



Appendix G

WATER QUALITY TECHNICAL REPORT



Water Quality Technical Report

For
Rose Creek Bikeway Project
Coastal Rail Trail
Segment 9B

Prepared For
SANDAG
San Diego Regional Planning Agency

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Date

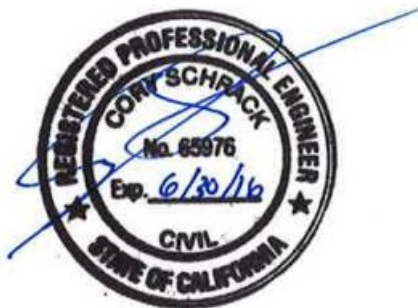


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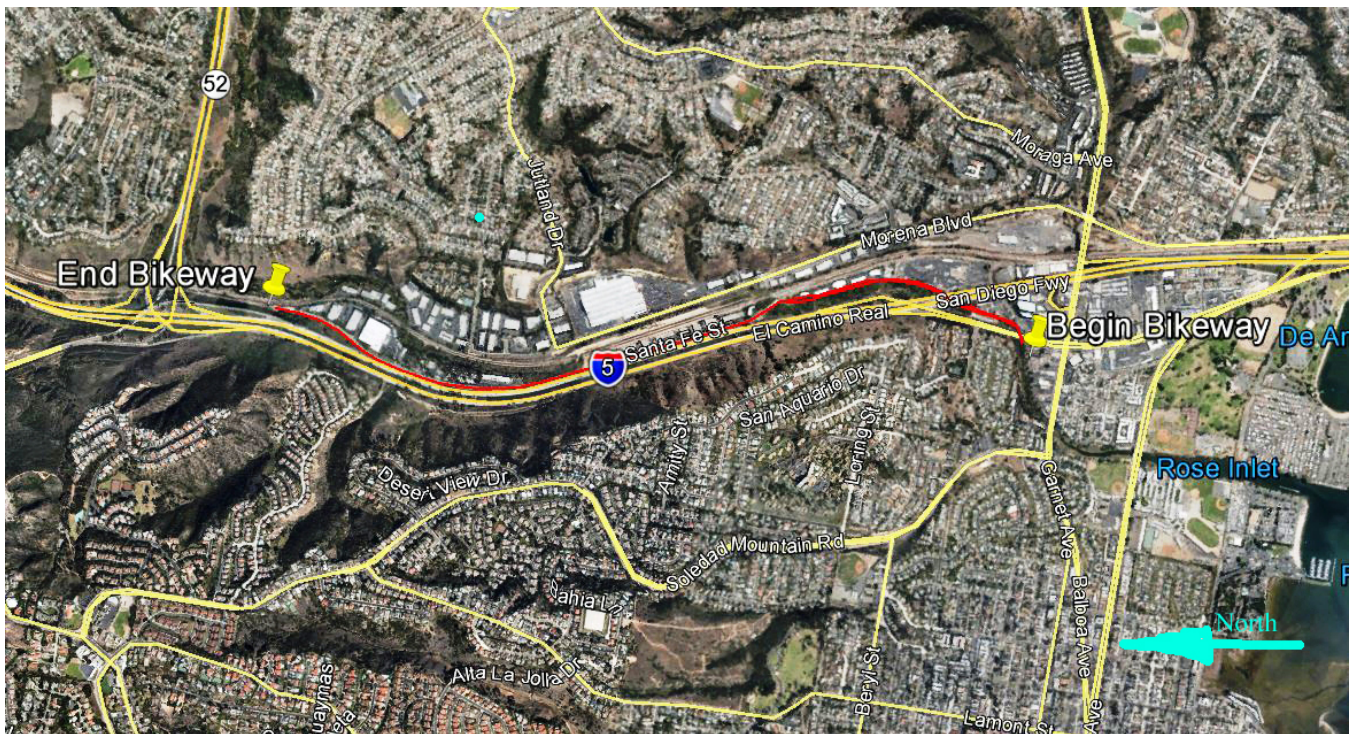
1 WATER QUALITY TECHNICAL REPORT

This Water Quality Technical Report (WQTR) has been written to comply with standards set forth in the 2013 MS4 Permit (Order R9-2013-0001), NPDES Permit requirements (2009-0009-DWQ as amended by 2010-0014-DWQ), and the San Diego Region BMP Design Manual. Based on these requirements, it was determined that the Rose Creek Bikeway (Project) is subject to Standard Project Permanent Storm Water BMP Requirements as defined in the Model BMP Design Manual (Draft January 2015). As such, this report identifies information such as the project location, project description and describes how Source Control and Site Design BMPs will be implemented to meet the storm water requirements. See section 3 for additional information on applicable requirements.

2 PROJECT SUMMARY

The project summary section includes general information pertaining to the project such as a vicinity map, project description, descriptions of the existing and proposed drainage patterns, and a Site Map.

2.1 VICINITY MAP:



Source: Google Earth

2.2 PROJECT DESCRIPTION

The proposed Project is located within the City of San Diego, within the Pacific Beach and Clairemont Districts, in San Diego County, California. The proposed bicycle facility would extend a distance of 2.1 miles from the northern terminus of Santa Fe Street, southward, to the west side of Mission Bay Drive, as it crosses over Rose Creek. The alignment of the bikeway includes 1.3 miles of bi-directional, protected bike lanes within the right-of-way (ROW) of Santa Fe Street (referred to as the “on-road portion”), and 0.8 miles of shared use bicycle path (Class I) along the eastern bank of Rose Creek

(referred to as the “off-road portion”). No permanent right-of-way acquisition is expected to be required. The proposed project may require easements from San Diego Gas and Electric (SDG&E), the North Coast Transit District (NCTD) and the San Diego Metropolitan Transit System (MTS). A Caltrans encroachment permit will need to be acquired.

2.2.1 ON-ROAD IMPROVEMENTS

Beginning at the northern terminus of Santa Fe Street, the bicycle facility would be a bi-directional set of protected bike lanes (sometimes referred to as a two-way cycle track) located within the existing paved area of Santa Fe Street to the bridge over Rose Creek, a distance of approximately 7,200 linear feet (LF). This stretch of the project would be located on the west side of the road, and accommodate both directions of bicycle travel. Each lane would be five feet in width for a total width of ten feet. The protected bike lanes would include a two-foot, raised concrete median between traffic and the bike lanes. The protected bicycle lanes would utilize the area used for informal on-street parking on the west side of Santa Fe Street. To obtain the width needed for the bicycle facility, Santa Fe Street would be widened to the east in sections by up to three feet wide, all within the existing ROW. The proposed widening would require a retaining wall along a section of Rose Creek up to six feet in height, relocation of various wet and dry utility features, including the relocation or undergrounding of an existing overhead power line and associated poles. Approximately 3,600 feet of new five-foot-wide sidewalk may be incorporated at the top of this retaining wall. The decision to construction this sidewalk will be made during final design of the project.

2.2.2 OFF-ROAD IMPROVEMENTS

The 0.8 mile portion of the bikeway would be a shared use path, also referred to as a “Class I” facility, consisting of a 10-foot wide concrete path with two-foot shoulders on each side. The off-road portion of the path would extend a distance of approximately 4,000 LF. The off-road portion would start just north of the Santa Fe Street Bridge over Rose Creek. At this point, the path would be located on a new bridge that would parallel the existing Santa Fe Street Bridge. The proposed bridge would include one central column in the creek for support. Once across the creek, the path would be located along the eastern bank of Rose Creek on a bench behind existing businesses fronting Santa Fe Street. The bench would be created by a cut along the east edge with a three- to six-foot retaining wall located along the west side. The maximum width of the bench would be 14 feet.

The bicycle facility would cross under the I-5 freeway bridge over Rose Creek. Beneath the bridge, the facility would be constructed on a structure adjacent to the base of one of the bents supporting the I-5 Bridge.

On the other side of the I-5 bridge, the path would return to a bench cut into the top of the east bank of Rose Creek leading to a service road behind existing businesses. It would cross beneath the Mission Bay Drive bridge over Rose Creek, on a structure similar to the one beneath the I-5 bridge, and connect with an existing Class I bicycle path near the intersection of Mission Bay Drive and Damon Street.

2.3 EXISTING DRAINAGE PATTERN

The existing on-road portion of the project consists of an existing roadway, including adjacent asphalt berms, curbs, landscaping, and fencing. Within the project area there are a number of buildings having driveway connections to Santa Fe Street. These buildings are typically below the grade of Santa Fe Street, and drain toward the Rose Creek Channel. The driveways are built to keep storm water from entering the sites from the existing roadway. Storm water from Santa Fe Street sheet flows to existing concrete swales, inlets or off site.

The existing off-road portion of the project consists of a small portion of existing asphalt trail, vegetated banks, and areas within the boundaries of the banks of Rose Creek itself. All storm water in the off-road portion drains directly into Rose Creek.

2.4 PROPOSED DRAINAGE PATTERN

The proposed on-road conditions will consist of a cycle track, ac roadway, concrete median, retaining walls and fencing. There will be no changes made to the existing drainage pattern and therefore the proposed conditions will be identical to the existing conditions. For the proposed conditions, the on-site drainage will sheet flow to existing concrete swale, inlets or off site.

The proposed off-road section consists of a Class I bicycle facility that includes asphalt paving, retaining walls, fencing, and a new shared use bridge on Santa Fe Street. Drainage will be directed onto existing vegetated banks along Rose Creek, and in the cases of the sections that cross Rose Creek (under Mission Bay Dr, under the I-5, and the new bridge) will drain into the creek.

2.5 PROPOSED SITE MAP

See the **Proposed Site Map** exhibit located in Appendix E.

3 DETERMINE APPLICABLE STORM WATER BMP REQUIREMENTS

The project is required to comply with the post construction requirements in the 2013 MS4 Permit (Order R9-2013-0001), and construction requirements in NPDES Permit (2009-0009-DWQ as amended by 2010-0014-DWQ).

3.1 POST CONSTRUCTION STORM WATER BMP REQUIREMENTS

Per the Model BMP Design Manual and the MS4 permit, local Priority Development Projects (PDP) exemptions include the following criteria for bicycle lane projects:

- “Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas”.
- “Designed and constructed to be hydraulically disconnected from paved streets or roads”
- “Retrofitting or redevelopment of existing paved alleys, streets or roads that are designed and constructed in accordance with the USEPA Green Streets guidance [“Managing Wet Weather with Green Infrastructure – Municipal Handbook: Green Streets” (USEPA, 2008)]”.

The project shall be designed to meet one of these PDP exemptions. Therefore the Rose Creek Bikeway Project is listed as a Standard Development Project as defined in the Model BMP Design Manual. The list of applicable post construction BMP requirements for standard projects includes:

- Source Control BMPs - *Required*
- Site Design BMPs – *Required*
- Structural Pollutant Control BMPs – *Not required*
- Structural Hydromodification Management BMPs – *Not required*

3.2 CONSTRUCTION STORM WATER BMP REQUIREMENTS

The project’s limits of disturbance encompass an area of approximately 9.13 acres. The project will be required to comply with the requirements in the Construction General Permit (2009-0009-DWQ as amended by 2010-0014-DWQ). The project is required to obtain coverage under the general permit by filing a Notice of Intent (NOI) with the State Water Resources Control Board. Also required is a Storm Water Pollution Prevention Plan (SWPPP), which identifies all construction BMP requirements required in accordance with the State General Permit for Storm Water Discharges Associated with Construction Activity. A SWPPP for the project will be prepared separately during the construction permit phase of the project.

4 IDENTIFY POLLUTANTS OF CONCERN

This report shall identify the San Diego Regional Water Quality Control Board Hydrologic Unit (HU), determine the impaired 303(d) receiving waters, and compare the impaired receiving waters to the anticipated project site pollutants.

4.1 IDENTIFY POLLUTANTS FROM THE PROJECT AREA

The project is a Standard Development Project thus is not required to identify pollutants from the project area.

4.2 IDENTIFY POLLUTANTS OF CONCERN IN RECEIVING WATERS

The proposed project discharges at several locations into Rose Creek which ultimately flows to Mission Bay (area at mouth of Rose Creek). The distance from the project limits to the mouth of Rose Creek is approximately 5,200 feet.

According to the *San Diego Region 9 Water Quality Plan* located in Appendix B, the Rose Creek Bikeway project has receiving waters located within the Miramar Hydrologic Area (HA) as indicated below:

- Peñasquitos Hydrologic Unit (HU 906.00)
 - Miramar Hydrologic Area (HA 906.40)

The downstream body of water associated with this project is Mission Bay (area at mouth of Rose Creek). This water body is listed in Section 303(d) as a contaminated or stressed by the following:

Mission Bay (906.50) is polluted/stressed by the following contaminants:

- Eutrophic (3.1 acres)
- Lead (3.1 acres)

As a reference, the “2006 CWA Section 303(d) List of Water Quality Limited Segments Requiring TMDLS approved June 28, 2007” has been attached in Appendix A. No TMDLS have been developed for the receiving water.

In addition, a table with all beneficial uses of receiving waters downstream is located in Appendix A. The list for Mission Bay includes:

- IND
- REC1
- REC2
- COMM
- EST
- WILD
- RARE
- MAR
- MIGR
- SPWN
- SHELL

4.3 PRIMARY POLLUTANTS OF CONCERN

The primary pollutants of concern are pollutants that are anticipated/potential for the project and present in downstream impaired water body. The Rose Creek Bikeway Project anticipates no primary pollutants of concern.

5 IDENTIFY CONDITIONS OF CONCERN

The existing site is a combination of developed and undeveloped area. The proposed project is located in the Miramar Hydrologic Area (906.40). Based on the Preliminary Hydrology Analysis prepared by Nasland Engineering (June 22), the project will increase the 100 year runoff by 3.8 cfs. This increase is compared to the estimated 12,000 cfs flow in Rose Creek during a 100 year storm event. The minimal increase in peak runoff for a 100-year storm event from the roughly 1.36 mile on-road bike path construction will have virtually no impact on the Rose Creek channel hydraulics. A preliminary location hydraulic study was prepared by Chang Consultants. The study analyzed the existing and post-project conditions and found there would be an increase in the water level in Rose Creek during a 100 year storm event due to the encroachment of the bikeway facilities within the flood limits. This increase upstream of the project would be approximately 0.1 feet. The off-road portion of the project will discharge to re-vegetated areas along the bikeway. This will allow runoff to disperse and infiltrate before entering the creek. Because the proposed project will not significantly impact the existing flow regime, no alterations to existing downstream conditions such as erosion and habitat characteristics are anticipated.

6 ESTABLISH PERMANENT STORM WATER BEST MANAGEMENT PRACTICES

The project must meet Standard Project Permanent Storm Water BMP Requirements: Source Control BMPs and Site Design BMPs.

6.1 SOURCE CONTROL BEST MANAGEMENT PRACTICES

Source control best management practices aim to minimize pollutants generated by everyday activities such as trash recycling and disposal and the washing of vehicles and equipment. These practices specify required design features for proposed site elements that can potentially contaminate storm water run-off. The San Diego Region BMP Design Manual requires that the following source control measures:

6.1.1 PREVENTION OF ILLICIT DISCHARGES INTO THE MS4

The project shall implement efficient irrigation systems and prevent non-stormwater discharges. Project to comply with CASQA detail SC-10 “Non-Stormwater Discharges”

6.1.2 STORM DRAIN SYSTEM STENCILING OR SIGNAGE

All proposed storm drain system catch basins shall be labeled with prohibitive storm water dumping language such as, “No Dumping Drains to Ocean”. Where practical, signage with prohibitive storm water dumping language shall also be posted near storm drain system catch basins and at intermediate points along the project limits.

6.1.3 PROTECTION OF OUTDOOR MATERIAL STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL

Outdoor Material Storage areas are not proposed as part of this project.

6.1.4 PROTECTION OF MATERIALS STORED IN OUTDOOR WORK AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL

Outdoor Material Storage areas are not proposed as part of this project.

6.1.5 PROTECTION OF TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL

Litter receptacles will be covered.

6.1.6 USE OF ANY ADDITIONAL BMPS DETERMINED TO BE NECESSARY BY THE COPERMITTEE TO MINIMIZE POLLUTANT GENERATION AT EACH PROJECT

Project proposes several areas which will require slope stabilization. Erosion control measures such as fiber rolls will be utilized during construction. Permanent re-vegetation of all disturbed areas will be implemented.

6.2 SITE DESIGN BEST MANAGEMENT PRACTICES

6.2.1 MAINTENANCE OR RESTORATION OF NATURAL STORAGE RESERVOIRS AND DRAINAGE CORRIDORS (INCLUDING TOPOGRAPHIC DEPRESSIONS, AREAS OF PERMEABLE SOILS, NATURAL SWALES, AND EPHEMERAL AND INTERMITTENT STREAMS)

All on-road drainage conditions will remain the same. All off-road drainage conditions will be restored to the original drainage patterns within the Rose Creek corridor.

6.2.2 BUFFER ZONES FOR NATURAL WATER BODIES (WHERE BUFFER ZONES ARE TECHNICALLY INFEASIBLE, REQUIRE PROJECT APPLICANT TO INCLUDE OTHER BUFFERS SUCH AS TREES, ACCESS RESTRICTIONS, ETC.)

Off-road areas will require re-vegetation between the bicycle facility and Rose Creek. Access restrictions in the form of a fence along the bikeway shall be implemented.

6.2.3 CONSERVATION OF NATURAL AREAS WITHIN THE PROJECT FOOTPRINT INCLUDING EXISTING TREES, OTHER VEGETATION, AND SOILS

Where feasible, existing mature trees and vegetation will be protected. The Area of Potential Effect (APE) limits shall be staked and marked with temporary fencing.

6.2.4 CONSTRUCTION OF STREETS, SIDEWALKS, OR PARKING LOT AISLES TO THE MINIMUM WIDTHS NECESSARY, PROVIDED PUBLIC SAFETY IS NOT COMPROMISED

Off-road portion is classified as a Class I – bike path and is 14' wide, accommodating both pedestrians and bicycles. On-road portion classifies as a cycle track and solely allows for bicycles and is 10' wide. Both meet minimum width requirements. The width of the traveled way of Santa Fe Street shall be maintained at the fire department minimum of 26 feet.

6.2.5 MINIMIZATION OF THE IMPERVIOUS FOOTPRINT OF THE PROJECT

Project proposes roughly 2.1 miles of bicycle path varying from 10' to 14'. No additional impervious surfaces are proposed at this time other than the replacement of existing driveways.

6.2.6 MINIMIZATION OF SOIL COMPACTION TO LANDSCAPED AREAS

Soil compaction in re-vegetation areas will be limited to the minimum required by the Geotechnical Investigation.

6.2.7 DISCONNECT IMPERVIOUS SURFACES THROUGH DISTRIBUTED PERVIOUS AREAS

The off-road portion of the project will direct runoff to pervious areas along the banks of Rose Creek.

6.2.8 LANDSCAPED OR OTHER PERVIOUS DESIGNED AND CONSTRUCTED TO EFFECTIVELY RECEIVE AND INFILTATE, RETAIN AND/OR TREAT RUNOFF FROM THE IMPERVIOUS AREAS, PRIOR TO DISCHARGING TO THE MS4

Not Applicable.

6.2.9 SMALL COLLECTION STRATEGIES LOCATED AT, OR AS CLOSE AS POSSIBLE TO, THE SOURCE (I.E., THE POINT WHERE STORM WATER INITIALLY MEETS THE GROUND) TO MINIMIZE THE TRANSPORT OF RUNOFF AND POLLUTANTS TO THE MS4 AND RECEIVING WATERS

Existing drainage patterns to remain the same.

6.2.10 USE OF PERMEABLE MATERIALS FOR PROJECTS WITH LOW TRAFFIC AREAS AND APPROPRIATE SOIL CONDITIONS

No permeable surfaces proposed for this project. Permeable pavements are not compatible with the desired performance of the bikeway.

6.2.11 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES

Off-road areas will require re-vegetation of natural species. Native and drought tolerant plantings will be utilized.

6.2.12 HARVESTING AND USING PRECIPITATION

Not Applicable.

7 CERTIFICATION

This Water Quality Technical Report (WQTR) has been prepared under the direction of the following Registered Civil Engineer. The Registered Civil Engineer (Cory Schrack) attests to the technical information contained herein and the engineering data upon which the following design, recommendations, conclusions and decisions are based.

Cory Schrack • RCE 65976 • Expires 06-30-16



8 REFERENCES

CASQA Stormwater Best Management Practice Handbook, New Development and Redevelopment, January, 2003.

Water Quality Control Plan for the San Diego Basin.

San Diego Regional Board Order R9-2013-0001

Model BMP Design Manual, San Diego Region, Draft January 2015.

Construction General Permit, “2009-0009-DWQ as amended by 2010-0014-DWQ” November 16, 2010