

Notice of Determination

Form C

To: [X] Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: (Public Agency) City of Trinidad

409 Trinity Street,
Trinidad, California 95570

[X] County Clerk
County of Humboldt
825 5th Street, Fifth Floor
Eureka, CA 95501

(Address)

Subject:

Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

City of Trinidad ASBS Stormwater Improvements Project

Project Title

2013112045 Karen Suiker, City Mgr. 707-677-3876
State Clearinghouse Number Lead Agency Area Code/Telephone/Extension
(If submitted to Clearinghouse) Contact Person

Humboldt County, within City rights-of-way west of Highway 101 in Trinidad.

Project Location (include county)

Project Description:

The ASBS Stormwater Improvements project has been designed to collect, treat, and infiltrate City stormwater runoff. This will be accomplished by modernizing the City stormwater system through incorporation of Low Impact Development Best Management Practices (LID/BMPs) to capture, treat, and infiltrate stormwater runoff.

This is to advise that the City of Trinidad has approved the above described project on December 18, 2013 and has made the following determinations regarding the above described project:

- 1. The project [ ] will [X] will not have a significant effect on the environment.
2. [ ] An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
[X] A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [X] were [ ] were not made a condition of the approval of the project.
4. A statement of Overriding Considerations [ ] was [X] was not adopted for this project.
5. Findings [X] were [ ] were not made pursuant to the provisions of CEQA.

931667
CAROLYN CRNICH
Humboldt County Clerk
DEC 19 2013
BY J. Halmer

This is to certify that the MND with comments and responses and record of project approval is available to the General Public at:
City of Trinidad, 409 Trinity Street, Trinidad, California 95570

Signature (Public Agency) Date Title
[Signature] December 19, 2013 City Planner

Date received for filing at OPR:

January 2004

# State Water Resources Control Board

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## Executive Office

1001 I Street • Sacramento, California 95814 • (916) 341-5615  
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100  
Fax (916) 341-5621 • <http://www.swrcb.ca.gov>



**Terry Tamminen**  
*Secretary for Environmental  
Protection*

**Arnold Schwarzenegger**  
*Governor*

October 18, 2004

Mr. Noel Ponniah  
City of Trinidad  
PO Box 390  
Trinidad, CA 95570-0390

Dear Mr. Ponniah:

### PROHIBITION OF WASTE DISCHARGES INTO THE KELP BEDS AT TRINIDAD HEAD AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE

The California Ocean Plan (Ocean Plan), adopted by the State Water Resources Control Board (State Board) and approved by the U.S. Environmental Protection Agency (U.S. EPA), lists 34 coastal marine waters which the State Board has designated as Areas of Special Biological Significance (ASBS). ASBS are defined as “those areas designated by the State Board requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.”

The Ocean Plan, Section III.E.1., requires that: “Waste\* shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.” “Waste” is defined as the “total discharge, of whatever origin.” Your discharge of storm water (dry and wet weather runoff) into the Kelp Beds at Trinidad Head Area of Special Biological Significance is subject to the prohibition against waste discharges to an ASBS.

The Ocean Plan, Section III.I.1, allows the State Board to grant exceptions to this prohibition, provided that the exception “will not compromise protection of ocean waters for beneficial uses, and, [t]he public interest will be served.” Prior to granting an exception, the State Board must hold a public hearing, and there must be compliance with the California Environmental Quality Act (CEQA). The U.S. EPA must also concur.

Information regarding the Ocean Plan, ASBS, or existing exceptions to the Ocean Plan may be found at <http://www.swrcb.ca.gov/plns/polso/plans/index.html> .

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**California Environmental Protection Agency**

Because you do not already have an exception issued by the State Board for discharges to the ASBS, you are required to cease discharging. You may, however, request an exception to the prohibition if you believe your discharge will not compromise protection of ocean waters for beneficial uses, and the public interest will be served. Please notify the State Board prior to January 1, 2005 whether you intend to cease discharging to the specified ASBS or whether you will seek an exception. We will discuss further steps with you subsequently. Your response should be sent to Dominic Gregorio of the Division of Water Quality, Ocean Standards Unit, with a copy sent to the North Coast Regional Water Quality Control Board.

The State Board staff will hold a workshop, at a date and location as yet to be determined, for those parties interested in pursuing an exception. The purpose of this workshop will be to provide information on the procedures for applying for an exception and possible funding sources that may be available to address discharges into ASBS. You will receive an invitation to this workshop in the near future.

If you have any questions, please feel free to contact Stan Martinson, Chief, Division of Water Quality, at (916) 341-5458 ([marts@swrcb.ca.gov](mailto:marts@swrcb.ca.gov)) or Dominic Gregorio, Division of Water Quality, Ocean Standards Unit, at (916) 341-5488 ([gregd@swrcb.ca.gov](mailto:gregd@swrcb.ca.gov)).

Sincerely,

*Original signed by Tom Howard for*

Celeste Cantú  
Executive Director

cc: Mayor Dean Heyenga  
City of Trinidad  
PO Box 390  
Trinidad, CA 95570-0390

Ms. Catherine Kuhlman, Executive Officer  
North Coast Regional Water Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403

bcc: Board members, EXEC  
Tom Howard, EXEC  
Sheila Vassey, OCC  
Betsy Jennings, OCC  
John Norton, OSI  
Stan Martinson, DWQ  
John Ladd, DWQ  
Gerald Bowes, DWQ  
Bruce Fujimoto, DWQ  
Frank Palmer, DWQ  
Frank Roddy, DWQ  
Dominic Gregorio, DWQ

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**City of Trinidad**  
**ASBS COMPLIANCE PLAN**

**Final Version 1.3**

**As specified in the Special Conditions (Specific Provisions)  
for Traditional Small MS4 ASBS Discharges**

Phase II Small MS4 General Permit  
NPDES General Permit No. S000004  
Order No. 2013-0001-DWQ - Attachment C

**September 6, 2016**

**Prepared by**

**City of Trinidad  
Stormwater Program Staff  
PO Box 390  
Trinidad CA 95570**

## Introduction

This ASBS Compliance Plan has been developed to comply with the Special Conditions for Traditional and Non-Traditional Small MS4 ASBS Discharges. The City of Trinidad is a Traditional Small MS4 Permittee because the City discharges to the Trinidad Bay ASBS. Trinidad was granted an exception to the Ocean Plan on March 20, 2012 and is subject to the following Special Protections requirements: Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint Source Waste Discharges (Attachment B to State Water Board Resolution 2012-0001) (Special Protections).

In 1974 the kelp beds offshore of Trinidad Head were designated by the State of California as an Area of Special Biological Significance, or ASBS. This rectangle of nearshore ocean surrounds Trinidad Head and includes Trinidad Bay to the east and State Beach to the northwest. Trinidad Head and other rock outcroppings form the sheltered open-ocean bay, which supports diverse marine life including (to name a few) giant kelp and other algae, harbor seals, sea lions, river otters, marine birds, fish, and invertebrates such as crab and mussels.

Trinidad is a small city located on the coast adjacent to Trinidad Bay and ASBS. The importance of Trinidad Bay to Trinidad area residents, businesses, visitors cannot be overstated. Since time immemorial, Trinidad Bay has contributed to the quality of life and livelihoods of the Yurok people, Tsurai village residents and more recent settlers. The bay provides a range of values and beneficial uses to this marine dependent community. Trinidad Bay and the adjacent waters and coastal areas are central to the cultural and economic life of the community. Trinidad Bay supports subsistence harvesting of fish, seaweed and shellfish, recreational, and commercial fishing. Trinidad Bay and the nearby coastal areas provide recreational opportunities for residents and visitors including enjoying the beach, surfing, kayaking and other boating activities, sightseeing, hiking, wildlife viewing and diving. The local elementary school, Humboldt State University, the Telonicher Marine Laboratory, Central and Northern California Ocean Observing System (CenCOOS) and others benefit from the opportunities provided by Trinidad Bay for educational and research activities. There are many hospitality businesses, suppliers and services that are indirectly benefiting from Trinidad Bay. Trinidad community members care about maintaining the scenic beauty and health and vitality of the Trinidad Bay, the City and the coastal watersheds.

The City of Trinidad has approximately 350 residents, and a total of 5 full-time and 2 part-time city staff. There is an active Trinidad Bay Watershed Council, whose mission is “is to work collaboratively to improve and maintain the watersheds, coastal waters, communities in the Trinidad and Westhaven area for the benefit of all community members.” The City and a group of partners have been active since 2005 in efforts to comply with the California Ocean Plan and related requirements. These partners, the “Regional Water Management Group” went through an integrated coastal watershed management planning process to develop the Trinidad-Westhaven Integrated Coastal Watershed Management Plan (ICWM Plan), completed and adopted by the City in 2008. That plan is available on the city website. The city is making an earnest effort with very limited resources to comply with the ASBS Special Protections and the MS4 Permit requirements. The City is an active member of the North Coast Stormwater Coalition (NCSC), whose goal is “to reduce stormwater pollution in local streams, rivers, Humboldt and Trinidad Bay and the ocean through public education and outreach, coordinating pollution prevention efforts and implementing pollution control measures.”

The Special Protections for Areas of Special Biological Significance require submittal of an ASBS Compliance Plan to be included in a SWMP. However, SWMPs are no longer required for submittal by this Order. As

such, the City shall submit a stand-alone ASBS Compliance Plan. The following pages outline the requirements as specified in the Special Protections as well as the City's plan for meeting these requirements.

## **I. PROVISIONS FOR POINT SOURCE DISCHARGES OF STORM WATER**

*The following terms, prohibitions, and special conditions (hereafter collectively referred to as special conditions) are established as limitations on point source storm water. These special conditions provide Special Protections for marine aquatic life and natural water quality in Areas of Special Biological Significance (ASBS), as required for State Water Quality Protection Areas pursuant to California Public Resources Code Sections 36700(f) and 36710(f). These Special Protections are adopted by the State Water Board as part of the California Ocean Plan (Ocean Plan) General Exception.*

### **PERMITTED POINT SOURCE DISCHARGES OF STORM WATER**

#### *1) General Provisions for Permitted Point Source Discharges of Storm Water*

*a. Existing storm water discharges into an ASBS are allowed only under the following conditions:*

*(1) The discharges are authorized by this Order;*

*(2) The discharges comply with all of the applicable terms, prohibitions, and special conditions contained in the Special Protections as laid out in this Attachment; and*

*(3) The discharges:*

*(i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;*

*(ii) Are designed to prevent soil erosion;*

*(iii) Occur only during wet weather;*

*(iv) Are composed of only storm water runoff.*

*b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.*

*c. The discharge of trash is prohibited.*

*d. Only discharges from existing storm water outfalls are allowed. Any proposed or new storm water runoff discharge shall be routed to existing storm water discharge outfalls and shall not result in any new contribution of waste to an ASBS (i.e., no additional pollutant loading). "Existing storm water outfalls" are those that were constructed or under construction prior to January 1, 2005. "New contribution of waste" is defined as any addition of waste beyond what would have occurred as of January 1, 2005. A change to an existing storm water outfall, in terms of re-location or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.*

*e. Non-storm water discharges are prohibited except as provided below:*

*1) The term "non-storm water discharges" means any waste discharges from a municipal separate storm sewer system (MS4) or other NPDES permitted storm drain system to an ASBS that are not composed entirely of storm water.*

*I.A.2) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally:*

- (i) Discharges associated with emergency firefighting operations.*
- (ii) Foundation and footing drains.*
- (iii) Water from crawl space or basement pumps.*
- (iv) Hillside dewatering.*
- (v) Naturally occurring groundwater seepage via a storm drain.*
- (vi) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.*

*I.A.3) Discharges from utility vaults and underground structures to a segment of the MS4 with a direct discharge to an ASBS are permitted if such discharges are authorized by the General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Water, NPDES No. CAG 990002. Other short-duration, intermittent non-storm water discharges related to utilities (e.g. groundwater dewatering, potable water system flushing, hydrotest discharges) to a segment of the MS4 with a direct discharge to an ASBS are permitted if such discharges are authorized by an NPDES permit issued by the relevant Regional Water Board. A Regional Water Board may nonetheless prohibit a specific discharge from a utility vault or underground structure or other specific utility-related discharge if it determines that the discharge is causing the MS4 discharge to the ASBS to alter natural ocean water quality in the ASBS. Additional non-storm water discharges to a segment of the MS4 with a direct discharge to an ASBS are allowed only to the extent the relevant Regional Water Board finds that the discharge does not alter natural ocean water quality in the ASBS.*

*This provision does not supersede the authority of the MS4 to effectively prohibit a non-storm water discharge that has been found to alter natural ocean water quality in the ASBS.*

*4) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.*

On August 12, 2015, the City enacted a new Stormwater Control Ordinance that specifically provides the authority for the City to regulate stormwater discharge so that we can ensure the above provisions are met.

## **2. ASBS Compliance Plan**

The ASBS Compliance Plan (Plan) specifically addresses the prohibition of non-storm water runoff and the requirement to maintain natural water quality for storm water discharges to an ASBS. This version of the Plan addresses comments from the SWRCB Division of Water Quality received September 8, 2014. The ASBS Compliance Plan is subject to approval by the Executive Director of the State Water Board.

### **2. a. ASBS Compliance Plan Map**

*The ASBS Compliance Plan shall include a map, and a procedure for updating the map and plan when changes are made to the storm water conveyance facilities.*

When changes are made to the stormwater conveyance facilities, the city engineer, upon completion of the record drawings, will update the ASBS Compliance Plan and map. The *Figure 1 ASBS Compliance Plan map* (separate document) includes a map of surface drainage of storm water runoff showing:

**1) Areas of sheet runoff:** the map shows the sub watersheds and arrows indicating runoff direction. The permit boundary is the current extent of the stormwater system drainage. With completion of the planned stormwater system improvements, the boundary will be updated to reflect the changes in the stormwater system drainage area.

**2) Prioritized discharges are those that pose the greatest water quality threat and which are identified to require installation of structural BMPs:** The city's single stormwater outfall is designated as #TRI032 and discharges into the ASBS. TRI032 is designated by SWRCB as a priority discharge. This is shown on the map.

**3) Description of any structural Best Management Practices (BMPs) already employed and/or BMPs to be employed in the future:** The map shows structural BMPs that were installed in 2014 and additional structural BMPs that are in the planning stages to reduce or eliminate the stormwater discharge outfall into the Trinidad Head ASBS. Implementation of additional BMPs is dependent on securing funding.

- (a) Stormwater System Improvements installed in 2014 on Trinity, Ocean and West Streets;
- (b) Future Stormwater System Improvements (assuming grant funding is secured) will be proposed for installation on Edwards and other areas to infiltrate the MS4 stormwater.

**4) Storm water conveyances in relation to other features such as**

- (a) **Service areas:** There are no service areas within the stormwater system drainage.
- (b) **Sewage conveyances and treatment facilities:** There is no sanitary sewer system. All development in and around the city has onsite wastewater treatment systems (OWTS). Results of a recently completed groundwater study indicate it is highly unlikely that OWTS in the MS4 drainage area would discharge waste to the city's stormwater system due to the fact that the soils are deep and sandy, with a deep water table. Water (and wastewater) infiltrates quickly rather than flowing on the surface. Planned LID installations (all within the city rights of way) have appropriate separation from the treatment zones and groundwater levels. The City is in the process of implementing an OWTS Management Operating Permit Program.
- (c) **Landslides, areas prone to erosion:** There are bluffs to the south and west between the city and the beach, but these areas are not within the stormwater system drainage.
- (d) **Waste and hazardous material storage areas:** The single hazardous material storage area within the permit boundary is the HSU Telonicher Marine Laboratory. The Marine Lab is regulated under a separate discharge permit. Two restaurants and a seafood business could be assumed to have waste storage areas.

**Figure 1: Trinidad ASBS Compliance Plan Map**



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroX, © mapping, Aerogrid, IGN, ICP, swisstopo, and the GIS User Community

<p>Paper Size 11" x 17" (ANSI B)</p> <p>Map Projection: Lambert Conformal Conic Horizontal Datum: North American 1983 Grid: NAD 1983 StatePlane California 1 FIPS 5401 Feet</p>		<ul style="list-style-type: none"> <li><span style="color: red;">●</span> City Outfall (TR1032)</li> <li><span style="color: yellow;">●</span> City Stormwater Sampling</li> <li><span style="color: blue;">●</span> Seawater Grab Sampling</li> <li><span style="color: green;">●</span> Sediment Sampling</li> <li><span style="color: orange;">●</span> Treatment Chambers</li> <li><span style="color: red;">■</span> Storm Drain Inlet</li> <li><span style="color: blue;">■</span> Storm Drain Inlet (Existing)</li> <li><span style="color: green;">■</span> Storm Drain (Existing)</li> <li><span style="color: orange;">—</span> Infiltration Basin</li> <li><span style="color: green;">—</span> Bioswale</li> <li><span style="color: yellow;">—</span> Storm Drain</li> <li><span style="color: blue;">—</span> Storm Drain (Existing)</li> <li><span style="border: 1px dashed gray; display: inline-block; width: 10px; height: 10px;"></span> City Subwatershed Boundary</li> <li><span style="border: 2px solid red; display: inline-block; width: 10px; height: 10px;"></span> Trinidad MS4 Boundary</li> <li><span style="color: gray;">→</span> Flow Direction</li> </ul>		<p>City of Trinidad Trinidad ASBS Stormwater Project</p>	<p>Job Number   0106311005 Revision   A Date   21 Sep 2015</p>
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## **2. b. Non-Authorized Non-Stormwater Runoff Elimination Measures**

*The Plan describes the measures by which all non-authorized non-storm water runoff (e.g., dry weather flows) have been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.*

The City is implementing a variety of measures to eliminate all non-authorized non-storm water runoff over the course of the 5 –year permit period, July 2013 – June 2018, generally following the implementation schedule for the MS4 Phase II permit. City staff and/or consultants are working to implement, maintain, monitor and document these measures over time. The specific measures and tasks for this section 2. B. *Non-Authorized Non- Stormwater Runoff Elimination Measures* are detailed in Table 1 BMPs and Implementation Schedule. The City’s MS4 Phase II Permit Guidance Document and Permit Tracking sheet will provide the structure needed to ensure that practices are implemented, maintained, tracked and documented.

## **2. c. Inspections**

*Minimum inspection frequencies are as follows:*

- 1) The minimum inspection frequency for construction sites shall be weekly during rainy season (Construction Site Inspection & Enforcement, Permit Element E.10.c.);*
- 2) The minimum inspection frequency for industrial facilities shall be monthly during the rainy season: not applicable (IDDE Illicit Discharge Source/Facility Inventory E.9.b);*
- 3) The minimum inspection frequency for commercial facilities (e.g., restaurants) shall be twice during the rainy season (IDDE Illicit Discharge Source/Facility Inventory E.9.b);*
- 4) Storm water outfall drains equal to or greater than 18 inches (457 mm) in diameter or width shall be inspected once prior to the beginning of the rainy season and once during the rainy season and maintained to remove trash and other anthropogenic debris (IDDE Outfall Mapping E.9.a).*

## **2. d. Storm Water Discharges**

*This section addresses storm water discharges (wet weather flows) and describes how pollutant reductions in storm water runoff, that are necessary to comply with these special conditions, will be achieved through BMPs. BMPs to control storm water runoff discharges (at the end-of-pipe) during a design storm shall be designed to achieve on average the following target levels:*

- 1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or*
- 2) A 90% reduction in pollutant loading during storm events, for the Permittee’s total discharges. The baseline for the reduction is the effective date of the Exception. The baseline for these determinations is the effective date of the Exception, and the reductions must be achieved and documented within six (6) years of the effective date.*

### **Water Quality Monitoring**

ASBS water quality monitoring results for the City’s stormwater and ASBS ocean receiving water, conducted by the City in May 2006, and during the wet seasons 2011-12, 2012-13 and 2013-14, indicated achievement of the Table B. Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan. “Natural Water Quality Guidelines” for the North Coast have been defined based on two years of reference site monitoring results.

### ***Results and Exceedances***

The City has completed its ASBS monitoring. The 2013-14 toxicity testing results were negative for both the City's stormwater (core monitoring) and ocean receiving water. Analysis of the Trinidad Head ASBS monitoring results of ocean receiving water and MS4 stormwater effluent discharged indicates there were exceedances for some constituents in comparison with the natural water quality guidelines. Lead and copper in the city's effluent were consistently reported above both background and receiving water.

### ***Reducing Pollutant Sources and Addressing Exceedances***

In response to these findings, the City will focus on addressing the lead and copper exceedances and further evaluate lead and copper in storm water runoff. The City will continue implementation of the BMPs currently in place to maintain the water quality objectives. In general, the City's approach is to control the sources of pollutants through implementation of the MS4 Phase II Permit Program, and to obtain grant funding to implement the structural BMPs necessary to completely eliminate our direct discharge (ASBS Discharge TRI032) to the Trinidad Bay ASBS. The specific measures and tasks for this section *2.d Stormwater Discharges* are detailed in Table 1 *BMPs and Implementation Schedule*.

### **2. e. Erosion Control and Anthropogenic Sedimentation Prevention**

The City will address erosion control and the prevention of anthropogenic sedimentation in ASBS through implementation of the MS4 Phase II Permit Program, through implementation of the City's Stormwater Control Ordinance and through education and outreach BMPs. The specific measures and tasks for this section *2.e Erosion Control* are detailed in Table 1 *BMPs and Implementation Schedule*.

### **2. f. Non-Structural and Structural BMPs**

The City is currently employing a variety of non-structural BMPs and is considering additional non-structural BMPs for the future. The specific measures and tasks for this section *2.f. Non-structural BMPs* are detailed in Table 1 *BMPs and Implementation Schedule*. The City's stormwater discharge into the Trinidad ASBS is a priority, high threat discharge. The City intends to eliminate this discharge from the ASBS completely. LID practices will be implemented wherever possible before using other structural BMPs. The City has successfully used LID several times in the past, including construction of the Stormwater Project Phase 1 LID improvements to the City's stormwater system and has conceptual plans for Phase 2, additional LID projects to be implemented when funding can be obtained.

Major improvements to the City's stormwater management system were completed in 2014. These improvements are reducing the quantity of stormwater entering the stormwater system through LID facilities that treat and infiltrate stormwater flows in the upper part of the City rather than collecting and discharging into the ASBS. These improvements reduced the area draining to the stormwater system and reduced by 37% the volume of stormwater discharging into the ASBS.

Additional details about specific measures for this Section 2.f. Structural BMPs are included in Table 1 *BMPs and Implementation Schedule*.

### **2. g. BMPs & Implementation Schedule**

The Best Management Practices and Implementation Schedule are designed to ensure that natural water quality conditions in the receiving water are achieved and maintained through a combination of disconnecting the MS4 from the ASBS discharge where possible, reducing flows from impervious surfaces and reducing pollutant loading. Strategies include both non-structural BMPs and structural BMPs.

1. The Storm Water Management Improvement Project Phase 1 (SW Phase 1) construction of structural LID facilities to eliminate discharge via infiltration was completed in 2014. These measures are effectively permanent and will not require tracking. Storm Water Management Improvement Project Phase 2 (SW

## City of Trinidad ASBS Compliance Plan

Phase 2) structural BMPs will be constructed when funding is secured. The City has applied for Prop 1 OPC funding, and is seeking Storm Water Grant Program Implementation Round 1 funding (Prop 1, 50 & 84). If unsuccessful, Round 2 funds will be applied for.

2. Until that goal is achieved, the City shall provide an annual update on the current status of the City's BMPs. This will take the form of an updated version of Table 1, and will include a summary of the implementation of each BMP over the prior year, and to date under these permits.

3. In order to compile the necessary information for this annual update, City Staff will maintain an ongoing file documenting the completion of BMPS. Examples include site inspection forms, outreach meetings and materials, and sign in sheets and training materials for staff and Site Operator trainings.

City of Trinidad ASBS Compliance Plan

Table 1 BMPs and Implementation Schedule  <b>BMPs and Tasks</b>	<b>MS4 Permit Element</b>	<b>Implementation Dates &amp; Current Status</b>	<b>Special Protections Section</b> 2.b eliminate non-authorized non-storm water discharge 2.c. Inspections 2.d Stormwater discharges 2. e. Erosion & Sediment Control			
			<b>2.b.</b>	<b>2.c.</b>	<b>2.d.</b>	<b>2. e</b>
<b>Non-Structural BMPs (section 2.f)</b>						
Adopt and implement Stormwater Control Ordinance to obtain legal authority to control pollutant discharges into and from MS4.	E.6.a	Adopted August 12, 2015	✓	✓	✓	✓
Work with partners to implement the <i>Trinidad-Westhaven Integrated Coastal Watershed Management Plan (ICWM Plan)</i> and ASBS Compliance Plan as funding allows.	E.7.a E.8 E.12.k	Ongoing. Adopted June 2008	✓	✓	✓	✓
Seek funding to implement ICWM Plan priority tasks and projects, and ASBS Compliance Plan structural and non-structural BMPs. <ul style="list-style-type: none"> <li>Prop 1 Ocean Protection Council</li> <li>Storm Water Grant Program Imp. Round 1</li> </ul>	E. 6. c E. 11 E.12	Ongoing. Beginning in 2008. <ul style="list-style-type: none"> <li>2/26/16</li> <li>7/8/16</li> </ul>	✓	✓	✓	✓
Develop and implement Stormwater Discharge Enforcement Response Plan	E.6.c	Implement in 2016	✓	✓	✓	✓
Develop & Implement Comprehensive Education & Outreach Program	E.7.a	Implement in 2015	✓		✓	✓
Conduct Staff & Site Operator Trainings (with NCSC): <ul style="list-style-type: none"> <li>IDDE Training for city staff that would in the course of their duties observe illicit discharges.</li> <li>Construction Outreach &amp; Education training Staff</li> <li>Construction Site Operator training</li> <li>Pollution Prevention &amp; Good Housekeeping staff training</li> </ul>	E.7.b.1 E.7.b.2.a E.7.b.2.b E.7.b.3	Beginning 2014  Annual Annual Periodic Biennial	✓		✓	✓
Hold Trinidad-Westhaven community meetings to educate and inform the public about the ASBS, water quality issues, watershed plan projects, and how to prevent water pollution and discharge of trash to the ASBS.	E.7.a E.8	Ongoing, beginning June 2006	✓		✓	✓
Encourage use of LID features to capture and treat storm water and pollutants on site.	E.7.a (ii)(g)	Beginning in February 2008	✓		✓	✓
Encourage use of water efficient and stormwater-friendly landscaping. As funding allows: <ul style="list-style-type: none"> <li>Develop and promote an “ocean-friendly gardening” guide.</li> <li>Provide LID and “Ocean-friendly gardening” workshops</li> </ul>	E.7.a (ii)(g)	Beginning in May 2014	✓		✓	✓
Stormwater Program Public Involvement & Participation	E.8	Started in 2013	✓		✓	✓
Illicit Discharge Detection & Elimination Program	E.9	Implement 2014	✓	✓	✓	✓
Implement City’s Onsite Wastewater Treatment System Ordinance and OWTS Management Operating Permit Program to reduce potential for septic contamination of stormwater.	E.9 E.7.a	Adoption in 2010 Implementation began in 2013	✓	✓	✓	✓

City of Trinidad ASBS Compliance Plan

Table 1 BMPs and Implementation Schedule  <b>BMPs and Tasks</b>	<b>MS4 Permit Element</b>	<b>Implementation Dates &amp; Current Status</b>	<b>Special Protections Section</b> 2.b eliminate non-authorized non-storm water discharge 2.c. Inspections 2.d Stormwater discharges 2. e. Erosion & Sediment Control			
<b>Non-Structural BMPs (section 2.f)</b>			<b>2.b.</b>	<b>2.c.</b>	<b>2.d.</b>	<b>2. e</b>
If illicit, polluted or sediment discharge is detected, contact responsible party to eliminate discharge and follow up as needed with cleanup and abatement.	E.9.d	Ongoing starting in August 2013	✓	✓	✓	✓
Create and maintain an inventory of all commercial facilities and locations with hazardous materials and update annually. Assess priority areas once during permit term.	E.9.b	Ongoing beginning June 2014	✓	✓	✓	✓
Spill Response Plan Member of Humboldt & Del Norte Regional Hazardous Materials Response Team (HDN HMRT).	E.9.e	Plan Completed June 2014	✓	✓		✓
Work regionally with the North Coast Stormwater Coalition (NCSC) to implement comprehensive education & outreach program, conduct surveys and distribute educational brochures and messaging, hold educational public meetings and workshops.	E.7 E.8	Ongoing, starting in July 2011	✓		✓	✓
Work with NCSC to promote reporting of illicit discharges through the Stormwater Hotline and/or other reporting methods.	E.7.a(h)	Ongoing, starting in July 2011	✓	✓	✓	✓
Support the Trinidad Elementary School environmental education programs	E.7.a(j)	Ongoing, starting in July 2011	✓		✓	✓
Support the Trinidad Bay Watershed Council as funding allows.	E.7 E.8	Ongoing, starting in May 2007	✓		✓	✓
Construction Site Inventory, with annual updates.	E.10.a	Completed in June 2013.		✓		✓
Construction Plan Review & Approval Procedures, updated as needed	E.10.b	Ongoing, starting July 2013		✓		
Construction Site Inspection & Enforcement Program	E.10.c	Ongoing, started prior to July 2013		✓		✓
Pollution Prevention/Good Housekeeping: Continue policy of not using herbicides or pesticides at city facilities. There are no city facilities where materials are stored within the permit area. Public Works will provide adequate trash receptacles at priority locations and ensure they are maintained regularly.	E.11	Ongoing, beginning prior to July 2013		✓		✓
Maintain stormwater system: Remove trash from streets and sidewalks. Consider street sweeping before storm season. Use vacuum extractor trailer to clean out storm drain system drop inlets in 2016 and 2017 before storm season.	E.11	Ongoing, beginning prior to July 2013.		✓	✓	✓
Planning & Development Review Process: Zoning Code changes to be included in the General Plan/Local Coastal Plan update.	E.12.j	Ongoing, starting July 2015.	✓	✓	✓	✓

City of Trinidad ASBS Compliance Plan

Table 1 BMPs and Implementation Schedule  <b>BMPs and Tasks</b>	<b>MS4 Permit Element</b>	<b>Implementation Dates &amp; Current Status</b>	<b>Special Protections Section</b> 2.b eliminate non-authorized non-storm water discharge 2.c. Inspections 2.d Stormwater discharges 2. e. Erosion & Sediment Control			
Develop and Implement a Post Construction Stormwater Management Program. Adopt Humboldt Stormwater Low Impact Development Manual that includes regulations, standards, review processes and enforceable mechanisms.	E.12	<ul style="list-style-type: none"> <li>• Implemented July 1, 2015</li> <li>• Manual adopted August 2015</li> </ul>	✓	✓	✓	✓
<b>Structural BMPs (Section 2.f)</b>			<b>2.b.</b>	<b>2.c.</b>	<b>2.d.</b>	<b>2. e</b>
Complete upgrades to the stormwater system through the Prop 84 ASBS Trinidad Stormwater Management Improvement Phase I Project.	E.11	Construction completed Fall 2014			✓	✓
Post Construction BMP Condition Assessment: Inventory and assess the maintenance condition of structural post construction BMPs within City.	E.12.i	Beginning June 2016	✓	✓	✓	✓
Trinidad Storm Water Management Improvement, final phase: Construct Low Impact Development (LID) improvements to the Storm Drainage System to eliminate stormwater discharges into Trinidad Head ASBS. Prop 1 SWGP proposal submitted 7/8/16.	E.8.f E.11	Project concept completed in 2015.	✓	✓	✓	✓
LID features (for capture, treatment, re-use and demonstration) have been installed at various places around the city. There are permeable pavers in the parking area in front of the City Annex at 463 Trinity Street. As funding allows, install residential LID demonstration project at City Annex. There is a rain garden installed at Azalea and Pacific Streets. The City park and areas around the library and museum include native plant landscaping and a grassy emergency access driveway from Main Street. A proposed demonstration project to capture and re-use storm water at the City Park will be constructed when funding is secured.	E.7.a(g) E.11.h E.11.i E.11.j E.12.	LID techniques included in projects when feasible beginning 2008.	✓	✓	✓	✓
Encourage use of LID features to capture and treat pollutants on site, and to re-use stormwater as appropriate to conserve potable water. As funding allows: <ul style="list-style-type: none"> <li>• Develop a residential LID construction incentive program.</li> <li>• Develop residential LID guidance and standard plans for construction of LID features.</li> <li>• Develop Ocean Friendly Gardening and Landscaping guidance to promote installation of low water/chemical use landscapes which re-use storm water and reduce potable water use.</li> </ul>	E.7.a(g)	Beginning in February 2008	✓	✓	✓	✓

## **h. Alterations of Natural Ocean Water Quality**

*If the results of the receiving water monitoring described in Section IV. B. below indicate that the storm water runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the Permittee shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results.*

The City submitted an Exceedance report on October 6, 2014 in compliance with the Special Conditions 2.h listed below:

- 1) The report shall identify the constituents in storm water runoff that alter natural ocean water quality and the sources of these constituents;*
- 2) The report shall describe BMPs that are currently being implemented, BMPs that are identified in the ASBS Compliance Plan for future implementation, and any additional BMPs that may be added to the ASBS Compliance Plan to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the BMPs.*
- 3) Within 30 days of the approval of the report by the State Water Board Executive Director, the Permittee shall revise its ASBS Compliance Plan to incorporate any new or modified BMPs that have been or will be implemented, the implementation schedule, and any additional monitoring required.*
- 4) As long as the Permittee has complied with the procedures described above and is implementing the revised ASBS Compliance Plan, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent.*
- 5) Compliance with this section does not excuse violations of any term, prohibition, or condition contained in the Special Protections.*

As required above, the City's Exceedance Report for the Trinidad Bay ASBS includes an identification of the constituents in storm water runoff, and the possible sources of the constituents as well as the current and planned BMPs that address the alteration of alteration of water quality. The City will continue to work with the SWRCB to address the water quality issues identified in the exceedance report.

## **3. Compliance Schedule**

*a. On the effective date of the Exception (March 20, 2012) all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.*

*b. Within 18 months from the effective date of the Exception (September 20, 2013), the Permittee shall submit a written ASBS Compliance Plan to the State Water Board Executive Director that describes its strategy to comply with these special conditions, including the requirement to maintain natural water quality in the affected ASBS. The ASBS Compliance Plan shall include a time schedule to implement appropriate non-structural and structural controls (implementation schedule) to comply with these special conditions.*

- September 20, 2013 - The draft ASBS Compliance Plan was submitted.
- October 6, 2014 - The ASBS Compliance Plan addressing SWRCB comments was submitted.
- September 21, 2015 - Final ASBS Compliance Plan (Version 1) was submitted.

*c. Within 18 months of the effective date of the Exception (September 20, 2013), any non-structural controls that are necessary to comply with these special conditions shall be implemented.*

See Table 1, Section 1 for the list of non-structural BMPs implemented and planned. Please note that many additional non-structural controls are scheduled for implementation per the Phase II MS4 Permit between 2013 and 2018.

*d. Within six (6) years of the effective date of the Exception (March 20, 2018), any structural controls identified in the ASBS Compliance Plan that are necessary to comply with these special conditions shall be operational.*

See Table 1, Section 2 for the list of Structural BMPs implemented and planned

*e. Within six (6) years of the effective date of the Exception (March 20, 2018), all Permittees must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the Permittee must re-sample the receiving water, pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data, and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded.*

The City fully participated in ASBS Regional Monitoring, works with the two other Trinidad ASBS dischargers to conduct ocean receiving water monitoring and has conducted core monitoring on our storm water discharge as required and is utilizing the resulting data to guide our efforts.

*f. The Executive Director of the State Water Board may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.*

*If a Permittee claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the Permittee first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the Permittee to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The Permittee shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.*

*The Permittee may request an extension of time for compliance based on lack of funding. The request for an extension shall require (for Traditional Small MS4s) a demonstration of significant hardship to Permittee ratepayers, by showing the relationship of storm water fees to annual household income for residents within the Permittee's jurisdictional area, and the Permittee has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate.*

## II. ADDITIONAL REQUIREMENTS FOR PARKS AND RECREATION FACILITIES

*In addition to the provisions in Section I (A) a Permittee with parks and recreation facilities shall comply with the following:*

*A. The Permittee shall include a section in an ASBS Compliance Plan to address storm water runoff from parks and recreation facilities.*

There are no City owned/operated facilities in the MS4 Permit (drainage) area, so none could contribute waste to stormwater runoff discharging to the ASBS. Neither the City maintained trails nor City's Saunders Park are in the MS4 drainage area.

Runoff from City Hall and the adjacent Lin tennis court and fire house no longer discharge to the ASBS. Installation of LID facilities has disconnected the upper area of the City from the MS4 that drains to the ASBS. The following sections are no longer applicable as of August, 2014 due to completion of the Stormwater Improvement Project Phase I. The BMPs were applicable between July 1, 2013 and August 2014.

*1. Pollutant sources, including sediment sources, which may result in waste entering storm water runoff.*

- Potential pollutant sources at City Hall, the tennis court and Fire House include one trash receptacle and one cigarette butt receptacle and potential sediment from parking lot runoff.

*2. BMPs or Management Measures/Practices to be implemented to control soil erosion (both temporary and permanent erosion controls) and reduce or eliminate pollutants in storm water runoff in order to achieve and maintain natural water quality conditions in the affected ASBS.*

- Please see Table 1 for BMPs to control soil erosion and reduce or eliminate pollutants in storm water runoff.

*3. BMPs or Management Measures/Practices to prevent the discharge of pesticides or other chemicals, including agricultural chemicals, in storm water runoff to the affected ASBS.*

- Please see Table 1 for BMPs to prevent the discharge of pesticides or other chemicals, including agricultural chemicals in storm water runoff to the affected ASBS.
- Please note that the city does not use pesticides or other agricultural chemicals on city owned or operated facilities and does not store these chemicals at city owned facilities.

*4. BMPs or Management Measures/Practices that address public education and outreach.*

- Please see Table 1 for BMPs that address public education and outreach to ensure the public is informed about preventing pollution in storm water runoff to the Trinidad ASBS.

*5. BMPs or Management Measures/Practices that address the prohibition against the discharge of trash to ASBS. Adequate trash receptacles are currently and will remain available for public use at visitor facilities, including parking areas. Receptacles are adequately maintained by Public Works to prevent trash discharges into the ASBS. Public Works empties receptacles to prevent overflows and includes covers as needed to prevent trash from being windblown.*

## City of Trinidad ASBS Compliance Plan

- Please see Table 1 for BMPs to address the prohibition against the discharge of trash to the Trinidad ASBS.
- Please see the Trinidad School students' artwork about preventing discharge of trash and other pollutants at:  
[http://www.blm.gov/ca/st/en/fo/arcata/trinidad\\_gateway\\_to/2013\\_ccnm\\_art\\_contest.html](http://www.blm.gov/ca/st/en/fo/arcata/trinidad_gateway_to/2013_ccnm_art_contest.html)

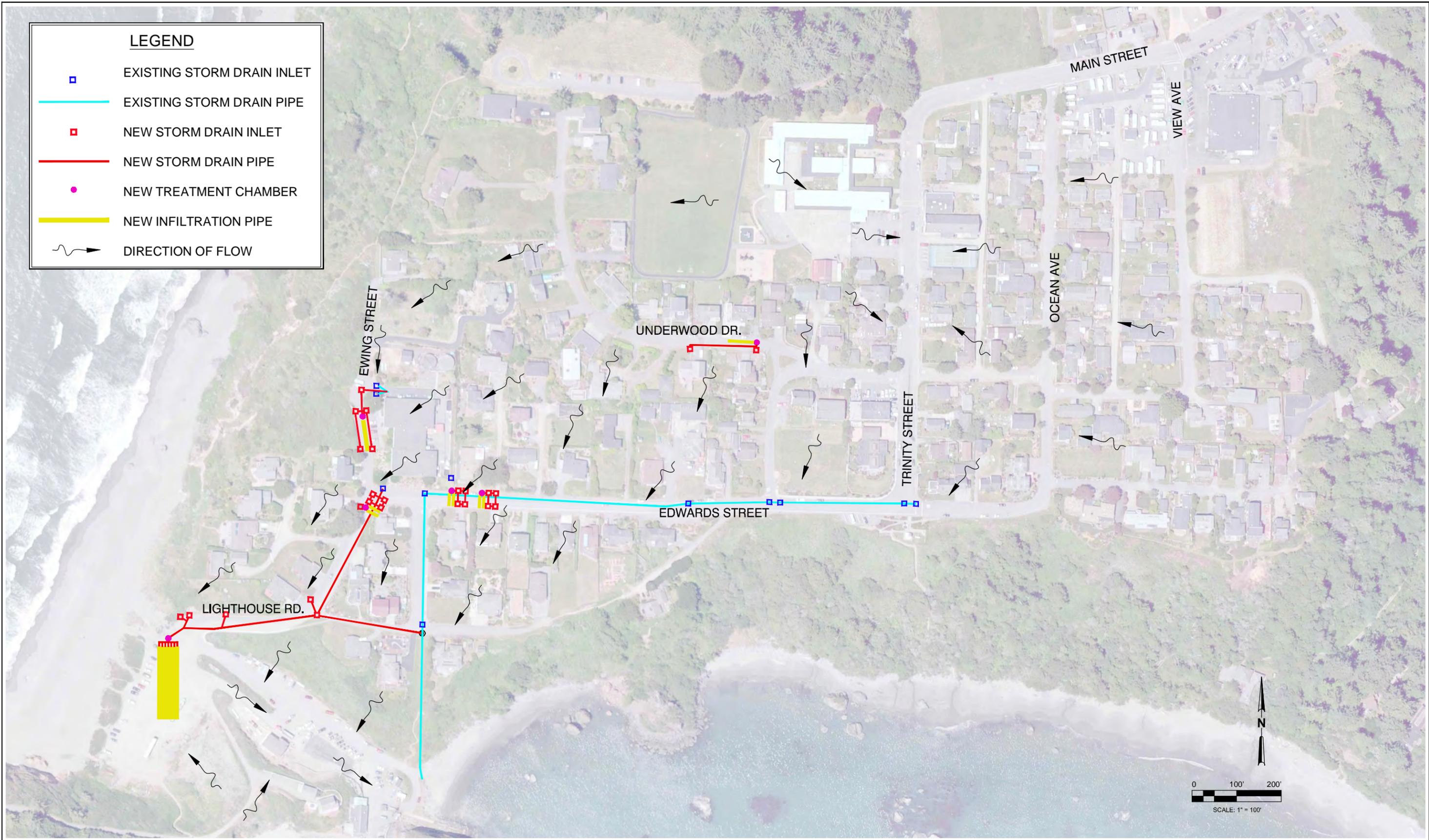
*6. BMPs or Management Measures/Practices to address runoff from parking areas and other developed features to ensure that the runoff does not alter natural water quality in the affected ASBS. BMPs include Management Measures and Practices to reduce pollutant loading in runoff to the ASBS through installation of natural area buffers (LID), treatment, and other appropriate measures.*

- Please see Table 1 for BMPs to address stormwater discharge from paved and developed areas.

*B. Park and recreation facilities maintenance and repairs will be conducted so as to avoid waste discharges to the ASBS.*

**LEGEND**

- EXISTING STORM DRAIN INLET
- EXISTING STORM DRAIN PIPE
- NEW STORM DRAIN INLET
- NEW STORM DRAIN PIPE
- NEW TREATMENT CHAMBER
- NEW INFILTRATION PIPE
- DIRECTION OF FLOW



No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

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THIS BAR IS ONE INCH LONG ON ORIGINAL DRAWING.  
 0 1"



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Drawn RKM	Designer TMD
Drafting PS	Design Check PS
Approved (Project Director)	Date AUGUST 2017
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction

Client **CITY OF TRINIDAD**  
 Project **ASBS STORMWATER IMPROVEMENT PROJECT**  
 Title **CONCEPTUAL SITE PLAN**  
 Figure **FIGURE 5**  
 Contract No. 01063-07-001

Original Size	ANSI D	Drawing No:	Rev:
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City of Trinidad  
ASBS Stormwater Improvement Project  
Infiltration Analysis by Sub-Basin

Results:				Constants:						References:	
Vtank (ft <sup>3</sup> )	h (ft)	Vtank Max (ft <sup>3</sup> )	hmax (ft)	Area (ft <sup>2</sup> ):	Ks* (ft/min):	Depth to Bedrock** (ft):	Wf* (ft)	θs*	θl*	* Hydrology and Hydraulic Systems, Third Edition, Gupta, 2008.	
16,392	1.87	21,372	1.87	11,400	0.04	50	0.0151	0.3000	0.1200	** City of Trinidad ASBS Stormwater Improvement Project, Geotechnical Analysis, GHD, October 2012.	

Hydrograph:				Calculations:								
Date/Time	CT-1 (ft <sup>3</sup> /s)	CT-2 (ft <sup>3</sup> /s)	CT-3 (ft <sup>3</sup> /s)	Volumetric:			Green-Ampt*					
	50-year	50-year	50-year	Vrunoff (ft <sup>3</sup> )	Vtank (ft <sup>3</sup> )	h (ft)	zf (ft)	q (ft/min)	F (ft)	Vinf (ft <sup>3</sup> )	actual (ft <sup>3</sup> )	
1/1/2012 0:00	0.00	0.00	0.00									
1/1/2012 0:01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/1/2012 0:02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/1/2012 0:03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/1/2012 0:04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/1/2012 0:05	0.00	0.10	0.00	6.00	6.00	0.00	0.03	0.01	0.01	64.06	6.00	6.00
1/1/2012 0:06	0.00	0.10	0.00	6.00	6.00	0.00	0.33	0.05	0.05	615.47	6.00	6.00
1/1/2012 0:07	0.00	0.10	0.00	6.00	6.00	0.00	0.54	0.04	0.04	429.62	6.00	6.00
1/1/2012 0:08	0.00	0.10	0.00	6.00	6.00	0.00	0.75	0.04	0.04	422.12	6.00	6.00
1/1/2012 0:09	0.10	0.10	0.10	18.00	18.00	0.00	0.95	0.04	0.04	419.44	18.00	18.00
1/1/2012 0:10	0.10	0.10	0.10	18.00	18.00	0.00	1.15	0.04	0.04	417.47	18.00	18.00
1/1/2012 0:11	0.10	0.10	0.10	18.00	18.00	0.00	1.36	0.04	0.04	416.20	18.00	18.00
1/1/2012 0:12	0.10	0.10	0.10	18.00	18.00	0.00	1.56	0.04	0.04	415.31	18.00	18.00
1/1/2012 0:13	0.10	0.10	0.10	18.00	18.00	0.00	1.76	0.04	0.04	414.66	18.00	18.00
1/1/2012 0:14	0.10	0.20	0.10	24.00	24.00	0.00	1.96	0.04	0.04	414.28	24.00	24.00
1/1/2012 0:15	0.10	0.20	0.10	24.00	24.00	0.00	2.16	0.04	0.04	413.87	24.00	24.00
1/1/2012 0:16	0.10	0.20	0.10	24.00	24.00	0.00	2.37	0.04	0.04	413.53	24.00	24.00
1/1/2012 0:17	0.20	0.20	0.10	30.00	30.00	0.00	2.57	0.04	0.04	413.35	30.00	30.00
1/1/2012 0:18	0.20	0.20	0.10	30.00	30.00	0.00	2.77	0.04	0.04	413.10	30.00	30.00
1/1/2012 0:19	0.20	0.20	0.10	30.00	30.00	0.00	2.97	0.04	0.04	412.90	30.00	30.00
1/1/2012 0:20	0.20	0.20	0.10	30.00	30.00	0.00	3.17	0.04	0.04	412.72	30.00	30.00
1/1/2012 0:21	0.20	0.20	0.10	30.00	30.00	0.00	3.37	0.04	0.04	412.57	30.00	30.00
1/1/2012 0:22	0.20	0.20	0.10	30.00	30.00	0.00	3.57	0.04	0.04	412.43	30.00	30.00
1/1/2012 0:23	0.20	0.20	0.10	30.00	30.00	0.00	3.77	0.04	0.04	412.31	30.00	30.00
1/1/2012 0:24	0.20	0.20	0.10	30.00	30.00	0.00	3.98	0.04	0.04	412.20	30.00	30.00
1/1/2012 0:25	0.20	0.20	0.10	30.00	30.00	0.00	4.18	0.04	0.04	412.10	30.00	30.00
1/1/2012 0:26	0.20	0.20	0.10	30.00	30.00	0.00	4.38	0.04	0.04	412.01	30.00	30.00
1/1/2012 0:27	0.20	0.20	0.10	30.00	30.00	0.00	4.58	0.04	0.04	411.93	30.00	30.00
1/1/2012 0:28	0.20	0.20	0.10	30.00	30.00	0.00	4.78	0.04	0.04	411.86	30.00	30.00
1/1/2012 0:29	0.20	0.20	0.10	30.00	30.00	0.00	4.98	0.04	0.04	411.79	30.00	30.00
1/1/2012 0:30	0.20	0.20	0.10	30.00	30.00	0.00	5.18	0.04	0.04	411.73	30.00	30.00
1/1/2012 0:31	0.20	0.20	0.10	30.00	30.00	0.00	5.38	0.04	0.04	411.68	30.00	30.00
1/1/2012 0:32	0.20	0.20	0.20	36.00	36.00	0.00	5.58	0.04	0.04	411.66	36.00	36.00
1/1/2012 0:33	0.20	0.20	0.20	36.00	36.00	0.00	5.78	0.04	0.04	411.61	36.00	36.00
1/1/2012 0:34	0.20	0.20	0.20	36.00	36.00	0.00	5.98	0.04	0.04	411.57	36.00	36.00
1/1/2012 0:35	0.20	0.20	0.20	36.00	36.00	0.00	6.18	0.04	0.04	411.52	36.00	36.00
1/1/2012 0:36	0.20	0.20	0.20	36.00	36.00	0.00	6.38	0.04	0.04	411.48	36.00	36.00
1/1/2012 0:37	0.20	0.20	0.20	36.00	36.00	0.00	6.58	0.04	0.04	411.45	36.00	36.00
1/1/2012 0:38	0.20	0.20	0.20	36.00	36.00	0.00	6.78	0.04	0.04	411.41	36.00	36.00
1/1/2012 0:39	0.20	0.20	0.20	36.00	36.00	0.00	6.98	0.04	0.04	411.38	36.00	36.00
1/1/2012 0:40	0.20	0.20	0.20	36.00	36.00	0.00	7.19	0.04	0.04	411.35	36.00	36.00
1/1/2012 0:41	0.20	0.20	0.20	36.00	36.00	0.00	7.39	0.04	0.04	411.32	36.00	36.00
1/1/2012 0:42	0.20	0.20	0.20	36.00	36.00	0.00	7.59	0.04	0.04	411.29	36.00	36.00
1/1/2012 0:43	0.20	0.20	0.20	36.00	36.00	0.00	7.79	0.04	0.04	411.26	36.00	36.00
1/1/2012 0:44	0.20	0.20	0.20	36.00	36.00	0.00	7.99	0.04	0.04	411.23	36.00	36.00
1/1/2012 0:45	0.20	0.20	0.20	36.00	36.00	0.00	8.19	0.04	0.04	411.21	36.00	36.00
1/1/2012 0:46	0.20	0.20	0.20	36.00	36.00	0.00	8.39	0.04	0.04	411.19	36.00	36.00
1/1/2012 0:47	0.20	0.20	0.20	36.00	36.00	0.00	8.59	0.04	0.04	411.17	36.00	36.00
1/1/2012 0:48	0.20	0.20	0.20	36.00	36.00	0.00	8.79	0.04	0.04	411.14	36.00	36.00
1/1/2012 0:49	0.20	0.20	0.20	36.00	36.00	0.00	8.99	0.04	0.04	411.13	36.00	36.00
1/1/2012 0:50	0.30	0.20	0.20	42.00	42.00	0.00	9.19	0.04	0.04	411.13	42.00	42.00
1/1/2012 0:51	0.30	0.20	0.20	42.00	42.00	0.00	9.39	0.04	0.04	411.11	42.00	42.00
1/1/2012 0:52	0.30	0.20	0.20	42.00	42.00	0.00	9.59	0.04	0.04	411.09	42.00	42.00

## Northeast Trinidad

### Scenario 1:

Watershed:	CT-1, CT-2 & CT-3	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	100 year, 24 hour	Contech Con/Span	40,000	8,300	65	16.00	6.00	521	19.67
Location:	Main Steet	Contech Chambermaxx	26,000	13,900	311	6.28	2.50	2,218	6.28

### Scenario 2:

Watershed:	CT-1, CT-2 & CT-3	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	50 year, 24 hour	Contech Con/Span	34,300	7,000	55	16.00	6.00	441	19.67
Location:	Main Steet	Contech Chambermaxx	21,400	11,400	255	6.28	2.50	1,820	6.28

### Scenario 3:

Watershed:	CT-1, CT-2 & CT-3	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	25 year, 24 hour	Contech Con/Span	28,700	6,000	47	16.00	6.00	377	19.67
Location:	Main Steet	Contech Chambermaxx	17,800	9,500	213	6.28	2.50	1,521	6.28

### Scenario 4:

Watershed:	CT-1, CT-2 & CT-3	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	2 year, 24 hour	Contech Con/Span	13,600	2,800	22	16.00	6.00	177	19.67
Location:	Main Steet	Contech Chambermaxx	8,000	4,300	96	6.28	2.50	688	6.28

## North Trinidad

### Scenario 1:

Watershed:	CT-5	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	100 year, 24 hour	Contech Con/Span	11,900	2,300	18	16.00	6.00	145	19.67
Location:	Main Steet	Contech Chambermaxx	6,800	3,600	81	6.28	2.50	582	6.28

### Scenario 2:

Watershed:	CT-5	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	50 year, 24 hour	Contech Con/Span	9,800	1,900	15	16.00	6.00	121	19.67
Location:	Main Steet	Contech Chambermaxx	5,700	3,000	68	6.28	2.50	489	6.28

### Scenario 3:

Watershed:	CT-5	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	25 year, 24 hour	Contech Con/Span	8,000	1,600	12	16.00	6.00	97	19.67
Location:	Main Steet	Contech Chambermaxx	4,600	2,500	55	6.28	2.50	397	6.28

### Scenario 4:

Watershed:	CT-5	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	2 year, 24 hour	Contech Con/Span	3,600	800	6	16.00	6.00	49	19.67
Location:	Main Steet	Contech Chambermaxx	2,100	1,100	25	6.28	2.50	183	6.28

## Central Trinidad

### Scenario 1:

Watershed:	CT-4, CT-6, CT-7	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	100 year, 24 hour	Contech Con/Span	28,000	5,200	41	16.00	6.00	329	19.67
Location:	Main Steet	Contech Chambermaxx	16,600	8,900	198	6.28	2.50	1,414	6.28

### Scenario 2:

Watershed:	CT-4, CT-6, CT-7	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	50 year, 24 hour	Contech Con/Span	24,200	4,500	35	16.00	6.00	281	19.67
Location:	Main Steet	Contech Chambermaxx	14,000	7,500	167	6.28	2.50	1,194	6.28

### Scenario 3:

Watershed:	CT-4, CT-6, CT-7	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	25 year, 24 hour	Contech Con/Span	20,600	3,800	30	16.00	6.00	241	19.67
Location:	Main Steet	Contech Chambermaxx	11,700	6,200	140	6.28	2.50	1,001	6.28

### Scenario 4:

Watershed:	CT-4, CT-6, CT-7	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	2 year, 24 hour	Contech Con/Span	9,700	1,800	14	16.00	6.00	113	19.67
Location:	Main Steet	Contech Chambermaxx	5,100	2,800	61	6.28	2.50	439	6.28

## South Trinidad

### Scenario 1:

Watershed:	CT-8, CT-9	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	100 year, 24 hour	Contech Con/Span	16,600	3,100	24	16.00	6.00	193	19.67
Location:	Main Steet	Contech Chambermaxx	9,700	5,200	116	6.28	2.50	831	6.28

### Scenario 2:

Watershed:	CT-8, CT-9	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	50 year, 24 hour	Contech Con/Span	14,100	2,700	21	16.00	6.00	169	19.67
Location:	Main Steet	Contech Chambermaxx	8,000	4,400	96	6.28	2.50	688	6.28

### Scenario 3:

Watershed:	CT-8, CT-9	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	25 year, 24 hour	Contech Con/Span	11,600	2,200	17	16.00	6.00	137	19.67
Location:	Main Steet	Contech Chambermaxx	6,600	3,600	79	6.28	2.50	567	6.28

### Scenario 4:

Watershed:	CT-8, CT-9	Technology:	Storage Volume (ft <sup>3</sup> ):	Infiltration Area (ft <sup>2</sup> )	No. Units:	Unit Width (ft):	Unit Height (ft):	Total Length (ft):	Total Width (ft):
Storm Size:	2 year, 24 hour	Contech Con/Span	4,900	1,000	8	16.00	6.00	65	19.67
Location:	Main Steet	Contech Chambermaxx	2,800	1,500	33	6.28	2.50	240	6.28



Sacramento • Modesto • Roseville • Pleasanton

October 3, 2013

Mr. Patrick Sullivan  
GHD  
718 Third Street  
Eureka, CA 95501-0417

Subject: **Slope Stability Analyses**  
Trinidad Stormwater Improvement Project  
Trinidad, California

Dear Mr. Sullivan,

Crawford & Associates, Inc. (CAInc) completed slope stability analyses along selected bluff sections using SLIDE software by RocScience. Our analyses were based on the cross-section geometry for Sections H-H', AB-AB', and G-G' as provided by GHD. Comparisons were made between water surface elevations under existing conditions and under maximum (peak) infiltration based on a 50-year storm, per GHD hydrologic data.

CAInc assigned strength parameters of  $\phi=30^\circ$  and a cohesion = 200 psf to the near surface terrace soils (silty sand and poorly graded sand). These parameters are supported by GHD boring and laboratory data and our field observations of the relatively strong, Pleistocene marine terrace soils as exposed along the bluff face (near-vertical in some places, reflecting their partly cemented nature). The underlying bedrock is comprised of highly sheared, greywacke sandstone of the late Mesozoic Franciscan Formation; we assigned strength parameters of  $\phi=42^\circ$  and a cohesion = 1000 psf to the bedrock formation.

We analyzed each section to determine the critical failure surface, recognizing that the south bluffs along Trinidad Bay (Sections G.1-G.1' and H-H') have experienced past failures within the terrace soils. Section AB-AB' evaluated the west slope facing the ocean. We also field-reviewed the north slope discharging to a tributary of Mill Creek.

Our computed minimum factors of safety (FS) for the existing slopes range from 1.22 to 2.09. The added hydraulic head as shown by GHD groundwater modeling for the 50-year storm condition (short-term, transient model) reduces the Factors of Safety to 1.05 (G.1-G.1') to 2.92 (AB-AB').

We summarize our results in Table 1 below, show the stability plots on Figure 1 through 6, and show the cross section locations on Figure 7.

Table 1: Slope Stability Results			
Cross Section <sup>1</sup>	Minimum Factor of Safety		
	Existing Condition	50-year Storm Condition	Reduction
H-H'	1.24	1.15	7%
G.1-G.1' Plus 25 Cells West	1.22	1.05	14%
AB-AB'	2.09	1.92	8%

<sup>1</sup>We show the cross section locations on Figure 7.

Our analyses show a relatively small (about 14% or less) reduction in FS at the 50-year storm event. Based on our discussion with GHD we understand that the 50-year event will cause a peak groundwater level for only a few hours in duration. We consider the reduced factor of safety to be acceptable for these short (transient) periods of time. We also compared the (50-year storm) condition at section G-G' (FS=1.05) with a more typical, 2-year storm profile; these results show a FS of 1.14.

At the Mill Creek tributary, our review indicated this drainage to be relatively steep and heavily vegetated, with the slope comprised of terrace soils similar to the bluffs. We did not observed evidence of significant instability along these slopes. We do not anticipate the short-term increase in hydraulic head to have an adverse impact to these slopes.

#### LIMITATIONS

CAInc prepared this report in accordance with generally accepted geologic and geotechnical engineering principles and practices currently used in this area. This report is based on data provided by GHD at specific bluff locations. The input parameters represent a simplified model using the limited data and conditions at other locations may be different. This report should be reviewed and modified if conditions change or if further data is made available.

**Crawford & Associates, Inc.**

Rick Sowers, P.E., C.E.G.  
Principal

Benjamin Crawford, P.E., G.E.  
Principal



Attachment: Figure 1 through 6, Slope Stability Trials  
Figure 7, Cross Section Locations

Slope Stability Trials

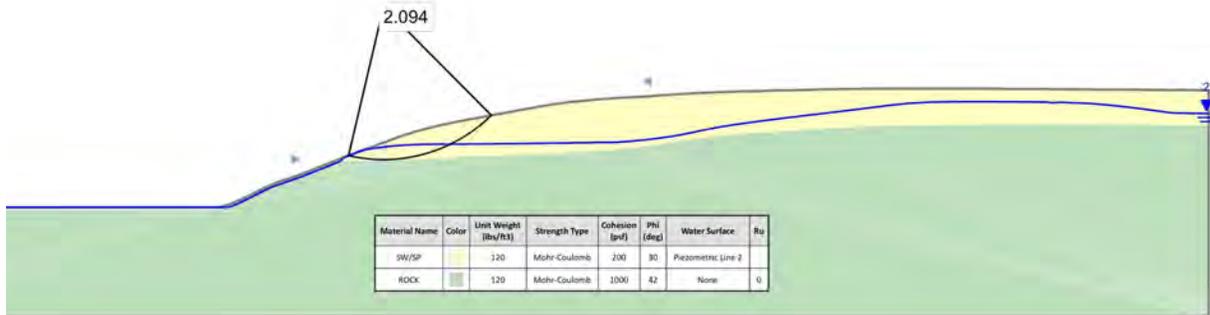


Figure 1: AB-AB' Existing Condition

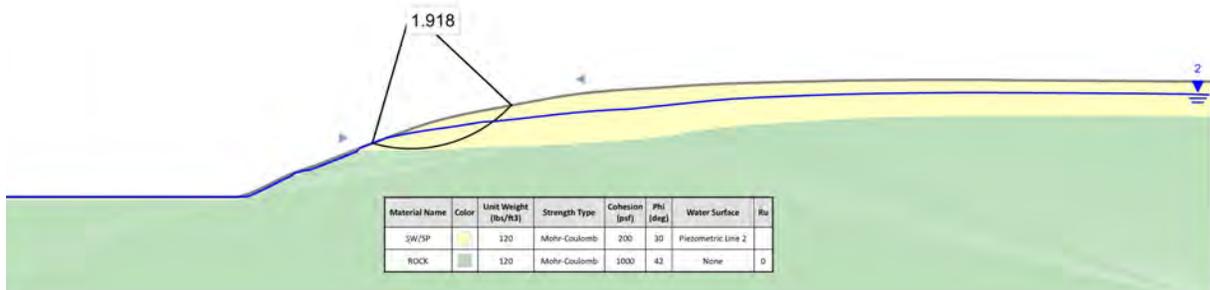


Figure 2: AB-AB' Proposed Condition

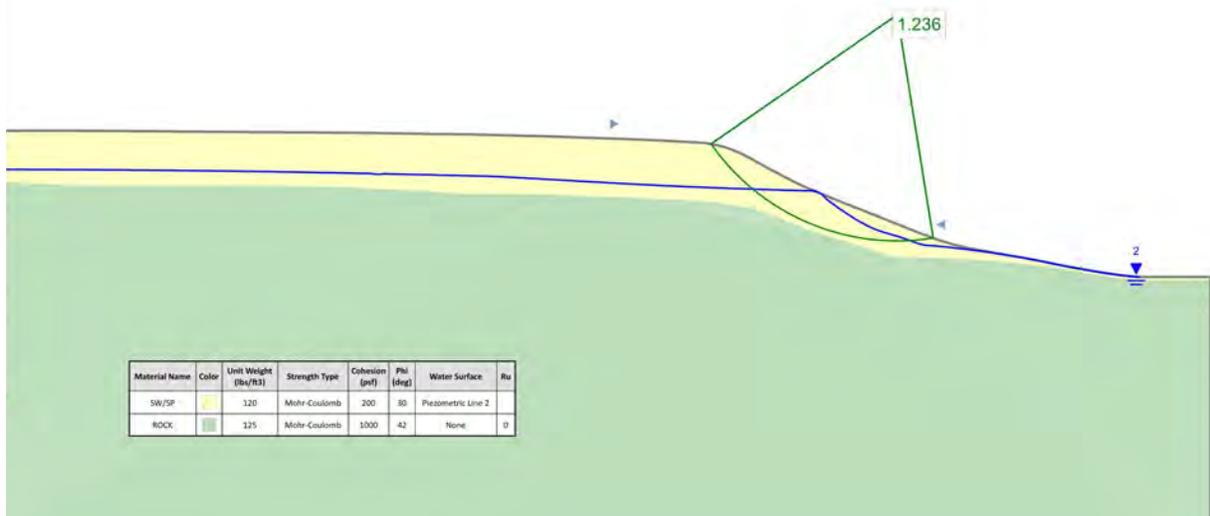


Figure 3: H-H' Existing Condition

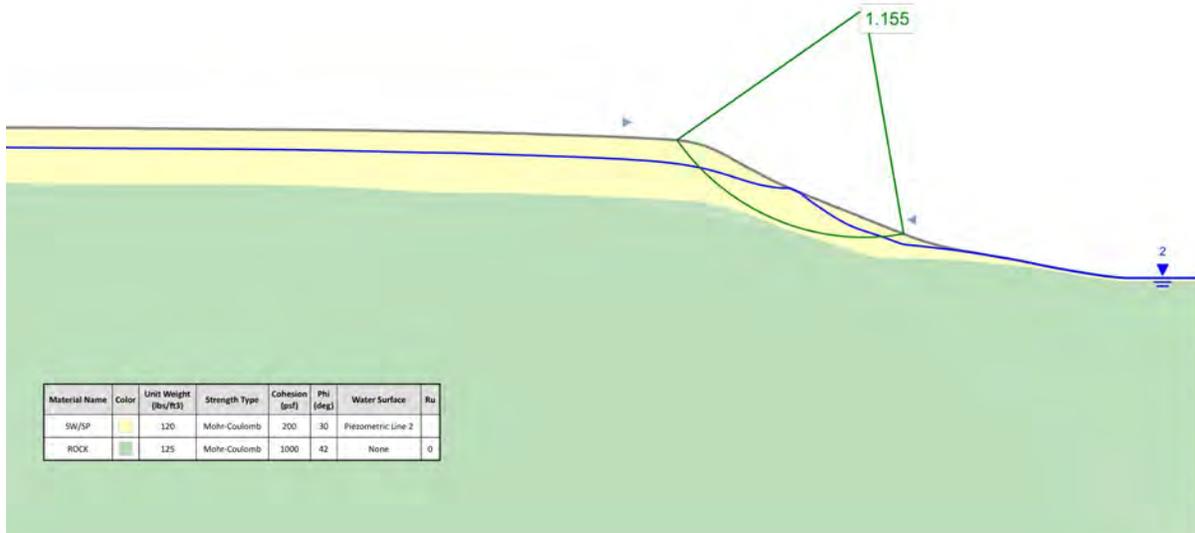


Figure 4: H-H' Proposed Condition

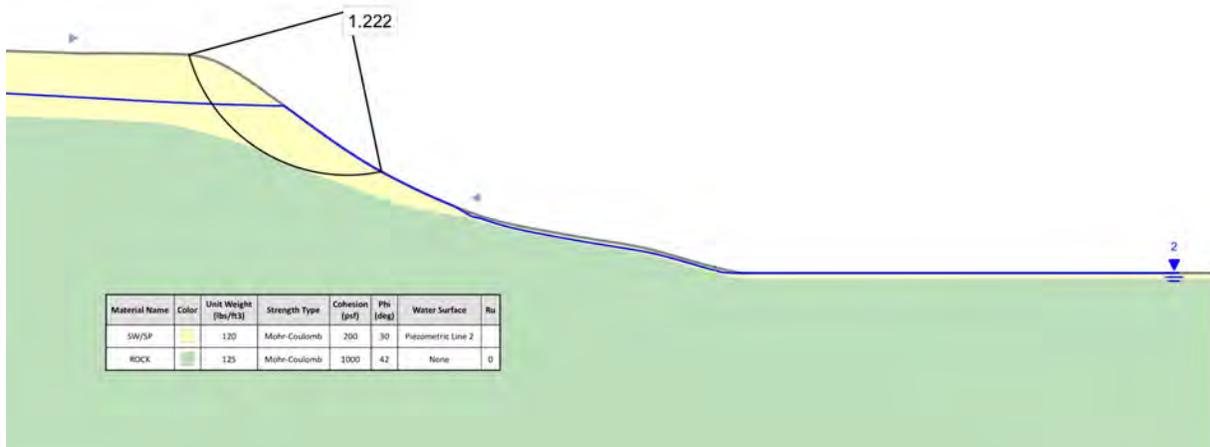


Figure 5: G.1-G.1' Plus 25 Cells West Existing Condition

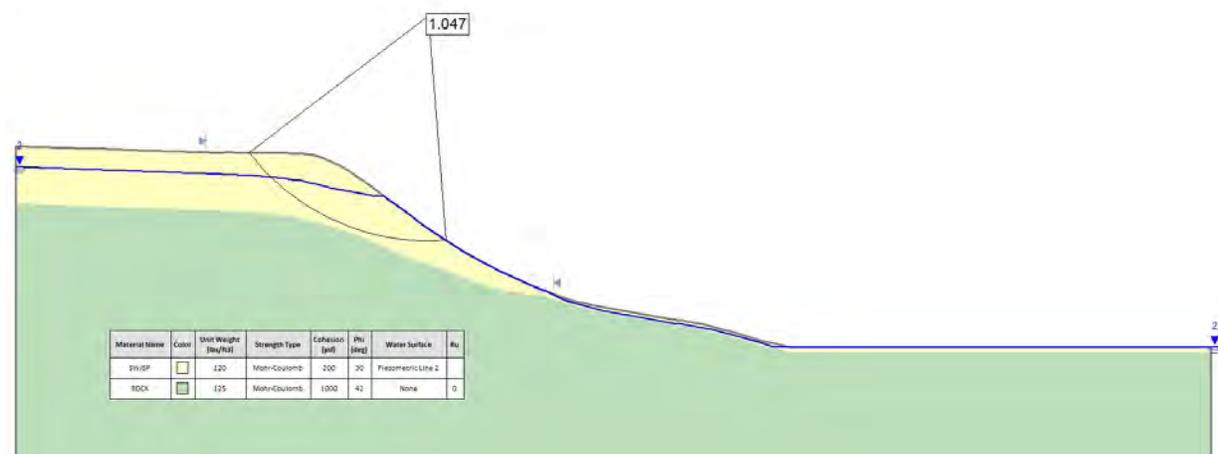


Figure 6: G.1-G.1' Plus 25 Cells West Proposed Condition



Figure 7: Cross Section Locations



# Memorandum

**TO:** Patrick Sullivan, GHD  
**FROM:** Varut Guvanasen, HGL  
**DATE:** September 5, 2013  
**SUBJECT:** Trinidad Model Review

---

## SUMMARY

A review of the City of Trinidad groundwater model was conducted and is summarized in this memorandum. The model was found to be consistent with the conceptual model outlined in the Geotechnical Analysis Report (GHD, 2012). The model was calibrated with observed potentiometric elevations in a steady-state mode. The model is considered technically appropriate for applications in engineering design and evaluation. It is also recommended that sensitivity analysis be conducted to bracket the model's predictive limits.

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## 1. BACKGROUND

The City of Trinidad (the City) is undertaking a project to make changes to the City stormwater drainage system. The objective of the City's Stormwater System Project is to capture and treat stormwater runoff from rainfall events by redirecting the runoff into underground infiltration galleries constructed in multiple locations within the City. The new stormwater system will replace the City's existing stormwater system, initially constructed in the early 1970's, discharges to a single 32-inch stormwater outfall, which discharges to Trinidad Bay.

GHD has developed a groundwater model to simulate groundwater flow within the City of Trinidad and surrounding areas. The model has been calibrated using observed groundwater elevation data and subsequently utilized to assess the impact due to implementation of infiltration galleries. As part of GHD's QA/QC program, HGL was contracted to review the model developed to ensure that the simulation code (MODFLOW-SURFACT (HGL, 2011)) was appropriately applied and the that the results are consistent with observed data.

## 2. COMPUTER SIMULATION CODE

The groundwater flow modeling computer code MODFLOW-SURFACT (HGL, 2011) was

used for the simulation of groundwater flow for the model area. MODFLOW-SURFACT is an enhanced version of the USGS modular three-dimensional groundwater flow code (McDonald and Harbaugh, 1988). MODFLOW-SURFACT was selected because of the following capabilities and attributes:

- Compatibility with the USGS MODFLOW;
- Rigorous simulation of the free surface conditions in unconfined aquifers;
- Seepage face boundary capability; and
- Robust and numerically efficient flow equation solver.

Of special importance are the second, third, and fourth attributes. These attributes are important to a computationally efficient, robust and accurate solution to a relatively large model with relatively thin saturated zones in many areas in the marine terrace.

### **3. DOCUMENTS AND COMPUTER FILES**

The following documents and computer files were provided to HGL:

- Geotechnical Analysis Report (GHD, 2012);
- Draft Report: Trinidad ASBS Stormwater Phase I (GHD, 2013a);
- Technical Note on septic tank loading rates (GHD, 2013b);
- Two sets of model input/output files:
  - TrinRev2\_Base (base case, steady state, one stress period)
  - TransV2Des50 (50-year design, transient, 150 stress periods); and
- Water level vs time and daily precipitation plots at eight observation wells from November 2012 to May 2013.

### **4. CONCEPTUALIZATION**

The groundwater model study area covers an area of 228 acres. The area includes the City of Trinidad, located in Humboldt County, CA, and surrounding areas. The study area is bound by Mill Creek to the north, Highway 101 and Parker Creek to the east, and the Pacific Ocean to the west and Trinidad Bay to the south. It is primarily covered by three watersheds: Mill Creek; the City of Trinidad; and Parker Creek.

The hydrogeology of the study area consists of (GHD, 2012):

- A Pleistocene unconfined sandy marine terrace aquifer generally composed of medium to well graded silty sands; underlain by
- Franciscan Complex bedrock.

The sandy aquifer is not currently used for extraction purposes, due to its low overall storage capacity, relatively shallow depth, and proximity to the residential septic systems. Depth to water table ranges from about 15 feet below ground surface (BGS) to 55 feet BGS across the study area, and is primarily controlled by the Franciscan Complex bedrock.

Data for depth to bedrock were obtained from a total of 18 soil borings (identified as SB-1 to SB-18) across the study area to varying depths to provide an indication of the depth to bedrock and the terrace stratigraphy. The data were used to complement the bedrock elevation surface across the study area, developed as part of the *Geotechnical Analysis* (GHD, 2012).

In the sandy aquifer, the stratigraphy in the upper 3 to 5 feet to the surface is characterized by loose to compact disturbed and mixed fill materials of imported river gravel, sand, and silt (GHD, 2013a). Underlying the upper fill and silty sand layer, the majority of the subsurface materials encountered were generally dominated by loose, poorly graded, fine and medium-grained sand down to bedrock.

## **5. DEVELOPMENT AND CALIBRATION OF THE MODEL**

### **5.1 Model Development**

The model area was discretized into 6.56 x 6.56 ft cells aligned north-south, resulting in 465 rows and 495 columns to provide adequate resolution to model the septic tanks and the stormwater infiltration design options. The model was configured to simulate steady state conditions. The model grid used was considered adequately fine and appropriate for the inclusion of hydrologic and hydrogeologic features in the project area.

In order to simulate the septic tanks and stormwater infiltration design options, and provide adequate vertical resolution, the model was separated into five model layers. Layer 1 has a uniform thickness of 3 ft, which is the average depth below ground surface of septic tanks. Layers 2, 3, and 4 represent the unconfined sandy marine terrace. Layer 5, originally used to represent the Franciscan Complex bedrock or the aquitard, is inactive. In a given column, Layers 2, 3, and 4 are of identical thickness. The total thickness of these three layers varies across the model domain and ranges from 2 to 145 ft, with an average thickness of 45 ft.

The groundwater model boundary conditions are discussed below.

- **Constant head boundaries:** Constant head boundary conditions were applied to the model boundary cells in Layer 1 along the west and part of the southern boundary to mimic coastline. The constant-head cells along the coast were assigned a head of 0 ft MSL. The constant-head cells adjacent to Highway 101 were assigned to the model in Layer 2. These cells were assigned a uniform head of 136 ft AMSL.
- **Rivers:** River boundary conditions were included in the model to simulate the flow of water into and out of the aquifer from Mill and Parker Creek (and tributaries). The river bed elevation was assigned as the layer 2 top elevation minus 0.33 ft, and was set to equal the stage height in order to prevent leakage from the River boundary to the aquifer. These water bodies were simulated as gaining streams only.
- **Seeps:** The regions identified as seeps in the Geotechnical Analysis Report (GHD, 2012) were classified as seepage face boundaries in the groundwater model.

- **Septic Tanks:** The septic tanks were incorporated into the groundwater model using injection wells to simulate fluxes into the model at the locations of respective septic systems. The injection wells were set in Layer 1 (based on the fact that septic system trenches are cut to around 3-4 feet deep), and each cell within a property’s septic system was assigned a constant discharge rate.
- **Recharge:** Recharge was divided into three major zones: pervious (0.007 ft/day – 30.7 inches/year); impervious(0 ft/day); and high slope area (greater than 45°) (0.0007 ft/day – 3.1 inches/year).

## 5.2 Consistency between the Model and Observed Data

Potentiometric elevation data from nine observation wells were available from November 2012 to May 2013. The observed potentiometric elevations at these wells were relatively steady and their variation with time was relatively small. A comparison between the observed and simulated potentiometric elevations (from the base case) at these wells is given in Table 1 below. At all wells, except MW-3, water levels were continuously recorded every 15 minutes. At MW-3, water level was manually monitored twice during the period of observation.

**Table 1 Comparison between the Simulated and Observed Potentiometric Elevations**

Well MW-	Observed (ft)		Average (ft)	Simulated (ft)	Difference (ft)
	High	Low			
1	13.4	8.8	11.1	10.7	0.4
2	65.5	62.0	63.4	63.4	0.1
3	84.6	81.5	83.1	80.9	2.1
4	137.7	133.8	135.3	138.2	-2.8
5	133.6	131.2	132.2	129.8	2.5
6	135.5	133.2	134.3	132.2	2.2
7	135.4	134.0	134.7	137.1	-2.5
8	132.5	131.5	132.0	129.0	3.0
9	117.8	116.6	117.2	117.6	-0.4
			Mean Error (ft)		0.5
			Mean Absolute Error (ft)		1.8
			Range (ft)		124.2

The comparison in Table 1 suggests that, based on the pseudo steady-state conditions between November 2012 to May 2013, the model favorably agrees with the observed data. The mean absolute error of 1.8 ft (1.5 percent of the range) is well within the normal criterion of 6.2 ft (5 percent of the range) and the mean error of 0.5 ft (0.4 percent of the range) indicates that the model bias is relatively small.

### 5.3 Discretization and Boundary Conditions

The following were verified/inspected:

- Vertical and horizontal discretization was verified. Elevation of the bottom of Layer 4 was verified against bedrock elevation information in the Geotechnical Analysis Report (GHD, 2012). The two elevation distributions were found to be similar but not identical. It was assumed that the elevation used in the model was based on more detailed and more recent information.
- Locations of general head boundaries, rivers, and seepage surface were verified against maps given in GHD (2012).
- Steady-state recharge distribution was inspected. Recharge was found to be within a possible range (maximum recharge is approximately 50% of the total precipitation during the observation period).
- Septic tank injection rates were also inspected to ensure that they were input correctly.

### 5.4 Hydraulic Conductivity

One of the key model parameters is hydraulic conductivity in the marine terrace aquifer. Data for the sandy material in the marine terrace indicate that hydraulic conductivity of the sandy material is on the order of 70 ft/day. However, the value is not based on direct measurements but rather on correlations between hydraulic conductivity and grain size distribution (GHD, 2012). The general hydraulic conductivity values used in the model to represent the marine terrace generally vary between 2 to 6 ft/day which is smaller than that based on grain size distribution. However, these values are within the range of hydraulic conductivity values in published literature (de Marsily, 1986). Many investigators including Eggleston and Rojstaczer (2001) found that measured hydraulic conductivity values could be much smaller than those determined based on grain size distributions. The model's hydraulic conductivity values of coastal bluffs and unconsolidated beach sands are 0.005 and 15 ft/day, respectively. These values are consistent with the published ranges for fine sands and sands, respectively (de Marsily, 1986).

### 5.5 Transient Simulations

The model was extended for transient applications. A specific yield value of 0.1 was assumed. This value is within a published range of specific yield values for fine sands and silts (Todd, 1976).

### 5.6 Quality of Simulation Results

MODFLOW-SURFACT generates quantitative information relating to the quality of the simulation results at the end of each simulation run. The final calibration run and the transient run had water balance errors of 0.06 and 0.01 percent, respectively. Simulation results are considered good when water balance errors are less than 1 percent.

## 6. SUMMARY AND RECOMMENDATIONS

### 6.1 Summary

The model for the City of Trinidad has been reviewed. The model was found to be consistent with the conceptual model outlined in GHD (2012). The model was verified against observed potentiometric elevation at nine observation wells. Material properties and recharge were found to be within reasonable ranges. Based on the data available, the model was found to be consistent with field observations.

The model developed based on a standard procedure. The model was calibrated with mean absolute error of 1.8 ft or 1.5 percent of the range of observed potentiometric elevation. The model is considered technically appropriate for applications in engineering design and evaluation.

## 6.2 Recommendations

The following are recommended:

- Sensitivity Analysis: Sensitivity analysis should be performed to quantify the model's predictive limits. At least two parameters, hydraulic conductivity and recharge should be included. Other possible parameters include: degree of hydraulic conductivity anisotropy, stream configuration and associated hydraulic properties, and boundary conditions.
- For transient model applications, the model should be used with caution as it has not been calibrated with transient data. Additional sensitivity analyses to bracket the range of storage parameter uncertainty should be performed.

## 7. REFERENCES

- DeMarsily, G., 1986. *Quantitative Hydrogeology*. Academic Press, Orlando, Florida, 440 pp.
- Eggleston, J. and S. Rojstaczer, 2001. The Value of Grain-size Hydraulic Conductivity Estimates: Comparison with High Resolution In-situ Field Hydraulic Conductivity. *Geophysical Research Letters*, 28(22): 4255-4258.
- GHD, 2012. City of Trinidad ASBS Stormwater Geotechnical Analysis Report- Final Draft, October, 2012.
- GHD, 2013a. Draft Report: Trinidad ASBS Stormwater Phase I, July, 2013.
- GHD, 2013b. Septic Tank Loading Calculation, Technical Note, March, 2013.
- HGL, 2001. MODFLOW-SURFACT: A Comprehensive MODFLOW-based Hydrologic Modeling System. Version 4, Code Documentation and User's Guide, HydroGeoLogic, Inc., Reston, VA.
- McDonald, M.G., and A.W. Harbaugh, 1988. *A modular three-dimensional finite-difference groundwater flow model*. U.S. Geological Survey Techniques of Water-Resources Investigations Book 6, Chapter A1, 1988.
- Todd, D.K., 1976. *Groundwater*, 2<sup>nd</sup> Edition, John Wiley and Sons, New York, 535 pp.



EDMUND G. BROWN JR.  
GOVERNOR

MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## State Water Resources Control Board

JUN 14 2018

Mr. Daniel Berman, City Manager  
City of Trinidad  
P.O. Box 390  
409 Trinity Street  
Trinidad, CA 95570

Dear Mr. Berman:

### **APPROVAL OF EXTENSION OF TIME FOR COMPLIANCE WITH SPECIAL CONDITIONS FOR MUNICIPAL SEPARATE STORMWATER SEWER SYSTEMS (MS4) DISCHARGE INTO AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS)**

The State Water Resources Control Board received your December 14, 2017, letter requesting an extension of time for compliance with the special conditions for MS4 discharges into ASBS. These special conditions (in Attachment C of the Small MS4 General Permit)<sup>1</sup> grant permittees an exception to the California Ocean Plan's prohibition of the discharge of waste into ASBS and require compliance with Special Protections for ASBS. Attachment C requires an ASBS Compliance Plan that includes any structural controls necessary to comply with the Special Protections and requires those BMPs to be operational and for natural water quality to be maintained by March 20, 2018 (six years from the exception's effective date). Attachment C also gives the Executive Director of the State Water Board the authority to allow additional time to comply with the special conditions due to a physical impossibility or lack of funding.

As stated in your letter in 2015, the City of Trinidad made progress in addressing storm water discharges to the Trinidad Head ASBS by installing structural controls that divert, treat, and infiltrate approximately 39% of the pre-project storm water discharges from the ASBS outfall. However, subsequent monitoring shows that pollutants in the City's discharge may potentially alter the natural water quality of the ASBS, and therefore, more structural controls are necessary.

In December 2016, the City of Trinidad was awarded \$4 million in Prop. 1 Storm Water Grant Program funding for the Storm Water Management Improvement Project that will eliminate all the City's storm water discharges to the ASBS. However, the City of Trinidad cannot meet the 10% non-state funding match requirement of Prop. 1 because this match represents two thirds of the City's entire annual general fund budget, or eight times the amount of unassigned general fund reserves for FY 2017-18.

<sup>1</sup> WASTE DISCHARGE REQUIREMENTS (WDRs) FOR STORM WATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) (GENERAL PERMIT) (WQ Order 2013-0001-DWQ)

FELICIA MARCUS, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

As the City of Trinidad is currently applying to the United States Department of Agriculture Rural Development Water and Environmental Program to finance the match, I approve your request for an extension of time to June 30, 2020, to comply with the special conditions and implement the needed structural controls. This extension of time will allow the City to fully mitigate its storm water discharges into the Trinidad Head ASBS and maintain natural water quality.

If you have any questions regarding this approval, please contact Ms. Gayleen Perreira, our Statewide Municipal Storm Water Program Manager at (916) 341-5497 or [Gayleen.Perreira@waterboards.ca.gov](mailto:Gayleen.Perreira@waterboards.ca.gov).

Sincerely,



Eileen Sobek, Executive Director  
State Water Resources Control Board

cc: [Hardcopy and/or Email]

Jonathan Bishop, Chief Deputy Director,  
State Water Resources Control Board  
[Jonathan.Bishop@waterboards.ca.gov](mailto:Jonathan.Bishop@waterboards.ca.gov)

Paul Levy, Municipal Storm Water Unit  
State Water Resources Control Board  
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# USDA Rural Development Funding Application

Preliminary Engineering Report

City of Trinidad

**GHD** | 718 Third Street, Eureka, CA 95501, USA

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## 1. Introduction

This Preliminary Engineering Report (PER) for the City of Trinidad (City) presents project alternatives to improve the operation of the City's stormwater system and to meet state standards. The report includes an evaluation of the City's present system, an analysis of alternatives, and proposes specific courses of action from an engineering perspective. The City's design consultant for the project is GHD, Inc. (GHD) of Eureka, California.

A PER is a planning document required by USDA as part of the process of obtaining financial assistance for development of the project. This PER describes the proposed project from an engineering perspective, analyzes alternatives for the project, defines project costs, and provides information critical to the underwriting process. The City is seeking funding for upgrading their stormwater system. Generally, the content of the report below follows the guidance in *USDA RUS Bulletin 1780-2* dated April 4, 2013.

## 2. Project Planning

### 2.1 Location

A location map for the City of Trinidad is presented in Figure 1 (see Appendix A). Figure 1 includes the location of the Trinidad City Limits, the City sphere of influence, and elevation data from the USGS 7.5 minute quad sheet. The project area encompasses two areas of the City, defined as the upper area (Phase 1) and the lower area (Phase 2) as shown in Figure 1. Components of Phase 1 have either been constructed or are in the final steps of design. The proposed project area presented herein includes the Phase 2 area.

### 2.2 Environmental and Cultural Resources Present

Environmental resources in the project planning area include Trinidad Bay and regional and local geology. Cultural resources are also discussed because of their relevance in development of projects in the area.

#### 2.2.1 Trinidad Bay

Trinidad Bay is designated as an Area of Special Biological Significance (ASBS) and is one of 34 ASBS ocean areas monitored and maintained for water quality by the State Water Resources Control Board (SWRCB). ASBS designated areas cover much of the length of California's coastal waters and support an unusual variety of aquatic life and often host unique individual species. Trinidad Bay was designated in 1974 as an ASBS in part because of the fluctuating presence of bull kelp (*Nereocystis luetkeana*), which are considered biologically significant in providing an ecological base for fish and invertebrate habitats by supplying food and shelter. All ASBS designated areas may be adversely affected by polluted stormwater discharges, which could damage their unique ecosystems. The intent of the ASBS designation is to give these areas a special status so that the valuable and sensitive biological resources can be protected from pollution through more restrictive



regulations. The law prohibits an undesirable alteration in natural water quality from waste discharges, and requires non-point source pollution to be controlled to the extent practicable.

### 2.2.2 Geology

A geotechnical analysis was conducted to better understand the geology and groundwater system underlying the City of Trinidad. Full details on the analysis can be found in the City of Trinidad ASBS Improvement Project Geotechnical Analysis, GHD (2012). A summary of key findings as they relate to the project area are presented below.

Results of the geotechnical investigations revealed that the hydrogeology of the study area consists of an unconfined sandy marine terrace aquifer generally composed of medium to well graded silty sands, underlain by impermeable Franciscan Complex bedrock. Hydraulic conductivities throughout the project area were found to be very high due to the sandy marine terrace layers within the aquifer. The Franciscan Complex bedrock surface was mapped using a combination of soil boring data which identified the depth of bedrock and geophysical analyses, including seismic refraction and electrical resistivity, which revealed the bedrock topography, including several ancient underground sea stacks protruding close to the ground surface.

Groundwater levels were monitored for a period of six months at 15-minute intervals to provide an indication of the current groundwater levels and the response to rainfall events. Review of the groundwater level readings indicated rapid groundwater movement and infiltration.

### 2.2.3 Cultural Resources

The Tsurai Study Area (TSA), located on a hillslope near the southeastern edge of Trinidad, is home to an ancient village site of the Yurok Tribe (Tribe). This village, known as Tsurai, is unique not only because it is one of the largest Yurok villages and is on the coast, but also due to its location on a cove protected from the ocean. Moreover, the language spoken at Tsurai is the most divergent dialect from what Yuroks of other villages spoke. Tsurai and the surrounding landscape are places of great significance to Yurok culture as evident in oral histories, ceremonial activities, and subsistence practices that continue to this day.

Past archaeological studies have revealed that the village was a permanent settlement, containing multiple levels of human occupation through time. Cultural resources identified within the TSA include a cemetery, traditional trails, sacred trees, house pits, a sweathouse, a Brush Dance area, and a dense archaeological deposit associated with occupation of the village and use of the surrounding coastal and marine resources. Unfortunately, looting of the Tsurai village occurred throughout its history until the 1970s. In 1978, the Tsurai Ancestral Society was formed to protect and maintain the village and burial grounds. In the same year, the California Coastal Conservancy was established. The Conservancy purchased the lands encompassing the Tsurai Study Area and retains a conservation easement, although the TSA was sold to the City of Trinidad in 1989. The village site has been designated a California State Historical Landmark and is included on the California Register of Historic Places. Historical and archaeological resources associated with the village site are not necessarily confined to the TSA boundaries. Erosion of coastal bluffs on and near the village site is a major concern of the Tribe and the Tsurai Ancestral Society.



### 2.3 Population Trends

The City's service area for stormwater encompasses the City of Trinidad (shown in Figure 1, Appendix A). Between 2000 and 2010, the City experienced a growth rate of approximately 15 percent, from 311 to 367. The State of California Department of Finance estimated the City's population for January 1, 2016 to be 365 and 369 on January 1, 2017, indicating an estimated annual growth rate of 1.1 percent. Given that the City is one of the smallest incorporated cities in the state of California, population growth rate may fluctuate dramatically due to small growths or losses in population. According to the United States Census Bureau, the population had been unusually declining from 2010 to 2015. This was not a typical trend for the population, therefore, a growth rate of 1.1 percent, starting after the 2017 population estimate of 369, is assumed for use in projecting the future population. Table 1 shows the past, current, and projected population.

Table 1. Past, current and projected Trinidad, California Population.

2000	2010	2020	2030	2040
311	367	381	423	473

### 2.4 Community Engagement

The City plans to continue implementing its existing stormwater education and outreach program. Program components include public meetings, stakeholder involvement, education about BMPs, and encouraging residents to be aware of and be observant so they can engaged and report any observed excessive erosion and stormwater discharge so the City can take action. The program includes dissemination of stormwater and watershed education materials using different media formats.

## 3. Existing Facilities

A summary of the existing stormwater system's location, history, condition, and financial status are discussed below. Photographs of the existing system are provided in Appendix B.

### 3.1 Location

The existing stormwater system within City limits is shown in Figure 1 (see Appendix A). A schematic of the existing system layout including surface flow is provided in Figure 2 (see Appendix A).

### 3.2 History

The City's existing stormwater system was constructed in the early 1970's and discharges to a single 32-inch diameter stormwater outfall (State Board identification: TRI032), which discharges just south of the boat launch at Trinidad Head to Trinidad Bay. The existing system did not incorporate modern retention, treatment or infiltration features. Prior to beginning Phase 1



construction, the system was designed to capture and convey runoff to the outfall. The estimated annual flow discharged from the City's discharge point, prior to Phase 1 construction, was approximately 8.5 million gallons based on an average annual rainfall of 48 inches. The portion of Phase I for which construction is complete includes two eight-foot diameter infiltrators 100 feet long beneath Trinity Street and a single six-foot diameter infiltrator 150 feet long beneath Ocean Avenue.

### 3.3 Condition of Existing Facilities

The existing stormwater collection infrastructure is aging and approaching the 50-year mark. Based on the age of the system, there are likely infiltration and inflow issues within the system. Some pipes may have been disconnected and it is unknown where some pipes drain to.

The portions of Phase 1 that have been constructed on Ocean and Trinity Avenues are likely in good condition given their recent construction in 2014.

### 3.4 Financial Status of Existing Facilities

The City's audited Annual Financial Report for the 2015-2016 fiscal year is included as Appendix E. Annual O&M costs for the City's stormwater system is provided in Table 2. The City has no existing debts. Based on the 2015-2016 fiscal year, reserve amounts are as follows:

- Emergency Reserve Fund: \$459,000
- Budget Stabilization Reserve Target: \$459,000
- Capital Asset and Special Project Reserves: \$358,000

Table 2. Current O&M costs.

Item	Cost
Personnel (salary, benefits, taxes, insurance, training)	\$ 4,500
Administrative (office supplies, printing, accounting, audit, etc.)	\$ 850
Insurance	\$ 150
Energy costs (Vactor excavation)	\$ 100
Monitoring & testing	\$ 56,000
Vactor trailer maintenance/replacement	\$ 100
Professional services	\$ 500
Residuals disposal (dumpster)	\$ 650
Outfall maintenance	\$ 900
MS4 permit	\$ 2,900
Stormwater (MS4) Program Management	\$ 10,500
<b>Total</b>	<b>\$ 77,150</b>



## 4. Need for Project

The goal of this project is to improve water quality through reducing pollutant discharge to the Trinidad ASBS. This section presents the relevant issues that illustrate the need for the proposed project.

### 4.1 Health, Sanitation, and Security

Stormwater discharge from the City that is conveyed to the existing outfall impacts the sensitive habitat within the ASBS. California's Critical Coastal Areas Report (2006) identified bacteria, nutrients, and sediment pollutants of concern for Trinidad Bay. In addition, Trinidad's Stormwater Management Plan included hydrocarbons as a priority pollutant (W&K 2008).

In 2004, the City received a letter from the State Water Resources Control Board regarding the "Prohibition of Waste Discharge into the kelp beds at Trinidad Head ASBS" (Appendix C). The City has requested and received temporary exemption to the prohibition which requires additional conditions and must be reviewed. Documentation of this correspondence is provided in Appendix C.

In addition to compliance with regulations, water quality impairments from the discharge of polluted runoff has potential to damage the ASBS ecosystem which could impact the City residents, many who rely on tourism and fishing for income which are both recognized beneficial uses of the ASBS. The beaches along the ASBS also provide an area for water contact and non-contact recreation, including aesthetic enjoyment. Unfortunately, poor water quality discharges threaten these beneficial uses and the inhabitants of the ASBS.

### 4.2 Aging Infrastructure

The existing stormwater collection infrastructure proposed for improvement was built approximately 50 years ago. See Section 3.3 Condition of Existing Facilities for more information.

### 4.3 Reasonable Growth

Population growth within the City is not anticipated to alter the stormwater runoff volume, as there is not much available land that could be developed or altered to significantly change the amount of impervious area.

## 5. Alternatives Considered

As discussed in previous sections, the primary focus of this project is to reduce stormwater discharge into the ASBS. After performing the needs assessment, alternatives that meet the following design criteria were considered:

- Provide removal of bacteria, nutrients, sediment, and hydrocarbons to meet regulatory requirements;
- Provide attenuation for up to a 50-year storm event;



- Be technically feasible; and
- Maintain project capital costs to be within budget.

Design criteria specific to each alternative are presented in the following sections. Other alternatives were considered, but are not discussed in detail in this report. A brief summary of these alternatives, and why they were not further considered is provided in Section 5.3.

## 5.1 Keep Existing Outfall (Alternative 1)

In Alternative 1, the City would continue to discharge to the existing outfall and install a treatment system at a centralized location prior to discharge at the outfall to meet regulatory requirements (Figure 3, Appendix A). To remove the priority pollutants, a two stage filtration system would be implemented, each stage targeting certain pollutants. The initial stage would be a sorptive filtration system, such as the *aquip*® system from StormwaterRx, which targets the removal of trash, oils, suspended sediment, nutrients, and some organic hydrocarbons. The second stage would be a targeted stormwater polishing system, such as the *purus*® system from StormwaterRx, which would target bacteria removal, and additionally further remove organic hydrocarbons.

The system would be connected to the existing main stormwater pipe leading to the outfall at Trinidad Bay, downstream of the final drainage inlet that contributes to the outfall discharge. The sorptive filter(s) would operate as a gravity system, and could be installed either above ground or below ground in traffic rated vaults. The polishing filter(s) would need to be installed above ground and be connected to an electrical power source in order to operate. The polishing filters could likely operate on gravity flow into the unit if the first-stage filters were installed above ground, otherwise, additional pumps and minor storage tanks may be necessary. After exiting the polishing filter(s), treated stormwater would then return into the existing stormwater pipe leading towards the outfall. Under Alternative 1, an NPDES permit and ASBS Compliance Plan would be an ongoing requirement.

### 5.1.1 Design Criteria

Design criteria for continuing to stormwater discharge to the existing outfall includes:

- Discharge occurs only during wet weather;
- Centralized stormwater treatment system;
- Maintain existing stormwater infrastructure, including repairs as needed;
- Minimize land acquisition (to accommodate new treatment system); and
- Provide water quality treatment for the 2-year, 24-hour storm event.

### 5.1.2 Environmental Impacts

It is anticipated that a Mitigated Negative Declaration would be the appropriate CEQA document for Alternative 1, and that all impacts could be mitigated to be less than significant. The environmental impacts of keeping the existing stormwater outfall and installing a treatment system are discussed below.



- **Biological Resources:** Maintaining the existing stormwater outfall is not anticipated to have a significant impact on the ASBS. The treatment system would be designed to protect the Bay and surrounding biological resources. Additionally, an ASBS monitoring program would be required that includes core discharge monitoring, ocean receiving water, and reference area monitoring, plus bioaccumulation and rocky intertidal assessments. All ocean receiving water and reference area monitoring would be comparable with the Water Boards' Surface Water Ambient Monitoring Program.
- **Cultural Resources:** The implementation of this alternative would not result in disturbance to a designated historical structure or known archaeological resource.

### 5.1.3 Land Requirements

The potential area for the treatment system (shown in Figure 3, Appendix A) could require land or right-of-way acquisition (APN 042-081-035) from a private owner. It is possible that the system would take only a portion of the property and partial land or right-of-way acquisition could be pursued. The outcome of securing the necessary land requirements is not currently known and may make this alternative infeasible.

### 5.1.4 Potential Construction Problems

The construction activities that would be required for this alternative are minimal. Anticipated construction includes mobilization/demobilization, cultural monitoring, potholing, temporary construction sign, temporary traffic control, construction staking, erosion and sediment control, excavation, and treatment vault installation. Problems relating to subsurface rock or high groundwater table are not anticipated.

### 5.1.5 Sustainability Considerations

This alternative incorporates operator simplicity by centralizing the treatment units to a single location. However, the simplicity provided by the single treatment location would likely be outweighed by the operation, maintenance, and demanding monitoring plan that would be required.

### 5.1.6 Advantages and Disadvantages

Advantages and disadvantages of installing a centralized treatment location and keeping the existing stormwater outfall are presented below:

- Advantages of Alternative 1:
  - Structures that house the treatment cartridges can be configured in a variety of ways;
  - Would provide high level of treatment for water quality flow rates;
  - Could be installed to be easily accessible for inspection, media replacement, and washing of structure; and
  - Centralized location for O&M.



- Disadvantages of Alternative 1:
  - Land easement could be required;
  - An NPDES permit and a stormwater program would be required, with significant costs. Frequent and expensive monitoring would be required to stay in compliance with NPDES permit for ASBS;
  - Includes grey infrastructure only;
  - High replacement costs when system requires replacement;
  - Requires connection to the electrical grid to operate polishing filters, and a power backup system for emergencies;
  - Aesthetically, does not fit in with the surrounding community;
  - New and ongoing power, maintenance (e.g., filter replacement), and monitoring costs for the City;
  - Treated and overflow runoff would likely transport pollutants to the outfall; and
  - Operator would need to be trained for new treatment system.

## 5.2 LID System without Outfall (Alternative 2)

In Alternative 2, the City would decommission the existing stormwater outfall and replace it with a system of localized stormwater treatment chambers and infiltration basins. Potential locations for these features are shown in Figure 3 (Appendix A). The intent of the design would be to incorporate green infrastructure to provide pollutant removal and capture stormwater runoff.

The overall system would include a system of stormdrain inlets, conveyance pipes, stormwater treatment chambers, and infiltration pipes. The treatment chambers would provide pollutant removal prior to the infiltrator pipes. The treatment units would remove oil, dirt, and trash from the stormwater. Further pollutant removal would occur in the natural treatment system provided by the underlying soil. Valley gutters, curbs and stormdrain manholes would also require minor improvements to direct the runoff within the system.

### 5.2.1 Design Criteria

Design criteria for constructing an LID system and decommissioning the existing outfall are:

- Ability to treat, store, or infiltrate stormwater;
- Fit within the existing City right of way;
- Ability to upgrade stormwater treatment efficiencies;
- Minimize reduction of city parking; and
- Minimize operation and maintenance requirements.



## 5.2.2 Environmental Impacts

It is anticipated that a Mitigated Negative Declaration would be the appropriate CEQA document for Alternative 2, and that all impacts could be mitigated to be less than significant. The environmental impacts of keeping the existing stormwater outfall and installing a treatment system are discussed below.

- **Biological Resources:** Eliminating the existing stormwater outfall is not anticipated to have an impact on the biological resources within nor surrounding Trinidad Bay. Discharge elimination is anticipated to protect the ASBS. Preliminary hydrology and groundwater hydrology modeling demonstrated that this alternative would not result in a significant impact to the underlying groundwater table.
- **Cultural Resources:** The implementation of this alternative would not result in disturbance to a designated historical structure or known archaeological resource.

## 5.2.3 Land Requirements

The construction of this alternative would not require land acquisition or new access agreements. The majority of proposed project components fit within the existing City right of way. Collaboration with Trinidad Rancheria would be required for the portion of the project that would be located in the lower Harbor parking lot area, which is already in progress.

## 5.2.4 Potential Construction Problems

Anticipated construction includes mobilization/demobilization, potholing, temporary construction sign, temporary traffic control, construction staking, erosion and sediment control, excavation, pipe and treatment chamber placement, connection to the existing storm drain system, and decommissioning of the existing stormwater outfall. These improvements are fairly routine construction activities and are not expected to incur any major construction problems. Access to all sites is well established. Problems relating to subsurface rock or high groundwater table are not anticipated.

## 5.2.5 Sustainability Considerations

Alternative 2 incorporates green infrastructure that helps mimic natural hydrologic conditions. This alternative includes LID design components that captures, filters, and infiltrates stormwater runoff.

## 5.2.6 Advantages and Disadvantages

Advantages and disadvantages of constructing an LID system and decommissioning the existing stormwater outfall are presented below:

- Advantages of Alternative 2:
  - Confined to areas with City right of way;
  - Incorporates green infrastructure;
  - Minimal maintenance would be required;



- The NPDES permit and ASBS monitoring would no longer be required;
- Above ground LID features provide an opportunity for education; and
- Direct stormwater discharge to the ASBS would be eliminated.
- Disadvantages of Alternative 2:
  - Difficult to access infiltration pipes should maintenance be required; and
  - Maintenance would be required in several locations.

### 5.3 Other Alternatives Considered

Other alternatives were considered and were mainly variations of the two general alternative categories presented in this report. Variations were considered were infeasible due to either technical or cultural constraints. These alternatives included an expanded LID system that incorporated more infiltrators in more locations. Construction of infiltrators in certain areas increased the potential for bluff erosion, interaction with existing leach fields, or impact to groundwater elevation, and were therefore deemed technically infeasible.

## 6. Cost Estimates

Cost estimates for the two alternatives are divided into three categories: non-construction, construction, and O&M costs. Non-construction and construction costs are combined to estimate the capital costs and O&M costs reflect annual costs. A summary of capital costs is provided in Table 3 and an itemized budget is included in Tables D1 and D2 in Appendix D. Each of these cost components is discussed in the following subsections. The estimates presented herein are preliminary and are based on the level and detail of planning presented in this report. Cost sources include previous similar projects and communication with product manufacturers. As this project proceeds and as site specific information becomes available, the estimates will be updated.

Table 3. Summary of capital costs for each alternative.

Item	Alternative 1	Alternative 2
<b>Direct Project Administration</b>	\$ 176,000	\$ 176,000
<b>Engineering</b>	\$ 193,000	\$ 230,000
<b>Environmental</b>	\$ 137,000	\$ 107,000
<b>Monitoring and Performance</b>	\$ 77,000	\$ 74,000
<b>Land Acquisition</b>	\$ 100,000	\$ -
<b>Education and Outreach</b>	\$ 8,000	\$ 8,000
<b>Bid Period Assistance</b>	\$ 20,000	\$ 20,000
<b>Construction Contingency</b>	\$ 320,000	\$ 396,268
<b>Construction</b>	\$ 3,520,000	\$ 4,362,675
<b>TOTAL</b>	<b>\$ 4,551,000</b>	<b>\$ 5,369,943</b>

### 6.1 Non-Construction Costs

Non-construction costs are described in the following subsections.



#### 6.1.1 Direct Project Administration

Direct project administration includes administering funds, general management and coordination of the project, and labor compliance costs. A portion of general management and coordination includes education on the maintenance of new stormwater features throughout the City. The direct project administration was assumed to be the same for each of the alternatives.

#### 6.1.2 Engineering

The Engineering cost includes the ground survey, geotechnical evaluation (as necessary), preliminary design, final plans and specifications, and bid documents for the alternative. The project design portion of both alternatives was assumed to be the same cost. Alternative 2 has an added cost to conduct a citywide LID hydrogeologic analysis. The cost of developing the Preliminary Engineering Report is also included in the engineering costs.

#### 6.1.3 Environmental: Permitting and Supporting Studies

The Environmental cost is composed of permitting and supporting studies, which includes the cost of California Environmental Quality Act (CEQA) documentation preparation and all studies and permits that may be required. A biological resources survey, cultural resources survey, and coastal development permit were assumed to be required for both alternatives. Alternative 1 had an additional cost under this subcategory due to the required report of waste discharge (Form 200), as well as additional permitting costs related to ongoing regulatory agency coordination for monitoring and other related permit conditions.

#### 6.1.4 Planning

The Planning cost includes the cost of a bond counsel. This cost is included under the assumption that a loan would be required to complete the project.

#### 6.1.5 Monitoring and Performance

The Monitoring and Performance cost is composed of general project planning and management required for project performance assessment and evaluation, development and implementation of a monitoring plan, data management, QA/QC, and reporting.

#### 6.1.6 Land Acquisition

Land acquisition includes the cost of land or right-of-way acquisition assistance, a permanent easement, and construction access easement. This cost applies only to Alternative 1 (see Figure 3 in Appendix A).

#### 6.1.7 Education and Outreach

The Education and Outreach cost is the cost of developing, implementing, and assessing an education and outreach program. Potential program elements are included in Section 2.4 of this report. The capital cost of Education and Outreach is assumed to be the same for both alternatives.



### 6.1.8 Bid Period Assistance

Bid Period Assistance costs encompass services for advertising, conducting a pre-bid meeting, selecting a contractor, responding to contractor questions, and issuing contract addenda.

### 6.1.9 Construction Contingency

A contingency factor equal to 10% percent of the estimated construction cost (excluding construction administration costs) was added for each alternative. The cost estimates presented are based on conceptual planning and allowances that may be made for variations in final quantities, bidding market conditions, changed construction conditions, unanticipated and specialized investigation and studies, and other difficulties which cannot be foreseen at this time.

## 6.2 Construction Costs

The estimated construction costs in this report are based on actual construction bidding results from similar work, published cost guides, discussions with local contractors, discussions with product manufacturer representatives, and other construction cost experience. Construction Administration was assumed to be the same for both alternatives. Project Initiation and Monitoring includes the cost of mobilization/demobilization, temporary construction sign, potholing, temporary traffic control, shoring and trench safety, construction staking, and erosion and sediment control. The cost of Project Initiation and Monitoring was assumed to be greater for Alternative 2 due to the larger footprint of the project. The remaining construction items are alternative-specific and include costs associated with labor and installation.

## 6.3 Operations and Maintenance Costs

Annual O&M costs for each alternative, shown in Table 4, were determined using the current estimated O&M costs (Table 2). The majority of costs for each alternative remained the same. A discussion of the items that varied from the current costs is provided here.

Personnel costs were increased for both alternatives to account for training that would be required to operate and maintain a new system. The personnel costs for Alternative 1 increased by a greater amount due to the increased complexity of the system. Because Alternative 2 eliminates discharge to the ASBS, monitoring and testing costs associated with discharge to an ASBS were removed. The cost of this item remained the same for Alternative 1 since discharge to the ASBS would continue. The costs of Vector trailer maintenance/replacement and residuals disposal increased for the two alternatives due to increased sediment and trash removal provided by each of the alternatives. Outfall maintenance costs and MS4 permit costs associated with discharging to an ASBS were removed for Alternative 2 since the outfall would be decommissioned. The last two budget items shown in Table 4 capture the cost of managing and operating a stormwater program. The MS4 Program is more expensive because of the more stringent compliance associated with an ASBS discharge. Both programs would require regional stormwater coordination and attendance to watershed council meetings. The MS4 Program would require additional tasks such as extensive reporting and monitoring BMPs.



Table 4. Annual O&M costs for each alternative.

Item	Alternative 1	Alternative 2
Personnel (salary, benefits, taxes, insurance, training)	\$ 7,500	\$ 6,750
Administrative (office supplies, printing, accounting, audit, etc.)	\$ 850	\$ 850
Insurance	\$ 150	\$ 150
Energy costs (Vactor excavation)	\$ 150	\$ 150
Monitoring & testing	\$ 56,000	\$ -
Vactor trailer maintenance/replacement	\$ 150	\$ 150
Professional services	\$ 500	\$ 500
Residuals disposal (dumpster)	\$ 800	\$ 800
Outfall maintenance	\$ 900	\$ -
MS4 permit	\$ 2,900	\$ -
Stormwater (MS4) Program Management	\$ 10,500	\$ -
Stormwater Program Management	\$ -	\$ 2,500
<b>Total</b>	<b>\$ 80,400</b>	<b>\$ 11,850</b>

## 7. Selection of an Alternative

### 7.1 Life Cycle Cost Analysis

A life cycle present worth cost analysis was completed to compare the technically feasible alternatives. All costs were converted to present day dollars. In accordance with Bulletin 1780-2, a discount rate of 0.5% (White House, 2017) and a planning period of 20 years were used to bring annual costs to present value. No salvage value was assigned to either alternative. It was assumed that there would be no monetary value gained from the systems after the 20-year life cycle. It was also assumed that no short lived assets were included in either alternative. Results of the life cycle cost analysis are summarized in Table 5.

Table 5. Summary of life cycle cost analysis.

Parameter	Alternative 1	Alternative 2
Discount Rate	0.5%	
Planning Period	20 years	
Capital	\$ 4,551,000	\$ 5,369,943
Annual O&M	\$ 80,400	\$ 11,850
Present Value	\$ 6,077,590	\$ 5,594,940



## 7.2 Non-Monetary Factors

Sustainability considerations (discussed in Sections 5.1.5 and 5.2.5) were used in the selection of an alternative. Non-monetary factors included in the alternatives analysis were protection of Trinidad ASBS, inclusion of green infrastructure, opportunities for community outreach and education, monitoring requirements, and operational safety. These factors were identified based on project goals and the City's staff availability to manage the system sustainably. Each of the alternatives was scored on a scale of zero to three for each of the non-monetary factors. A summary of the non-monetary factors considered in the selection of an alternative is provided in Table 6 of the following section.

## 7.3 Preferred Project Alternative

The select criteria shown are each equally-weighted in the alternative scoring. Taking into consideration the monetary and non-monetary factors of the alternatives, summarized in Table 6, Alternative 2 is the preferred project alternative.



Table 6. Alternative evaluation matrix.

Criterion	Parameter	Alternative 1: Keep Existing Outfall	Alternative 2: LID System without Outfall
Protection of Trinidad ASBS	Score	1	3
	Reasoning	Treated stormwater discharge will continue to be discharged at outfall.	Direct stormwater discharge to ASBS will be eliminated.
Inclusion of green infrastructure	Score	0	3
	Reasoning	Does not include green infrastructure.	Includes green infrastructure.
Opportunity for community outreach and education	Score	0	3
	Reasoning	Includes grey infrastructure only, no opportunity for LID public education. MS4 permit requires extensive education and outreach efforts.	Above ground LID features provide an education opportunity. Potential future LID components may allow for community participation.
Monitoring Requirements	Score	2	3
	Reasoning	Frequent monitoring required.	Minimal monitoring required.
Operational Simplicity	Score	1	2
	Reasoning	New system will require operator training. Requires operation of new treatment system. Single location for operator maintenance	Operator maintenance in several locations.
Life Cycle Cost	Cost	\$6,077,590	\$5,594,940
	Score	1	3
<b>Total Scores</b>		<b>5</b>	<b>17</b>



## 8. Proposed Project

The preliminary design, schedule, permit requirements, sustainability considerations, cost estimate and annual operating budget are presented in the following sections.

### 8.1 Preliminary Project Design

The proposed project is Alternative 2 which is to eliminate the existing stormwater outfall and replace it with a system of localized stormwater treatment chambers and infiltration basins. The intent of the design is to treat and dispose of stormwater closer to the areas of stormwater generation, which allows for a more distributed network of stormwater infrastructure that can be tailored to the anticipated runoff volumes generated in the contributing sub-watersheds.

The base design of each stormwater treatment and infiltration system includes a local network of stormdrain inlets, conveyance pipes, stormwater treatment chambers, and infiltration pipes, in addition to some minor improvements including valley gutters, curbs, and stormdrain manholes. Drainage inlets capture the runoff from the existing curb, gutter and roadway network, which act as the initial receiving body of stormwater generated in the City. In some cases, inlets are located in the roadway or gutter area, and in others they are located within newly constructed grassed swales lined with permeable paver blocks. Where installed, these swales provide for additional infiltration area as well as some storage and treatment capacity, while preserving parking areas along the existing roadways. From the inlets, stormwater is conveyed through traditional high-density polyethylene (HDPE) stormwater pipes, which lead into stormwater treatment units. The treatment units are designed to remove oil, dirt, and trash from the stormwater, and are sized to allow the flow from the 50-year, 24-hour storm event through the unit. After leaving the treatment units, stormwater enters the infiltration pipes, which are large perforated HDPE pipes surrounded by drain rock, allowing the accumulated stormwater to slowly enter the subsurface water system. In this design the stormwater infiltration pipes act as the outfalls of the system, and are sized to accommodate the 50-year, 24-hour storm event.

In total there are four primary stormwater systems that compose the Alternative 2 improvements, each of which is a combination of the improvements noted above. The systems are located along Ewing Street, Lower and Upper Underwood Drive, Edwards Street, and Lighthouse Road (Figure 5, Appendix A), and are presented in further detail below.

**Ewing Street:** The improvements here include approximately 90 feet of 72-inch diameter stormwater infiltration pipe and stormwater treatment chamber, five new drainage inlets, and approximately 135 feet of new curb and 330 feet of new 12-inch diameter HDPE stormdrain pipe.

**Underwood Drive:** The improvements here include two new drainage inlets, two 72-inch diameter infiltration pipes (totaling 70 feet) with one treatment chamber, and approximately 150 feet of 12-inch HDPE stormwater pipe and 350 feet of concrete curb and valley gutters.

**Edwards Street:** The improvements here include three stormwater treatment chambers, four 36-inch diameter infiltration pipes (totaling 125 feet), 12 drainage inlets, and approximately 235 feet of 8-inch diameter HDPE stormdrain pipe.



**Lighthouse Road and Lower Parking Area:** The improvements here include one treatment unit, 1,500 feet of 54-inch diameter infiltration pipe, six drainage inlets, and approximately 1,180 feet of 24-inch diameter HDPE stormdrain pipe.

## 8.2 Project Schedule

Pending acceptance of the City's application for USDA assistance, the following schedule for implementation of the project is proposed:

- **April 2018:** USDA awards the City funding for the proposed project;
- **October 2018:** Prepare and submit required permit applications;
- **December 2018:** Complete CEQA/NEPA process;
- **December 2018:** Complete design;
- **April 2019:** Award construction; and
- **October 2019:** Construction project close out.

## 8.3 Permit Requirements

The stormwater system construction and operation would be conducted to meet all applicable local, State and Federal regulations. The following permits will may be required for certain aspects of the project:

Table 7. Required permits and associated regulatory agencies.

Regulatory Agency	Potential Permit or Approval Required
City of Trinidad	Coastal Development Permit
City of Trinidad	Encroachment Permit
North Coast Regional Water Quality Control Board	Stormwater Pollution Prevention Plan
Coastal Commission	Coastal Development Permit (only if appealed)

## 8.4 Sustainability Considerations

The proposed project design helps mimic natural hydrologic conditions by facilitating stormwater capture, filtration, and infiltration. The green infrastructure (i.e., grassy bioswales and underground treatment/infiltration systems) incorporated in the proposed design provides an improved technology for protection of receiving waters, reduce construction and maintenance costs of stormwater infrastructure, and encourage public education and participation in environmental protection and stewardship.



The proposed project would permanently eliminate a stormwater discharge from the ASBS. The stormwater treatment and infiltration facilities provide water quality ASBS habitat benefits for a typical infrastructure life span of 20 years and potentially up to 40 years with continued regular maintenance. To ensure the long term function of the storm drainage system, LID facilities maintenance would be the responsibility of the City's Public Works Department.

## 8.5 Total Project Cost Estimate (Engineer's Opinion of Probable Cost)

The total project cost is approximately \$5,369,943. A breakdown of costs is provided in Appendix D.

## 8.6 Annual Operating Budget

The following section outlines the annual operating budget for the City. Because the City does not collect funds for the stormwater system, income is not included in the operating budget.

### 8.6.1 Annual O&M Costs

Annual O&M Costs are provided in Table 4 as Alternative 2 costs. A discussion of each item that differs from current costs is provided in Section 6.3.

### 8.6.2 Debt Repayments

Because the City does not currently carry debt, debt repayments would be only from the loan for this project should the grant not be awarded. Assuming a 2.5% interest rate over a 30-year loan term, the City would need to make an annual payment of \$22,400.

### 8.6.3 Reserves

The proposed loan would be funded by Capital Asset and Special Project Reserves presented in Section 3.4. Capital Asset and Special Project Reserves is a portion of undesignated general funds that remained as of the last audit report conducted for the 2015-2016 fiscal year.

# 9. Conclusions and Recommendations

Based on the evaluation of technically feasible alternatives, constructing an LID system and decommissioning the existing outfall is recommended. A summary of funding sources for the project is provided in Table 8.

Table 8. Summary of funding sources for capital costs of the proposed project.

Budget Item	Funding Source			Total Cost
	Prop 1	City	USDA	
<b>Direct Project Administration Costs</b>	\$ 161,000	\$ 15,000	\$ -	\$176,000
<b>Planning/Design/Engineering/Environmental</b>	\$ -	\$ -	\$ 341,000	\$341,000



Budget Item	Funding Source			Total Cost
	Prop 1	City	USDA	
<b>Monitoring/Performance</b>	\$ 74,000	\$ -	\$ -	\$74,000
<b>Education/Outreach</b>	\$ 8,000		\$ -	\$8,000
<b>Bid Period Assistance</b>	\$ -	\$ -	\$ 20,000	\$20,000
<b>Construction Contingency</b>	\$ 396,268		\$ -	\$396,300
<b>Construction Administration</b>	\$ 234,606	\$ -	\$ 161,394	\$396,000
<b>Project Construction</b>	\$ 3,962,675	\$ -	\$ -	\$3,962,675
<b>Total</b>	<b>\$ 4,832,949</b>	<b>\$ 15,000</b>	<b>\$ 521,994</b>	<b>\$5,369,943</b>

Installation of the proposed LID system would provide capture, treatment and infiltration for the City's stormwater runoff. Because the City would no longer discharge to the ASBS, ongoing monitoring costs and requirements of City staff would be significantly reduced. Given the limited staff availability of the City, this is considered a significant advantage. In addition, the visible and accessible nature of the green infrastructure elements included in the project provide opportunities for community education and outreach.



## References

City of Trinidad. 2016. ASBS Compliance Plan.

GHD 2013. Trinidad ASBS Stormwater Project Design Basis Memorandum.

GHD. 2013. Trinidad ASBS Stormwater Project Groundwater Model Technical Report.

ParcelQuest. 2017. Assessor Data. < <https://pqweb.parcelquest.com/#home>> Accessed August 9<sup>th</sup>, 2017.

State of California. 2017. Population Estimates for Cities, Counties, and the State.

<<http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/>> Accessed August 8<sup>th</sup>, 2017.

United States Census Bureau. Community Facts.

<[https://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml)>. Accessed August 8<sup>th</sup>, 2017.

United States Department of Agriculture (USDA). 2013. Bulletin 1780-2: Preliminary Engineering Reports for the Water and Waste Disposal Program

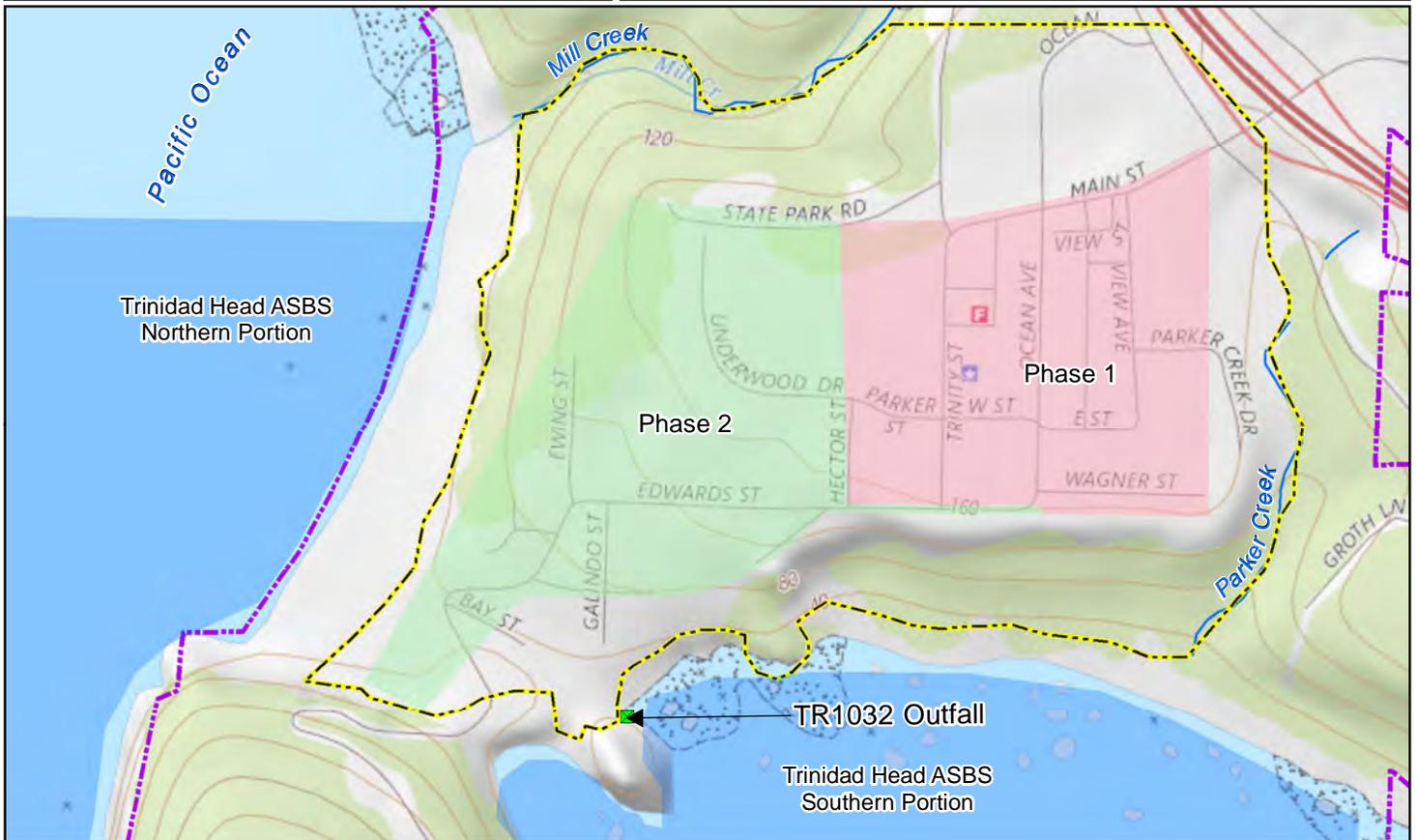
White House. Circular A-94 Appendix C Revised November 2016.

<[https://www.whitehouse.gov/omb/circulars\\_a094/a94\\_appx-c](https://www.whitehouse.gov/omb/circulars_a094/a94_appx-c)> Accessed August 9<sup>th</sup>, 2017.

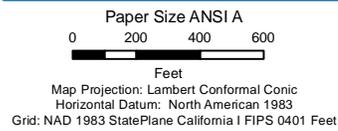
Winzler & Kelly. 2008. City of Trinidad Draft Stormwater Management Plan.



## Appendix A: Figures



- Phase 1
- Phase 2
- Area of Special Biological Significance (ASBS)
- Project Area
- Trinidad City Limits
- Humboldt County
- Counties



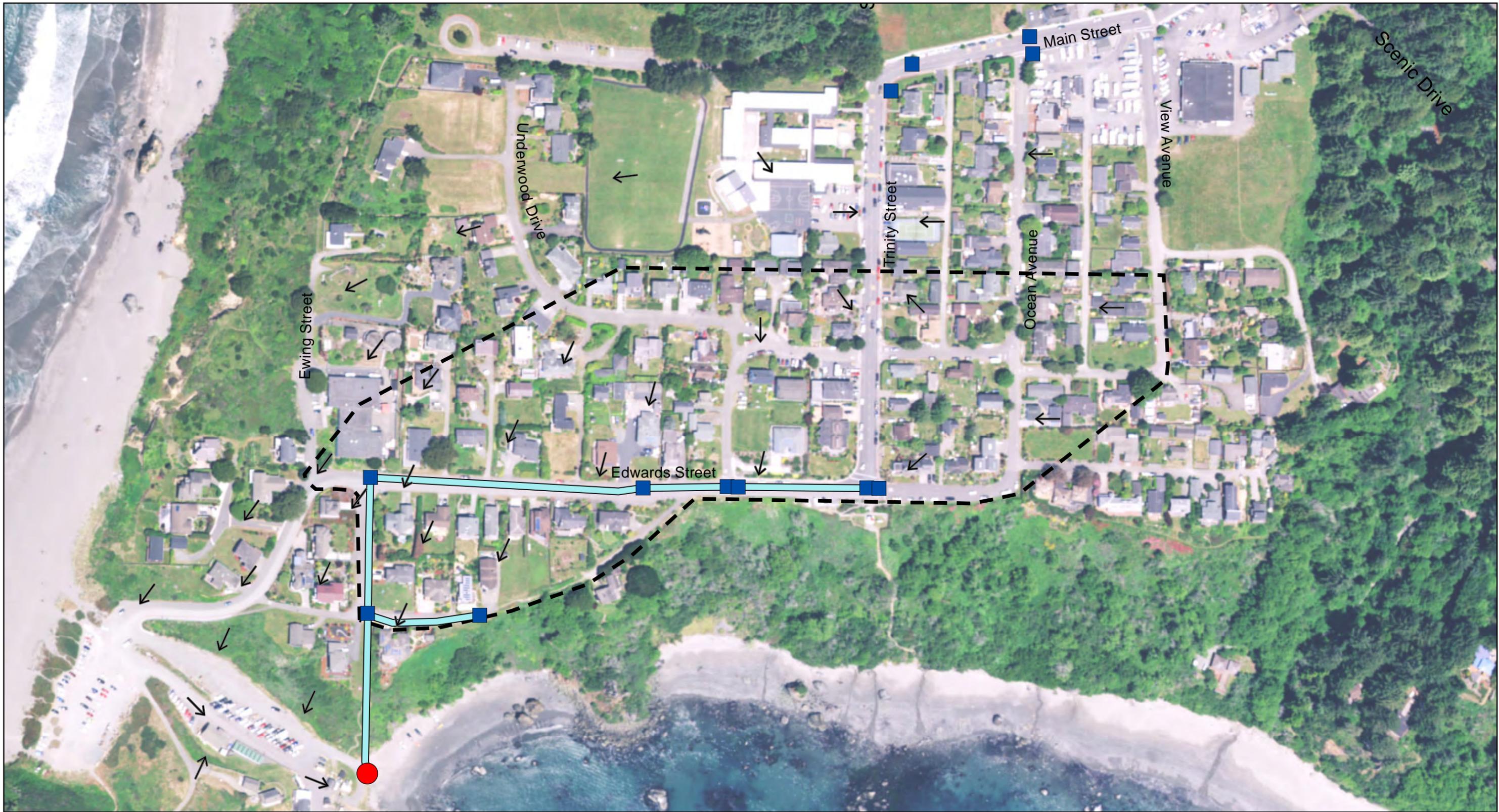
City of Trinidad  
 Trinidad ASBS Stormwater Project  
 USDA Preliminary Engineering Report

Job Number 01063-07-001  
 Revision 1  
 Date 07 Aug 2017

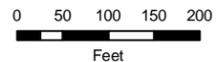
Vicinity Map

Figure 1

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 718 Third Street Eureka, CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com  
 © 2017. While every care has been taken to prepare this map, GHD and the City of Trinidad make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.  
 Data source: StreetMapUSA, Roads, Boundaries, 2010. City of Trinidad, Area of Special Biological Significance, 2011. Humboldt County, Watersheds, 2011. USGS topo basemap, 2017. Created by: jclark2



Paper Size 11" x 17" (ANSI B)



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



- City Outfall (TR1032)
- Storm Drain Inlet
- Storm Drain
- Trinidad MS4 Boundary

→ Flow Direction



City of Trinidad  
 Trinidad ASBS Stormwater Project  
 USDA Preliminary Engineering Report

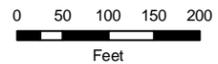
Job Number | 01063-07-001  
 Revision | A  
 Date | 08 Aug 2017

Existing Facilities

Figure 2



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Approximate Potential Area for Treatment System

Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California 1 FIPS 0401 Feet

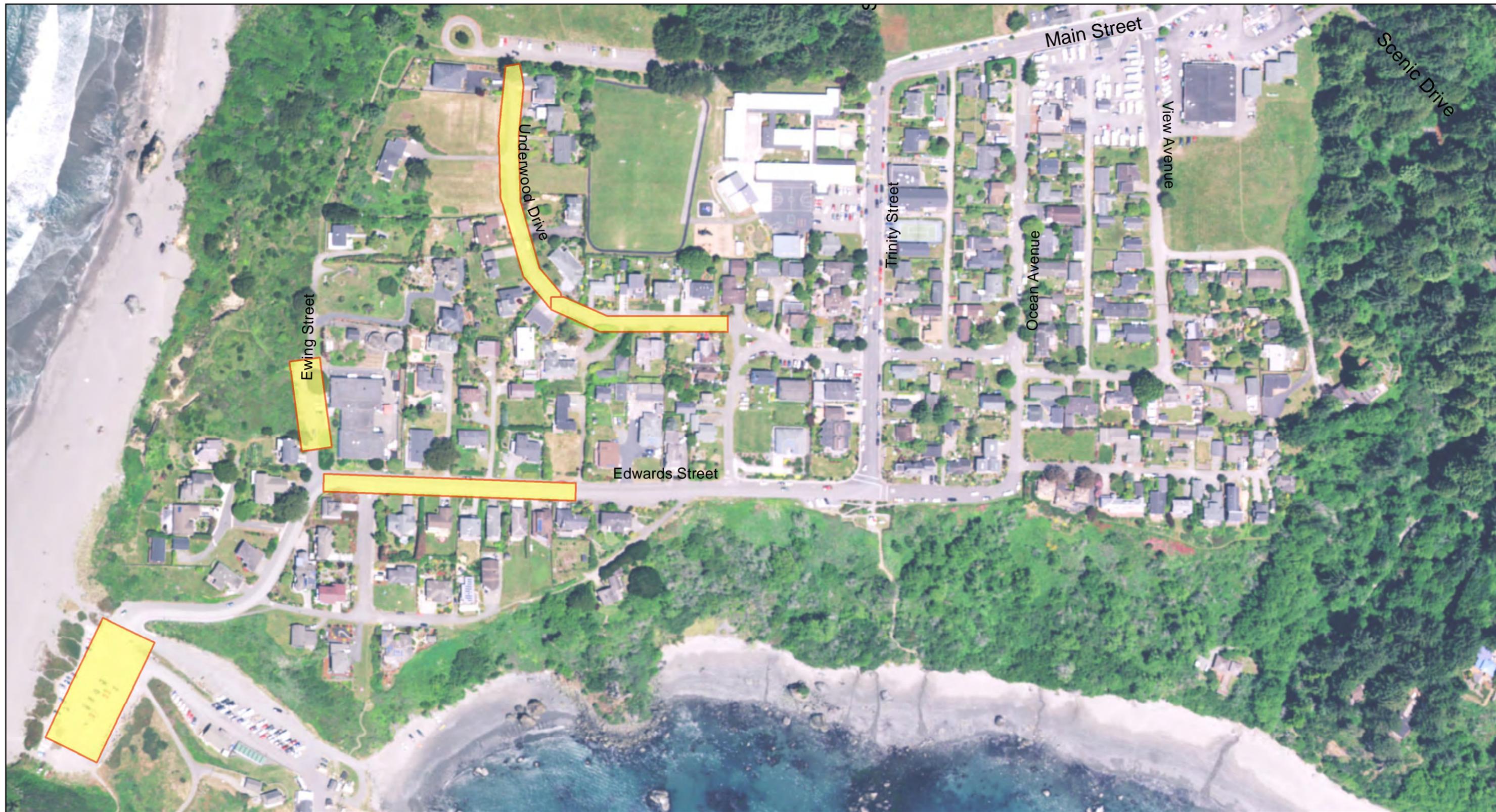


City of Trinidad  
Trinidad ASBS Stormwater Project  
USDA Preliminary Engineering Report

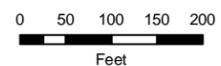
Job Number	01063-07-001
Revision	A
Date	09 Aug 2017

Alternative 1

Figure 3



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Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Approximate Potential Area for LID Features



City of Trinidad  
 Trinidad ASBS Stormwater Project  
 USDA Preliminary Engineering Report

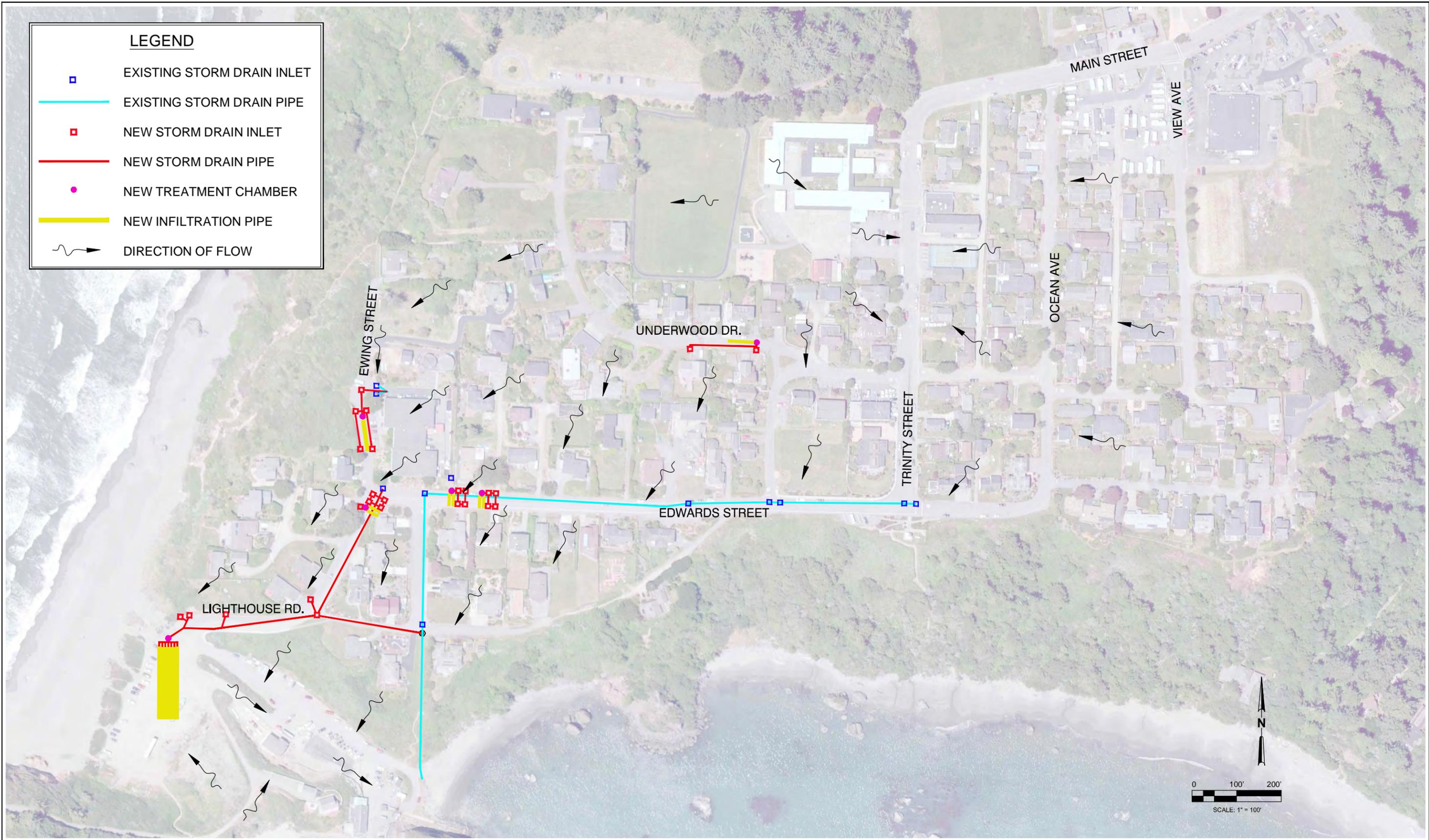
Job Number	01063-07-001
Revision	A
Date	08 Aug 2017

Alternative 2

Figure 4

**LEGEND**

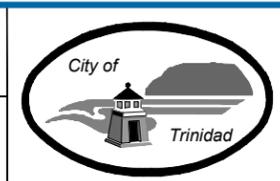
- EXISTING STORM DRAIN INLET
- EXISTING STORM DRAIN PIPE
- NEW STORM DRAIN INLET
- NEW STORM DRAIN PIPE
- NEW TREATMENT CHAMBER
- NEW INFILTRATION PIPE
- DIRECTION OF FLOW



No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

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THIS BAR IS ONE INCH LONG ON ORIGINAL DRAWING.  
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Drawn RKM	Designer TMD
Drafting PS	Design Check PS
Approved (Project Director)	Date AUGUST 2017
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction

Client **CITY OF TRINIDAD**  
 Project **ASBS STORMWATER IMPROVEMENT PROJECT**  
 Title **CONCEPTUAL SITE PLAN**  
 Figure **FIGURE 5**  
 Contract No. 01063-07-001

Original Size	ANSI D	Drawing No:	Rev:
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## Appendix B: Photos of Existing Stormwater System

**City of Trinidad Project Photographs**



Trinidad City Storm Drain Outlet



Road view of drainage inlet looking down Trinity Street.

## City of Trinidad Project Photographs



Road view of drainage inlet looking down Edwards Street.



Parking lot area for beach access.



## Appendix C: Correspondence with State Water Board

# State Water Resources Control Board



Terry Tamminen  
Secretary for Environmental  
Protection

## Executive Office

1001 I Street • Sacramento, California 95814 • (916) 341-5615  
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100  
Fax (916) 341-5621 • <http://www.swrcb.ca.gov>



Arnold Schwarzenegger  
Governor

October 18, 2004

ATTN: TRAVIS JAMES  
@ W&K  
(3) PAGES

Mr. Noel Ponniah  
City of Trinidad  
PO Box 390  
Trinidad, CA 95570-0390

**COPY**

Dear Mr. Ponniah:

### PROHIBITION OF WASTE DISCHARGES INTO THE KELP BEDS AT TRINIDAD HEAD AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE

The California Ocean Plan (Ocean Plan), adopted by the State Water Resources Control Board (State Board) and approved by the U.S. Environmental Protection Agency (U.S. EPA), lists 34 coastal marine waters which the State Board has designated as Areas of Special Biological Significance (ASBS). ASBS are defined as "those areas designated by the State Board requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable."

The Ocean Plan, Section III.E.1., requires that: "Waste\* shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas." "Waste" is defined as the "total discharge, of whatever origin." Your discharge of storm water (dry and wet weather runoff) into the Kelp Beds at Trinidad Head Area of Special Biological Significance is subject to the prohibition against waste discharges to an ASBS.

The Ocean Plan, Section III.I.1, allows the State Board to grant exceptions to this prohibition, provided that the exception "will not compromise protection of ocean waters for beneficial uses, and, [t]he public interest will be served." Prior to granting an exception, the State Board must hold a public hearing, and there must be compliance with the California Environmental Quality Act (CEQA). The U.S. EPA must also concur.

Information regarding the Ocean Plan, ASBS, or existing exceptions to the Ocean Plan may be found at <http://www.swrcb.ca.gov/plnspols/oplans/index.html>.

*California Environmental Protection Agency*

Recycled Paper

Mr. Noel Ponniah

- 2 -

October 18, 2004

Because you do not already have an exception issued by the State Board for discharges to the ASBS, you are required to cease discharging. You may, however, request an exception to the prohibition if you believe your discharge will not compromise protection of ocean waters for beneficial uses, and the public interest will be served. Please notify the State Board prior to January 1, 2005 whether you intend to cease discharging to the specified ASBS or whether you will seek an exception. We will discuss further steps with you subsequently. Your response should be sent to Dominic Gregorio of the Division of Water Quality, Ocean Standards Unit, with a copy sent to the North Coast Regional Water Quality Control Board.

The State Board staff will hold a workshop, at a date and location as yet to be determined, for those parties interested in pursuing an exception. The purpose of this workshop will be to provide information on the procedures for applying for an exception and possible funding sources that may be available to address discharges into ASBS. You will receive an invitation to this workshop in the near future.

If you have any questions, please feel free to contact Stan Martinson, Chief, Division of Water Quality, at (916) 341-5458 ([marts@swrcb.ca.gov](mailto:marts@swrcb.ca.gov)) or Dominic Gregorio, Division of Water Quality, Ocean Standards Unit, at (916) 341-5488 ([gregd@swrcb.ca.gov](mailto:gregd@swrcb.ca.gov)).

Sincerely,

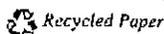


Celeste Cantú  
Executive Director

cc: Mayor Dean Heyenga  
City of Trinidad  
PO Box 390  
Trinidad, CA 95570-0390

Ms. Catherine Kuhlman, Executive Officer  
North Coast Regional Water Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403

*California Environmental Protection Agency*



Mr. Noel Ponniah

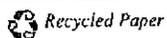
- 3 -

October 18, 2004

bcc: Board members, EXEC  
Tom Howard, EXEC  
Sheila Vassey, OCC  
Betsy Jennings, OCC  
John Norton, OSI  
Stan Martinson, DWQ  
John Ladd, DWQ  
Gerald Bowes, DWQ  
Bruce Fujimoto, DWQ  
Frank Palmer, DWQ  
Frank Roddy, DWQ  
Dominic Gregorio, DWQ

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*California Environmental Protection Agency*





EDMUNDO G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION



State Water Resources Control Board

MAY 30 2012

The Honorable Stan Binnie  
City of Trinidad  
409 Trinity Street  
Trinidad, CA 95570

[Certified Mail: 7004 1160 0002 0464 3327]

**COPY**

Dear the Honorable Stan Binnie:

**NOTICE OF ADOPTION OF THE GENERAL EXCEPTION TO THE CALIFORNIA OCEAN PLAN WASTE DISCHARGE PROHIBITION FOR SELECTED STORM WATER AND NONPOINT SOURCE DISCHARGES INTO AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE, INCLUDING SPECIAL PROTECTIONS FOR BENEFICIAL USES; REQUEST FOR MONITORING PROGRAM REPORT**

On October 18, 2004, the State Water Resources Control Board (State Water Board) notified the City of Trinidad, as a responsible party, to cease storm water and nonpoint source waste discharges into Areas of Special Biological Significance (ASBS) or to request an exception from the California Ocean Plan ASBS waste discharge prohibition. On January 26, 2005, the City of Trinidad requested an exception. On March 20, 2012, the State Water Board adopted Resolution No. 2012-0012, approving an exception to the California Ocean Plan for the ASBS Waste Discharge Prohibition for Storm Water and Nonpoint Source Discharges, with Special Protections for beneficial uses (General Exception). Enclosed please find the General Exception and Special Protections. These documents are also posted on the State Water Board Web site at [http://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2012/rs2012\\_0012.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0012.pdf).

The purpose of this letter is to notify you of the adoption of the General Exception and Special Protections and additionally, to require, pursuant to the General Exception and to California Water Code section 13383, information you must submit regarding your plans to initiate monitoring in the next storm season.

According to the General Exception, monitoring shall commence during the first storm season following adoption of the Special Protections, which is the 2012-13 storm season. You are required to perform both core monitoring for runoff and ambient seawater monitoring for receiving water and reference sites. There are two options for fulfilling your ambient water monitoring requirements: an individual monitoring program, or a regional integrated monitoring program. While we strongly encourage you to participate in a regional monitoring program, you may elect instead to perform individual monitoring. You must identify your selected option and report that decision in a letter to the State Water Board by August 1, 2012. Please feel free to

CHARLES R. HOPPIN, CHAIRMAN | THOMAS HOWARD, EXECUTIVE DIRECTOR

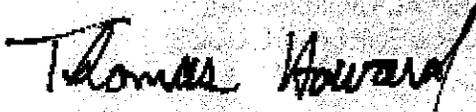
1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | [www.waterboards.ca.gov](http://www.waterboards.ca.gov)

contact staff if you need assistance in the development of a regional integrated monitoring program.

You should also be aware that the General Exception also requires the City of Trinidad to submit to the State Water Board by September 20, 2013, an ASBS Compliance Plan. The ASBS Compliance Plan shall describe your strategy to comply with these special conditions, including the requirement to maintain natural water quality in the affected ASBS. The ASBS Compliance Plan shall include a description of appropriate non-structural and structural controls, and a draft implementation schedule to comply with the General Exception. The State Water Board recommends that you initiate development of your ASBS Compliance Plan. If you need assistance in planning, please feel free to contact our staff.

Please feel free to contact Dr. Maria de la Paz Carpio-Obeso, Ocean Unit Chief, at (916) 341-5858 or e-mail [mcarpio-obeso@waterboards.ca.gov](mailto:mcarpio-obeso@waterboards.ca.gov), or Mr. Dominic Gregorio, Manager of the Watershed, Ocean and Wetland Section, at (916) 341-5488 or e-mail [dgregorio@waterboards.ca.gov](mailto:dgregorio@waterboards.ca.gov) if you have any questions.

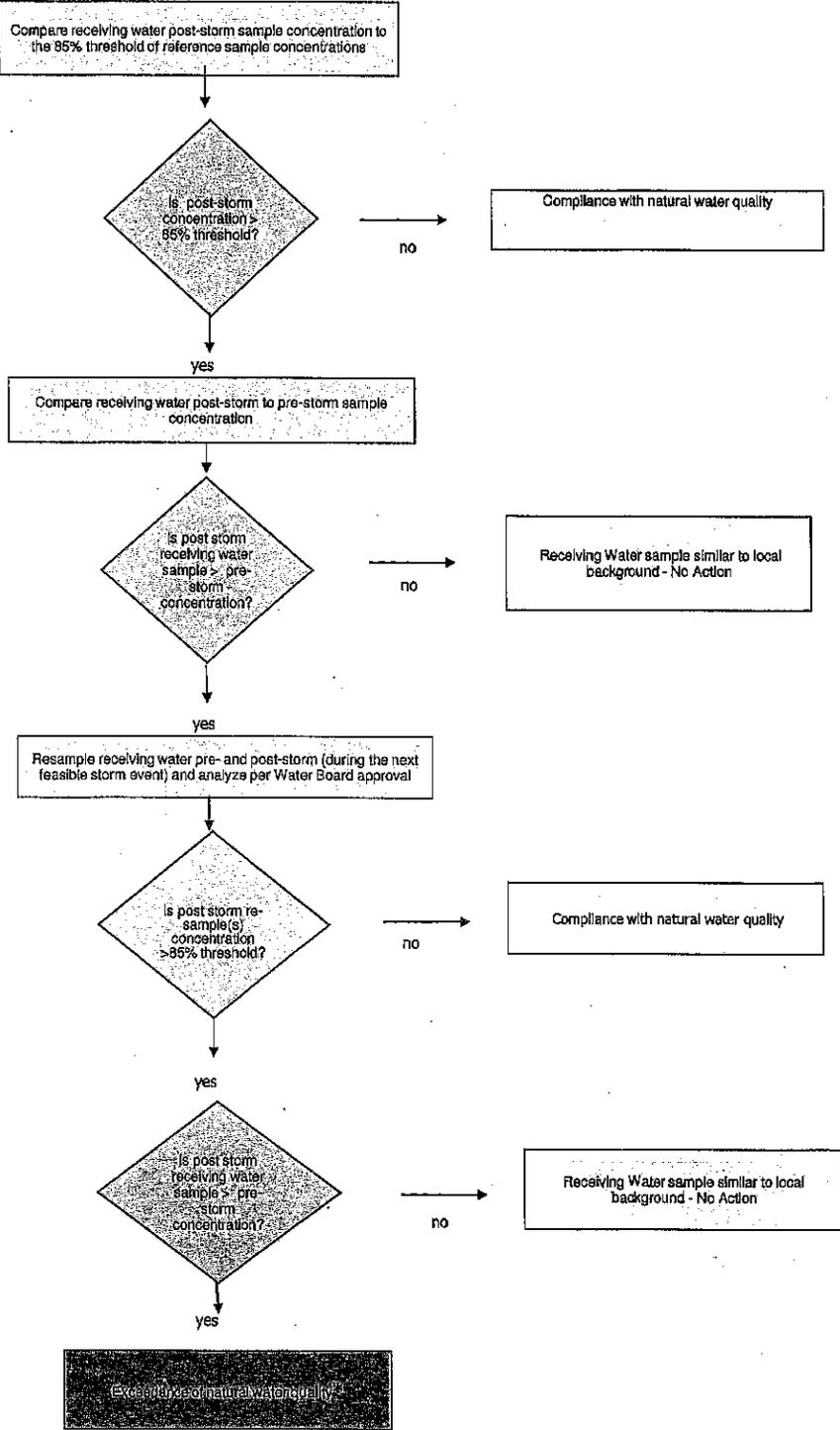
Sincerely,



Thomas Howard  
Executive Director

cc: Mr. Matt St. John  
Executive Officer  
North Coast Regional Water Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403

**Attachment 1  
Special Protections Sections I(A)(3)(e) and I(B)(3)(e)  
Flowchart to Determine Compliance with Natural Water Quality**



**\* When an exceedance of natural water quality occurs, the discharger must comply with section I.A.2.h (for permitted storm water) or section I.B.2.c (for nonpoint sources). Note, when sampling data is available, end-of-pipe effluent concentrations will be considered by the Water Boards in making this determination.**

1. The first step in the process is to identify the problem or goal.

2. Next, you need to gather information and resources.

3. Then, you should analyze the information and develop a plan.

4. After that, you can implement the plan and monitor progress.

5. Finally, you should evaluate the results and make adjustments as needed.

6. The process is iterative and may require revisiting previous steps.

7. It is important to stay flexible and adapt to changing circumstances.

8. The process is a continuous cycle of learning and improvement.

**STATE WATER RESOURCES CONTROL BOARD  
RESOLUTION NO. 2012-0012**

**APPROVING EXCEPTIONS TO THE CALIFORNIA OCEAN PLAN FOR SELECTED  
DISCHARGES INTO AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE, INCLUDING  
SPECIAL PROTECTIONS FOR BENEFICIAL USES,  
AND CERTIFYING A PROGRAM ENVIRONMENTAL IMPACT REPORT**

**WHEREAS:**

1. The State Water Resources Control Board (State Water Board) adopted the California Ocean Plan (Ocean Plan) on July 6, 1972 and revised the Ocean Plan in 1978, 1983, 1988, 1990, 1997, 2000, 2005, and 2009.
2. The Ocean Plan prohibits the discharge of waste to designated Areas of Special Biological Significance (ASBS).
3. ASBS are designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.
4. Under the Marine Managed Areas Improvement Act, all ASBS are designated as a subset of state water quality protection areas and require special protection as determined by the State Water Board pursuant to the Ocean Plan and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan).
5. In state water quality protection areas, waste discharges must be prohibited or limited by special conditions, in accordance with the Porter-Cologne Water Quality Control Act, California Water Code §13000 et seq., and implementing regulations, including the Ocean Plan and Thermal Plan.
6. The Ocean Plan authorizes the State Water Board to grant an exception to Ocean Plan provisions where the board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served.
7. On October 18, 2004, the State Water Board notified a number of parties that they must cease the discharge of storm water and nonpoint source waste into ASBS or request an exception to the Ocean Plan.
8. The State Water Board has now received 27 applications for an exception to the Ocean Plan prohibition against waste discharges into an ASBS. The applicants, who are listed in Attachment A to this resolution, discharge storm water and nonpoint source waste into ASBS.
9. The State Water Board finds that granting the requested exceptions will not compromise protection of ocean waters for beneficial uses, provided that the applicants comply with the prohibitions and special conditions that comprise the Special Protections contained in this resolution. The prohibitions and special conditions in the Special Protections, contained in Attachment B to this resolution, are intended to ensure that storm water

and nonpoint source discharges are controlled to protect the beneficial uses of the affected ASBS, including marine aquatic life and habitat, and to maintain natural water quality within ASBS. The Special Protections are also intended to maintain the natural hydrologic cycle and coastal ecology by allowing the flow of clean precipitation runoff into the ocean, while preserving coastal slope stability and preventing anthropogenic erosion.

10. The State Water Board finds that granting the requested exceptions is in the public interest because the various discharges are essential for flood control, slope stability, erosion prevention, and maintenance of the natural hydrologic cycle between terrestrial and marine ecosystems, public health and safety, public recreation and coastal access, commercial and recreational fishing, navigation, and essential military operations (national security).
11. The State Water Board staff conducted scoping meetings on August 1, 8, and 15, 2006. The comment period for CEQA scoping closed August 15, 2006. The State Water Board heard a status report on ASBS at the April 1, 2008 meeting.
12. The State Water Board staff prepared and circulated a Program Environmental Impact Report for the proposed exceptions, in accordance with the California Environmental Quality Act (CEQA) and implementing regulations.
13. The State Water Board held a public hearing on May 18, 2011, to receive comments on the proposed exceptions and the Program Environmental Impact Report. The written comment period ended on May 20, 2011. The State Water Board staff has considered the comments and prepared written response. The State Water Board finds, based on the whole record, including the applications, Draft Program Environmental Impact Report, comments, and responses, that there is no substantial evidence that approval of the exceptions will have a significant effect on the environment because of the terms and conditions incorporated into the project. The Program Environmental Impact Report reflects the State Water Board's independent judgment and analysis.
14. Granting the exceptions is consistent with federal and state antidegradation policies, in 40 C.F.R. §131.12 and State Water Board Resolution No. 68-16, respectively. The terms, special conditions, and prohibitions that comprise these Special Protections will not authorize a lowering of water quality, but rather will improve water quality conditions in the affected ASBS.
15. This resolution only grants an exception from the Ocean Plan prohibition against waste discharges into ASBS to the applicants listed in Attachment A. It does not authorize waste discharges to state waters. In order to legally discharge waste into an ASBS, the applicants must have both coverage under this resolution and an appropriate authorization to discharge. Authorization to discharge for point source waste discharges to navigable waters consists of coverage under the National Pollutant Discharge Elimination System (NPDES) permit program. Nonpoint source discharges of waste must be regulated under waste discharge requirements, a conditional waiver, or a conditional prohibition.

16. The exceptions will be reviewed during the next triennial review of the Ocean Plan. If the State Water Board finds cause to revoke or re-open the exceptions, the board may do so during the triennial review or at any other time. During the next triennial review period staff will also evaluate those aspects of the exception that are successfully protecting beneficial uses, to make recommendations on a potential Ocean Plan amendment to address storm runoff into ASBS.
17. The State Water Board's record of proceedings in this matter is located at 1001 I Street, Sacramento, California, 95814 and the custodian is the Division of Water Quality.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. The State Water Board certifies that the Final EIR has been completed in compliance with CEQA. The State Water Board has reviewed and considered the information contained in these documents, which reflect the State Water Board's independent judgment and analysis.
2. Approves the exceptions to the Ocean Plan prohibition against waste discharges to ASBS for discharges of storm water and nonpoint source waste by the applicants listed in Attachment A to this resolution provided that:
  - a. The discharges are covered under an appropriate authorization to discharge waste to the ASBS, such as an NPDES permit and/or waste discharge requirements;
  - b. The authorization incorporates all of the Special Protections, contained in Attachment B to this resolution, which are applicable to the discharge; and
  - c. Only storm water and nonpoint source waste discharges by the applicants listed in Attachment A to this resolution are covered by this resolution. All other waste discharges to ASBS are prohibited, unless they are covered by a separate, applicable Ocean Plan exception.
3. Authorizes the Executive Director or designee to file the Notice of Determination with the Governor's Office of Planning and Research.
4. Authorizes the Executive Director or designee to transmit the exceptions to the United States Environmental Agency (U.S. EPA) for concurrence.
5. Directs staff to consider development of, and make recommendations for, an Ocean Plan amendment to address storm runoff into ASBS, during the next triennial review period.
6. Directs staff to propose for Board consideration up to \$1 million from the Proposition 50 Coastal Nonpoint Source (CNPS) program for additional ASBS Regional Monitoring, starting in the fall of 2012.

7. Directs staff, pending budget authority, to propose for Board consideration the use of CNPS funds (approximately \$10 million) in conjunction with the remaining Proposition 84 ASBS funds (\$3.6 million) for additional ASBS BMP projects.

### CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on March 20, 2012.

AYE: Chairman Charles R. Hoppin  
Vice Chair Frances Spivy-Weber  
Board Member Tam M. Doduc

NAY: None

ABSENT: None

ABSTAIN: None

  
\_\_\_\_\_  
Jeanine Townsend  
Clerk to the Board

## Attachment A – Applicants

Applicant	ASBS
Carmel by the Sea, City of	Carmel Bay
Connolly-Pacific Company	Southeast Santa Catalina Island
Department of Parks and Recreation	Redwoods National Park, Trinidad Head, King Range, Jughandle Cove, Gerstle Cove, James V. Fitzgerald, Año Nuevo, Carmel Bay, Point Lobos, Julia Pfeiffer Burns, Laguna Point to Latigo Point, Irvine Coast
Department of Transportation (CalTrans)	Redwoods National Park, Saunders Reef, James V. Fitzgerald, Año Nuevo, Carmel Bay, Point Lobos, Julia Pfeiffer Burns, Salmon Creek Coast, Laguna Point to Latigo Point, Irvine Coast
Humboldt County	King Range
Humboldt Bay Harbor District	King Range
Irvine Company	Irvine Coast
Laguna Beach, City of	Heisler Park
Los Angeles County	Laguna Point to Latigo Point
Los Angeles County Flood Control District	Laguna Point to Latigo Point
Malibu, City of	Laguna Point to Latigo Point
Marin County	Duxbury Reef
Monterey, City of	Pacific Grove
Monterey, County of	Carmel Bay
Newport Beach, City of, and on behalf of the Pelican Point Homeowners	Robert E. Badham And Irvine Coast
Pacific Grove, City of	Pacific Grove
Pebble Beach Company, and on behalf of the Pebble Beach Stillwater Yacht Club	Carmel Bay
San Diego, City of	La Jolla
San Mateo County	James V. Fitzgerald
Santa Catalina Island Company, and on behalf of the Santa Catalina Island Conservancy	Northwest Santa Catalina Island And Western Santa Catalina Island
Sea Ranch Association	Del Mar Landing
Trinidad, City of	Trinidad Head
Trinidad Rancheria	Trinidad Head
U.S. Dept. of Interior, Point Reyes National Seashore	Point Reyes Headlands, Duxbury Reef
U.S. Dept. of Interior, Redwoods National and State Park	Redwoods National Park
U.S. Dept. of Defense, Air Force	James V. Fitzgerald
U.S. Dept. of Defense, Navy	San Nicolas Island & Begg Rock
U.S. Dept. of Defense, Navy	San Clemente Island

## **Attachment B - Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint Source Waste Discharges**

### **I. PROVISIONS FOR POINT SOURCE DISCHARGES OF STORM WATER AND NONPOINT SOURCE WASTE DISCHARGES**

The following terms, prohibitions, and special conditions (hereafter collectively referred to as special conditions) are established as limitations on point source storm water and nonpoint source discharges. These special conditions provide Special Protections for marine aquatic life and natural water quality in Areas of Special Biological Significance (ASBS), as required for State Water Quality Protection Areas pursuant to California Public Resources Code Sections 36700(f) and 36710(f). These Special Protections are adopted by the State Water Board as part of the California Ocean Plan (Ocean Plan) General Exception.

The special conditions are organized by category of discharge. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Regional Water Boards) will determine categories and the means of regulation for those categories [e.g., Point Source Storm Water National Pollutant Discharge Elimination System (NPDES) or Nonpoint Source].

#### **A. PERMITTED POINT SOURCE DISCHARGES OF STORM WATER**

##### **1. General Provisions for Permitted Point Source Discharges of Storm Water**

- a. Existing storm water discharges into an ASBS are allowed only under the following conditions:
  - (1) The discharges are authorized by an NPDES permit issued by the State Water Board or Regional Water Board;
  - (2) The discharges comply with all of the applicable terms, prohibitions, and special conditions contained in these Special Protections; and
  - (3) The discharges:
    - (i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;
    - (ii) Are designed to prevent soil erosion;
    - (iii) Occur only during wet weather;
    - (iv) Are composed of only storm water runoff.
- b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.

- c. The discharge of trash is prohibited.
  - d. Only discharges from existing storm water outfalls are allowed. Any proposed or new storm water runoff discharge shall be routed to existing storm water discharge outfalls and shall not result in any new contribution of waste to an ASBS (i.e., no additional pollutant loading). "Existing storm water outfalls" are those that were constructed or under construction prior to January 1, 2005. "New contribution of waste" is defined as any addition of waste beyond what would have occurred as of January 1, 2005. A change to an existing storm water outfall, in terms of re-location or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.
  - e. Non-storm water discharges are prohibited except as provided below:
    - (1) The term "non-storm water discharges" means any waste discharges from a municipal separate storm sewer system (MS4) or other NPDES permitted storm drain system to an ASBS that are not composed entirely of storm water.
    - (2) (i) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally:
      - (a) Discharges associated with emergency fire fighting operations.
      - (b) Foundation and footing drains.
      - (c) Water from crawl space or basement pumps.
      - (d) Hillside dewatering.
      - (e) Naturally occurring groundwater seepage via a storm drain.
      - (f) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
    - (ii) An NPDES permitting authority may authorize non-storm water discharges to an MS4 with a direct discharge to an ASBS only to the extent the NPDES permitting authority finds that the discharge does not alter natural ocean water quality in the ASBS.
    - (3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.
2. Compliance Plans for Inclusion in Storm Water Management Plans (SWMP) and Storm Water Pollution Prevention Plans (SWPPP).

The discharger shall specifically address the prohibition of non-storm water runoff and the requirement to maintain natural water quality for storm water discharges to an ASBS in an ASBS Compliance Plan to be included in its SWMP or a SWPPP, as appropriate to permit type. If a statewide permit includes a SWMP, then the discharger shall prepare a stand-alone

compliance plan for ASBS discharges. The ASBS Compliance Plan is subject to approval by the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (for permits issued by Regional Water Boards).

- a. The Compliance Plan shall include a map of surface drainage of storm water runoff, showing areas of sheet runoff, prioritize discharges, and describe any structural Best Management Practices (BMPs) already employed and/or BMPs to be employed in the future. Priority discharges are those that pose the greatest water quality threat and which are identified to require installation of structural BMPs. The map shall also show the storm water conveyances in relation to other features such as service areas, sewage conveyances and treatment facilities, landslides, areas prone to erosion, and waste and hazardous material storage areas, if applicable. The SWMP or SWPPP shall also include a procedure for updating the map and plan when changes are made to the storm water conveyance facilities.
- b. The ASBS Compliance Plan shall describe the measures by which all non-authorized non-storm water runoff (e.g., dry weather flows) has been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.
- c. For Municipal Separate Storm Sewer System (MS4s), the ASBS Compliance Plan shall require minimum inspection frequencies as follows:
  - (1) The minimum inspection frequency for construction sites shall be weekly during rainy season;
  - (2) The minimum inspection frequency for industrial facilities shall be monthly during the rainy season;
  - (3) The minimum inspection frequency for commercial facilities (e.g., restaurants) shall be twice during the rainy season; and
  - (4) Storm water outfall drains equal to or greater than 18 inches (457 mm) in diameter or width shall be inspected once prior to the beginning of the rainy season and once during the rainy season and maintained to remove trash and other anthropogenic debris.
- d. The ASBS Compliance Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff, that are necessary to comply with these special conditions, will be achieved through BMPs. Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that such installation would pose a threat to health or safety. BMPs to control storm water runoff discharges (at the end-of-pipe) during a design storm shall be designed to achieve on average the following target levels:
  - (1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

- (2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within four (4) years of the effective date.

- e. The ASBS Compliance Plan shall address erosion control and the prevention of anthropogenic sedimentation in ASBS. The natural habitat conditions in the ASBS shall not be altered as a result of anthropogenic sedimentation.
- f. The ASBS Compliance Plan shall describe the non-structural BMPs currently employed and planned in the future (including those for construction activities), and include an implementation schedule. The ASBS Compliance Plan shall include non-structural BMPs that address public education and outreach. Education and outreach efforts must adequately inform the public that direct discharges of pollutants from private property not entering an MS4 are prohibited. The ASBS Compliance Plan shall also describe the structural BMPs, including any low impact development (LID) measures, currently employed and planned for higher threat discharges and include an implementation schedule. To control storm water runoff discharges (at the end-of-pipe) during a design storm, permittees must first consider, and use where feasible, LID practices to infiltrate, use, or evapotranspire storm water runoff on-site, if LID practices would be the most effective at reducing pollutants from entering the ASBS.
- g. The BMPs and implementation schedule shall be designed to ensure that natural water quality conditions in the receiving water are achieved and maintained by either reducing flows from impervious surfaces or reducing pollutant loading, or some combination thereof.
- h. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results.
  - (1) The report shall identify the constituents in storm water runoff that alter natural ocean water quality and the sources of these constituents.
  - (2) The report shall describe BMPs that are currently being implemented, BMPs that are identified in the SWMP or SWPPP for future implementation, and any additional BMPs that may be added to the SWMP or SWPPP to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the BMPs.
  - (3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits), the discharger shall revise its ASBS Compliance Plan to incorporate any new or modified BMPs that have been or will be implemented, the implementation schedule, and any additional monitoring required.

(4) As long as the discharger has complied with the procedures described above and is implementing the revised SWMP or SWPPP, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent.

(5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

### 3. Compliance Schedule

- a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.
- b. Within eighteen (18) months from the effective date of the Exception, the discharger shall submit a draft written ASBS Compliance Plan to the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that describes its strategy to comply with these special conditions, including the requirement to maintain natural water quality in the affected ASBS. The ASBS Compliance Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls (implementation schedule) to comply with these special conditions for inclusion in the discharger's SWMP or SWPPP, as appropriate to permit type. The final ASBS Compliance Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.
- c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these special conditions shall be implemented.
- d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Compliance Plan that are necessary to comply with these special conditions shall be operational.
- e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85<sup>th</sup> percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water, pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85<sup>th</sup> percentile threshold of reference water quality data, and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.
- f. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe

the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. for municipalities, a demonstration of significant hardship to discharger ratepayers, by showing the relationship of storm water fees to annual household income for residents within the discharger's jurisdictional area, and the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
2. for other governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

## **B. NONPOINT SOURCE DISCHARGES**

### **1. General Provisions for Nonpoint Sources**

a. Existing nonpoint source waste discharges are allowed into an ASBS only under the following conditions:

(1) The discharges are authorized under waste discharge requirements, a conditional waiver of waste discharge requirements, or a conditional prohibition issued by the State Water Board or a Regional Water Board.

(2) The discharges are in compliance with the applicable terms, prohibitions, and special conditions contained in these Special Protections.

(3) The discharges:

(i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;

(ii) Are designed to prevent soil erosion;

(iii) Occur only during wet weather;

(iv) Are composed of only storm water runoff.

b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.

- c. The discharge of trash is prohibited.
- d. Only existing nonpoint source waste discharges are allowed. "Existing nonpoint source waste discharges" are discharges that were ongoing prior to January 1, 2005. "New nonpoint source discharges" are defined as those that commenced on or after January 1, 2005. A change to an existing nonpoint source discharge, in terms of relocation or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.
- e. Non-storm water discharges from nonpoint sources (those not subject to an NPDES Permit) are prohibited except as provided below:
  - (1) The term "non-storm water discharges" means any waste discharges that are not composed entirely of storm water.
  - (2) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability, or occur naturally:
    - (i) Discharges associated with emergency fire fighting operations.
    - (ii) Foundation and footing drains.
    - (iii) Water from crawl space or basement pumps.
    - (iv) Hillside dewatering.
    - (v) Naturally occurring groundwater seepage via a storm drain.
    - (vi) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
  - (3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.
- f. At the San Clemente Island ASBS, discharges incidental to military training and research, development, test, and evaluation operations are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed in the two military closure areas in the vicinity of Wilson Cove and Castle Rock. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.
- g. At the San Nicolas Island and Begg Rock ASBS, discharges incidental to military research, development, testing, and evaluation of, and training with, guided missile and other weapons systems, fleet training exercises, small-scale amphibious warfare training, and special warfare training are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.

h. All other nonpoint source discharges not specifically authorized above are prohibited.

## 2. Planning and Reporting

a. The nonpoint source discharger shall develop an ASBS Pollution Prevention Plan, including an implementation schedule, to address storm water runoff and any other nonpoint source discharges from its facilities. The ASBS Pollution Prevention Plan must be equivalent in contents to an ASBS Compliance Plan as described in I (A)(2) in this document. The ASBS Pollution Prevention Plan is subject to approval by the Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements).

b. The ASBS Pollution Prevention Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff that are necessary to comply with these special conditions, will be achieved through Management Measures and associated Management Practices (Management Measures/Practices). Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director or Regional Water Board Executive Officer that such installation would pose a threat to health or safety. Management Measures to control storm water runoff during a design storm shall achieve on average the following target levels:

(1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

(2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within four (4) years of the effective date.

c. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff or other nonpoint source pollution is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and the Regional Water Board within 30 days of receiving the results.

(1) The report shall identify the constituents that alter natural water quality and the sources of these constituents.

(2) The report shall describe Management Measures/Practices that are currently being implemented, Management Measures/Practices that are identified in the ASBS Pollution Prevention Plan for future implementation, and any additional Management Measures/Practices that may be added to the Pollution Prevention Plan to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the Management Measures/Practices.

- (3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements), the discharger shall revise its ASBS Pollution Prevention Plan to incorporate any new or modified Management Measures/Practices that have been or will be implemented, the implementation schedule, and any additional monitoring required.
- (4) As long as the discharger has complied with the procedures described above and is implementing the revised ASBS Pollution Prevention Plan, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural water quality conditions due to the same constituent.
- (5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

### 3. Compliance Schedule

- a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.
- b. Within eighteen (18) months from the effective date of the Exception, the dischargers shall submit a draft written ASBS Pollution Prevention Plan to the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) that describes its strategy to comply with these special conditions, including the requirement to maintain natural ocean water quality in the affected ASBS. The Pollution Prevention Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls to comply with these special conditions for inclusion in the discharger's Pollution Prevention Plan. The final ASBS Pollution Prevention Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.
- c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these Special Protections shall be implemented.
- d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Pollution Prevention Plan that are necessary to comply with these special conditions shall be operational.
- e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85<sup>th</sup> percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85<sup>th</sup> percentile threshold of reference water quality data and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.

- f. The Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

## II. ADDITIONAL REQUIREMENTS FOR PARKS AND RECREATION FACILITIES

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with parks and recreation facilities shall comply with the following:

- A. The discharger shall include a section in an ASBS Compliance Plan (for NPDES dischargers) or an ASBS Pollution Prevention Plan (for nonpoint source dischargers) to address storm water runoff from parks and recreation facilities.
1. The plan shall identify all pollutant sources, including sediment sources, which may result in waste entering storm water runoff. Pollutant sources include, but are not limited to, roadside rest areas and vistas, picnic areas, campgrounds, trash receptacles, maintenance facilities, park personnel housing, portable toilets, leach fields, fuel tanks, roads, piers, and boat launch facilities.
  2. The plan shall describe BMPs or Management Measures/Practices that will be implemented to control soil erosion (both temporary and permanent erosion controls) and reduce or eliminate pollutants in storm water runoff in order to achieve and maintain natural water quality conditions in the affected ASBS. The plan shall include BMPs or

- Management Measures/Practices to ensure that trails and culverts are maintained to prevent erosion and minimize waste discharges to ASBS.
3. The plan shall include BMPs or Management Measures/Practices to prevent the discharge of pesticides or other chemicals, including agricultural chemicals, in storm water runoff to the affected ASBS.
  4. The plan shall include BMPs or Management Measures/Practices that address public education and outreach. The goal of these BMPs or Management Measures/Practices is to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The BMPs or Management Measures/Practices shall include signage at camping, picnicking, beach and roadside parking areas, and visitor centers, or other appropriate measures, which notify the public of any applicable requirements of these Special Protections and identify the ASBS boundaries.
  5. The plan shall include BMPs or Management Measures/Practices that address the prohibition against the discharge of trash to ASBS. The BMPs or Management Measures/Practices shall include measures to ensure that adequate trash receptacles are available for public use at visitor facilities, including parking areas, and that the receptacles are adequately maintained to prevent trash discharges into the ASBS. Appropriate measures include covering trash receptacles to prevent trash from being wind blown and periodically emptying the receptacles to prevent overflows.
  6. The plan shall include BMPs or Management Measures/Practices to address runoff from parking areas and other developed features to ensure that the runoff does not alter natural water quality in the affected ASBS. BMPs or Management Measures/Practices shall include measures to reduce pollutant loading in runoff to the ASBS through installation of natural area buffers (LID), treatment, or other appropriate measures.
- B. Maintenance and repair of park and recreation facilities must not result in waste discharges to the ASBS. The practice of road oiling must be minimized or eliminated, and must not result in waste discharges to the ASBS.

### III. ADDITIONAL REQUIREMENTS – WATERFRONT AND MARINE OPERATIONS

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with waterfront and marine operations shall comply with the following:

- A. For discharges related to waterfront and marine operations, the discharger shall develop a Waterfront and Marine Operations Management Plan (Waterfront Plan). This plan shall contain appropriate Management Measures/Practices to address nonpoint source pollutant discharges to the affected ASBS.
  1. The Waterfront Plan shall contain appropriate Management Measures/Practices for any waste discharges associated with the operation and maintenance of vessels, moorings, piers, launch ramps, and cleaning stations in order to ensure that beneficial uses are protected and natural water quality is maintained in the affected ASBS.

2. For discharges from marinas and recreational boating activities, the Waterfront Plan shall include appropriate Management Measures, described in The Plan for California's Nonpoint Source Pollution Control Program, for marinas and recreational boating, or equivalent practices, to ensure that nonpoint source pollutant discharges do not alter natural water quality in the affected ASBS.
  3. The Waterfront Plan shall include Management Practices to address public education and outreach to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The management practices shall include appropriate signage, or similar measures, to inform the public of the ASBS restrictions and to identify the ASBS boundaries.
  4. The Waterfront Plan shall include Management Practices to address the prohibition against trash discharges to ASBS. The Management Practices shall include the provision of adequate trash receptacles for marine recreation areas, including parking areas, launch ramps, and docks. The plan shall also include appropriate Management Practices to ensure that the receptacles are adequately maintained and secured in order to prevent trash discharges into the ASBS. Appropriate Management Practices include covering the trash receptacles to prevent trash from being windblown, staking or securing the trash receptacles so they don't tip over, and periodically emptying the receptacles to prevent overflow.
  5. The discharger shall submit its Waterfront Plan to the by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) within six months of the effective date of these special conditions. The Waterfront Plan is subject to approval by the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The plan must be fully implemented within 18 months of the effective date of the Exception.
- B. The discharge of chlorine, soaps, petroleum, other chemical contaminants, trash, fish offal, or human sewage to ASBS is prohibited. Sinks and fish cleaning stations are point source discharges of wastes and are prohibited from discharging into ASBS. Anthropogenic accumulations of discarded fouling organisms on the sea floor must be minimized.
  - C. Limited-term activities, such as the repair, renovation, or maintenance of waterfront facilities, including, but not limited to, piers, docks, moorings, and breakwaters, are authorized only in accordance with Chapter III.E.2 of the Ocean Plan.
  - D. If the discharger anticipates that the discharger will fail to fully implement the approved Waterfront Plan within the 18 month deadline, the discharger shall submit a technical report as soon as practicable to the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The technical report shall contain reasons for failing to meet the deadline and propose a revised schedule to fully implement the plan.
  - E. The State Water Board or the Regional Water Board may, for good cause, authorize additional time to comply with the Waterfront Plan. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in Section III.A.5. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality. The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration of significant hardship by showing that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate.
2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

#### IV. MONITORING REQUIREMENTS

Monitoring is mandatory for all dischargers to assure compliance with the Ocean Plan. Monitoring requirements include both: (A) core discharge monitoring, and (B) ocean receiving water monitoring. The State and Regional Water Boards must approve sampling site locations and any adjustments to the monitoring programs. All ocean receiving water and reference area monitoring must be comparable with the Water Boards' Surface Water Ambient Monitoring Program (SWAMP).

**Safety concerns:** Sample locations and sampling periods must be determined considering safety issues. Sampling may be postponed upon notification to the State and Regional Water Boards if hazardous conditions prevail.

**Analytical Chemistry Methods:** All constituents must be analyzed using the lowest minimum detection limits comparable to the Ocean Plan water quality objectives. For metal analysis, all samples, including storm water effluent, reference samples, and ocean receiving water samples, must be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

##### A. CORE DISCHARGE MONITORING PROGRAM

1. General sampling requirements for timing and storm size:

Runoff must be collected during a storm event that is greater than 0.1 inch and generates runoff, and at least 72 hours from the previously measurable storm event. Runoff samples shall be collected during the same storm and at approximately the same time when post-

storm receiving water is sampled, and analyzed for the same constituents as receiving water and reference site samples (see section IV B) as described below.

2. Runoff flow measurements

- a. For municipal/industrial storm water outfalls in existence as of December 31, 2007, 18 inches (457mm) or greater in diameter/width (including multiple outfall pipes in combination having a width of 18 inches, runoff flows must be measured or calculated, using a method acceptable to and approved by the State and Regional Water Boards.
- b. This will be reported annually for each precipitation season to the State and Regional Water Boards.

3. Runoff samples – storm events

- a. For outfalls equal to or greater than 18 inches (0.46m) in diameter or width:
  - (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and
  - (2) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.
  - (3) If an applicant has no outfall greater than 36 inches, then storm water runoff from the applicant's largest outfall shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates).
- b. For outfalls equal to or greater than 36 inches (0.91m) in diameter or width:
  - (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and
  - (2) samples of storm water runoff shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates); and
  - (3) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.

- b. For an applicant not participating in a regional monitoring program [see below in Section IV (B)] in addition to (a.) and (b.) above, a minimum of the two largest outfalls or 20 percent of the larger outfalls, whichever is greater, shall be sampled (flow weighted composite samples) at least three times annually during wet weather (storm event) and analyzed for all Ocean Plan Table A constituents, Table B constituents for marine aquatic life protection (except for toxicity, only chronic toxicity for three species shall be required), DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, and Ocean Plan indicator bacteria. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one (the largest) such discharge shall be sampled annually in each Region.
4. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may reduce or suspend core monitoring once the storm runoff is fully characterized. This determination may be made at any point after the discharge is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.

#### **B. Ocean Receiving Water and Reference Area Monitoring Program**

In addition to performing the Core Discharge Monitoring Program in Section II.A above, all applicants having authorized discharges must perform ocean receiving water monitoring. In order to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS, dischargers may choose either (1) an individual monitoring program, or (2) participation in a regional integrated monitoring program.

1. Individual Monitoring Program: The requirements listed below are for those dischargers who elect to perform an individual monitoring program to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within the affected ASBS. In addition to Core Discharge Monitoring, the following additional monitoring requirements shall be met:
  - a. Three times annually, during wet weather (storm events), the receiving water at the point of discharge from the outfalls described in section (IV)(A)(3)(c) above shall be sampled and analyzed for Ocean Plan Table A constituents, Table B constituents for marine aquatic life, DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, salinity, chronic toxicity (three species), and Ocean Plan indicator bacteria.

The sample location for the ocean receiving water shall be in the surf zone at the point of discharges; this must be at the same location where storm water runoff is sampled. Receiving water shall be sampled prior to (pre-storm) and during (or immediately after) the same storm (post storm). Post storm sampling shall be during the same storm and at approximately the same time as when the runoff is sampled. Reference water quality shall also be sampled three times annually and analyzed for the same constituents pre-storm and post-storm, during the same storm seasons when receiving water is sampled. Reference stations will be determined by the State Water Board's Division of Water Quality and the applicable Regional Water Board(s).
  - b. Sediment sampling shall occur at least three times during every five (5) year period. The subtidal sediment (sand or finer, if present) at the discharge shall be sampled and analyzed for Ocean Plan Table B constituents for marine aquatic life, DDT, PCBs, PAHs,

pyrethroids, and OP pesticides. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed.

- c. A quantitative survey of intertidal benthic marine life shall be performed at the discharge and at a reference site. The survey shall be performed at least once every five (5) year period. The survey design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The results of the survey shall be completed and submitted to the State Water Board and Regional Water Board at least six months prior to the end of the permit cycle.
  - d. Once during each five (5) year period, a bioaccumulation study shall be conducted to determine the concentrations of metals and synthetic organic pollutants at representative discharge sites and at representative reference sites. The study design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The bioaccumulation study may include California mussels (*Mytilus californianus*) and/or sand crabs (*Emerita analoga* or *Blepharipoda occidentalis*). Based on the study results, the Regional Water Board and the State Water Board's Division of Water Quality, may adjust the study design in subsequent permits, or add or modify additional test organisms (such as shore crabs or fish), or modify the study design appropriate for the area and best available sensitive measures of contaminant exposure.
  - e. Marine Debris: Representative quantitative observations for trash by type and source shall be performed along the coast of the ASBS within the influence of the discharger's outfalls. The design, including locations and frequency, of the marine debris observations is subject to approval by the Regional Water Board and State Water Board's Division of Water Quality.
  - f. The monitoring requirements of the Individual Monitoring Program in this section are minimum requirements. After a minimum of one (1) year of continuous water quality monitoring of the discharges and ocean receiving waters, the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may require additional monitoring, or adjust, reduce or suspend receiving water and reference station monitoring. This determination may be made at any point after the discharge and receiving water is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.
2. Regional Integrated Monitoring Program: Dischargers may elect to participate in a regional integrated monitoring program, in lieu of an individual monitoring program, to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS. This regional approach shall characterize natural water quality, pre- and post-storm, in ocean reference areas near the mouths of identified open space watersheds and the effects of the discharges on natural water quality (physical, chemical, and toxicity) in the ASBS receiving waters, and should include benthic marine aquatic life and bioaccumulation components. The design of the ASBS stratum of a regional integrated monitoring program may deviate from the otherwise prescribed individual monitoring approach (in Section IV.B.1) if approved by the State Water Board's Division of Water Quality and the Regional Water Boards.
- a. Ocean reference areas shall be located at the drainages of flowing watersheds with minimal development (in no instance more than 10% development), and shall not be located in CWA Section 303(d) listed waterbodies or have tributaries that are 303(d)

- listed. Reference areas shall be free of wastewater discharges and anthropogenic non-storm water runoff. A minimum of low threat storm runoff discharges (e.g. stream highway overpasses and campgrounds) may be allowed on a case-by-case basis. Reference areas shall be located in the same region as the ASBS receiving water monitoring occurs. The reference areas for each Region are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean reference water samples must be collected from each station, each from a separate storm during the same storm season that receiving water is sampled. A minimum of one reference location shall be sampled for each ASBS receiving water site sampled per responsible party. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.
- b. ASBS ocean receiving water must be sampled in the surf zone at the location where the runoff makes contact with ocean water (i.e. at "point zero"). Ocean receiving water stations must be representative of worst-case discharge conditions (i.e. co-located at a large drain greater than 36 inches, or if drains greater than 36 inches are not present in the ASBS then the largest drain greater than 18 inches.) Ocean receiving water stations are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean receiving water samples must be collected during each storm season from each station, each from a separate storm. A minimum of one receiving water location shall be sampled in each ASBS per responsible party in that ASBS. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.
  - c. Reference and receiving water sampling shall commence during the first full storm season following the adoption of these special conditions, and post-storm samples shall be collected during the same storm event when storm water runoff is sampled. Sampling shall occur in a minimum of two storm seasons. For those ASBS dischargers that have already participated in the Southern California Bight 2008 ASBS regional monitoring effort, sampling may be limited to only one storm season.
  - d. Receiving water and reference samples shall be analyzed for the same constituents as storm water runoff samples. At a minimum, constituents to be sampled and analyzed in reference and discharge receiving waters must include oil and grease, total suspended solids, Ocean Plan Table B metals for protection of marine life, Ocean Plan PAHs, pyrethroids, OP pesticides, ammonia, nitrate, phosphates, and critical life stage chronic toxicity for three species. In addition, within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination shall be analyzed.
3. Waterfront and Marine Operations: In addition to the above requirements for ocean receiving water monitoring, additional monitoring must be performed for marinas and boat launch and pier facilities:
- a. For all marina or mooring field operators, in mooring fields with 10 or more occupied moorings, the ocean receiving water must be sampled for Ocean Plan indicator bacteria, residual chlorine, copper, zinc, grease and oil, methylene blue active substances (MBAS), and ammonia nitrogen.

- (1) For mooring field operators opting for an individual monitoring program (Section IV.B.1 above), this sampling must occur weekly (on the weekend) from May through October.
  - (2) For mooring field operators opting to participate in a regional integrated monitoring program (Section IV.B.2 above), this sampling must occur monthly from May through October on a high use weekend in each month. The Water Boards may allow a reduction in the frequency of sampling through the regional monitoring program, after the first year of monitoring.
- b. For all mooring field operators, the subtidal sediment (sand or finer, if present) within mooring fields and below piers shall be sampled and analyzed for Ocean Plan Table B metals (for marine aquatic life beneficial use), acute toxicity, PAHs, and tributyltin. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed. This sampling shall occur at least three times during a five (5) year period. For mooring field operators opting to participate in a regional integrated monitoring program, the Water Boards may allow a reduction in the frequency of sampling after the first sampling effort's results are assessed.

## **Glossary**

**At the point of discharge(s)** – Means in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero).

**Areas of Special Biological Significance (ASBS)** – Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of State Water Quality Protection Areas.

**Design storm** – For purposes of these Special Protections, a design storm is defined as the volume of runoff produced from one inch of precipitation per day or, if this definition is inconsistent with the discharger's applicable storm water permit, then the design storm shall be the definition included in the discharger's applicable storm water permit.

**Development** – Relevant to reference monitoring sites, means urban, industrial, agricultural, grazing, mining, and timber harvesting land uses.

**Higher threat discharges** - Permitted storm drains discharging equal to or greater than 18 inches, industrial storm drains, agricultural runoff discharged through an MS4, discharges associated with waterfront and marina operations (e.g., piers, launch ramps, mooring fields, and associated vessel support activities, except for passive discharges defined below), and direct discharges associated with commercial or industrial activities to ASBS.

**Low Impact Development (LID)** – A sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which entails collecting and conveying storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID focuses on using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.

**Marine Operations** – Marinas or mooring fields that contain slips or mooring locations for 10 or more vessels.

**Management Measure (MM)** - Economically achievable measures for the control of the addition of pollutants from various classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives. For example, in the "marinas and recreational boating" land-use category specified in the Plan for California's Nonpoint Source Pollution Control Program (NPS Program Plan) (SWRCB, 1999), "boat cleaning and maintenance" is considered a MM or the source of a specific class or type of NPS pollution.

**Management Practice (MP)** - The practices (e.g., structural, non-structural, operational, or other alternatives) that can be used either individually or in combination to address a specific MM class or classes of NPS pollution. For example, for the "boat cleaning and maintenance" MM, specific MPs can include, but are not limited to, methods for the selection of environmentally sensitive hull paints or methods for cleaning/removal of hull copper anti-fouling paints.

Municipal Separate Storm Sewer System (MS4) – A municipally-owned storm sewer system regulated under the Phase I or Phase II storm water program implemented in compliance with Clean Water Act section 402(p). Note that an MS4 program's boundaries are not necessarily congruent with the permittee's political boundaries.

Natural Ocean Water Quality - The water quality (based on selected physical, chemical and biological characteristics) that is required to sustain marine ecosystems, and which is without apparent human influence, *i.e.*, an absence of significant amounts of: (a) man-made constituents (*e.g.*, DDT); (b) other chemical (*e.g.*, trace metals), physical (temperature/thermal pollution, sediment burial), and biological (*e.g.*, bacteria) constituents at concentrations that have been elevated due to man's activities above those resulting from the naturally occurring processes that affect the area in question; and (c) non-indigenous biota (*e.g.*, invasive algal bloom species) that have been introduced either deliberately or accidentally by man. Discharges "*shall not alter natural ocean water quality*" as determined by a comparison to the range of constituent concentrations in reference areas agreed upon via the regional monitoring program(s). If monitoring information indicates that *natural ocean water quality* is not maintained, but there is sufficient evidence that a discharge is not contributing to the alteration of natural water quality, then the Regional Water Board may make that determination. In this case, sufficient information must include runoff sample data that has equal or lower concentrations for the range of constituents at the applicable reference area(s).

Nonpoint source – Nonpoint pollution sources generally are sources that do not meet the definition of a point source. Nonpoint source pollution typically results from land runoff, precipitation, atmospheric deposition, agricultural drainage, marine/boating operations or hydrologic modification. Nonpoint sources, for purposes of these Special Protections, include discharges that are not required to be regulated under an NPDES permit.

Non-storm water discharge – Any runoff that is not the result of a precipitation event. This is often referred to as "dry weather flow."

Non-structural control – A Best Management Practice that involves operational, maintenance, regulatory (*e.g.*, ordinances) or educational activities designed to reduce or eliminate pollutants in runoff, and that are not structural controls (*i.e.* there are no physical structures involved).

Physical impossibility - Means any act of God, war, fire, earthquake, windstorm, flood or natural catastrophe; unexpected and unintended accidents not caused by discharger or its employees' negligence; civil disturbance, vandalism, sabotage or terrorism; restraint by court order or public authority or agency; or action or non-action by, or inability to obtain the necessary authorizations or approvals from any governmental agency other than the permittee.

Representative sites and monitoring procedures – Are to be proposed by the discharger, with appropriate rationale, and subject to approval by Water Board staff.

Sheet-flow – Runoff that flows across land surfaces at a shallow depth relative to the cross-sectional width of the flow. These types of flow may or may not enter a storm drain system before discharge to receiving waters.

**Storm Season** – Also referred to as rainy season, means the months of the year from the onset of rainfall during autumn until the cessation of rainfall in the spring.

**Structural control** – A Best Management Practice that involves the installation of engineering solutions to the physical treatment or infiltration of runoff.

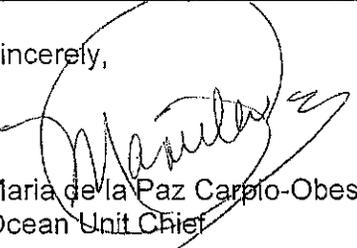
**Surf Zone** - The surf zone is defined as the submerged area between the breaking waves and the shoreline at any one time.

**Surface Water Ambient Monitoring Program (SWAMP) comparable** – Means that the monitoring program must 1) meet or exceed 2008 SWAMP Quality Assurance Program Management Plan (QAPP) Measurement Quality Objectives, or 2) have a Quality Assurance Project Plan that has been approved by SWAMP; in addition data must be formatted to match the database requirements of the SWAMP Information Management System. Adherence to the measurement quality objectives in the Southern California Bight 2008 ASBS Regional Monitoring Program QAPP and data base management comprises being SWAMP comparable.

**Waterfront Operations** - Piers, launch ramps, and cleaning stations in the water or on the adjacent shoreline.

If you have any questions please feel free to contact me at (916) 341-5858 or [mcarpio-obeso@waterboards.ca.gov](mailto:mcarpio-obeso@waterboards.ca.gov).

Sincerely,



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## Appendix D: Engineer's Cost Estimates

**Table D1: Alternative 1 Capital Costs**

	<b>TOTAL COST</b>
<b>NON-CONSTRUCTION</b>	
<b>Direct Project Administration</b>	
Funds Administration	\$39,000
Project Management/Coordination	\$100,000
Labor Compliance	\$37,000
<b>Planning, Environmental, and Engineering</b>	
<b>Engineering</b>	
Project Design	\$167,000
Preliminary Engineering Report	\$26,000
<b>Permitting and Supporting Studies</b>	
Preparation of CEQA	\$39,000
Report of Waste Discharge/Form 200	\$30,000
Biological Resources Survey	\$7,000
Cultural Resources Survey	\$10,000
City of Trinidad Coastal Development Permit	\$21,000
NEPA	\$30,000
<b>Monitoring Plans</b>	
Project Planning and Management	\$10,000
Implement Monitoring Plan	\$41,000
QA/QC, Data Management, Reporting	\$26,000
<b>Land Acquisition</b>	
Acquire Project Site Easement	\$100,000
<b>Education and Outreach</b>	\$8,000
<b>Bid Period Assistance</b>	\$20,000
<b>Construction Contingency</b>	\$320,000
<b>NON-CONSTRUCTION SUBTOTAL</b>	<b>\$1,031,000</b>
<b>CONSTRUCTION</b>	
<b>Construction Administration</b>	\$320,000
<b>Project Construction</b>	
Project Initiation and Monitoring	\$500,000
Centralized Stormwater Treatment System (including delivery/installat	\$2,000,000
Contractor's Overhead and Profit (15% of construction sub-total)	\$500,000
Minor Stormwater System Upgrades	\$200,000
<b>CONSTRUCTION TOTAL</b>	<b>\$3,520,000</b>
<b>GRAND TOTAL</b>	<b>\$4,551,000</b>

**Table D2: Alternative 2 Capital Costs**

	TOTAL COST
NON-CONSTRUCTION	
<b>Direct Project Administration</b>	
Funds Administration	\$39,000
Project Management/Coordination	\$100,000
Labor Compliance	\$37,000
<b>Planning, Environmental, and Engineering</b>	
<b>Engineering</b>	
Citywide LID Hydrogeologic Analysis	\$37,000
Project Design	\$167,000
Preliminary Engineering Report for USDA	\$26,000
<b>Permitting and Supporting Studies</b>	
Preparation of CEQA	\$39,000
Biological Resources Survey	\$7,000
Cultural Resources Survey	\$10,000
City of Trinidad Coastal Development Permit	\$21,000
NEPA	\$30,000
<b>Monitoring Plans</b>	
Project Planning and Management	\$9,000
Implement Monitoring Plan	\$40,000
QA/QC, Data Management, Reporting	\$25,000
<b>Education and Outreach</b>	
Program Implementation	\$8,000
<b>Bid Period Assistance</b>	\$20,000
<b>Construction Contingency</b>	\$396,268
<b>NON-CONSTRUCTION SUBTOTAL</b>	<b>\$1,011,268</b>
CONSTRUCTION	
<b>Construction Administration</b>	\$396,000
<b>Project Construction</b>	
Project Initiation and Monitoring	\$855,000
Edwards Street Improvements	\$586,075
Ewing Street Improvements	\$417,350
Underwood Drive Improvements	\$360,350
Lower Parking Area/Lighthouse Drive Improvements	\$1,643,900
Existing Outfall Decommissioning	\$100,000
<b>CONSTRUCTION TOTAL</b>	<b>\$4,358,675</b>
<b>GRAND TOTAL</b>	<b>\$5,369,943</b>

**Table D3: Proposed Project Capital Costs**

Budget Item	Consulting/Materials/Equipment			
	Unit Cost	Units	# of Units	Total Cost
<b>Direct Project Administration Costs</b>				<b>\$176,000</b>
Funds Administration				\$39,000
Project Management/Coordination				\$100,000
Labor Compliance				\$37,000
<b>Planning/Design/Engineering/ Environmental</b>				<b>\$337,000</b>
Citywide LID Hydrogeologic Analysis				\$37,000
Project Design				\$167,000
Preparation of CEQA				\$39,000
Biological Resources Survey				\$7,000
Cultural Resources Survey				\$10,000
City of Trinidad Coastal Development Permit (CDP)				\$21,000
Preliminary Engineering Report for USDA				\$26,000
NEPA				\$30,000
<b>Monitoring/Performance</b>				<b>\$74,000</b>
Project Planning and Management				\$9,000
Implement Monitoring Plan				\$40,000
QA/QC, Data Management, Reporting				\$25,000
<b>Education/Outreach</b>				<b>\$8,000</b>
<b>Bid Period Assistance</b>				<b>\$20,000</b>
<b>Construction Contingency</b>				<b>\$396,268</b>
<b>Construction Administration</b>				<b>\$396,000</b>
<b>Project Construction</b>				<b>\$3,962,675</b>
<b>Project Initiation and Monitoring</b>				
Mobilization/ Demobilization				\$405,000
Temporary Construction Sign				\$5,000
Cultural Resource Monitoring				\$40,000
Potholing				\$40,000
Temporary Traffic Control				\$100,000
Shoring and Trench Safety				\$190,000
Construction Staking				\$25,000
Erosion and Sediment Control				\$50,000
<b>Edwards Street Improvements</b>				
Sawcutting Pavement	\$10	LF	610	\$6,100
Demolition	\$10,000	LS	1	\$10,000
Excavation and Off Haul	\$75	CY	725	\$54,400
Infiltration Chamber	\$325	LF	125	\$40,625
Treatment Unit	\$75,000	EA	3	\$225,000
Structural Backfill	\$200	TON	560	\$112,000
Storm Drain	\$120	LF	235	\$28,200
Precast Drainage Inlet and Misc. Concrete	\$6,300	EA	12	\$75,600
Asphalt Paving	\$400	TON	60	\$24,000
Permeable Rock	\$45	TON	210	\$9,450
Re-striping	\$700	LS	1	\$700
<b>Ewing Street Improvements</b>				
Sawcutting Pavement	\$10	LF	930	\$9,300
Demolition	\$7,000	LS	1	\$7,000
Excavation and Off Haul	\$75	CY	850	\$63,800
Infiltration Chamber	\$325	LF	90	\$29,250
Treatment Unit	\$140,000	EA	1	\$140,000
Structural Backfill	\$200	TON	180	\$36,000
Storm Drain	\$120	LF	330	\$39,600
Drainage Inlet and Misc. Concrete	\$6,300	EA	5	\$31,500
Asphalt Paving	\$400	TON	50	\$20,000
Manhole	\$9,000	EA	1	\$9,000
Permeable Rock	\$45	TON	260	\$11,700

**Table D3: Proposed Project Capital Costs**

Budget Item	Consulting/Materials/Equipment			
	Unit Cost	Units	# of Units	Total Cost
Conc. Curb and Gutter	\$145	LF	135	\$19,600
Re-striping	\$600	LS	1	\$600
<b>Underwood Improvements</b>				
Sawcutting Pavement	\$10	LF	910	\$9,100
Demolition	\$10,000	LS	1	\$10,000
Excavation and Off Haul	\$75	CY	600	\$45,000
Infiltration Chamber	\$325	LF	70	\$22,750
Treatment Unit	\$140,000	EA	1	\$140,000
Structural Backfill	\$200	TON	110	\$22,000
Storm Drain	\$120	LF	150	\$18,000
Drainage Inlet and Misc. Concrete	\$6,300	EA	2	\$12,600
Asphalt Paving	\$400	TON	40	\$16,000
Permeable Rock	\$45	TON	260	\$11,700
Conc. Curb and Gutter	\$145	LF	350	\$50,800
Grading	\$15	SY	160	\$2,400
<b>Lower Parking Lot Area/Lighthouse Drive Improvements</b>				
Sawcutting Pavement	\$10	LF	2550	\$25,500
Demolition	\$20,000	LS	1	\$20,000
Excavation and Off Haul	\$75	CY	3950	\$296,300
Infiltration Chamber	\$325	LF	1500	\$487,500
Treatment Unit	\$300,000	EA	1	\$300,000
Structural Backfill	\$200	TON	540	\$108,000
Storm Drain	\$120	LF	1180	\$141,600
Drainage Inlet and Misc. Concrete	\$6,300	EA	6	\$37,800
Asphalt Paving	\$400	TON	135	\$54,000
Manhole	\$9,000	EA	2	\$18,000
Parking Lot Resurfacing	\$45	TON	100	\$4,500
Permeable Rock	\$45	TON	1500	\$67,500
Conc Valley Gutter	\$145	LF	140	\$20,300
Conc. Curb and Gutter	\$145	LF	410	\$59,500
Re-striping	\$3,400	LS	1	\$3,400
<b>Outfall Decommissioning</b>				
Decomission Stormwater Outfall to ASBS				\$100,000
<b>Grand Total:</b>				<b>\$5,369,943</b>



## Appendix E: Audited Annual Financial Report

# **CITY OF TRINIDAD**

## ***California***

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**Annual Financial Report  
June 30, 2016**

### **City Council**

**Julie Fulkerson  
Dwight Miller  
Jim Baker  
Dave Winnett  
Jack West**

**Mayor  
Mayor Pro-Tem  
Member  
Member  
Member**

### **Appointed Officials**

***City Manager*  
Dan Berman**

***City Clerk*  
Gabriel Adams**

# CITY OF TRINIDAD

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# MARCELLO & COMPANY

## CERTIFIED PUBLIC ACCOUNTANTS

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2701 Cottage Way, Suite 30 / Sacramento, California 95825

### **INDEPENDENT AUDITOR'S REPORT**

Honorable Mayor  
Members of the City Council  
City of Trinidad, California

#### **Report on the Financial Statements**

We have audited the accompanying financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Trinidad, California, as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

#### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

#### ***Auditor's Responsibility***

Our responsibility is to express an opinion on these financial statements based upon our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### ***Opinion***

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Trinidad, as of June 30, 2016, and the respective changes in financial position and where applicable, cash flows thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Honorable Mayor  
Members of the City Council  
City of Trinidad, California

### ***Other Matters***

#### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, and budgetary comparison information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historic context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Management has omitted *management's discussion and analysis* that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic financial statements is not affected by this missing information.

#### *Other Information*

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the City of Trinidad's basic financial statements. The combining nonmajor fund financial statements are presented for purposes of additional analysis and are not a required part of the financial statements.

The combining nonmajor fund financial statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

*Marcello & Company*

Certified Public Accountants  
Sacramento, California  
December 1, 2016

***GOVERNMENT-WIDE FINANCIAL STATEMENTS***

**CITY OF TRINIDAD**  
**Government-wide Financial Statements**  
**Statement of Net Position**  
**June 30, 2016**

	<b>Primary Government</b>		
	<b>Governmental Activities</b>	<b>Business-Type Activities</b>	<b>Total</b>
<b>ASSETS</b>			
Cash and investments	\$ 1,334,289	\$ 1,071,664	\$ 2,405,953
Receivables	149,153	71,666	220,819
Capital assets not being depreciated	9,500	1,923,439	1,932,939
Capital assets, net of depreciation	<u>3,061,124</u>	<u>223,907</u>	<u>3,285,031</u>
Total assets	<u>4,554,066</u>	<u>3,290,676</u>	<u>7,844,742</u>
<b>LIABILITIES</b>			
Payables	101,188	43,304	144,492
Customer deposits	<u>-</u>	<u>2,980</u>	<u>2,980</u>
Total liabilities	<u>101,188</u>	<u>46,284</u>	<u>147,472</u>
<b>NET POSITION</b>			
Net investment in capital assets	3,070,624	2,147,346	5,217,970
Restricted	28,601	-	28,601
Unrestricted	<u>1,353,653</u>	<u>1,097,046</u>	<u>2,450,699</u>
Total net position	<u>\$ 4,452,878</u>	<u>\$ 3,244,392</u>	<u>\$ 7,697,270</u>

*The accompanying notes to financial statements are an integral part of this financial statement*

**CITY OF TRINIDAD**  
**Government-wide Financial Statements**  
**Statement of Activities**  
**Year Ended June 30, 2016**

Functions/Programs	Expenditures	Program Revenue			Net (Expense) Revenue and Change in Net Position			
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities	Business-type Activities	Total	
<b>Governmental Activities</b>								
General government	\$ 349,621	\$ 35,813	\$ -	\$ -	\$ (313,808)		\$ (313,808)	
Public safety	203,881	-	114,618	-	(89,263)		(89,263)	
Public works	176,660	-	33,013	-	(143,647)		(143,647)	
Capital improvement projects	173,914	-	45,327	112,965	(15,622)		(15,622)	
Depreciation	43,466	-	-	-	(43,466)		(43,466)	
Total governmental activities	<u>947,542</u>	<u>35,813</u>	<u>192,958</u>	<u>112,965</u>	<u>(605,806)</u>		<u>(605,806)</u>	
<b>Business-type Activities</b>								
Water utility	333,477	311,567	64,318	-		\$ 42,408	42,408	
Cemetery	23,585	13,042	-	-		(10,543)	(10,543)	
Total business-type activities	<u>357,062</u>	<u>324,609</u>	<u>64,318</u>	<u>-</u>		<u>31,865</u>	<u>31,865</u>	
Total primary government	<u>\$ 1,304,604</u>	<u>\$ 360,422</u>	<u>\$ 257,276</u>	<u>\$ 112,965</u>			<u>(573,941)</u>	
<b>General Revenue</b>								
					250,368	-	250,368	
					147,243	-	147,243	
					127,794	-	127,794	
					53,741	-	53,741	
					3,262	1,101	4,363	
					28,314	4,354	32,668	
					<u>610,722</u>	<u>5,455</u>	<u>616,177</u>	
					<b>Change in Net Position</b>	4,916	37,320	42,236
<b>Net Position</b>								
					4,104,584	3,207,072	7,311,656	
					343,378	-	343,378	
					<u>4,447,962</u>	<u>3,207,072</u>	<u>7,655,034</u>	
					<u>\$ 4,452,878</u>	<u>\$ 3,244,392</u>	<u>\$ 7,697,270</u>	

The accompanying notes to financial statements are an integral part of this financial statement

***FUND FINANCIAL STATEMENTS***

**CITY OF TRINIDAD**  
**Balance Sheet**  
**Governmental Funds**  
**June 30, 2016**

	<u>General Fund</u>	<u>Clean Beaches Grant</u>	<u>COPS Grant</u>	<u>Other Governmental Funds</u>	<u>Total Governmental Funds</u>
<b>ASSETS</b>					
Cash and investments	\$ 1,334,236	\$ -	\$ -	\$ 35,587	\$ 1,369,823
Receivables	94,644	22,931	24,626	6,952	149,153
Total assets	<u>\$ 1,428,880</u>	<u>\$ 22,931</u>	<u>\$ 24,626</u>	<u>\$ 42,539</u>	<u>\$ 1,518,976</u>
<b>LIABILITIES</b>					
Payables	\$ 72,999	\$ 17,369	\$ -	\$ 10,820	\$ 101,188
Cash overdrafts	-	5,337	23,526	6,671	35,534
Total liabilities	<u>72,999</u>	<u>22,706</u>	<u>23,526</u>	<u>17,491</u>	<u>136,722</u>
<b>FUND BALANCES</b>					
Nonspendable	-	-	-	-	-
Restricted	-	225	1,100	12,844	14,169
Committed	15,000	-	-	-	15,000
Assigned	64,418	-	-	20,489	84,907
Unassigned	1,276,463	-	-	(8,285)	1,268,178
Total fund balances	<u>1,355,881</u>	<u>225</u>	<u>1,100</u>	<u>25,048</u>	<u>1,382,254</u>
Total liabilities and fund balances	<u>\$ 1,428,880</u>	<u>\$ 22,931</u>	<u>\$ 24,626</u>	<u>\$ 42,539</u>	<u>\$ 1,518,976</u>

*The accompanying notes to financial statements are an integral part of this financial statement*



**CITY OF TRINIDAD**  
**Statement of Revenue, Expenditures, and Change in Fund Balances**  
**Governmental Funds**  
**Year Ended June 30, 2016**

	<b>General Fund</b>	<b>Clean Beaches Grant</b>	<b>COPS Grant</b>	<b>Other Governmental Funds</b>	<b>Total Governmental Funds</b>
<b>REVENUE</b>					
Intergovernmental	\$ 54,534	\$ 45,327	\$ 114,618	\$ 145,978	\$ 360,457
Property tax	92,709	-	-	-	92,709
Sales tax	250,368	-	-	-	250,368
Transient occupancy tax	127,794	-	-	-	127,794
Licenses, planning and permits	35,813	-	-	-	35,813
Use of property	53,741	-	-	-	53,741
Investment earnings	3,248	-	-	14	3,262
Other revenue	28,314	-	-	-	28,314
Totals	<u>646,521</u>	<u>45,327</u>	<u>114,618</u>	<u>145,992</u>	<u>952,458</u>
<b>EXPENDITURES</b>					
General government	330,255	-	-	19,366	349,621
Public safety-police	83,709	-	112,976	-	196,685
Public safety-fire	7,196	-	-	-	7,196
Public works	176,660	-	-	-	176,660
Capital improvement projects	-	45,102	-	128,812	173,914
Totals	<u>597,820</u>	<u>45,102</u>	<u>112,976</u>	<u>148,178</u>	<u>904,076</u>
Excess Revenue over Expenditures	<u>48,701</u>	<u>225</u>	<u>1,642</u>	<u>(2,186)</u>	<u>48,382</u>
<b>Other Financing Sources (Uses)</b>					
Transfers in	2,333	-	-	4,228	6,561
Transfers (out)	-	-	-	(6,561)	(6,561)
Totals	<u>2,333</u>	<u>-</u>	<u>-</u>	<u>(2,333)</u>	<u>-</u>
<b>Change in Fund Balances</b>	51,034	225	1,642	(4,519)	48,382
Fund Balances - beginning	<u>1,304,847</u>	<u>-</u>	<u>(542)</u>	<u>29,567</u>	<u>1,333,872</u>
Fund Balances - end of year	<u>\$ 1,355,881</u>	<u>\$ 225</u>	<u>\$ 1,100</u>	<u>\$ 25,048</u>	<u>\$ 1,382,254</u>

*The accompanying notes to financial statements are an integral part of this financial statement*

**CITY OF TRINIDAD**

**Reconciliation of the Statement of Revenue, Expenditures, and Change in Fund Balances  
of Governmental Funds to the Statement of Activities  
Year Ended June 30, 2016**

**Change in Fund Balances - Governmental Funds (page 8)** \$ 48,382

Amounts reported for governmental activities in the statement  
of activities are different because:

**Capital Assets**

Governmental funds report capital outlays as expenditures. However,  
in the statement of activities the cost of these assets is allocated over  
their estimated useful lives and reported as depreciation expense.

Depreciation expense	(43,466)
Capital asset additions - see Note 6	<u>-</u>

**Change in Net Position - Governmental Activities (page 5)** \$ 4,916

*The accompanying notes to financial statements are an integral part of this financial statement*

**CITY OF TRINIDAD**  
**Proprietary Funds**  
**Statement of Net Position**  
**June 30, 2016**

	<b>Business-type Activities</b>		
	<b>Water Fund</b>	<b>Cemetery Fund</b>	<b>Total Enterprise Funds</b>
<b>ASSETS</b>			
Current Assets:			
Cash and investments	\$ 939,675	\$ 131,989	\$ 1,071,664
Receivables	71,666	-	71,666
Total current assets	<u>1,011,341</u>	<u>131,989</u>	<u>1,143,330</u>
Noncurrent Assets:			
Capital assets not being depreciated	1,923,439	-	1,923,439
Capital assets, net of depreciation	219,949	3,958	223,907
Total assets	<u>3,154,729</u>	<u>135,947</u>	<u>3,290,676</u>
<b>LIABILITIES</b>			
Current Liabilities:			
Payables	41,350	1,954	43,304
Customer deposits	2,980	-	2,980
Total liabilities	<u>44,330</u>	<u>1,954</u>	<u>46,284</u>
<b>NET POSITION</b>			
Net investment in capital assets	2,143,388	3,958	2,147,346
Restricted	-	-	-
Unrestricted	967,011	130,035	1,097,046
Total net position	<u>\$ 3,110,399</u>	<u>\$ 133,993</u>	<u>\$ 3,244,392</u>

*The accompanying notes to financial statements are an integral part of this financial statement*

**CITY OF TRINIDAD**  
**Proprietary Funds**  
**Statement of Revenue, Expenses, and Change in Net Position**  
**Year Ended June 30, 2016**

	<b>Business-type Activities</b>		
	<b>Water Fund</b>	<b>Cemetery Fund</b>	<b>Total Enterprise Funds</b>
<b>OPERATING REVENUE</b>			
Water sales	\$ 311,100	\$ -	\$ 311,100
Burial plot sales	-	13,042	13,042
Late charges	467	-	467
Totals	<u>311,567</u>	<u>13,042</u>	<u>324,609</u>
<b>OPERATING EXPENSES</b>			
Personnel services	135,370	22,630	158,000
Operations and maintenance	112,486	728	113,214
Depreciation	21,997	227	22,224
Totals	<u>269,853</u>	<u>23,585</u>	<u>293,438</u>
<b>OPERATING INCOME (LOSS)</b>	<u>41,714</u>	<u>(10,543)</u>	<u>31,171</u>
<b>NONOPERATING REVENUE (EXPENSES)</b>			
Intergovernmental grants	64,318	-	64,318
Grant funded project expenses	(63,624)	-	(63,624)
Investment earnings	960	141	1,101
Other revenue (expense)	4,354	-	4,354
Totals	<u>6,008</u>	<u>141</u>	<u>6,149</u>
<b>CHANGE IN NET POSITION</b>	47,722	(10,402)	37,320
Net Position - beginning	3,062,677	144,395	3,207,072
Net Position - end of year	<u>\$ 3,110,399</u>	<u>\$ 133,993</u>	<u>\$ 3,244,392</u>

*The accompanying notes to financial statements are an integral part of this financial statement*

**CITY OF TRINIDAD**  
**Proprietary Funds**  
**Statement of Cash Flows**  
**Year Ended June 30, 2016**

CASH FLOWS PROVIDED BY (USED FOR)	Business-type Activities		
	Water Fund	Cemetery Fund	Total Enterprise Funds
<b>Operating Activities</b>			
Cash received from customers	\$ 312,123	\$ 13,042	\$ 325,165
Cash paid for employee compensation	(135,370)	(22,630)	(158,000)
Cash paid for operations and maintenance	(89,170)	(261)	(89,431)
Net cash provided (used)	<u>87,583</u>	<u>(9,849)</u>	<u>77,734</u>
<b>Noncapital Financing Activities</b>			
Other revenue	4,354	-	4,354
Net cash provided (used)	<u>4,354</u>	<u>-</u>	<u>4,354</u>
<b>Capital &amp; Financing Activities</b>			
Grants received	119,459	-	119,459
Grant funded capital expenditures	(85,967)	-	(85,967)
Net cash provided (used)	<u>33,492</u>	<u>-</u>	<u>33,492</u>
<b>Investing Activities</b>			
Investment earnings	960	141	1,101
<b>Net Increase (Decrease) in Cash</b>	126,389	(9,708)	116,681
Cash - beginning	813,286	141,697	954,983
Cash - end of year	<u>\$ 939,675</u>	<u>\$ 131,989</u>	<u>\$ 1,071,664</u>
<b>Operating Activities Analysis</b>			
Operating Income (Loss) (page 11)	\$ 41,714	\$ (10,543)	\$ 31,171
Reconciliation adjustments:			
Add depreciation, a noncash expense	21,997	227	22,224
(Increase) decrease in receivables	556	-	556
(Increase) decrease in prepaid expenses	6,799	-	6,799
Increase (decrease) in payables	16,517	467	16,984
Net cash provided (used)	<u>\$ 87,583</u>	<u>\$ (9,849)</u>	<u>\$ 77,734</u>

*The accompanying notes to financial statements are an integral part of this financial statement*

**CITY OF TRINIDAD**  
**Notes to the Financial Statements**  
**June 30, 2016**

The notes to the financial statements include a summary of significant accounting policies and other notes considered essential to fully disclose and fairly present the transactions and financial position of the City as follows:

- Note 1 - Summary of Significant Accounting Policies
- Note 2 - Stewardship, Compliance, and Accountability
- Note 3 - Cash and Investments
- Note 4 - Receivables
- Note 5 - Defined Contribution Retirement Plan
- Note 6 - Prior Period Adjustment
- Note 7 - Capital Assets
- Note 8 - Payables
- Note 9 - Risk Management
- Note 10 - Commitments and Contingencies
- Note 11 - Subsequent Events
- Note 12 - New Pronouncements
- Note 13 - Fund Balance Designations Section of the Balance Sheet

**CITY OF TRINIDAD**  
**Notes to the Financial Statements**  
**June 30, 2016**

**Note 1 - Summary of Significant Accounting Policies**

Defining the Reporting Entity

The City of Trinidad was incorporated on November 7, 1870 under the laws of the State of California. The City operates under a Council-Manager form of government that provides the following services: public safety (police, fire and animal control), recreation and culture, public improvements, planning and zoning, general and administrative services, cemetery and water utilities.

The City participates in a joint powers agency through a formally organized and separate entity agreement. The financial activities of the Public Agency Risk Sharing Authority of California (PARSAC), a public entity risk pool, are not included in the accompanying financial statements because they are administered by a governing board which is separate from and independent of the City.

The Governmental Accounting Standards Board (GASB) Statement No. 34, *Basic Financial Statements – and Management’s Discussion and Analysis – for State and Local Governments* set the standards for governmental financial reporting, and includes the following:

- A Management Discussion and Analysis (MD&A) section providing an analysis of the City’s overall financial position and results of operations.
- Governmental-wide financial statements using full accrual accounting for all of the City’s activities, and fund financial statements to focus on the major funds.
- Notes to the financial statements.

These and other changes are reflected in the accompanying financial statements (including the notes to financial statements). The City has elected to implement the general provisions of GASB Statement No. 34 to prospectively report infrastructure assets.

The City of Trinidad, for financial purposes, includes all of the funds relevant to the operations of the City. The financial statements presented herein do not include agencies which have been formed under applicable state laws or separate and distinct units of government apart from the City.

The City’s financial statements are prepared in accordance with generally accepted accounting principles (GAAP). The Governmental Accounting Standards Board (GASB) is responsible for establishing GAAP for state and local governments through its pronouncements (Statements and Interpretations). The more significant accounting policies established by GAAP and used by the City are described below:

Basic Financial Statements – Government-wide Statements

The City’s basic financial statements include both government-wide (reporting the City as a whole) and fund financial statements (reporting the City’s major funds). Both the government-wide and fund financial statements categorize primary activities as either governmental or business-type. The City’s police and fire protection, public works, special revenue projects, and general administrative services are classified as governmental activities. The City’s water and cemetery services are classified as business-type activities.

In the Government-wide Statement of Net Position, both the governmental and business-type activities columns are presented on a consolidated basis by column; and are reported on a full accrual, economic resource basis, which recognizes all long-term assets and receivables as well as long-term debt and obligations. The City utilizes restricted resources to finance qualifying activities.

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The Government-wide Statement of Activities reports both the gross and net cost of each of the City's functions and business-type activities. The functions are also supported by general government revenue (property, sales and use taxes, transient occupancy taxes, certain intergovernmental revenue, fines, permits and charges, etc). The Statement of Activities reduces gross expenses (including depreciation) by related program revenue, operating and capital grants. Program revenue must be directly associated with the function (public safety, public works, etc.) or a business-type activity. Operating grants include operating-specific and discretionary (either operating or capital) grants while the capital grants column reflects capital-specific grants.

This government-wide focus is more on the sustainability of the City as an entity and the change in the City's net position resulting from the current year's activities.

Basic Financial Statements – Fund Financial Statements

The financial transactions of the City are reported in individual funds in the fund financial statements. Each fund is accounted for by providing a separate set of self-balancing accounts that encompass its assets, liabilities, fund equity, revenue and expenditures/expenses. The various funds are reported by generic classification within the financial statements.

Fund Types and Major Funds:

Governmental Funds

- *General Fund* – this fund is the primary operating fund of the City which is used to account for all financial resources not reported in other funds.
- *Special Revenue Funds* – these funds are used to account for the proceeds of specific revenue resources (other than major capital projects) that are legally restricted to expenditures for specific purposes.
- *Capital Projects Funds* – these funds are used to account for financial resources to be used for the acquisition or construction of major capital facilities or projects.

Proprietary Funds

The City reports the following proprietary funds:

- *Water Utilities Fund* – accounts for the operating activities of the City's water utility service.
- *Cemetery Fund* – accounts for the operating activities of the City's cemetery.

Major Funds

GASB Statement No. 34 defines major funds and requires that the City's major governmental funds are identified and presented separately in the fund financial statements. All other governmental funds, called nonmajor or other funds, are combined and reported in a single column, regardless of their fund-type. Major funds are defined as funds that have assets, liabilities, revenue, or expenditures/expenses equal to or greater than ten percent of their fund-type total, and can change annually. The general fund is always a major fund. The City may also select other funds it believes should be presented as major funds.

The City reports the following major governmental funds:

- *General Fund* - this is the primarily operating fund of the City. It is used to account for all financial resources except those required to be accounted for in another fund.

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- *Clean Beaches Grant* - this fund is used to account for proceeds received from a State grant. Revenue is restricted for monitoring and management expenditures of biological significant areas.
- *COPS Grant* - this fund is used to account for proceeds received from a State grant. Revenue is restricted for public safety expenditures.

Basis of Accounting

Basis of accounting refers to the point at which revenue or expenditures/expenses are recognized in the accounts and reported in the financial statements. It relates to the timing of the measurements made regardless of the measurement focus applied.

Under the accrual method of accounting, both governmental and business-type activities in the government-wide financial statements and the proprietary fund financial statements are presented on the accrual basis of accounting. Revenue is recognized when earned and expenses are recognized when incurred.

Under the modified accrual method of accounting, the governmental funds financial statements are presented on the modified accrual basis of accounting. Revenue is recorded when susceptible to accrual; i.e., both measurable and available. "Available" means collectible within the current period or within sixty days after year-end.

Expenditures are generally recognized under the modified accrual basis of accounting when the related liability is incurred. The exception to this general rule is that principal and interest on general obligation long-term debt, if any, is recognized when due.

Cash, Investments and Cash Equivalents

Cash and Cash Equivalents - for purposes of the statement of cash flows, the City considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents, which are shown on the statement of cash flows as "cash and investments."

Cash and Investments – are reported at fair value including the disclosure of risks related to credit risk, concentration of credit risk, and interest rate risk.

Interfund Activity

Interfund activity is reported as loans, reimbursements or transfers. Loans are reported as interfund receivables and payables as appropriate and are subject to elimination upon consolidation. Reimbursements are when one fund incurs a cost and then charges the appropriate benefiting fund and reduces its related cost as a reimbursement. All other interfund transactions are treated as transfers. Transfers between governmental and proprietary funds are netted as part of the reconciliation to the government-wide financial statements.

Capital Assets

Capital assets used in governmental fund type operations are accounted for on the statement of net position. Public domain general capital assets (infrastructure) consisting of certain improvements other than buildings, such as roads, sidewalks and bridges are capitalized prospectively starting July 1, 2003 in accordance with GASB Stmt No. 34. City policy has set the capitalization threshold for reporting capital assets at \$5,000. Capital outlay is recorded as expenditures of the general and special revenue funds, and, as capital assets in the government-wide financial statements to the extent the City's capitalization threshold is met. Donated assets are recorded at estimated fair value at the date of donation.

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Property, plant and equipment acquired for proprietary funds are capitalized in the respective fund to which it applies and are stated at their cost. Where cost could not be determined from the available records, estimated historical cost was used to record the estimated value of the assets.

Depreciation is recorded on a straight-line basis over the estimated useful lives of the capital assets which range from 3 to 20 years for equipment and vehicles, and 20 to 50 years for infrastructure, buildings and improvements. Land, art and treasures are not considered exhaustible, therefore are not being depreciated.

Compensated Absences

In compliance with GASB Stmt No.16, the City has established a liability for accrued vacation, except that additional accruals for salary-related expenses associated with the costs of compensated absences, for example, the employer's share of social security and Medicare taxes, have not been accrued as that amount is not considered significant or material to the financial statements taken as a whole. All vacation pay is accrued when incurred in the government-wide and proprietary funds financial statements. This liability is established for current employees at their current rates of pay. If accrued vacation is not used by the employee during their term of employment, compensation is payable to the employee at the time of separation, and at the employee's prevailing rate of pay. Each fiscal year, an adjustment to the liability is made based on pay rate changes and adjustments for the estimated current portion due within one year. Due to the immaterial amount of year end accrued compensated absences, the City has elected to report compensated absences as accrued expenses in all funds, which is merged with accounts payable and reported as Payables in the financial statements.

Estimates

Financial statement presentation in conformity with generally accepted accounting principles requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenditures/expenses during the reporting period. Actual results could vary from those estimates.

Property Tax Revenue

Property taxes in the State of California are administered for all local agencies at the County level and consist of secured, unsecured and utility tax rolls. The following is a summary of major policies and practices relating to property taxes:

- *Property Valuations* - are established by the Assessor of Humboldt County for the secured and unsecured property tax rolls; the utility property tax roll is valued by the California State Board of Equalization. Under the provisions of Article XIII A of the State Constitution (Proposition 13, adopted by the voters on June 6, 1978), properties are assessed at 100% of full value. From this base of assessment, subsequent annual increases in valuation are limited to a maximum of 2%. However, increase to full value is allowed for property improvements or upon change in ownership. Personal property is excluded from these limitations and is subject to annual reappraisal.
- *Tax Levies* - are limited to 1% of full assessed value which results in a tax rate of \$1.00 per \$100 assessed valuation under the provisions of Proposition 13. Tax rates for voter-approved indebtedness are excluded from this limitation.
- *Tax Levy Dates* - are attached annually on January 1, preceding the fiscal year for which the taxes are levied. The fiscal year begins July 1 and ends June 30 of the following year. Taxes are levied on both real and unsecured personal property. Liens against real estate, as well as the tax on personal property, are not relieved by subsequent renewal or change in ownership.

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- *Tax Collections* - are the responsibility of the County's tax collector. Taxes and assessments on secured and utility rolls, which constitute a lien against the property, may be paid in two installments: The first is due on November 1 of the fiscal year and is delinquent if not paid by December 10; and the second is due on March 1 of the fiscal year and is delinquent if not paid by April 10. Unsecured personal property taxes do not constitute a lien against property unless the taxes become delinquent. Payment must be made in one installment, which is delinquent if not paid by August 31 of the fiscal year. Significant penalties are imposed by the County for late payments. The City has elected to receive the City's portion of the property tax revenue from the County under the State enacted "Teeter Bill" program. Under this program, the City receives 100% of the City's share of the levied property taxes in periodic payments, with the County assuming responsibility for collecting the delinquencies as well as keeping the related late penalties and interest.
- *Tax Levy Apportionments* - due to the nature of the City-wide maximum levy, it is not possible to identify general-purpose tax rates for specific entities. Under State legislation adopted subsequent to the passage of Proposition 13, apportionments to local agencies are made by each County auditor-controller based primarily on the ratio that each agency represented of the total City-wide levy for the three fiscal years prior to fiscal year 1979.
- *Property Tax Administration Fees* - the State of California fiscal year 1990-91 Budget Act authorized Counties to collect an administrative fee for its collection and distribution of property tax revenue.

Revenue and Expenditures

Substantially all governmental fund revenue is accrued. Property taxes are billed and collected within the same period in which the taxes are levied. Subsidies and grants to proprietary funds, which finance either capital or current operations, are reported as non-operating revenue based on GASB Stmt. No. 33. In applying GASB Statement No. 33 to grant revenue, the provider recognizes liabilities and expenses and the recipient recognizes receivables and revenue when the applicable eligibility requirements, including time requirements, are met. Grant resources transmitted before eligibility requirements are met, are reported as advances by the provider and deferred revenue by the recipient.

Operating income in proprietary fund financial statements includes revenue and expenses related to the primary continuing operations of the fund. Principal operating revenue for proprietary funds are charges to customers for sales or services. Principal operating expenses are the costs of providing goods or services and include administrative expenses and depreciation of capital assets. Other revenue and expenses are classified as non-operating in the financial statements. When both restricted and unrestricted resources are available for use, it is the City's policy to use restricted resources first, and then unrestricted resources as needed. Expenditures are recognized when the related fund liability is incurred.

Net Position and Fund Balances

The City's net position is classified as follows on the government-wide statement of net position:

- Net investment in capital assets - represents the City's total investment in capital assets reduced by any outstanding debt used to acquire these assets.
- Restricted net position - includes resources that the City is legally or contractually obligated to spend in accordance with restrictions imposed by external third parties.
- Unrestricted net position - represents resources derived from sources without spending

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restrictions, are used for transactions relating the general operations of the City, and may be used at the discretion of those charged with governance to meet current expenses or obligations for any purpose.

Fund balance designations are classified on the governmental funds balance sheet as follows:

- Nonspendable - amounts that cannot be spent because they are either (a) legally or contractually required to be maintained intact or (b) not in spendable form such as long-term notes receivable.
- Restricted - amounts that can be spent only for the *specific purposes* stipulated by constitution, external resource providers, or through enabling legislation.
- Committed - amounts that can be used only for the *specific purposes* determined by a formal action of the City Council, to establish, modify or rescind a fund balance commitment.
- Assigned - amounts that are constrained by the government's *intent* to be used for specific purposes but do not meet the criteria to be classified as restricted or committed, as determined by a formal action or policy of the City Council or its appointed official.
- Unassigned - the residual classification for the government's general fund and includes all spendable amounts not contained in the other classifications.

**Note 2 - Stewardship, Compliance, and Accountability**

Revenue Limitations Imposed by California Proposition 218

Proposition 218, which was approved by the voters in November 1996, regulates the City's ability to impose, increase, and extend taxes, assessments, and fees. Any new, increased, or extended taxes, assessments, and fees subject to the provisions of Proposition 218, require voter approval before they can be implemented. Additionally, Proposition 218 provides that these taxes, assessments, and fees are subject to the voter initiative process and may be rescinded in the future years by the voters.

Deficit Fund Balances

Due to the City incurring costs in advance of receiving grant awards and other reimbursements, and revenue which it expects to recover in the future from grants and other sources, the following funds incurred deficits in their ending fund balances:

LCP Local Coastal Project	\$	409
Onsite wastewater treatment fund		7,876
		8,285
		\$ 8,285

Cash Deficit Balances by Fund

The following governmental activity funds reported year-end cash deficit balances:

Clean Beaches Grant	\$	5,337
COPS program grant		23,526
Onsite wastewater treatment fund		6,671
		35,534
		\$ 35,534

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**Note 3 - Cash and Investments**

The City follows the practice of pooling cash and investments of all funds except for restricted funds required to be held by outside custodians, fiscal agents or trustees, under the provisions of bond covenants. Cash and investments at fiscal year-end are classified in the accompanying financial statements as follows:

Statement of Net Position	
Governmental Activities	\$ 1,334,289
Business-type Activities	1,071,664
	\$ 2,405,953

Cash and Investments consist of the following:

Deposits with financial institutions	\$ 1,756,503
Money Market Funds	76,788
Local Agency Investment Fund	572,662
	\$ 2,405,953

Collateral and Categorization Requirements

At fiscal year end, the City's carrying amount of demand deposits was \$1,754,853 and the local bank account balances were \$1,788,030. The difference of \$33,177 represented outstanding checks and deposits in transit. Of the total bank deposit balance, \$250,000 was insured by Federal Depository Insurance Corporation (FDIC) and \$1,538,030 was collateralized in accordance with California Government Code Section 53600. California law requires that the fair value of the pledged securities must equal at least 110% of the City's deposits. California law also allows financial institutions to secure the City's deposits by pledging first trust deed mortgage notes having a value of 150% of the City's total deposits.

Investments in money market funds and the Local Agency Investment Fund (LAIF) are not insured by the FDIC or any government agencies. Investments in government or government sponsored entity (GSE) bonds are not insured but are collateralized by loans on real estate.

Investment Policy

The table below identifies the investment types that are authorized under provisions of the City's investment policy adopted September 14, 2011, and in accordance with Section 53601 of the California Government Code. The table also identifies certain provisions of the investment policy that address interest rate risk, credit risk, and concentration of credit risk.

Authorized Investment Type	Maximum Maturity	Maximum Percentage of Portfolio	Maximum Investment in One Issuer	Minimum Rating
Certificates of Deposit	3 years	20%	None	None
U.S. Treasury Securities	None	None	None	None
Local Agency Investment Fund	None	None	None	N/A
State and Local Agency Obligations	None	20%	None	AAA

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Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates.

Concentration of Credit Risk

The investment policy of the City contains limitations on the amount that can be invested in any single issuer as described above, and beyond that stipulated by the California government code. Investments at fiscal year-end were as follows:

<u>Investment Type</u>	<u>Fair Value</u>	<u>Maturity</u>	<u>Yield</u>	<u>Concentration</u>
Local Agency Investment Fund	\$ 572,662	6 months	0.55%	24%
Money Market Funds	76,788	on demand	0.01%	3%
Demand Deposits (checking)	1,754,853	on demand	0.01%	73%

Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. The City's investment policy limits credit risk by requiring compliance with the California Government Code for investment of public funds.

The credit risk for *deposits* is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. The California government code and the City's investment policy do not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits, other than the following provision for deposits: "The California government code requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law (unless so waived by the governmental unit). The market value of the pledged securities in the collateral pool must equal at least 110% of the total amount deposited by the public agencies. California law also allows financial institutions to secure City deposits by pledging first trust deed mortgage notes having a value of 150% of the secured public deposits."

The credit risk for *investments* is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The California government code and the City's investment policy do not contain legal or policy requirements that would limit the exposure to custodial credit risk for investments. With respect to investments, custodial credit risk generally applies only to direct investments in marketable securities. Custodial credit risk does not apply to a local government's indirect investment in securities through the use of mutual funds or government investment pools (such as LAIF).

Participation in an External Investment Pool

The City is a voluntary participant in the Local Agency Investment Fund (LAIF). LAIF, established in 1977, is regulated by California Government Code Section 16429 and under the day to day administration of the California State Treasurer. There is a five member Local Investment Advisory Board that is chaired by the State Treasurer. LAIF determines fair value of its investment portfolio based on market quotations for those securities where market quotations are readily available, and on amortized cost or best estimate for those securities where market value is not readily available. LAIF is part of the Pooled Money Investment Account (PMIA) and under the control of the State Treasurer's Office, which is audited by the Bureau of State Audits. As of June 30, 2016, PMIA had approximately

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\$77.6 billion in investments. Audited financial statements of PMIA may be obtained from the California State Treasurer’s web site at [www.treasurer.ca.gov](http://www.treasurer.ca.gov).

The fair value of the City’s investment in this pool is reported in the accompanying financial statements at amounts based upon the City’s pro-rata share of the fair value provided by LAIF for the entire LAIF portfolio (in relation to the amortized cost of that portfolio). The balance available for withdrawal is based on the accounting records maintained by LAIF, which are recorded on an amortized cost basis.

**Note 4 - Receivables**

Accounts and other receivables as reported in the Statement of Net Position are comprised of the following:

<u>Governmental Activities</u>	
Sales taxes	\$ 56,037
COPS grant	24,626
Grant reimbursements	32,179
Property taxes	27,173
Other receivables	9,138
	<u>\$ 149,153</u>
 <u>Business-type Activities</u>	
Water fund - grant reimbursements	\$ 26,795
Water utility customers	44,871
	<u>\$ 71,666</u>

Management has elected to record bad debts using the direct write-off method. Accounting principles generally accepted in the United States of America require that the allowance method be used to reflect bad debts. However, the effect of the use of the direct write-off method is not materially different from the results that would have been obtained had the allowance method been followed.

**Note 5 - Defined Contribution Retirement Plan**

The City contributes to an employee owned defined contribution plan administered through Smith Barney/Hartford ITT under established plan provisions, and which may be amended by City council resolution. The City contributes 6% of an employee’s annual salary to the plan which provides retirement benefits. The City also provides matching contributions up to 6% of an employee’s contributions for all eligible employees. Plan participants age 50 and older can make catch-up annual contributions up to \$5,000; and in the three years prior to retirement, can make catch-up contributions of up to twice the annual limit. All employee and employer contributions are tax deferred to the employee. The City contributed \$27,765 to the plan for the year.

**Note 6 - Prior Period Adjustment**

The City is recording a street improvement project in the amount of \$343,378, started in year 2013 that was completed in year 2015.

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**Note 7 - Capital Assets**

Governmental-type capital asset activity for the year was follows:

	<u>Beginning Balance</u>	<u>Additions/ Completions</u>	<u>Retirements/ Adjustments</u>	<u>Ending Balance</u>
<i><u>Nondepreciable Assets</u></i>				
Land	\$ 9,500	\$ -	\$ -	\$ 9,500
Construction-in-progress	1,680,432	(1,680,432)	-	-
	<u>1,689,932</u>	<u>(1,680,432)</u>	<u>-</u>	<u>9,500</u>
<i><u>Depreciable Assets</u></i>				
Buildings, Improvements, and Streets	1,269,876	1,680,432	343,827	3,294,135
Equipment	103,924	-	-	103,924
Vehicles	57,775	-	-	57,775
	<u>1,431,575</u>	<u>1,680,432</u>	<u>343,827</u>	<u>3,455,834</u>
<i><u>Accumulated Depreciation</u></i>				
	<u>(351,244)</u>	<u>-</u>	<u>(43,466)</u>	<u>(394,710)</u>
Depreciable assets, net	<u>1,080,331</u>	<u>1,680,432</u>	<u>300,361</u>	<u>3,061,124</u>
Total capital assets, net	<u>\$ 2,770,263</u>	<u>\$ -</u>	<u>\$ 300,361</u>	<u>\$ 3,070,624</u>

Business-type capital asset activity for the year was follows:

	<u>Beginning Balance</u>	<u>Additions/ Completions</u>	<u>Retirements/ Adjustments</u>	<u>Ending Balance</u>
<i><u>Nondepreciable Assets</u></i>				
Land	\$ 5,089	\$ -	\$ -	\$ 5,089
Construction-in-progress	1,918,350	-	-	1,918,350
	<u>1,923,439</u>	<u>-</u>	<u>-</u>	<u>1,923,439</u>
<i><u>Depreciable Assets</u></i>				
Water utility	1,151,749	-	(2,282)	1,149,467
Cemetery	7,964	-	-	7,964
	<u>1,159,713</u>	<u>-</u>	<u>(2,282)</u>	<u>1,157,431</u>
<i><u>Accumulated Depreciation</u></i>				
Water utility	(909,805)	(21,995)	2,282	(929,518)
Cemetery	(3,779)	(227)	-	(4,006)
Depreciable assets, net	<u>246,129</u>	<u>(22,222)</u>	<u>-</u>	<u>223,907</u>
Total capital assets, net	<u>\$ 2,169,568</u>	<u>\$ (22,222)</u>	<u>\$ -</u>	<u>\$ 2,147,346</u>

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**Note 8 - Payables**

Accounts payable and accruals, as reported in the Statement of Net Position are comprised of the following:

	Governmental Activities	Business-type Activities
Contractors, programs & projects - grant funded	\$ 39,856	\$ 9,923
Engineering/planning consultants	1,400	-
County Sheriff - contract service	8,818	-
TBID pass through	12,717	-
Vendors and supplies	38,397	33,381
	<u>\$ 101,188</u>	<u>\$ 43,304</u>

**Note 9 - Risk Management**

The City is exposed to various risks of loss related to torts, thefts, damage and destruction of assets, errors and omissions, injuries to employees, and natural disasters. The City is a member of the Public Agency Risk Sharing Authority of California (PARSAC or the Authority), a public entity risk pool currently operating as a common risk management and insurance program for member cities. The relationship between the City and PARSAC is such that PARSAC is not a component unit of the City for financial reporting purposes. PARSAC is governed by a Board consisting of representatives from member municipalities. The Board controls the operations of the Authority, including selection of management and approval of operating budgets, independent of any influence by member municipalities beyond their representation on the Board. The City's deposits with the Authority are in accordance with formulas established by the Authority. Actual surpluses or losses are shared according to a formula developed from overall loss costs and spread to member entities on a percentage basis after a retrospective rating. Financial statements may be obtained from PARSAC, 1525 Response Road, Suite One, Sacramento, CA 95815.

For workers compensation insurance, the City is insured for the first \$250,000 of claims by PARSAC, and above \$250,000 by the Local Agency Workers Compensation Excess Company. For general liability and automobile liability, the City is self-insured for the first \$1,000 of claims. There is a shared risk layer for losses between \$1,000 to \$1,000,000, and losses in excess of \$1,000,000, up to \$3,000,000, are covered by excess insurance. For property coverage, the City is protected by a commercial general liability insurance policy. The City is self-insured for the first \$5,000 of per occurrence claims with various degrees of risk protection depending upon the type of coverage.

**Note 10 - Commitments and Contingencies**

In the normal course of City operations there are occasional and various legal claims and actions against the City for which no provision has been made in the financial statements because the amount of liability, if any, is unknown.

The City has received state and federal funds for specific purposes that are subject to review and audit by the grantor agencies. Although such audits could generate expenditure disallowances under terms of the grants, it is believed that any required reimbursements will not be material.

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The City entered into an agreement with the County of Humboldt to provide law enforcement services within the City limits, payable in the amount of \$37,659 per quarter. The agreement period commences July 1, 2014 through June 30, 2017, unless terminated pursuant to mutual agreement. Appropriations are partially funded through an annual State grant in the amount of \$100,000.

At June 30, 2016 the City was committed to several grant funded contracts related to water quality, environmental issues and water plant upgrades, and street improvements. The ability of the City to meet its commitments is dependent upon continued intergovernmental appropriated funding.

The City entered into a 99-year lease agreement with the Trinidad Coastal Land Trust, for a building which is occupied by a branch of the Humboldt County library. Annual rent is \$500 per year and adjusted every five years equal to a consumer price index.

**Note 11 - Subsequent Events**

The management of the City has reviewed the results of operations for the period from its fiscal year end June 30, 2016 through December 20, 2016, the date the financial statements were available to be issued in draft form, and have determined that no adjustments are necessary to the amounts reported in the accompanying financial statements nor have any subsequent events occurred, the nature of which would require disclosure.

**Note 12 - New Pronouncements**

The Governmental Accounting Standards Board (GASB) has released the following new pronouncements, which can read in their entirety at <http://www.gasb.org>.

GASB Statement No. 82, *Pension Issues—an amendment of GASB Statements No. 67, No. 68, and No. 73*

Effective Date: The requirements of this Statement are effective for reporting periods beginning after June 15, 2016, except for the requirements of paragraph 7 in a circumstance in which an employer's pension liability is measured as of a date other than the employer's most recent fiscal year-end. In that circumstance, the requirements of paragraph 7 are effective for that employer in the first reporting period in which the measurement date of the pension liability is on or after June 15, 2017. Earlier application is encouraged.

GASB Statement No. 81, *Irrevocable Split-Interest Agreements*

Effective Date: The requirements of this Statement are effective for periods beginning after December 15, 2016. Earlier application is encouraged.

GASB Statement No. 80, *Blending Requirements for Certain Component Units—an amendment of GASB Statement No. 14*

Effective Date: The requirements of this Statement are effective for reporting periods beginning after June 15, 2016. Earlier application is encouraged.

GASB Statement No. 79, *Certain External Investment Pools and Pool Participants*

Effective Date: The requirements of this Statement are effective for reporting periods beginning after June 15, 2015, except for the provisions in paragraphs 18, 19, 23–26, and 40, which are effective for reporting periods beginning after December 15, 2015. Earlier application is encouraged.

**CITY OF TRINIDAD**  
**Notes to the Financial Statements**  
**June 30, 2016**

GASB Statement No. 78, *Pensions Provided through Certain Multiple-Employer Defined Benefit Pension Plans*

Effective Date: The requirements of this Statement are effective for reporting periods beginning after December 15, 2015. Earlier application is encouraged.

GASB Statement No. 77, *Tax Abatement Disclosures*

Effective Date: The requirements of this Statement are effective for reporting periods beginning after December 15, 2015. Earlier application is encouraged.

GASB Statement No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*

Effective Date: The provisions in Statement 76 are effective for reporting periods beginning after June 15, 2015. Earlier application is encouraged.

GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*

Effective Date: The provisions in Statement 75 are effective for fiscal years beginning after June 15, 2017. Earlier application is encouraged.

GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*

Effective Date: The provisions in Statement 74 are effective for fiscal years beginning after June 15, 2016. Earlier application is encouraged.

GASB Statement No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*

Effective Date: The provisions in Statement 73 are effective for fiscal years beginning after June 15, 2015—except those provisions that address employers and governmental nonemployer contributing entities for pensions that are not within the scope of Statement 68, which are effective for fiscal years beginning after June 15, 2016. Earlier application is encouraged.

**CITY OF TRINIDAD**  
**Notes to the Financial Statements**  
**June 30, 2016**

**Note 13 - Fund Balance Designations Section of the Balance Sheet**

<b>Fund Balances</b>	General Fund	Major Fund Clean Beaches Grant	Major Fund COPS Grant Fund	Total Nonmajor Governmental Funds	Total Fund Balance Designations
<b>Nonspendable:</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Restricted for:</b>					
Clean Beaches project	-	225	-	-	225
COPS grant expenditures	-	-	1,100	-	1,100
State Gas tax street projects	-	-	-	5,630	5,630
State TDA street projects	-	-	-	7,214	7,214
Total restricted fund balances	<u>-</u>	<u>225</u>	<u>1,100</u>	<u>12,844</u>	<u>14,169</u>
<b>Committed to:</b>					
Self insurance reserve	15,000	-	-	-	15,000
Total committed fund balances	<u>15,000</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>15,000</u>
<b>Assigned to:</b>					
Fire dept capital reserve	50,700	-	-	-	50,700
Public works capital reserve	10,000	-	-	-	10,000
Town hall capital reserve	3,718	-	-	-	3,718
Integrated Waste Mgmt	-	-	-	20,489	20,489
Total assigned fund balances	<u>64,418</u>	<u>-</u>	<u>-</u>	<u>20,489</u>	<u>84,907</u>
<b>Unassigned:</b>	<u>1,276,463</u>	<u>-</u>	<u>-</u>	<u>(8,285)</u>	<u>1,268,178</u>
<b>Total Fund Balances</b>	<u>\$ 1,355,881</u>	<u>\$ 225</u>	<u>\$ 1,100</u>	<u>\$ 25,048</u>	<u>\$ 1,382,254</u>

**REQUIRED SUPPLEMENTARY INFORMATION**  
*(unaudited)*

**CITY OF TRINIDAD**  
**Note to Required Supplementary Information on**  
**Budgetary Comparison Information**  
**June 30, 2016**

The City follows these procedures in establishing the budgetary data reflected in the financial statements:

- Prior to the close of each fiscal year, the City Manager submits to the City Council a proposed operating budget for the fiscal year commencing the following July 1. The operating budget includes proposed revenue and expenditures.
- Public hearings are conducted at City Council meetings to obtain taxpayer comments prior to adoption of the budget in June.
- Prior to July 1, the budget is legally adopted for all governmental fund types through Council approved resolution.
- The City Manager is authorized to transfer budget amounts within and between funds as deemed desirable and necessary in order to meet the City's needs; however, revisions that alter the total expenditures must be approved by the City Council. Formal budgetary integration is employed as a management control device during the year for the governmental type funds.
- Budgets for the governmental type funds are adopted on a basis consistent with generally accepted accounting principles. Budgeted amounts presented are as originally adopted and as further amended by the City Council.

**CITY OF TRINIDAD**  
**Budgetary Comparison Information**  
**General Fund and COPS State Grant Fund**  
**Year Ended June 30, 2016**

	Budget Amounts (unaudited)		Actual Amounts	Variance with Final Budget Positive (Negative)
	Original	Final		
<b>Resources (Inflows)</b>				
Property taxes	\$ 98,630	\$ 98,630	\$ 92,709	\$ (5,921)
Sales taxes	200,000	200,000	250,368	50,368
Transient occupancy taxes	120,000	120,000	127,794	7,794
Intergovernmental	54,300	54,300	54,534	234
Investment earnings	6,000	6,000	3,248	(2,752)
Licenses, planning and permits	25,100	25,100	35,813	10,713
Rent and land leases	46,425	46,425	53,741	7,316
Other revenue	1,030	1,030	28,314	27,284
Transfers in	30,000	30,000	2,333	(27,667)
Police COPS grant fund	100,000	100,000	114,618	14,618
Amounts Available for Appropriation	<u>681,485</u>	<u>681,485</u>	<u>763,472</u>	<u>81,987</u>
<b>Charges to Appropriation (Outflow)</b>				
Public Safety - Police general fund	206,224	206,224	83,709	122,515
Public Safety - Police COPS grant fund	-	-	112,976	(112,976)
subtotal - Police	<u>206,224</u>	<u>206,224</u>	<u>196,685</u>	<u>9,539</u>
General Gov. - City Administration	322,433	322,433	330,255	(7,822)
Public Safety - Fire	15,870	15,870	7,196	8,674
Public Works	161,904	161,904	176,660	(14,756)
Fire dept. reserve	-	-	-	-
Public works reserve	-	-	-	-
Town hall reserve	-	-	-	-
Transfers out	-	-	-	-
Total Charges to Appropriations	<u>706,431</u>	<u>706,431</u>	<u>710,796</u>	<u>(4,365)</u>
<b>Surplus (Deficit)</b>	<u>\$ (24,946)</u>	<u>\$ (24,946)</u>	<u>\$ 52,676</u>	<u>\$ 77,622</u>

***OTHER SUPPLEMENTARY INFORMATION***

**CITY OF TRINIDAD**  
**Combining Financial Statements**  
**Nonmajor Governmental Funds**  
**Year Ended June 30, 2016**

	Integrated Waste Mgmt	LCP Local Coastal Project	State Gas Tax Fund	Transportation Development Agency	ASBS Stormwater Project	Onsite Wastewater Treatment	Watershed Coordinator Project	Grant Coordinator Holding	Creek Sediment Reduction	TOTAL NONMAJOR FUNDS
<b>ASSETS</b>										
Cash and investments	\$ 20,972	\$ 1,771	\$ 5,630	\$ 7,214	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,587
Receivables	1,006	5,946	-	-	-	-	-	-	-	6,952
Total assets	<u>\$ 21,978</u>	<u>\$ 7,717</u>	<u>\$ 5,630</u>	<u>\$ 7,214</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 42,539</u>
<b>LIABILITIES</b>										
Payables	\$ 1,489	\$ 8,126	\$ -	\$ -	\$ -	\$ 1,205	\$ -	\$ -	\$ -	\$ 10,820
Cash overdrafts	-	-	-	-	-	6,671	-	-	-	6,671
Total liabilities	1,489	8,126	-	-	-	7,876	-	-	-	17,491
<b>FUND BALANCES</b>										
Total liabilities and fund balances	20,489	(409)	5,630	7,214	-	(7,876)	-	-	-	25,048
	<u>\$ 21,978</u>	<u>\$ 7,717</u>	<u>\$ 5,630</u>	<u>\$ 7,214</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 42,539</u>
<b>REVENUE</b>										
Intergovernmental	\$ 9,380	\$ 29,797	\$ 13,935	\$ 25,243	\$ 57,925	\$ -	\$ -	\$ -	\$ 9,698	\$ 145,978
Other revenue	-	-	6	8	-	-	-	-	-	14
Total revenue	9,380	29,797	13,941	25,251	57,925	-	-	-	9,698	145,992
<b>EXPENDITURES</b>										
General government	19,366	-	-	-	-	-	-	-	-	19,366
Capital improvements	-	30,206	7,582	23,932	57,976	1,529	-	(2,273)	9,860	128,812
Total expenditures	19,366	30,206	7,582	23,932	57,976	1,529	-	(2,273)	9,860	148,178
Transfers in	-	-	-	-	-	-	4,228	-	-	4,228
Transfers (out)	-	-	-	-	(2,134)	-	-	(4,246)	(181)	(6,561)
<b>CHANGE IN FUND BALANCES</b>	(9,986)	(409)	6,359	1,319	(2,185)	(1,529)	4,228	(1,973)	(343)	(4,519)
Fund balances - beginning	30,475	-	(729)	5,895	2,185	(6,347)	(4,228)	1,973	343	29,567
Fund balances - end of year	<u>\$ 20,489</u>	<u>\$ (409)</u>	<u>\$ 5,630</u>	<u>\$ 7,214</u>	<u>\$ -</u>	<u>\$ (7,876)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 25,048</u>





# HUMBOLDT STATE UNIVERSITY

**HSU Marine Laboratory**

July 7, 2016

Mr. Dwight Miller, Mayor  
City of Trinidad  
P. O. Box 390  
Trinidad, CA 95570

Re: City of Trinidad Storm Water Management Improvement Project Letter of Support

Dear Mayor Miller;

The Humboldt State University (HSU) Marine Laboratory strongly supports the City of Trinidad's application for Proposition 1 Storm Water Grant Program Funding for the "Storm Water Management Improvement Project" (Project). This Implementation Application proposes to completely eliminate the storm water discharges to the Trinidad Head Area of Special Biological Significance (ASBS) from the City's MS4 as well as the ASBS discharge from the HSU Marine Lab storm water system.

The HSU Marine lab strongly supports the overall project goals as well as the project component proposed to re-route and treat storm water runoff from the Marine Laboratory property that currently is discharged into the Trinidad Head ASBS. If the project is selected for funding, HSU will work with the City to enter into a project specific agreement.

The HSU Marine Lab recognizes the importance of protecting watersheds and maintaining water quality standards. Improving the water resources in the Trinidad area will be beneficial to the biological community, public health, and our local economy.

We look forward to working with the City on this important project addressing water issues of common concern.

Sincerely,

Brian Tissot, Ph.D.  
Director and Professor, Marine Laboratory, Humboldt State University  
Tissot@humboldt.edu | 707-826-5827 | HSUMarineLab.org



# HUMBOLDT STATE UNIVERSITY

**HSU Marine Laboratory**

July 7, 2016

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City of Trinidad  
P. O. Box 390  
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The HSU Marine lab strongly supports the overall project goals as well as the project component proposed to re-route and treat storm water runoff from the Marine Laboratory property that currently is discharged into the Trinidad Head ASBS. If the project is selected for funding, HSU will work with the City to enter into a project specific agreement.

The HSU Marine Lab recognizes the importance of protecting watersheds and maintaining water quality standards. Improving the water resources in the Trinidad area will be beneficial to the biological community, public health, and our local economy.

We look forward to working with the City on this important project addressing water issues of common concern.

Sincerely,

Brian Tissot, Ph.D.  
Director and Professor, Marine Laboratory, Humboldt State University  
Tissot@humboldt.edu | 707-826-5827 | HSUMarineLab.org

# Provisional Landowner Access Agreement

*Cher-Ae Heights Indian Community of the Trinidad Rancheria (Rancheria)*  
*P. O. Box 630*  
*Trinidad, CA 95570*

## *City of Trinidad Stormwater Management Improvement Project*

### I. BACKGROUND

The City of Trinidad (City) is seeking funding for the *City of Trinidad Storm Water Management Improvement Project* (Project). The proposed Project consists of constructing improvements to the City's stormwater drainage system including stormwater facilities in and under the western section of the Harbor parking lot along Trinidad State Beach. This portion of the parking lot includes parcels owned by the Cher-Ae Heights Indian Community of the Trinidad Rancheria (Rancheria). The subject property includes APNs 04207101 and 04207108, located at the end of Edwards Street, Trinidad, CA 95570.

### II. PURPOSE

The purpose of this Provisional Landowner Access Agreement is to document that the Rancheria, as owner of these parcels, is aware of this proposed project, is supportive of the project, and intends to work with the City to develop a final landowner agreement allowing the project to proceed on Rancheria's property, if the project is funded.

### III. AGREEMENT

The Rancheria is aware that a grant application for the *City of Trinidad Storm Water Management Improvement Project* will be submitted to State Water Resources Control Board for Proposition 1 and/or 84 funding, and that the Project includes components on Rancheria owned property. The project has been explained to the Rancheria Tribal Council by representatives of City of Trinidad. The Tribal Council supports the Project components proposed for Harbor Parking Lot area on property owned by the Rancheria, as well as the overall goals of the grant project to eliminate the stormwater discharges to the Trinidad Head ASBS and to upgrade prioritized segments of Trinidad Water System infrastructure. If the project is selected for funding, the Tribal Council will work with the City to enter into a landowner agreement with the City that will be project specific and delineate responsibilities for project construction and post construction maintenance activities.

### II. DURATION OF NOTICE

The term of this agreement shall commence upon signing of this Agreement and terminate on *June 30, 2017.*

*Dark Smith Tribal Chairman*  
Landowner Signature

*POB 630 Trinidad, CA 95570*  
Landowner Address

*Daniel Beum*  
City Signature (SWGPA Project Applicant)

*P. O. Box 390, Trinidad, CA 95570*  
City of Trinidad Address

*6-16-16*  
Date

*707 677-0211*  
Landowner Phone Number

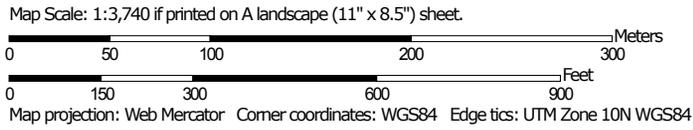
*6116116*  
Date

*(707) 677-0223*  
City Phone Number

Soil Map—Humboldt and Del Norte Area, California  
(Trinidad Stormwater Phase 2)



Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt and Del Norte Area, California  
Survey Area Data: Version 11, Oct 4, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Aug 21, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
146	Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes	19.6	32.1%
157	Oxyaquic Udipsamments- Samoa complex, 0 to 50 percent slopes	16.1	26.4%
299	Candymountain, 30 to 75 percent slopes	19.0	31.1%
596	Flintrock-Highprairie complex, 15 to 75 percent slopes	0.6	1.0%
<b>Totals for Area of Interest</b>		<b>60.9</b>	<b>100.0%</b>

## Humboldt and Del Norte Area, California

### 146—Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2dh7x  
*Elevation:* 10 to 120 feet  
*Mean annual precipitation:* 35 to 90 inches  
*Mean annual air temperature:* 50 to 54 degrees F  
*Frost-free period:* 275 to 325 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Tepona and similar soils:* 40 percent  
*Halfbluff and similar soils:* 35 percent  
*Urban land, residential:* 15 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Tepona

##### Setting

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Marine deposits derived from sedimentary rock

##### Typical profile

*O<sub>i</sub> - 0 to 0 inches:* slightly decomposed plant material  
*A - 0 to 11 inches:* sandy loam  
*B<sub>w</sub> - 11 to 35 inches:* fine sandy loam  
*B<sub>w</sub> - 35 to 41 inches:* fine sandy loam  
*C - 41 to 64 inches:* loamy fine sand

##### Properties and qualities

*Slope:* 2 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):*  
Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* About 30 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 8.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated): 2e*  
*Hydrologic Soil Group: C*  
*Ecological site: Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy lo (F004BX118CA)*  
*Other vegetative classification: Forest Type IV, coastal (RNPF004CA)*  
*Hydric soil rating: No*

### **Description of Halfbluff**

#### **Setting**

*Landform: Marine terraces*  
*Landform position (two-dimensional): Backslope*  
*Landform position (three-dimensional): Tread*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Marine deposits derived from sedimentary rock*

#### **Typical profile**

*A - 0 to 23 inches: loam*  
*Bw - 23 to 37 inches: fine sandy loam*  
*C - 37 to 71 inches: fine sand*

#### **Properties and qualities**

*Slope: 2 to 9 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Natural drainage class: Moderately well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)*  
*Depth to water table: About 20 to 39 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*  
*Available water storage in profile: Moderate (about 8.7 inches)*

#### **Interpretive groups**

*Land capability classification (irrigated): 2e*  
*Land capability classification (nonirrigated): 2e*  
*Hydrologic Soil Group: B/D*  
*Ecological site: Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy lo (F004BX118CA)*  
*Other vegetative classification: Forest Type IV, coastal (RNPF004CA)*  
*Hydric soil rating: No*

### **Description of Urban Land, Residential**

#### **Setting**

*Landform: Alluvial fans*  
*Landform position (two-dimensional): Backslope*  
*Landform position (three-dimensional): Tread*

*Down-slope shape:* Linear  
*Across-slope shape:* Convex

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydric soil rating:* No

**Minor Components**

**Talawa**

*Percent of map unit:* 5 percent  
*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Tillas**

*Percent of map unit:* 3 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Hookton**

*Percent of map unit:* 2 percent  
*Landform:* Erosion remnants  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Data Source Information**

Soil Survey Area: Humboldt and Del Norte Area, California  
Survey Area Data: Version 11, Oct 4, 2017

## Humboldt and Del Norte Area, California

### 157—Oxyaquic Udipsamments-Samoa complex, 0 to 50 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1j90p

*Elevation:* 0 to 70 feet

*Mean annual precipitation:* 35 to 80 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 275 to 330 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Oxyaquic udipsamments and similar soils:* 65 percent

*Samoa and similar soils:* 25 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Oxyaquic Udipsamments

##### Setting

*Landform:* Beaches

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Beach sand and gravel derived from mixed sources

##### Typical profile

*C1 - 0 to 22 inches:* fine sand

*C2 - 22 to 60 inches:* fine sand

##### Properties and qualities

*Slope:* 0 to 20 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)

*Depth to water table:* About 20 to 39 inches

*Frequency of flooding:* Very frequent

*Frequency of ponding:* None

*Salinity, maximum in profile:* Strongly saline (48.0 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* A/D

*Hydric soil rating:* No

## Description of Samoa

### Setting

*Landform:* Dunes

*Landform position (two-dimensional):* Shoulder, backslope, summit

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Parent material:* Eolian and marine sand derived from mixed sources

### Typical profile

*C1 - 0 to 17 inches:* sand

*C2 - 17 to 63 inches:* sand

### Properties and qualities

*Slope:* 0 to 50 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

### Minor Components

#### Clambeach

*Percent of map unit:* 10 percent

*Landform:* Deflation basins

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave, linear

*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: Humboldt and Del Norte Area, California

Survey Area Data: Version 11, Oct 4, 2017

## Humboldt and Del Norte Area, California

### 299—Candymountain, 30 to 75 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2lcyt

*Elevation:* 10 to 600 feet

*Mean annual precipitation:* 35 to 90 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 275 to 325 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Candymountain and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Candymountain

##### Setting

*Landform:* Bluffs, marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Marine deposits derived from mixed

##### Typical profile

*A - 0 to 24 inches:* fine sandy loam

*Bw - 24 to 37 inches:* fine sandy loam

*C - 37 to 64 inches:* loamy fine sand

##### Properties and qualities

*Slope:* 30 to 75 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):*

Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 8.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

## Minor Components

### Ladybird

*Percent of map unit:* 5 percent

*Landform:* Mountain slopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Sitka spruce-red alder/salmonberry/western swordfern, hills, sandstone and mudstone, clay I (F004BX110CA)

*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)

*Hydric soil rating:* No

### Footstep

*Percent of map unit:* 3 percent

*Landform:* Mountain slopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Mountainflank

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Ecological site:* Redwood, western swordfern, mountain slopes, sandstone and schist, clay loa (F004BX108CA)

*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)

*Hydric soil rating:* No

### Houda

*Percent of map unit:* 3 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* Sitka spruce-red alder/salmonberry/western swordfern, hills, sandstone and mudstone, clay I (F004BX110CA)

*Hydric soil rating:* No

### Cannonball

*Percent of map unit:* 2 percent

*Landform:* Marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam an (F004BX121CA)

*Hydric soil rating:* No

### **Hutsinpillar**

*Percent of map unit:* 2 percent

*Landform:* Marine terraces, drainageways

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave, linear

*Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Humboldt and Del Norte Area, California

Survey Area Data: Version 11, Oct 4, 2017

## Humboldt and Del Norte Area, California

### 596—Flintrock-Highprairie complex, 15 to 75 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1qltr  
*Elevation:* 0 to 700 feet  
*Mean annual precipitation:* 60 to 80 inches  
*Mean annual air temperature:* 50 to 55 degrees F  
*Frost-free period:* 250 to 365 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Flintrock and similar soils:* 40 percent  
*Highprairie and similar soils:* 30 percent  
*Minor components:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Flintrock

##### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Debris flow colluvium derived from sandstone and mudstone

##### Typical profile

*A - 0 to 10 inches:* very gravelly clay loam  
*Bw1 - 10 to 19 inches:* very gravelly clay loam  
*Bw2 - 19 to 31 inches:* extremely gravelly clay loam  
*BC - 31 to 38 inches:* very gravelly clay loam  
*C - 38 to 63 inches:* extremely gravelly clay loam

##### Properties and qualities

*Slope:* 15 to 75 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 4.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

*Ecological site:* Coastal scrub, hills, sandstone and mudstone, grave (R004BX102CA)

*Hydric soil rating:* No

### Description of Highprairie

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Colluvium and residuum derived from sandstone and mudstone

#### Typical profile

*A - 0 to 15 inches:* clay loam

*Bw1 - 15 to 26 inches:* clay loam

*Bw2 - 26 to 55 inches:* gravelly clay loam

*BC - 55 to 67 inches:* gravelly clay loam

#### Properties and qualities

*Slope:* 15 to 75 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately low to moderately high (0.06 to 0.60 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 8.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

*Ecological site:* Coastal scrub, hills, sandstone and mudstone, grave (R004BX102CA)

*Hydric soil rating:* No

### Minor Components

#### Sisterrocks

*Percent of map unit:* 10 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* Sitka spruce-red alder/salmonberry/western swordfern, hills, sandstone and mudstone, clay I (F004BX110CA)  
*Hydric soil rating:* No

#### **Ladybird**

*Percent of map unit:* 10 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* Redwood, western swordfern, mountain slopes, sandstone and schist, clay loa (F004BX108CA)  
*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)  
*Hydric soil rating:* No

#### **Rock outcrop**

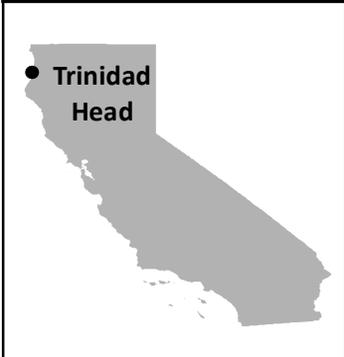
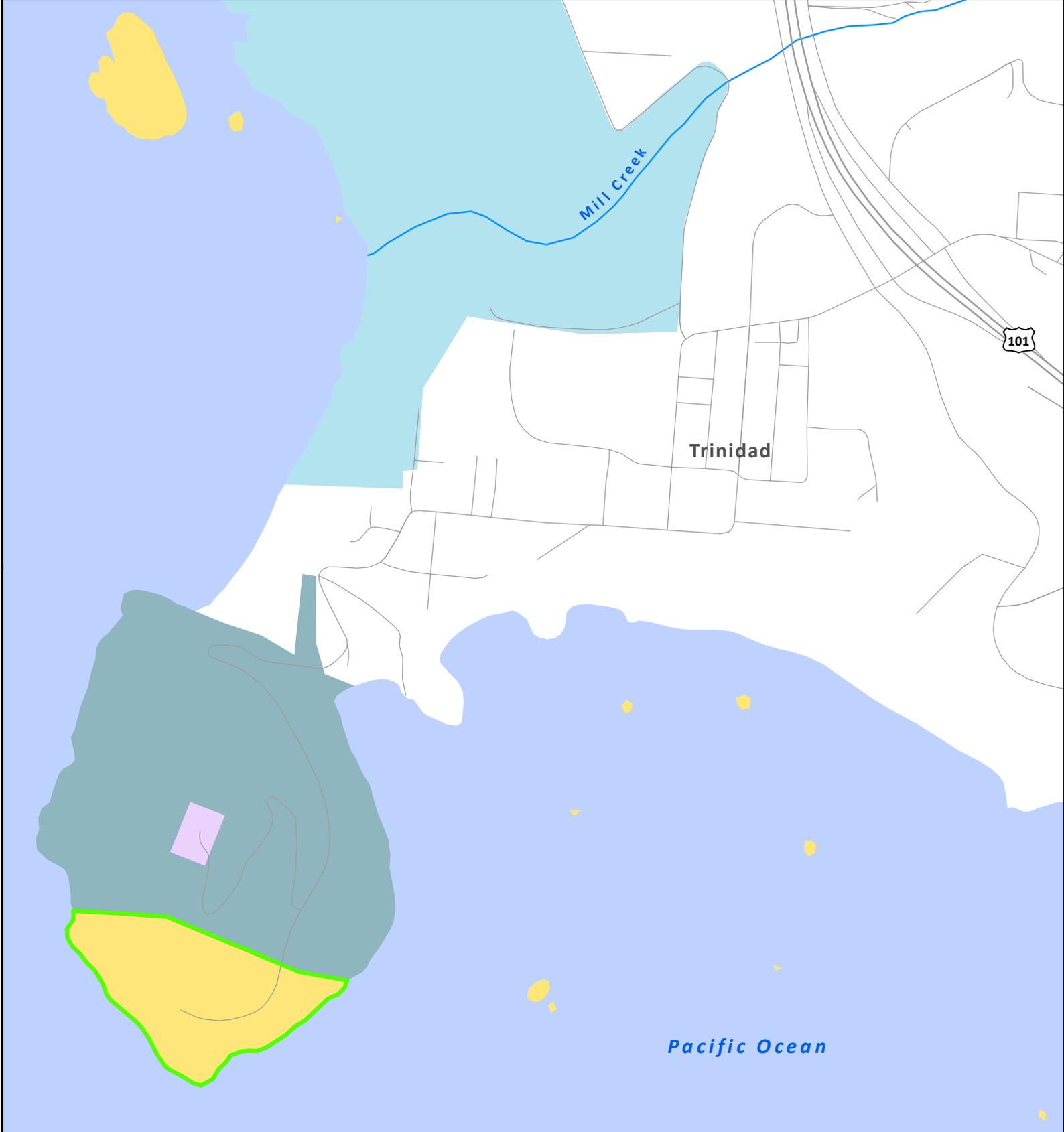
*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### **Footstep**

*Percent of map unit:* 5 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* Redwood, western swordfern, mountain slopes, sandstone and schist, clay loa (F004BX108CA)  
*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)  
*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Humboldt and Del Norte Area, California  
Survey Area Data: Version 11, Oct 4, 2017



**Trinidad Head**

**Surface Management Agency**

- Trinidad Head
- Bureau of Land Management
- State
- US Coast Guard
- Local Government

N

1:7,200

0      500      1,000 Feet

# Trinidad Head

# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth Regulatory Floodway <i>Zone AE, AO, AH, VE, AR</i>
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



41°3'43.74"N

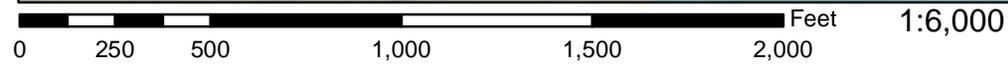
124°9'8.29"W



124°8'30.83"W

41°3'16.61"N

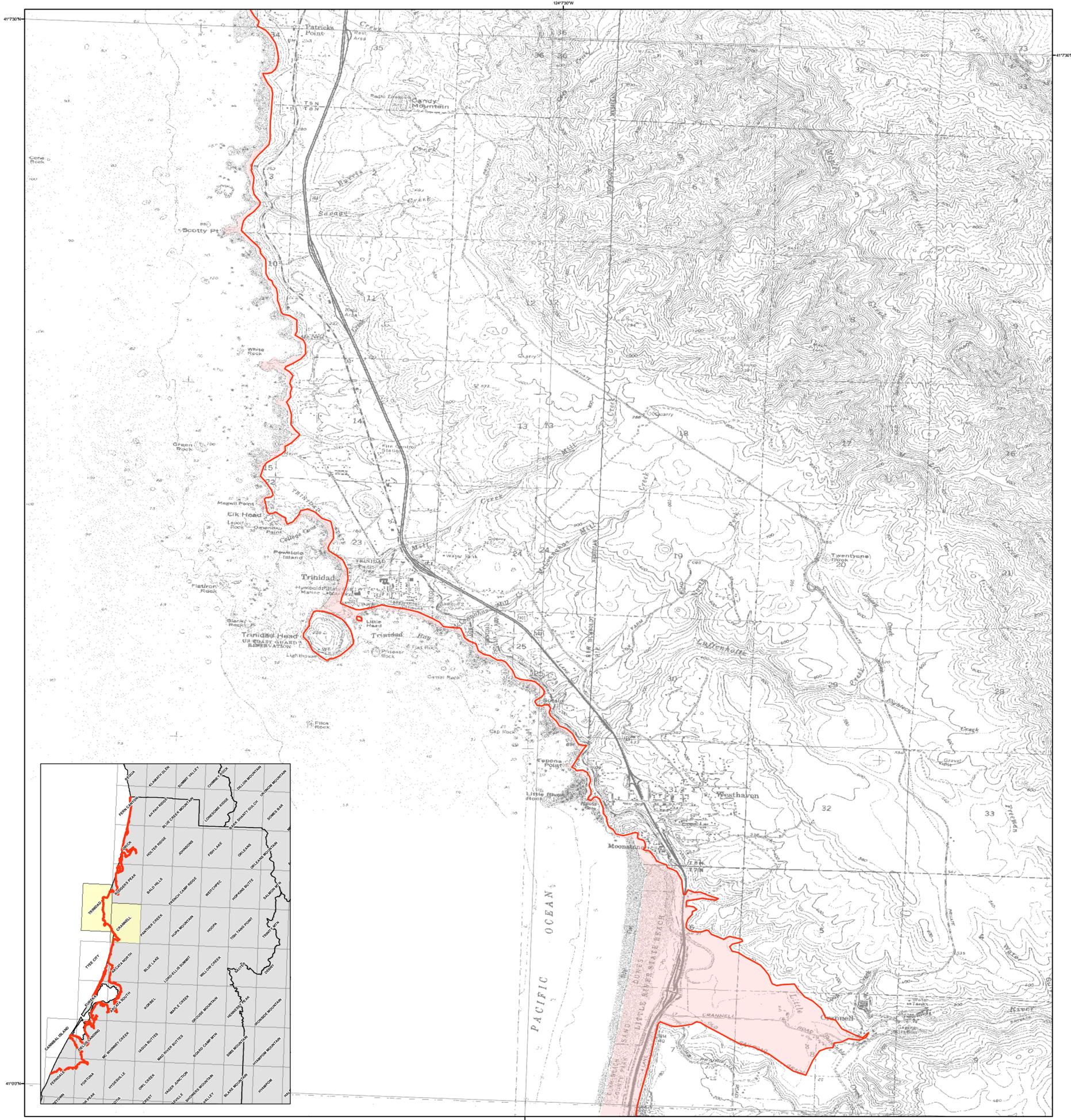
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **5/22/2018 at 5:07:32 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



### METHOD OF PREPARATION

Initial tsunami modeling was performed by the University of Southern California (USC) Tsunami Research Center funded through the California Emergency Management Agency (CalEMA) by the National Tsunami Hazard Mitigation Program. The tsunami modeling process utilized the MOST (Method of Splitting Tsunami) computational program (Version 0), which allows for wave evolution over a variable bathymetry and topography used for the inundation mapping (Titov and Gonzalez, 1997; Titov and Synolakis, 1998).

The bathymetric/topographic data that were used in the tsunami models consist of a series of nested grids. Near-shore grids with a 3 arc-second (75- to 90-meters) resolution or higher, were adjusted to "Mean High Water" sea-level conditions, representing a conservative sea level for the intended use of the tsunami modeling and mapping.

A suite of tsunami source events was selected for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near-shore landslides (Table 1). Local tsunami sources that were considered include offshore reverse-thrust faults, restraining bends on strike-slip fault zones and large submarine landslides capable of significant seafloor displacement and tsunami generation. Distant tsunami sources that were considered include great subduction zone events that are known to have occurred historically (1960 Chile and 1964 Alaska earthquakes) and others which can occur around the Pacific Ocean "Ring of Fire."

In order to enhance the result from the 75- to 90-meter inundation grid data, a method was developed utilizing higher-resolution digital topographic data (3- to 10-meters resolution) that better defines the location of the maximum inundation line (U.S. Geological Survey, 1993; Intermap, 2003; NOAA, 2004). The location of the enhanced inundation line was determined by using digital imagery and terrain data on a GIS platform with consideration given to historic inundation information (Lander, et al., 1993). This information was verified, where possible, by field work coordinated with local county personnel.

The accuracy of the inundation line shown on these maps is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the models. Thus, although an attempt has been made to identify a credible upper bound to inundation at any location along the coastline, it remains possible that actual inundation could be greater in a major tsunami event.

This map does not represent inundation from a single scenario event. It was created by combining inundation results for an ensemble of source events affecting a given region (Table 1). For this reason, all of the inundation region in a particular area will not likely be inundated during a single tsunami event.

**References:**

- Intermap Technologies, Inc., 2003. Intermap product handbook and quick start guide; Intermap NEXTmap document on 5-meter resolution data, 112 p.
- Lander, J.F., Lockridge, P.A., and Kozuch, M.J., 1993. Tsunamis Affecting the West Coast of the United States 1806-1992: National Geophysical Data Center Key to Geophysical Record Documentation No. 29, NOAA, NESDIS, NGDC, 242 p.
- National Atmospheric and Oceanic Administration (NOAA), 2004. Interferometric Synthetic Aperture Radar (IFSAR) Digital Elevation Models from GeoSAR platform (EarthData): 3-meter resolution data.
- Titov, V.V., and Gonzalez, F.I., 1997. Implementation and Testing of the Method of Tsunami Splitting (MOST). NOAA Technical Memorandum ERL PMEL – 112, 11 p.
- Titov, V.V., and Synolakis, C.E., 1998. Numerical modeling of tidal wave runup; Journal of Waterways, Port, Coastal and Ocean Engineering, ASCE, 124 (4), pp 157-171.
- U.S. Geological Survey, 1993. Digital Elevation Models: National Mapping Program, Technical Instructions, Data Users Guide 5, 48 p.

**Note:**

The inundation line for portions of Humboldt County were developed with the assistance of Jay Patton, Lori Dengler, and other members of the Redwood Coast Tsunami Work Group. The inundation line represented on this map is a product of both the methodology outlined above, as well as the method and local knowledge described in the following references:

- Patton, J.R., and Dengler, L.A., 2006. Relative tsunami hazard mapping for Humboldt and Del Norte Counties, California: Proceedings of the 8NCEE/EERI Eighth Earthquake Engineering Conference.
- Patton, J.R., and Dengler, L.A., 2004. GIS-based relative tsunami hazard maps for northern California, Humboldt and Del Norte Counties: (abs.) Eos Trans. American Geophysical Union, Vol. 85, No. 47, Fall Meeting Supplement.

## TSUNAMI INUNDATION MAP FOR EMERGENCY PLANNING

### State of California ~ County of Humboldt TRINIDAD QUADRANGLE CRANNELL QUADRANGLE

June 1, 2009

SCALE 1:24,000

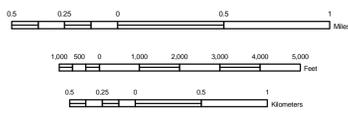


Table 1: Tsunami sources modeled for the Humboldt County coastline.

Sources (M = moment magnitude used in modeled event)		Areas of Inundation Map Coverage and Sources Used				
		Yurok	Orick	Trinidad	Humboldt	Shelter Cove
Local Sources	Cascadia Subduction Zone-full rupture (M9.0)	X	X	X	X	X
	Cascadia Subduction Zone-south segment, narrow rupture (M8.4)	X	X	X	X	X
	Cascadia Subduction Zone-south segment, wide rupture (M8.5)	X	X	X	X	X
	Cascadia Subduction Zone-south segment and Little Salmon Fault #1 (M8.5)			X	X	
Distant Sources	Cascadia Subduction Zone-south segment and Little Salmon Fault #2 (M8.5)	X	X	X	X	X
	Central Aleutians Subduction Zone #1 (M8.9)			X	X	
	Central Aleutians Subduction Zone #2 (M8.9)			X	X	
	Central Aleutians Subduction Zone #3 (M9.2)	X	X	X	X	X
	Chile North Subduction Zone (M9.4)			X	X	
	1960 Chile Earthquake (M9.3)			X	X	
	1964 Alaska Earthquake (M9.2)	X	X	X	X	X
	Japan Subduction Zone #2 (M8.8)			X	X	
Kuril Islands Subduction Zone #2 (M8.8)			X	X		
Kuril Islands Subduction Zone #3 (M8.8)			X	X		
Kuril Islands Subduction Zone #4 (M8.8)			X	X		
Marianas Subduction Zone (M8.6)	X	X	X	X	X	

### MAP EXPLANATION

- Tsunami Inundation Line
- Tsunami Inundation Area

### PURPOSE OF THIS MAP

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.

The inundation map has been compiled with best currently available scientific information. The inundation line represents the maximum considered tsunami runup from a number of extreme, yet realistic, tsunami sources. Tsunamis are rare events; due to a lack of known occurrences in the historical record, this map includes no information about the probability of any tsunami affecting any area within a specific period of time.

Please refer to the following websites for additional information on the construction and/or intended use of the tsunami inundation map:

State of California Emergency Management Agency, Earthquake and Tsunami Program: <http://www.oes.ca.gov/WebPage/oeswebsite.nsf/Content/B1EC51BA21593176825741F005E8D807?OpenDocument>

University of Southern California – Tsunami Research Center: <http://www.usc.edu/dept/tsunamis/2005/index.php>

State of California Geological Survey Tsunami Information: [http://www.conservation.ca.gov/cgs/geologic\\_hazards/Tsunami/index.htm](http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/index.htm)

National Oceanic and Atmospheric Agency Center for Tsunami Research (MOST model): <http://nctr.pmel.noaa.gov/time/background/models.html>

### MAP BASE

Topographic base maps prepared by U.S. Geological Survey as part of the 7.5-minute Quadrangle Map Series (originally 1:24,000 scale). Tsunami inundation line boundaries may reflect updated digital orthophotographic and topographic data that can differ significantly from contours shown on the base map.

### DISCLAIMER

The California Emergency Management Agency (CalEMA), the University of Southern California (USC), and the California Geological Survey (CGS) make no representation or warranties regarding the accuracy of this inundation map nor the data from which the map was derived. Neither the State of California nor USC shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.



