conducted prior to maintenance.

Please find the attached documents submitted for the After-the-Fact SCR of the Soledad (Sorrento) Creek Channel; Reaches 2&3 (MMP Maps 11&12) emergency channel maintenance

and concrete repair project. If you have any questions or concerns regarding the emergency maintenance activities or associated documentation, please call me at (619) 318-3616.

Sincerely

Catherine Rom
Senior Planner

Attachments:

1 – General Application Form (Form DS-3032)
2 – Public Notice Figure & Parcel List Supplemental Discretionary Project Application (Form DS-3035)
3 – Storm Water Applicability Checklist (Form DS-560)
4 – Substantial Conformance Review Checklist
5 – Individual Biological Assessment (Dudek, July 28, 2016)
6 – Records Search Summary
7 – Regulatory Permits

cc: *Gene Matter, Assistant Deputy Director, Transportation & Storm Water Department*
Christine Rothman, Development Project Manager III, Transportation & Storm Water Department
Jane-Marie Fajardo, Associate Planner, Transportation & Storm Water Department
Vipul Joshi, Principal/Ecologist – Dudek
Scott Gressard, Environmental Specialist/Biologist – Dudek