

Stormwater  
Quality Technical  
Memorandum  
No.4

DRAFT

**Verdi Avenue Pedestrian  
Rail Undercrossing Project**

October 2019

## **1.0 Objective**

The objective of this technical memorandum is to determine post-construction stormwater quality requirements applicable to the project, and to define a regulatory approach to comply with those requirements.

## **2.0 Background**

The Verdi Avenue Pedestrian Rail Undercrossing Project (the Project) will add and reconstruct impervious surfaces such as a pedestrian undercrossing, a pump station, sidewalks, a railroad bridge, and other features. In the existing conditions, the Encinitas Coastal Rail Trail (ECRT) is the only impervious surface within NCTD Right-of-Way (ROW). Within City of Encinitas ROW, impervious surfaces include the sidewalks and adjacent streets (City ROW) which are concrete and asphalt paved roads.

Currently, NCTD, operator and maintainer of the Project, is a non-traditional copermittee of the Phase II Small MS4 General Permit (Order No. 2013-0001-DWQ (NPDES No. CAS000004). One of the required guidance documents currently available is the NCTD Storm Water Management Plan (SWMP), dated June 2016 (complemented by Section F.5.g of the permit). This document specifies the stormwater runoff controls to reduce the discharge of pollutants and the post-construction stormwater standards. Similarly, the City of Encinitas is a copermittee of the San Diego County MS4 permit (Order No. R9-2013-0001-DWQ (NPDES NO. CAS0109266)). These requirements are spelled out in the City of Encinitas Best Management Practices (BMP) Design Manual, effective on February 16, 2016.

There is an overlap of jurisdiction and corresponding stormwater quality requirements for this project. There are similarities between both permits. Both require site design measures, source control measures, similar impervious surface thresholds, low impact development standards, numeric sizing criteria, etc. Any difference in the requirements stem from the fact that the permit and guidance documents for NCTD are not as detailed as those for the City of Encinitas.

The first step is to determine which requirements apply to the project. After which an approach will be proposed to comply with those requirements.

## **3.0 NCTD Phase II Permit Requirements**

On February 5, 2013, the following permit was adopted: National Pollutant Discharge Elimination System (NPDES) General Permit for Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), Order No. 2013-0001-DWQ (NPDES No. CAS000004). This Phase II Small MS4 General Permit, of which NCTD is a non-traditional copermittee, became effective on July 1, 2013. One of the required guidance documents currently available is the Storm Water Management Plan (SWMP), prepared by NCTD in June 2016. This document specifies the stormwater runoff

controls to reduce the discharge of pollutants and the post-construction stormwater standards. Any requirements not mentioned in the SWMP are identified in the permit. NCTD projects are required to comply with these requirements.

## **4.0 City Phase I Permit Requirements**

According to direction from City staff at a recent meeting, two reasons were provided why the project needs to follow the City Phase I permit requirements. First, the project must comply with local conditions, meaning the City of Encinitas and required permits.

Second, in the Carlsbad Watershed Management Area, the City of Encinitas (copermittee) is required to perform MS4 outfall monitoring (dry and wet weather) in accordance with the Carlsbad Watershed Management Area MS4 Outfall Monitoring Plan. Several of these monitoring manholes are located within the downstream trackside ditch and Rossini Creek of which the project is tributary (see attachments). The monitored analysis of this runoff is legally required of the City of Encinitas and must be submitted to the RWQCB for compliance. For the reasons cited above, it is the City's interpretation that the project must comply with the City Phase I MS4 permit and corresponding BMP Design Manual.

## **5.0 BMP Design Manual Requirements**

Based on this City interpretation, the next step is to determine how the project is to be categorized and what is required within the BMP Design Manual. Before determining the Priority Development Project (PDP) category associated with the project, let's first determine if the project is exempt from complying with PDP requirements. Section 1.4.3.2, item 1, of the BMP Design Manual (see attachments) states that trail projects are exempt from complying with PDP requirements if they meet certain criteria. Consider the following criteria:

- "1 (a) Designed and constructed to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas; or"

The project will evaluate directing runoff to vegetated areas either before it drains to the dry well of the sump pump or to vegetated areas above grade (after runoff has been pumped) before it gravity drains to the reconfigured storm drain. Or even if the runoff is directed to outlet directly to the storm drain, the argument may be made that the project drains to non-erodible permeable areas since it is tributary to the trackside ditch (from project site to exiting culvert MP 239.70) [see attachment] which consist of an articulated concrete block (ACB) bottom and concrete side slopes (the San Diego RWQCB has previously considered ACB as permeable on prior projects).

Based on this analysis, the project will qualify for the PDP exemption based on this definition (this also means the project is exempt from complying with hydromodification criteria). However, the project will still need to consider source control and site design requirements where applicable and feasible from the BMP Design Manual. This will be reflected by completing checklists I-4 and I-5.

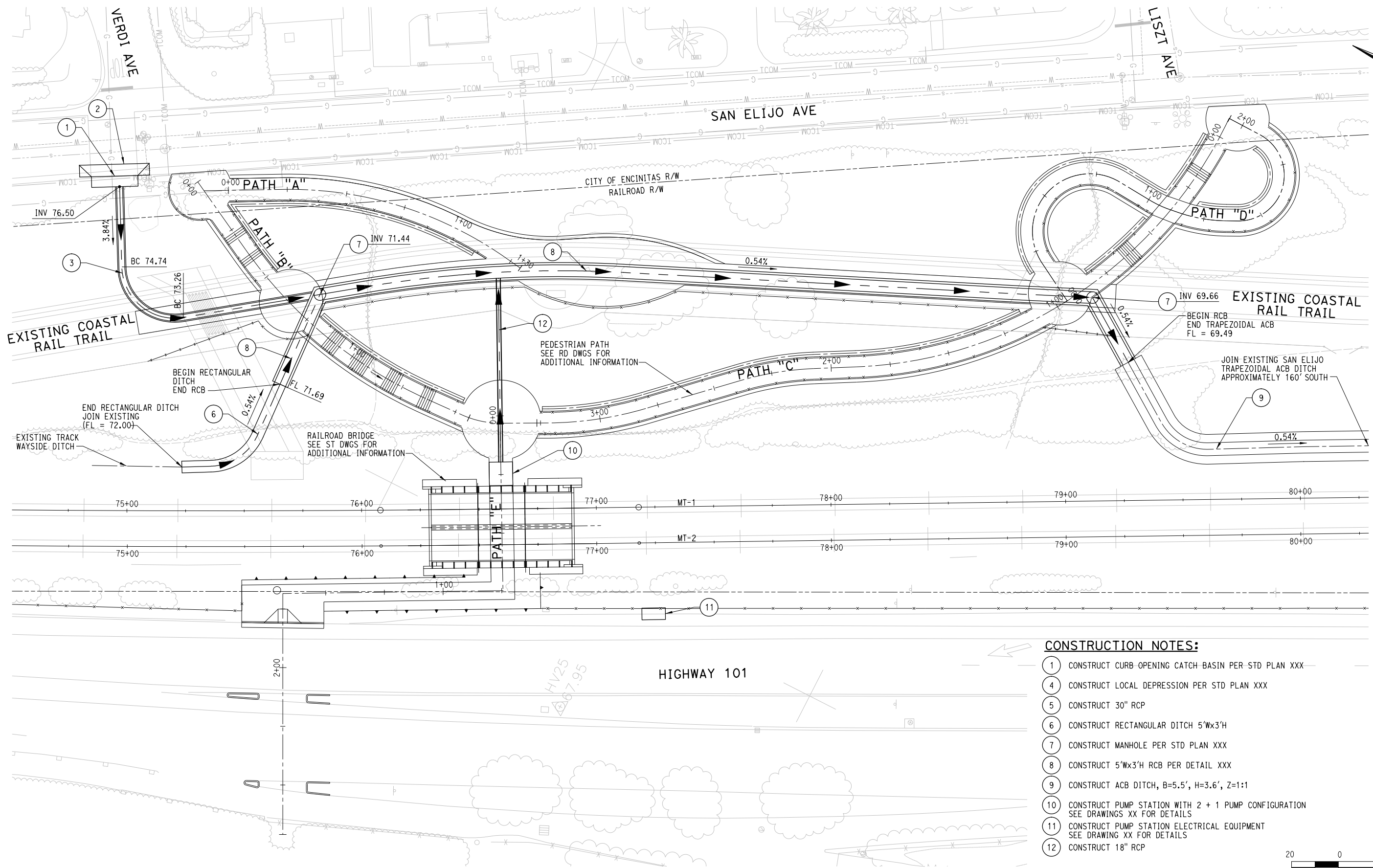
## 6.0 Conclusion

As stated previously, the project will comply with the City Phase I MS4 permit and the associated BMP Design Manual. And based on interpretation of those requirements, the project is PDP exempt. As PDP exempt, the project will need comply with source control and site design requirements as applicable and feasible. This will be reflected in corresponding checklist from the BMP Design Manual.

DRAFT

**50% SUBMITTAL**

NOT FOR CONSTRUCTION



**CONSTRUCTION NOTES:**

- 1 CONSTRUCT CURB OPENING CATCH BASIN PER STD PLAN XXX
- 4 CONSTRUCT LOCAL DEPRESSION PER STD PLAN XXX
- 5 CONSTRUCT 30" RCP
- 6 CONSTRUCT RECTANGULAR DITCH 5'Wx3'H
- 7 CONSTRUCT MANHOLE PER STD PLAN XXX
- 8 CONSTRUCT 5'Wx3'H RCB PER DETAIL XXX
- 9 CONSTRUCT ACB DITCH, B=5.5', H=3.6', Z=1:1
- 10 CONSTRUCT PUMP STATION WITH 2 + 1 PUMP CONFIGURATION SEE DRAWINGS XX FOR DETAILS
- 11 CONSTRUCT PUMP STATION ELECTRICAL EQUIPMENT SEE DRAWING XX FOR DETAILS
- 12 CONSTRUCT 18" RCP



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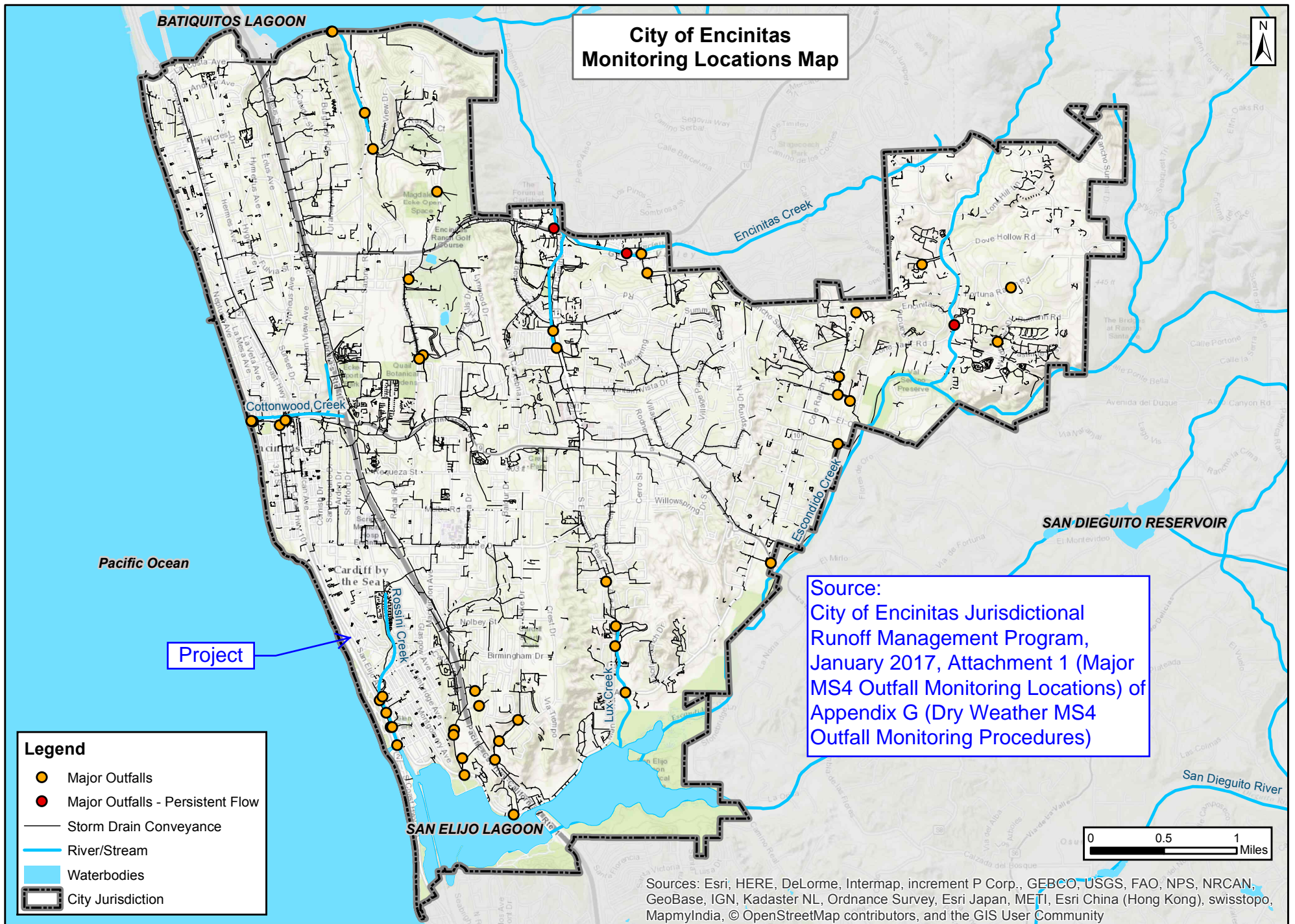
**50% SUBMITTAL**

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

**CITY OF ENCINITAS  
VERDI AVENUE PEDESTRIAN  
RAIL UNDERCROSSING  
STORM DRAIN LAYOUT PLAN**

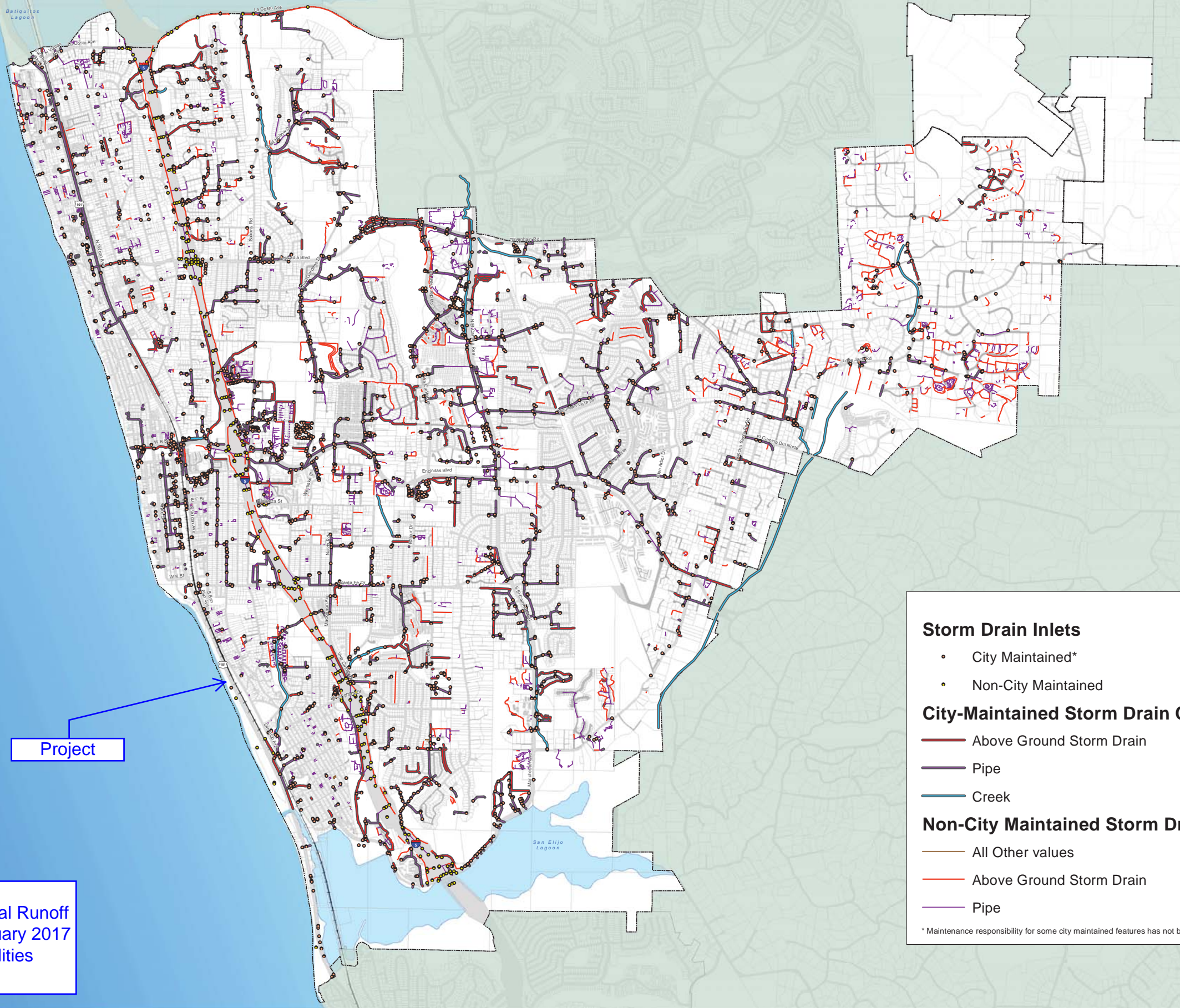
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Data Sources: SanGIS and City of Encinitas.

Note: The map included reflects the monitoring locations and outfall classifications as of June 2015. The most recent map is presented in the WQIP annual report each year.



Source:  
 City of Encinitas Jurisdictional Runoff  
 Management Program, January 2017  
 (Appendix D, Municipal Facilities  
 Inventory and Maps)

**Storm Drain Inlets**

- City Maintained\*
- Non-City Maintained

**City-Maintained Storm Drain Conveyance\***

- Above Ground Storm Drain
- Pipe
- Creek

**Non-City Maintained Storm Drain Conveyance**

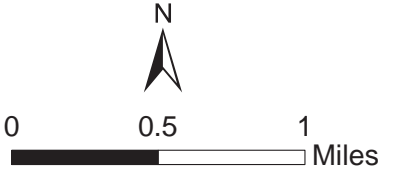
- All Other values
- Above Ground Storm Drain
- Pipe

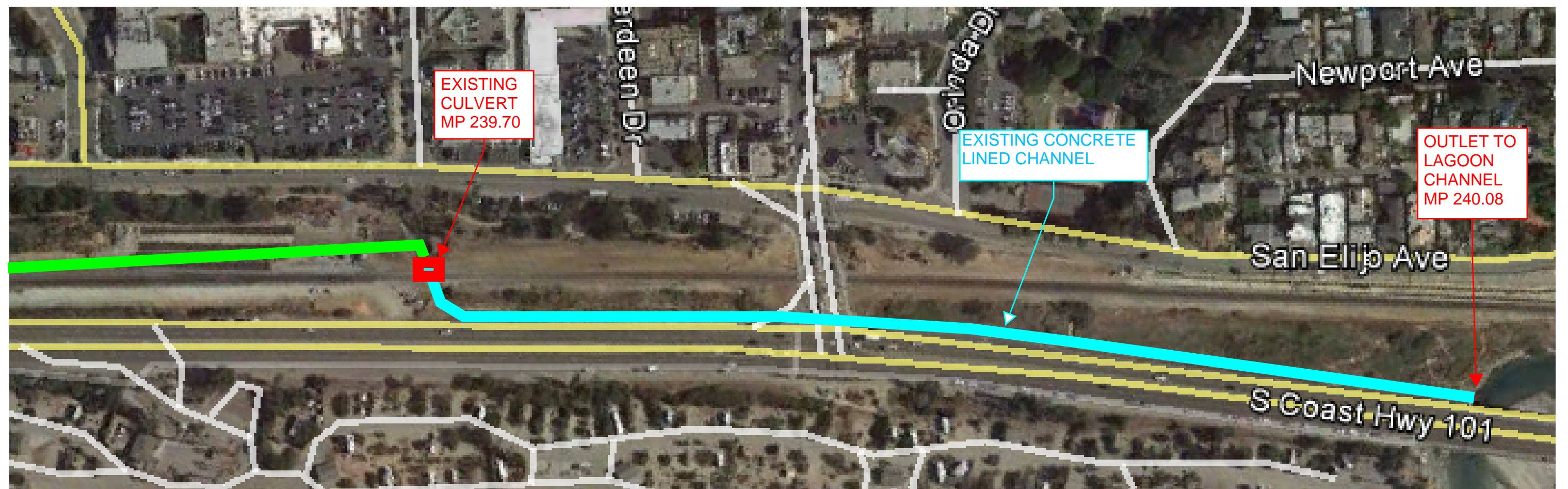
\* Maintenance responsibility for some city maintained features has not been verified and is subject to change.



# City of Encinitas Municipal Separate Storm Sewer System (MS4)

**DISCLAIMER:**  
 This map should not be used for Engineering,  
 Survey, or Site-Specific Analysis.  
 Every reasonable effort has been made to assure  
 the accuracy of the data provided; nevertheless,  
 some information may not be accurate.  
 The City of Encinitas assumes no liability or responsibility  
 arising from the use of or reliance upon this information.  
Date of Map Production: 4/21/2015  
 By Encinitas GIS Division





DATE: 8/1/18  
SCALE: 1"=100'  
SP: TDV/L

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SUBMITTAL**

**CITY OF ENCINITAS  
VERDI AVENUE PEDESTRIAN  
RAIL UNDERCROSSING**

**TRACKSIDE DITCH EXHIBIT**

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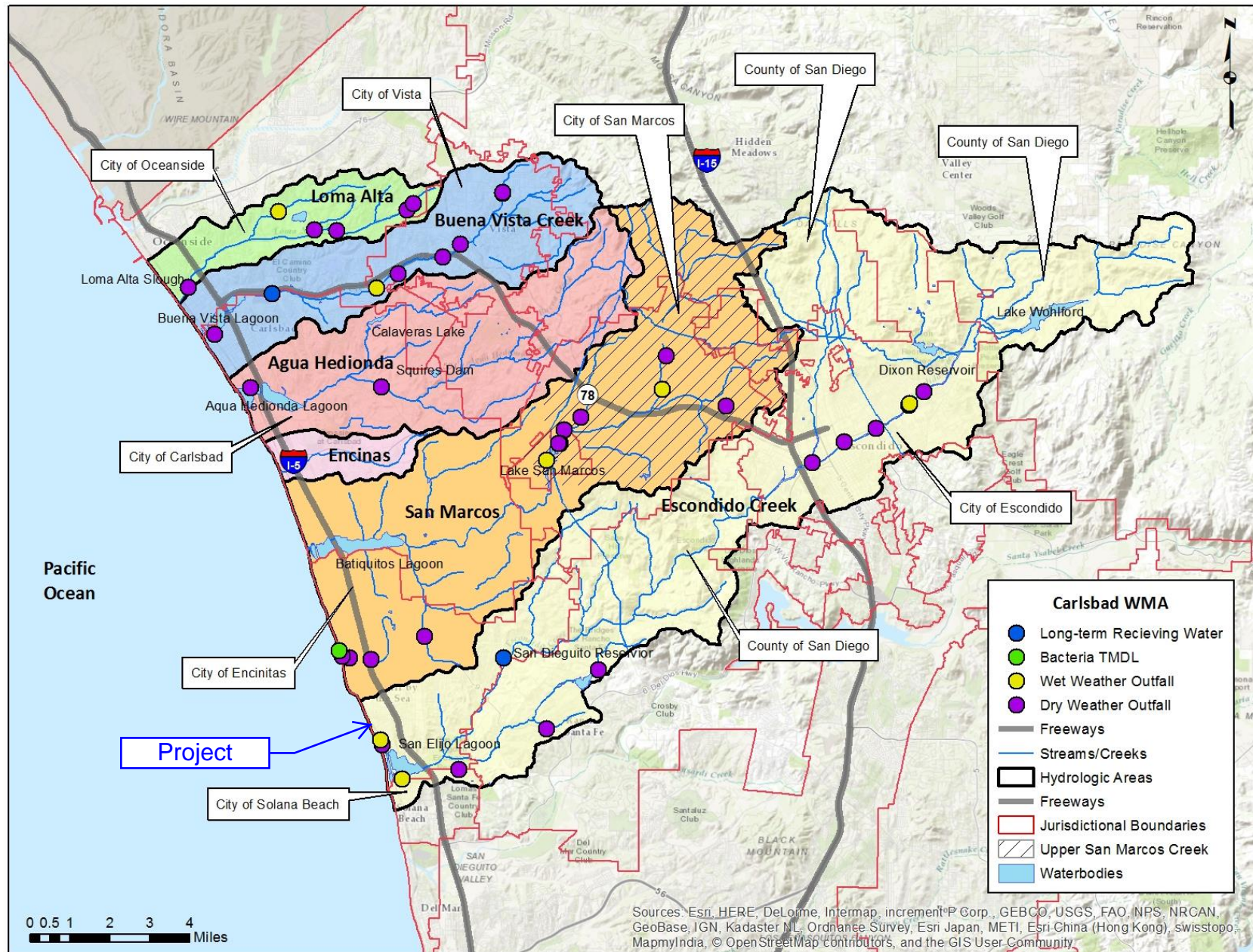


Figure 12: Carlsbad WMA Monitoring Locations

Source: Carlsbad Watershed Management Area Water Quality Improvement Plan, May 15, 2018 (updated)

### 1.4.2 Local Additional PDP Categories and/or Expanded PDP Definitions

To determine whether your project discharges directly to an Environmentally Sensitive Area, begin by referring to the map of ESAs in Appendix J. This map includes all locally known ESAs as defined by the MS4 Permit. Additionally, if a site-specific open space area and/or wetland area has been identified on the property or downstream of the property, this must be considered when determining whether the project is a PDP. Consult with City staff for additional guidance.

### 1.4.3 Requirements for Standard and Basic Projects and Local PDP Exemptions

#### 1.4.3.1 Requirements for Standard and Basic Projects

The City of Encinitas, in addition to the PDPs categorized in section 1.4.1, categorizes non-PDP projects as Standard or Basic Projects. Projects that create and/or replace 500 square feet or more of impervious surface but are not classified as one of the PDP categories described above are considered **Standard Projects**. Projects that create and/or replace less than 500 square feet of impervious surface and are not classified as one of the PDP categories described above are considered **Basic Projects**.

Standard projects shall provide natural bioretention BMPs for stormwater pollution control based on the following sizing calculation method or the DCV calculation method described in Chapter 5 and Appendix B. The total surface area shall include new and replaced impervious areas of the proposed project. If it is determined that bioretention BMPs are not feasible, at the discretion of the City Engineer, partial retention BMPs or biofiltration BMPs may be used. The following sizing calculation or the DCV calculation method may be used to size partial retention or biofiltration BMPs. All Standard Projects must also implement source control and site design measures as described in Chapter 4. Consult Chapter 5 for structural BMP design options.

$$\text{MINIMUM BMP AREA} = 0.03 \Sigma (\text{Surface Type SF X Surface Type Runoff Factor})$$

Basic Projects must also implement source control and site design measures as described in Chapter 4 but are not required to provide structural BMPs.

In situations with uncontrolled cross lot drainage that do not drain into a controlled, engineered drainage conveyance system the City Engineer may require additional or upsized stormwater treatment and flow control facilities. These facilities shall be designed for the greater surface area and volume of either treatment sizing required for new or removed and replaced impervious surface areas OR sizing for Hydromodification based on the net new impervious surface area. Special attention shall be made to design the overflow of these facilities to maintain the historical drainage pattern to the maximum extent practical.

#### 1.4.3.2 Local PDP Exemptions

As defined in the MS4 Permit, projects that meet the following criteria may qualify for an exemption from PDP requirements:

- 1) New or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria:
  - a) Designed and constructed to direct stormwater runoff to adjacent vegetated areas, or

- other non-erodible permeable areas; OR
  - b) Designed and constructed to be hydraulically disconnected from paved streets or roads; OR
  - c) Designed and constructed with permeable pavements or surfaces in accordance with current USEPA Green Streets guidance, "Managing Wet Weather with Green Infrastructure – Municipal Handbook: Green Streets" (USEPA, most recent edition).
- 2) Retrofitting or redevelopment of existing paved alleys, streets or roads that are designed and constructed in accordance with the current USEPA Green Streets guidance, "Managing Wet Weather with Green Infrastructure – Municipal Handbook: Green Streets" (USEPA, most recent edition).

Consult City staff if you think your project may qualify for an exemption based on the above definitions. Note that the source control and site design stormwater requirements that are applicable to all projects will still apply even if a project is exempt from PDP requirements.

## 1.5 Determining Applicable Stormwater Management Requirements

*MS4 Permit Provision E.3.c.(1)*

Depending on project type and receiving water, different stormwater management requirements apply.

New development or redevelopment projects that are subject to this manual requirement pursuant to Section 1.3, but are not classified as PDPs based on Section 1.4, include Standard Projects, Basic Projects and Exempt projects. Source control and site design requirements apply to all projects including Standard Projects, Basic Projects, Exempt Projects and PDPs. Additional structural BMP requirements (i.e. pollutant control and hydromodification management) apply to PDPs and Standard projects (on a more limited basis). Stormwater management requirements for a project, and the applicable sections of this manual, are summarized in Table 1-3.

**TABLE 1-2. Applicability of Manual Sections for Different Project Types**

Project Type	Project Development Process (Chapter 3 and 8)	Source Control and Site Design (Section 2.1 and Chapter 4)	Structural Pollutant Control (Section 2.2 and Chapter 5 and 7)	Structural Hydromodification Management (Section 2.3, 2.4 and Chapter 6 and 7)
Not a Development Project	The requirements of this manual do not apply			
Basic Project	☑	☑	NA	NA
Standard Project <sup>1</sup>	☑	☑	☑	NA