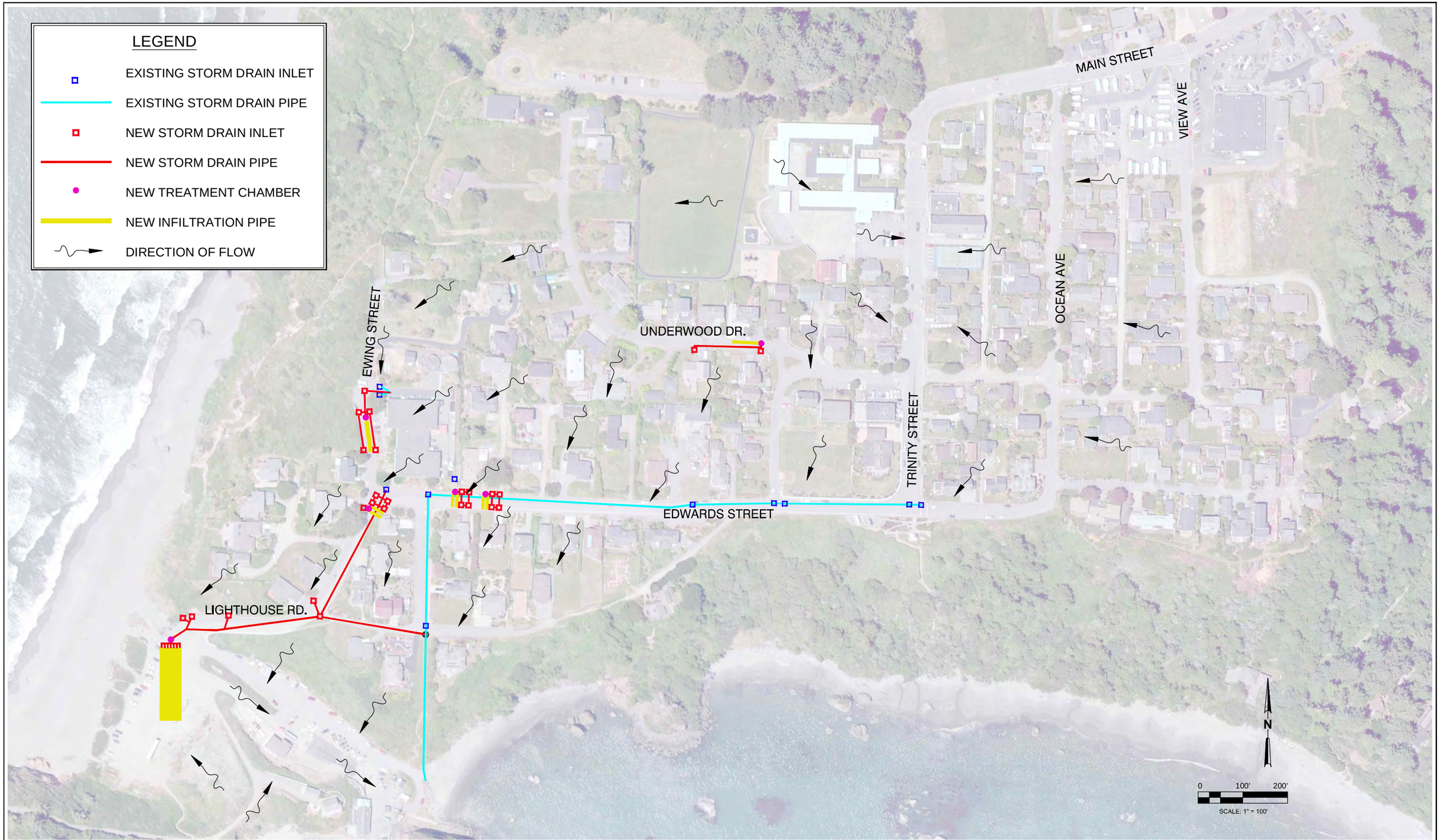
Attachment 1

Site Plan

(Figure 5 from GHD 2018)



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

Plot Date: 20 December 2017 - 4:53 PM Plotted by: Scott Davis

Cad File No: G:\Legacy\Projects\2005 & Beyond\01063 City of Trinidad\01063-07-001 Consulting Services for City\17 USDA PER ASBS\CAD\SitePlan.dwg

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

City of Trinidad

GHD Inc.
718 Third Street Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
W www.ghd.com

Drawn	RKM	Designer	TMD
Drafting Check	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 5
Contract No. 01063-07-001
Original Size Ansi D
Drawing No:
Rev:

Attachment 2

NEPA FONSI

FINDING OF NO SIGNIFICANT IMPACT

City of Trinidad ASBS Stormwater Improvement Project
Humboldt County, CA

Rural Utilities Service
U.S. Department of Agriculture

City of Trinidad

Prepared by:
Quinn Donovan
USDA Rural Development

December 2018

A. INTRODUCTION

City of Trinidad plans to submit a financing request to the U.S. Department of Agriculture, Rural Utilities Service (RUS) to construct the proposed City of Trinidad ASBS Stormwater Improvement Project (Project) in Humboldt County, California. RUS is considering this financing request. Prior to taking a federal action (i.e., providing financial assistance), RUS is required to complete an environmental impact analysis in accordance with the National Environmental Policy Act of 1969 (NEPA) (U.S.C. 4231 et seq.), the Council on Environmental Quality's (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508), and RD's NEPA implementing regulations, Environmental Policies and Procedures (7 CFR Part 1970). After completing an independent analysis of an environmental report prepared by City of Trinidad and its consultant, RUS concurred with its scope and content. In accordance with 7 CFR § 1970.102, RUS adopted the report and issued it as the Agency's Environmental Assessment (EA) for the proposed Project. RUS finds that the EA is consistent with federal regulations and meets the standards for an adequate assessment. City of Trinidad published a newspaper notice, announcing the availability of the EA for public review, in accordance with 7 CFR § 1970.102. In addition, RUS considers the proposed Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 USC 470(f), and its implementing regulation, "Protection of Historic Properties" (36 CFR Part 800).

B. PROJECT DESCRIPTION AND PURPOSE/NEED

The overall purpose of the Trinidad Head Area of Special Biological Significance (ASBS) Stormwater Improvement Project (project) is to improve water quality through reducing polluted storm water runoff into the Trinidad ASBS. The design of the new stormwater system was developed to collect, treat, and infiltrate City stormwater runoff, thus improving stormwater quality that reaches Trinidad Bay. In addition to impairments to water quality and the kelp beds, poor water quality discharges from the storm water system threaten beneficial uses such as fishing, recreation and impact residents who depend on fishing and tourism. The project will assist the City in meeting the requirements of the California Ocean Plan's prohibition of waste discharge into the Kelp Beds at Trinidad Head ASBS. RUS has reviewed the purpose and need for the Project and determined that the proposal will meet the present and future needs of City of Trinidad.

C. ALTERNATIVES EVALUATED

1. No Action

Under the No Action Alternative, RUS would not provide financial assistance to City of Trinidad, and/or the proposed Project would not be constructed. This alternative would not assist City of Trinidad in providing structural improvements to the existing storm water system and pollutants would continue to be discharged to the Trinidad Head ASBS via the stormwater outfall in violation of the California Ocean Plan and impacting the ASBS, water quality and beneficial uses.

2. Action Alternative (Preferred Alternative)

Under the Action Alternative, RUS would consider financing the proposed Project, and City of Trinidad would construct the Storm Water Management Improvement Project. The proposed project would decommission the existing stormwater outfall into the ASBS and replace it with a system of localized stormwater treatment chambers and infiltration basins, including installing new HDPE storm drain pipe (100 ft of 24", 480 ft of 12" and 1100 ft. of 8"); 25 new inlets; 135 ft. of new curb and gutter; 6 treatment chambers; 160 ft. of 72" infiltration pipe; 1500 ft of 54" infiltration pipe; and 125 ft. of 36" infiltration pipe.

3..**Alternatives Eliminated from Further Consideration**

In addition to the No Action Alternative and Action Alternative, City of Trinidad considered other technology and siting alternatives, which are documented in the **Alternatives** section of the EA.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

The analyses in the EA documented that the proposed Project would have no adverse effects to land use, floodplains, wetlands, drainage, groundwater, water quality, coastal resources, biological resources, cultural resources, aesthetics, air quality, socioeconomic, environmental justice, noise, transportation, human health and safety, and the project is not a corridor project. A summary of anticipated impacts on the human environment is provided below, including any mitigation measures deemed necessary to avoid or minimize impacts. City of Trinidad is responsible for implementing these measures.

Water quality could potentially be affected by runoff from construction activities. Therefore a grading permit will be required and Mitigation Measure 1 water quality best management practices will be implemented during construction.

Mitigation Measure 1: Water Quality BMPs to be Implemented During Construction

- At all times during construction activities, the contractor shall miuimize the area disturbed by excavation, grading, or earth moving to preveut the release of excessive fugitive dust. During periods of high winds (i.e. wind speed sufficient that fugitive dust leaves the site) contractor shall cover or treat areas of exposed soil and active portions of the construction site to prevent fugitive dust.
- No construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to wiud, or rain erosion and dispersion. Material handling on and offsite shall be required to comply with California Vehicle Code Sec. 23114 with regard to covering loads to prevent materials spills onto public roads.
- All construction equipment shall be equipped and maintained to meet applicable EPA and CARB emission requirements for the duration of construction activities.
- Throughout construction, contractor shall maintain adjacent paved areas free of visible soil, sand or other debris.

- If stockpiled on or offsite, or if rain is expected, soil and aggregate materials shall be covered with secured plastic sheeting and runoff shall be diverted around them.
- Drainage courses, creeks, or catch basins shall be protected with straw bales, silt fences, and/or straw wattles.
- Storm drain inlets shall be protected from sediment-laden runoff with sand bag barriers, filter fabric fences, straw wattles, block and gravel filters, and excavated drop inlet sediment traps.
- Vehicle and equipment parking and vehicle maintenance shall be conducted in designated areas away from creeks or storm drain inlets.
- Major maintenance, repair, and washing of vehicles and other equipment shall be conducted offsite or in a designated and controlled area.
- Construction debris, plant and organic material, trash, and hazardous materials shall be collected and properly disposed.
- Any areas of bare soil disturbed during construction that are not paved will be re-seeded or planted with native vegetation or a locally appropriate seed mix.

Biological Resources: An evaluation was conducted for the presence or absence, and habitat requirements relative to conditions observed during field surveys of special status plant and animal species. Federally and state listed species Marbled Murrelet, Bald Eagle and California Brown Pelican were the primary concern. No special status plant or animal species were observed during the field visits. Nesting birds (Migratory Bird Treaty Act) could be disturbed if brush clearing or construction work occurs during breeding season, therefore Mitigation Measure 2 bird surveys will be performed weekly within the active construction area during nesting season. There will be no open trenches left open following construction, therefore there is no risk that the American bullfrog (invasive species) will colonize as a result of the project.

Mitigation Measure 2: Pre-construction bird surveys during nesting season

If project-related brush clearing or construction work must occur during the breeding season (February 15-August 15), nesting bird surveys should be performed weekly by a qualified biologist within the active construction area to ensure that active nests are not destroyed.

Cultural and historic resource protection: No structures will be disturbed or demolished, however there may be cultural artifacts on or below the surface that could be disturbed. Research and an archaeological survey were conducted and no artifacts, archaeological features, sites or other specific cultural resources were encountered during the investigation. Consultation and discussions were held with the Cher-Ae Heights Indian Community of the Trinidad Rancheria, the Yurok Tribe and the Tsurai Ancestral Society. To avoid adverse effects implementation of Mitigation Measure 3 - Cultural and Historic Resource Protections will include putting in place a Monitoring Plan/NAGPRA Plan of Action, including monitoring of all earth disturbing activities by tribally appointed monitors.

Mitigation Measure 3 - Cultural and Historic Resource Protections

The following recommendations are designed in accordance with the expressed concerns of the contacted Trinidad area Tribes and will be incorporated into the project as mitigation:

1. A Monitoring Plan/NAGPRA Plan of Action be put in place prior to permit approval, thereby setting up a formal agreement between the stakeholders regarding the plan for items discovered and excavated dirt removed during project implementation.

2. It is recommended that any grading or earthwork activities within the project area be monitored tribally appointed monitors.

3. Cultural resource monitors must be empowered to halt heavy equipment operations in the event that significant cultural features or human remains are uncovered. Construction activities in the immediate vicinity would be delayed until an archaeologist, qualified to the Secretary of Interior Standards, has assessed the significance of the find. An Inadvertent Discovery Protocol, developed in consultation with the Yurok Tribe and Trinidad Rancheria, will be in place prior to construction.

4. The Cultural resource monitor(s) must be kept informed by the contractor and understand the ground disturbance schedule. Field notes should be kept by the monitor(s) and a brief letter report of the monitoring effort filed with the North Coastal Information Center.

Air Quality: The primary concern is dust generated during construction. A grading permit will be required conditioned on controlling dust and other nuisance impacts. With Mitigation Measure 4 to implement air quality emission control measures during construction, the project will not adversely affect air quality.

Mitigation Measure 4 – Implement Air Quality Emission Control Measures during Construction

Although the North Coast Unified Air Quality Management District (NCUAQMD) has not adopted formal construction measures or guidelines, the project includes the following air quality control actions to reduce construction-generated emissions:

The principal concern about the effect of construction projects on air quality relates to the potential for earthwork and other activities to generate dust, including inhalable particulate matter (PM10) that poses a human health hazard. To address the potential for dust generation, the contractor will be required to implement the following BMPs to reduce nuisance dust and other sources of PM10.

- These actions will also apply to ground disturbing maintenance activities and equipment exhaust.
- Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered as necessary during dusty conditions.
- If loose material becomes airborne during transportation, haul trucks transporting soil, sand, or other loose material off-site will be covered.
- Disturbed roadways will be re-paved as soon as possible following work in the area, as appropriate.

- Visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers, as necessary. The use of dry power sweeping is prohibited.
- Idling times will be minimized by shutting equipment off when not in use.
- Construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications.

Noise: To avoid and minimize adverse effects to sensitive noise receptors, Mitigation Measure 5 Noise Reduction Actions will be implemented during project construction. There will be a less than significant effect during the operation phase of the project.

Mitigation Measure 5: Noise Reduction Actions.
During project construction, the following actions will be incorporated into the project to reduce daytime noise impacts to the maximum feasible extent:

- A preconstruction meeting (or conference call) will be held among the City of Trinidad, construction manager, and the general contractor to confirm that the following noise reduction practices are to be implemented in the appropriate phase of construction.
- Hours of construction will typically be limited 7:00 a.m. to 5:00 p.m. Monday through Friday, unless other hours are specified by the City Engineer. No construction would occur on weekends except with permission from the City as needed to keep the project on schedule.
- Semi-stationary equipment (e.g., generators, compressors, etc.) will be located as far as possible from residences.
- Quietest available equipment and electrically-powered equipment will be used, rather than internal combustion engines where feasible.
- Equipment and on-site trucks used for project construction will be equipped with properly functioning noise control devices such as mufflers, shields, and shrouds. All construction equipment will be inspected by construction personnel at periodic intervals to ensure proper maintenance and resulting lower noise levels.
- Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction will be hydraulically or electrically powered wherever possible to avoid noise associated with compressed-air exhaust from pneumatically powered tools.

Traffic: Most of the project will occur in the road right of ways, so there is the potential for minor impacts to motor vehicles, pedestrians and bicyclists. With implementation of Mitigation Measure 6 Traffic Control Plan, the project will not adversely affect traffic.

Mitigation Measure 6: Traffic Control Plan
In coordination with the City of Trinidad, the construction contractor shall develop an approved traffic control plan prior to the commencement of construction. Elements of this plan shall be implemented as necessary and appropriate for construction. The plan shall include, but not be limited to:

- Adherence to City and Caltrans traffic management standards.

- Location(s) of designated project construction staging area(s) for equipment/materials storage and construction worker parking.
- Temporary replacement parking for residents during the construction period, if needed.
- Detour routes will be used in order to maintain access throughout the City and to the coastline during project construction.
- Use of flagging and signage during construction of LID/BMPs stormwater improvements, materials delivery, and/or movement of construction equipment in any private or public roadway.
- Provisions to maintain unobstructed access for law enforcement, fire department, or other official or emergency personnel and vehicles.

E. **PUBLIC AND AGENCY INVOLVEMENT**

A local newspaper advertisement/legal notice, announcing the availability of the EA and participation under Section 106 of the National Historic Preservation Act, was/were published on November 7 and 14, in Mad River Union, **Humboldt County, California.** A copy of the EA was available for public review at Rural Utilities Service, United States Department of Agriculture, 777 Sonoma Avenue, E Street Annex, Santa Rosa, CA 95404 and City of Trinidad, 409 Trinity Street, Trinidad, CA 95570. The 14-day comment period ended on November 21, 2018.

One comment was received during the 14-day comment period. The comment included a request that the existing storm water pipe and inlet along Galindo Street be abandoned. The comment also requested that the proposed storm water pipe along Van Wycke Street not be installed and that the storm water be routed along Edwards Street due to potential impacts to historic properties.

F. **FINDING OF NO SIGNIFICANT IMPACT**

Based on its EA, RUS has concluded that the proposed Project would have no significant effects to land use, floodplains, wetlands, drainage, groundwater, water quality, coastal resources, biological resources, aesthetics, air quality, socioeconomic, environmental justice, noise, transportation, human health and safety, and the project is not a corridor project. The proposed project will utilize the Nationwide Programmatic Agreement (NPA) among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers and The Advisory Council on Historic Preservation for Sequencing Section 106 (NPA)to achieve compliance with the Nation Historic Preservation Act and formally determine effects on historic properties listed or eligible for listing on the National Register of Historic Places. The National Programmatic Agreement will be followed to fully comply with the National Historic Preservation Act. The project can proceed to obligation with the understanding that Section 106 will be completed prior to construction. Using the NPA does not complete the Section 106 process. In accordance with the National Programmatic Agreement (NPA) signed in July 2018 with the AHCP further cultural consultation/studies will be completed prior to the start of construction.

The project will have no known adverse effects to federally listed species or designated critical habitat.

The proposed Project would not disproportionately affect minority or low-income populations.

In accordance with the National Environmental Policy Act, as amended (42 U.S.C. 4321 et seq.), the Council on Environmental Quality Regulations (40 CFR 1500-1508), and RD's Environmental Policies and Procedures (7 CFR Part 1970), RUS has determined that the environmental impacts of the proposed Project have been adequately addressed and that no significant impacts to the quality of the human environment would result from construction and operation of the proposed Project. Any final action by RUS related to the proposed Project will be subject to, and contingent upon, compliance with all relevant federal and state environmental laws and regulations. Because RUS's action will not result in significant impacts to the quality of the human environment, RUS will not prepare an Environmental Impact Statement for its potential federal action associated with the proposed Project.

G. RUS LOAN REVIEW AND RIGHT OF ADMINISTRATIVE REVIEW

This FONSI is not a decision on a loan application and therefore not an approval of the expenditure of federal funds. Issuance of the FONSI and its notices concludes RUS's environmental review process. The ultimate decision on loan approval depends upon conclusion of this environmental review process in addition to financial and engineering reviews. Issuance of the FONSI and publication of notices will allow for these reviews to proceed. The decision to provide financial assistance also is subject to the availability of loan funds for the designated purpose in RUS's budget. There are no provisions to appeal this decision (i.e., issuance of a FONSI). Legal challenges to the FONSI may be filed in Federal District Court under the Administrative Procedures Act.

H. APPROVAL

This Finding of No Significant Impact is effective upon signature.

Dated: 3/15/19

Pete Yribarren
Community Programs Director
Rural Development
United states Department of Agriculture

Contact Person
For additional information on this FONSI and EA, please contact Quinn Donovan at quinn.donovan@ca.usda.gov

Attachment 3

Prohibition of Discharge Letter from SWRCB

State Water Resources Control Board

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 P1an, 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 .

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 pursing 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) or Dominic Gregorio, Division of Water Quality, Ocean Standards Unit, at (916) 341-5488 (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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Attachment 4

City of Trinidad ASBS Compliance Plan

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

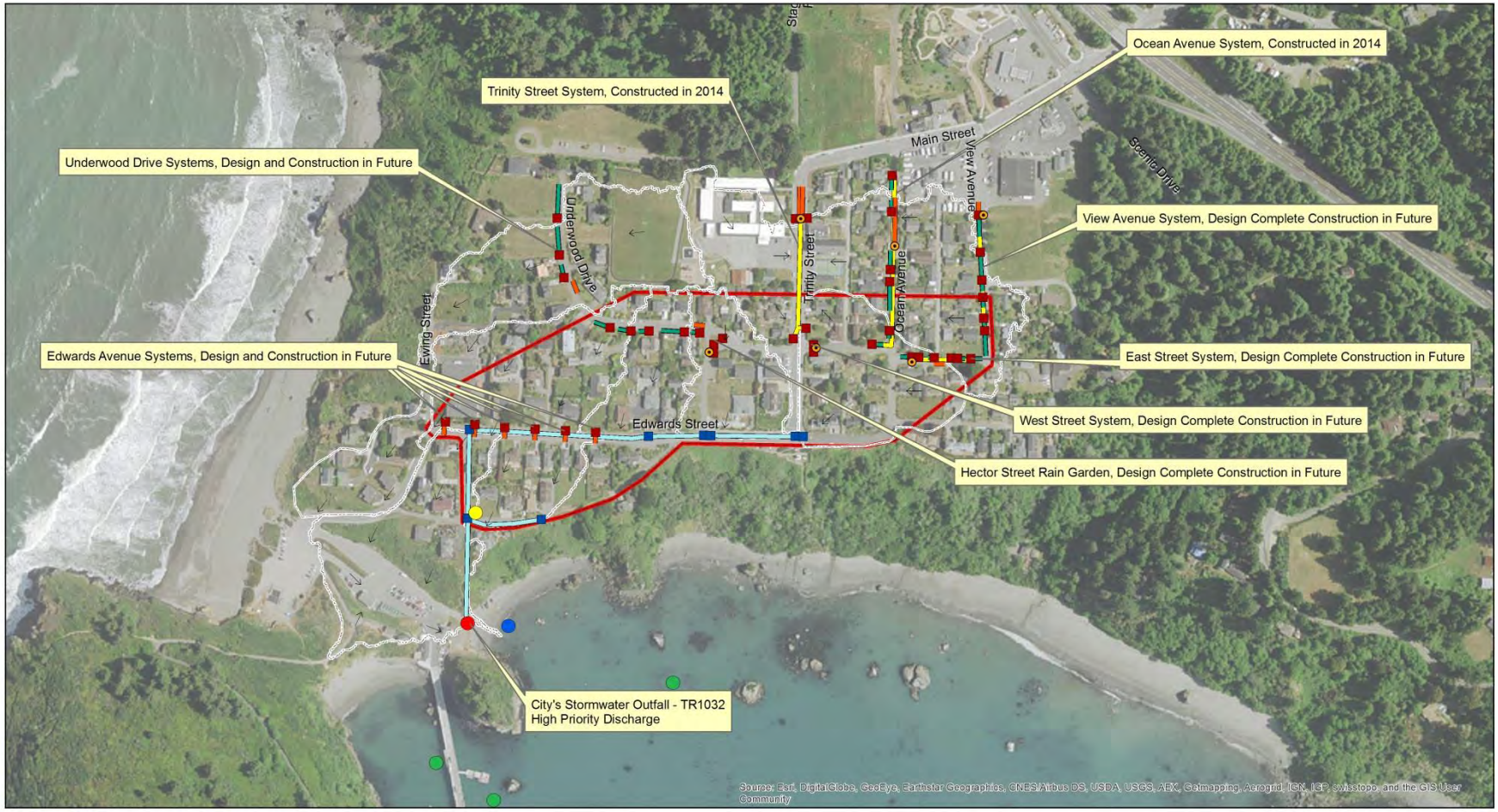
(a) **Service areas**: There are no service areas within the stormwater system drainage.

(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



Paper Size 11" x 17" (ANSI B)
0 100 200 300 400 500
Feet
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

City Outfall (TR1032)
City Stormwater Sampling
Seawater Grab Sampling
Sediment Sampling
Treatment Chambers
Storm Drain Inlet
Storm Drain Inlet (Existing)
Infiltration Basin
Bioswale
Storm Drain
Storm Drain (Existing)
City Subwatershed Boundary
Trinidad MS4 Boundary
Flow Direction

GHD

City of Trinidad
Trinidad ASBS Stormwater Project

Job Number 0106311005
Revision A
Date 21 Sep 2015

ASBS Compliance Plan Map

Figure 1

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

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

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.

Table 1 BMPs and Implementation Schedule **BMPs and Tasks**	**MS4 Permit Element**	**Implementation Dates & Current Status**	**Special Protections Section** **2.b** eliminate non-authorized non-storm water discharge **2.c.** Inspections **2.d** Stormwater discharges **2. e**. Erosion & Sediment Control			
Non-Structural BMPs (section 2.f)			**2.b.**	**2.c.**	**2.d.**	**2. e**
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 *Trinidad-Westhaven Integrated Coastal Watershed Management Plan* (ICWM Plan) 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. • Prop 1 Ocean Protection Council • Storm Water Grant Program Imp. Round 1	E. 6. c E. 11 E.12	Ongoing. Beginning in 2008. • 2/26/16 • 7/8/16	✓	✓	✓	✓
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): • IDDE Training for city staff that would in the course of their duties observe illicit discharges. • Construction Outreach & Education training Staff • Construction Site Operator training • Pollution Prevention & Good Housekeeping staff training	 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: • Develop and promote an "ocean-friendly gardening" guide. • Provide LID and "Ocean-friendly gardening" workshops	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	✓	✓	✓	✓

Table 1 BMPs and Implementation Schedule **BMPs and Tasks**	**MS4 Permit Element**	**Implementation Dates & Current Status**	**Special Protections Section** **2.b** eliminate non-authorized non-storm water discharge **2.c.** Inspections **2.d** Stormwater discharges **2. e**. Erosion & Sediment Control			
Non-Structural BMPs (section 2.f)			**2.b.**	**2.c.**	**2.d.**	**2. e**
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.	✓	✓	✓	✓

Table 1 BMPs and Implementation Schedule **BMPs and Tasks**	**MS4 Permit Element**	**Implementation Dates & Current Status**	**Special Protections Section** **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	• Implemented July 1, 2015 • Manual adopted August 2015	✓	✓	✓	✓
Structural BMPs (Section 2.f)			**2.b.**	**2.c.**	**2.d.**	**2. e**
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: • Develop a residential LID construction incentive program. • Develop residential LID guidance and standard plans for construction of LID features. • 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.	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.

- 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

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.

Attachment 5

Infiltration Analysis

City of Trinidad
ASBS Stormwater Improvement Project
Infiltration Analysis by Sub-Basin

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

Hydrograph:						Calculations:							
	CT-1 (ft^3/s)	CT-2 (ft^3/s)	CT-3 (ft^3/s)			Volumetric:			Green-Ampt*				
Date/Time	50-year	50-year	50-year			Vrunoff (ft^3)	Vtank (ft^3)	h (ft)	zf (ft)	q (ft/min)	F (ft)	Vinf (ft^3)	actual (ft^3)
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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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
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
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
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
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
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

Northeast Trinidad

Scenario 1:

Watershed:	CT-1, CT-2 & CT-3	Technology:	Storage Volume (ft^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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^3):	Infiltration Area (ft^2)	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

Attachment 6

Slope Stability Analysis

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

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 ϕ=30° 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 ϕ=42° 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[1]	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%

[1]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

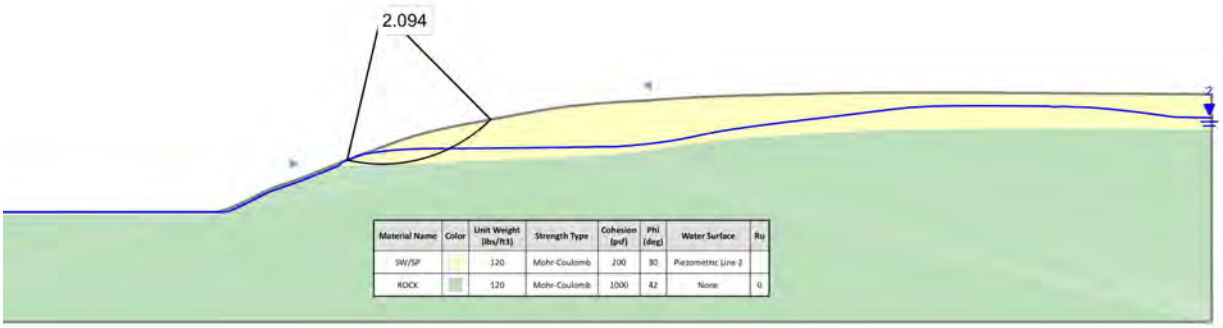

Figure 1: AB-AB' Existing Condition

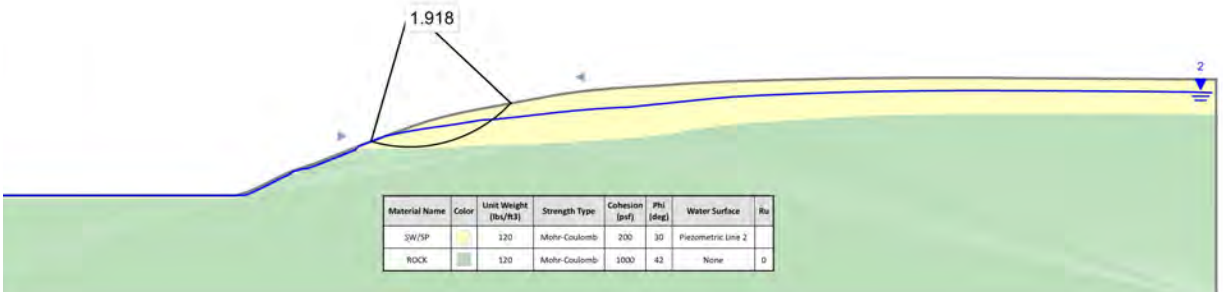

Figure 2: AB-AB' Proposed Condition

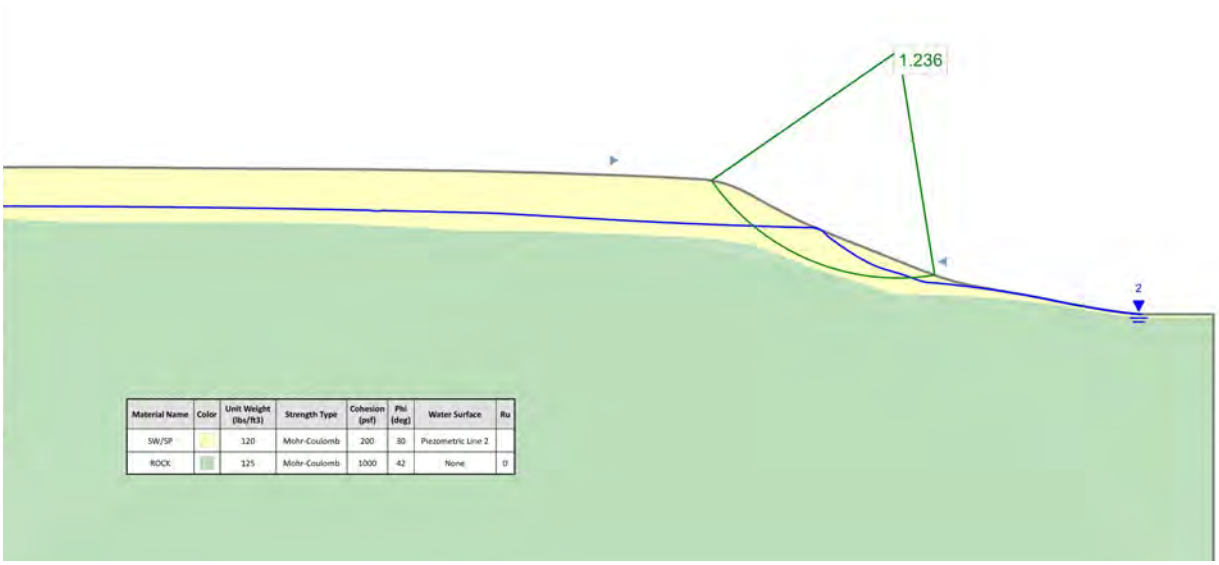

Figure 3: H-H' Existing Condition

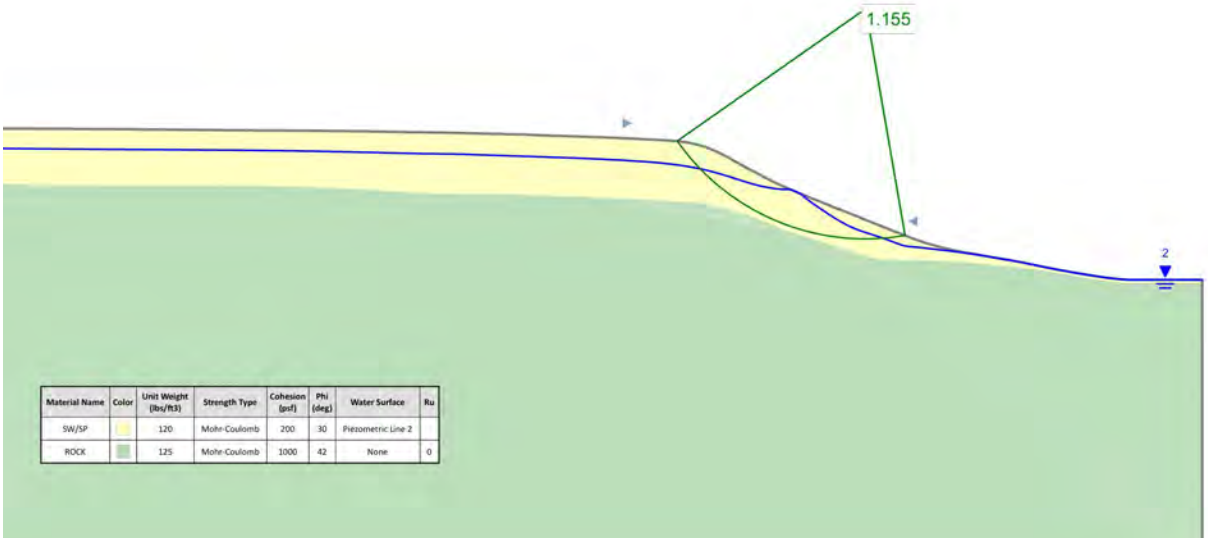

Figure 4: H-H' Proposed Condition

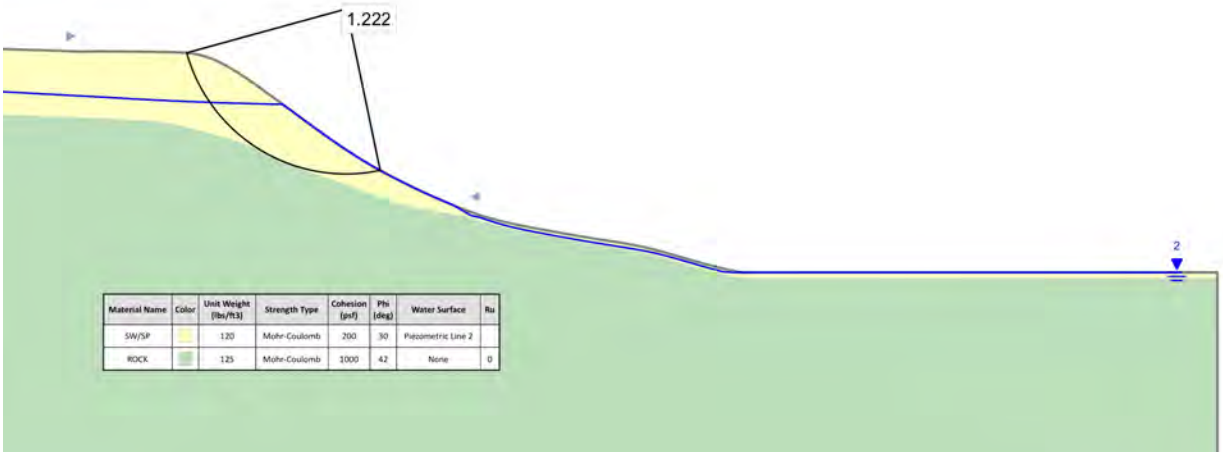

Figure 5: G.1-G.1' Plus 25 Cells West Existing Condition

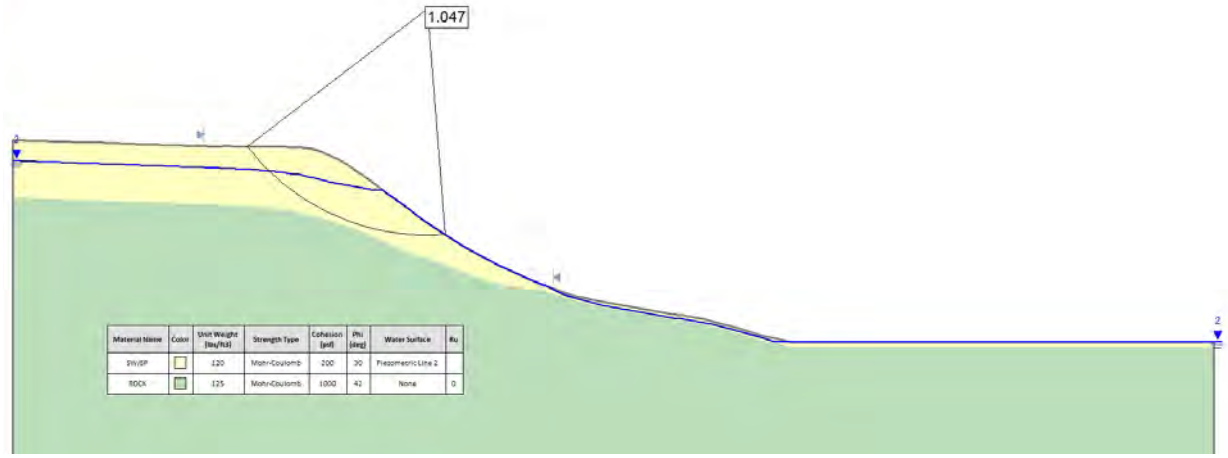

Figure 6: G.1-G.1' Plus 25 Cells West Proposed Condition

Figure 7: Cross Section Locations

Attachment 7

Groundwater Model Review

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 simuation 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 Fransciscan 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 identidcal 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 Simuulated 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

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Attachment 8

ASBS Compliance Extension

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
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)[1] 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.

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

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.

Sincerely,

Eileen Sobek, Executive Director
State Water Resources Control Board

cc: [Hardcopy and/or Email]

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