For Discussion Purposes Only

The purpose of this submission is to act as a conversational and/or guiding document only. By participating in this discussion, and addressing the various options found herein, Copermittees are in no way admitting any liability or otherwise making any other admission. Any final approval required of the dischargers relative to the options discussion herein will require further proceedings before their respective governing bodies or designees.

Pathway for Bacterial Water Quality Regulation in Newport Bay

As identified in the June 30, 2018 memorandum Newport Bay Fecal Coliform Total Maximum Daily Load – Findings and Recommendations, the components of a viable regulatory pathway concerning bacterial water quality in Newport Bay include the following:

- Dischargers need a regulatory mechanism for compliance while BMPs are being implemented.
- NGOs require an assured means for enforceability and interim milestones.
- A reasonable timeframe needs to be provided for studies.
- A BMP-based approach needs to be allowed to address wet weather conditions.
- There should be a finite timeframe for BMP implementation.

In order to effect the above regulatory pathway, incorporate the results of or allow for special studies, and modify the allocation and targets from fecal coliform to the State-adopted enterococci objective revisions to the existing fecal coliform TMDL are required. Additionally, and more importantly (from the discharger perspective), a permit that reflects these revisions is also required. However, TMDL modifications will take some time to develop and the dischargers need a regulatory mechanism for compliance during the period of time necessary to modify the TMDL and while BMPs are implemented.

The only apparent means of achieving the above, including all five of the features of the regulatory pathway, is via a direct and immediate modification of the corresponding TMDL provisions contained within the dischargers' MS4 permit, similar to what is described in item number three, below. This can be achieved through adoption of a new permit, as indicated in item number three (i.e. permit renewal), or a permit modification (if permit renewal will not

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occur in the near future). However, if direct and immediate revision of permit provisions is not undertaken by the Regional Board, based on the views of Board staff and other stakeholders, an alternative means of pursuing the above objectives is as follows:

1. The Regional Board has the authority to, and may, adopt a Time Schedule Order (TSO) for five years to cover any exceedance of the the current MS4 permit wasteload allocation and receiving water limitation.

2. Revise TMDL and obtain compliance schedule authority for any new TMDL timelines.

3. Incorporate TMDL into MS4 permit. Ultimately, as indicated by Board staff, the Regional Board could consider a new MS4 permit that incorporates the new State enterococci criteria based on a finding that the new criteria is consistent with or more stringent than the fecal coliform TMDL assumptions (i.e., 32 illnesses v. 36 illnesses per 1000 recreators). This action would then require an extended compliance schedule based on the time necessary to implement actions to meet the new criteria, and a compliance pathway through developing and implementing a watershed management plan that defines specific milestones and actions necessary to meet new permit requirements.

4. The Regional Board may adopt a TSO for SHEL if TMDL is not revised prior to the 2022 final compliance date for the SHEL allocations.

5. If a TSO is issued for REC-1, revise the TSO to maintain BMP-based implementation, if necessary (e.g., for REC-1 if fecal coliform TMDL is modified without extending the compliance deadline).

The above approaches/options reflect discussions during the stakeholder meetings. The permit approach will provide compliance protection for dischargers, support watershed planning efforts to address bacteria and other pollutants to Newport Bay, and provide enforceable milestones for implementation.

The above reflects the understanding, based on discussion during stakeholder meetings, that a compliance option based on development and implementation of a watershed management plan, which incorporates a combination of BMPs and specific milestones, will be made available. In order to obtain a truly comprehensive result which addresses stakeholder concerns and the regulatory pathway identified above, the Regional Board will need to amend the pertinent TMDLs and adopt or amend the MS4 permit in a manner that provides for a technically and financially feasible pathway to compliance. Additionally, while the permittees stakeholders are

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not admitting that there are exceedances or threatened exceedances that violate the pertinent MS4 permit at the moment, should the Regional Board still decide to issue a TSO, Copermittees have provided some proposed TSO language for the Regional Board's consideration.

This approach was developed with the understanding, based on discussion during stakeholder meetings, that stakeholders agree that adoption of a RWQCB-approved implementation plan (TSO) and watershed management plan (permit revision) which incorporates a combination of BMPs and specific milestones will constitute compliance with permit and TMDL requirements.

The proposed TSO language for step #1 and the approach for #2 are included in the following sections.

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Proposed Time Schedule Order Language

Time Schedule Order for Newport Bay Fecal Coliform TMDL for ORDER NO. R8-2009-0030

The California Regional Water Quality Control Board, Santa Ana Region (Santa Ana Water Board) finds:

1. On May 22, 2009, the Santa Ana Water Board adopted waste discharge requirements and a National Pollutant Discharge Elimination System (NPDES) permit (Order No. R8-2009-0030) for municipal separate storm sewer system (MS4) discharges within the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County (Orange County MS4 Permit).

2. Newport Bay was listed on California's 1996 Clean Water Act Section 303(d) list as impaired due to "Beach Closures (coliform)." To address impairments in Newport Bay due to bacteria, the Santa Ana Water Board adopted the Newport Bay Fecal Coliform TMDL (Bacteria TMDL).

3. The Orange County MS4 Permit includes wasteload allocations for bacteria to implement the Bacteria TMDL.

4. Section XVIII.C.1 of the Orange County MS4 Permit requires the Co-permittees to comply with the wasteload allocations for urban runoff for fecal coliform to protect the REC-1 and SHEL beneficial uses based on monitoring conducted at representative sampling locations within San Diego Creek and Newport Bay by December 30, 2013 and December 30, 2019 respectively.

5. On July 16, 2017, the Santa Ana Water Board adopted Resolution No. R8-2017-0019 amending the Basin Plan to revise the compliance schedule for the Bacteria TMDL for shellfish harvesting from December 30, 2019 to December 31, 2022.

6. In 2017, a stakeholder process was initiated to address bacterial water quality regulations in Newport Bay with respect to recreational Water Contact (REC-1) and

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Shellfish Harvesting (SHEL) beneficial uses[1]. The objective of this process was to form a representative Stakeholder Group and engage in focused dialogue to develop and submit recommendations to the Santa Ana Regional Water Quality Control Board (Regional Water Board) regarding necessary revisions to the Newport Bay Fecal Coliform Total Maximum Daily Load (TMDL) and/or alternative regulatory options/programs for the protection of the REC-1 and SHEL beneficial uses[2]. It was further recognized that the recommendations would form the technical foundation for the development of action plans and/or management practices to address the bacteria levels from the Newport Bay watershed[2].

The Stakeholder Group included up to thirteen participants from the following entities (parentheses indicate how many official representatives were identified for each)[3]:

- County of Orange/Flood Control District (1)
- Orange County Coastkeeper (1)
- NDPES Co-permittees (2)
- Development/Business Community (3)
- NGO Environmental Community (2)
- Regional Water Board (3)
- US EPA (1)

In order to develop and submit a set of recommendations to the Regional Water Board, the Stakeholder Group met eleven times[4] over the course of a year and a half to discuss a wide range of issues and review associated policy and technical analyses as they related to the protection of REC-1 and SHEL beneficial uses.

7. During the stakeholder process, the Regional Board has stated its intention to revise the existing Fecal Coliform TMDL, and make corresponding modifications to the Co-permittees' MS4 permit, to generally align with the new REC-1 enterococci objective in the Bacteria Provisions adopted by the State Board on August 7, 2018 for the ISWEBE Plan (which includes Newport Bay). The Bacteria Provisons are consistent with the assumptions underlying, and are as protective of the beneficial use as, the existing Fecal Coliform TMDL. Revision of the Co-permittees' MS4 permit in this manner would

[1] Settlement Agreement between the County of Orange, the Orange County Flood Control District, and the Orange County Coastkeeper (Settlement Agreement), Agreement Item 1.1, page 2.

[2] Settlement Agreement, Agreement Item 1.2, page 2.

[3] Settlement Agreement, Agreement Item 1.5, page 4.

[4] Stakeholder Group meetings were held on the following dates: 1-18-17, 2-23-17, 3-30-17, 7-27-17, 8-24-17, 10-4-17, 10-26-17, 11-16-17, 1-25-18, 4-26-18, and 8-23-18.

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constitute new bacteria standards applicable to the Co-permittees and Co-permittees would need to implement new or modified control measures in order to comply with the new bacteria standards.

8. The Great Lakes Rule, 40 C.F.R. 131.41, promulgated by the EPA, allows for the permiting authority to grant permittees additional time to comply with the new bacteria standards in the Statewide Bacteria Provisions.

9. The State Water Board adopted Order No. WQ 2015-0075 on June 16, 2015. The Order includes seven principles for Regional Water Boards to follow when developing receiving water limitation compliance provisions in Phase 1 MS4 permits. Principle 2 allows compliance with TMDLs to constitute compliance with receiving water limitations and Principle 3 allows for Regional Water Boards to develop a compliance alternative that allows for Co-permittees to achieve receiving water limitations over a period of time.

10. In accordance with State Board Order No. WQ 2015-0075, and as a result of discussions during the stakeholder process, the Regional Water Board will amend the Co-Permittees' MS4 permit to provide an alternative compliance pathway for achieving compliance with the Fecal Coliform TMDL and the forthcoming revised bacteria TMDL, which will allow for a BMP-based means of compliance and a revised/extended compliance deadline.

11. The Santa Ana Water Quality Control Plan (Basin Plan) includes provisions to distinguish between controllable and uncontrollable sources of bacteria. The Co-permittees are required to address controllable sources of bacteria that result in excessive risk of illness among people recreating in or near the water, but not uncontrollable bacteria sources. Uncontrollable bacteria sources refer to contributions of bacteria within the watershed from nonpoint sources that are not readily managed through technological or natural mechanisms or through source control and that may result in exceedances of water quality objectives for indicator bacteria. Specific uncontrollable indicator bacteria sources within the Santa Ana Region may include:
    - Wildlife activity and waste
    - Bacterial regrowth within sediment or biofilm
    - Resuspension from disturbed sediment
    - Marine vegetation (wrack) along high tide line
    - Concentrations (flocks) of semi-wild waterfowl
    - Shedding during swimming

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12. California Water Code section 13300 authorizes the Regional Board to issue a time schedule order as follows:

    "Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements."

13. The Regional Board believes that there is a threat that the Copermittee's MS4 discharges to Newport Bay are not able to consistently comply with the final water quality-based effluent limitations and corresponding final receiving water limitations for fecal coliform in the Orange County MS4 Permit during wet weather.

14. California Water Code section 13385(h)-(i) require the Santa Ana Water Board to impose mandatory minimum penalties upon dischargers that violate certain effluent limitations. Section 13385(j)(3) exempts violations of an effluent limitation from mandatory minimum penalties "where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300, *if all of the [specified] requirements are met*." (emphasis added).

15. The Co-permittees have performed the following activities to comply with the TMDL:

    - *Under development*

16. This TSO requires the Co-permittees to undertake specific actions to control bacteria in their MS4 discharges to Newport Bay to put the dischargers on the path towards compliance with the final wasteload allocations for fecal coliform. The established time schedule is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the final wasteload allocations for fecal coliform.

17. A TSO is appropriate in these circumstances to allow the Co-permittees the necessary time to undertake actions to reduce the amount of bacteria discharged from the MS4 to Newport Bay. The temporary bacteria exceedances allowed by this TSO are in the public

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interest given the significant environmental benefits associated with promptly achieving compliance with the wasteload allocations for bacteria.

18. Full compliance with the requirements of this TSO exempts the Copermittes from mandatory minimum penalties for violations of the wasteload allocations for fecal coliform in the Orange County MS4 Permit, pursuant to California Water Code section 13385(j)(3).

19. As long as the Co-permittees are in compliance with the applicable TMDL requirements in this TSO, the Santa Ana Water Board will not take an enforcement action for violations of Part XVIII.C.1. of the Orange County MS4 Permit for the specific pollutants addressed in this TSO.

20. This TSO is being issued for the protection of the environment and human health. Therefore, issuance of this TSO is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21100 *et seq*.) in accordance with sections 15301, 15308 and 15321(a)(2) of Title 14 of the California Code of Regulations.

21. The Regional Board recognizes that the Copermittees maintain that they are, and will continue to be, in compliance with the limitations set forth in the Orange County MS4 Permit for the specifical pollutants addressed in this TSO.

IT IS HEREBY ORDERED that, pursuant to California Water Code section 13300, the Co-permittees shall comply with the requirements listed below to ensure its MS4 discharges to Newport Bay comply with the final wasteload allocations in Order No. R8-2009-0030:

The Co-permittees shall implement and complete watershed control measures according to the following schedule:

Task (most actions will address both dry and wet weather discharges)	**Completion Date (all will be completed within 5 year period of TSO, specific dates TBD)**
Complete construction of the Arches diversion	*TBD*
Complete construction of the Santa-Ana Delhi diversion	*TBD*
Construct Hoag Drain diversion	*TBD*

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Task (most actions will address both dry and wet weather discharges)	**Completion Date (all will be completed within 5 year period of TSO, specific dates TBD)**
Install two bilge pumpouts in Lower Newport Bay	*TBD*
Complete Bayview Heights (UNB) wetlands project	*TBD*
Install and maintain additional trash skimmers in harbor	*TBD*
Improve Barranca Channel to improve flows and reduce stagnant pools	*TBD*
Improve Lane Channel to improve flows and reduce stagnant pools	*TBD*
Develop Human Waste Source Reduction Strategy Work Plan with sewer agencies	*TBD*
Implement source investigation and abatement procedures from Human Waste Source Reduction Strategy Work Plan	*TBD*
Implement infiltration and retention LID BMPs in new development and significant redevelopment	*Ongoing*
Install 383 additional CPS units in Tustin	*TBD*
Remove sediment from San Diego Creek in-channel basins	*TBD*
Remove sediment from San Diego Creek upstream of basins (405 to 405 project)	*TBD*
Peters Canyon Wash widening project	*TBD*
Investigate and institute additional non-structural BMPs, including but not limited to implementing a comprehensive vessel pumpout program and a human waste reduction strategy	*TBD*
Contribute to studies and reevaluation of the TMDL using newly available science and criteria	*TBD*
Develop tools to identify and evaluate potential project opportunities, develop list of prioritized BMPs for implementation if needed to address any remaining wet weather impairments	*TBD*

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1. The Copermittee's shall implement the control measures to implement the final wasteload allocations for fecal coliform as soon as possible, but no later than *TBD*.

2. If, in the opinion of the Regional Water Board Executive Officer, the Co-permittees fail to comply with any provision of this TSO, the Santa Ana Water Board may take any further action authorized by law. The Executive Officer, or his/her designee, is authorized to take appropriate enforcement action pursuant, but not limited to, California Water Code sections 13350 and 13385. The Santa Ana Water Board may also refer any violations to the Attorney General for judicial enforcement, including injunction and civil monetary remedies.

3. All other provisions of Order No. R8-2009-0030 not in conflict with this TSO are in full force and effect.

4. This TSO becomes effective immediately upon adoption by the Santa Ana Water Board. This TSO expires on *TBD*, or upon the effective date of a new Orange County MS4 Permit that supersedes Order No. R8-2009-0030 and that incorporates revised effluent limitations and other requirements necessary to implement Regional Board approved Fecal Coliform Total Maximum Daily Loads (TMDLs).

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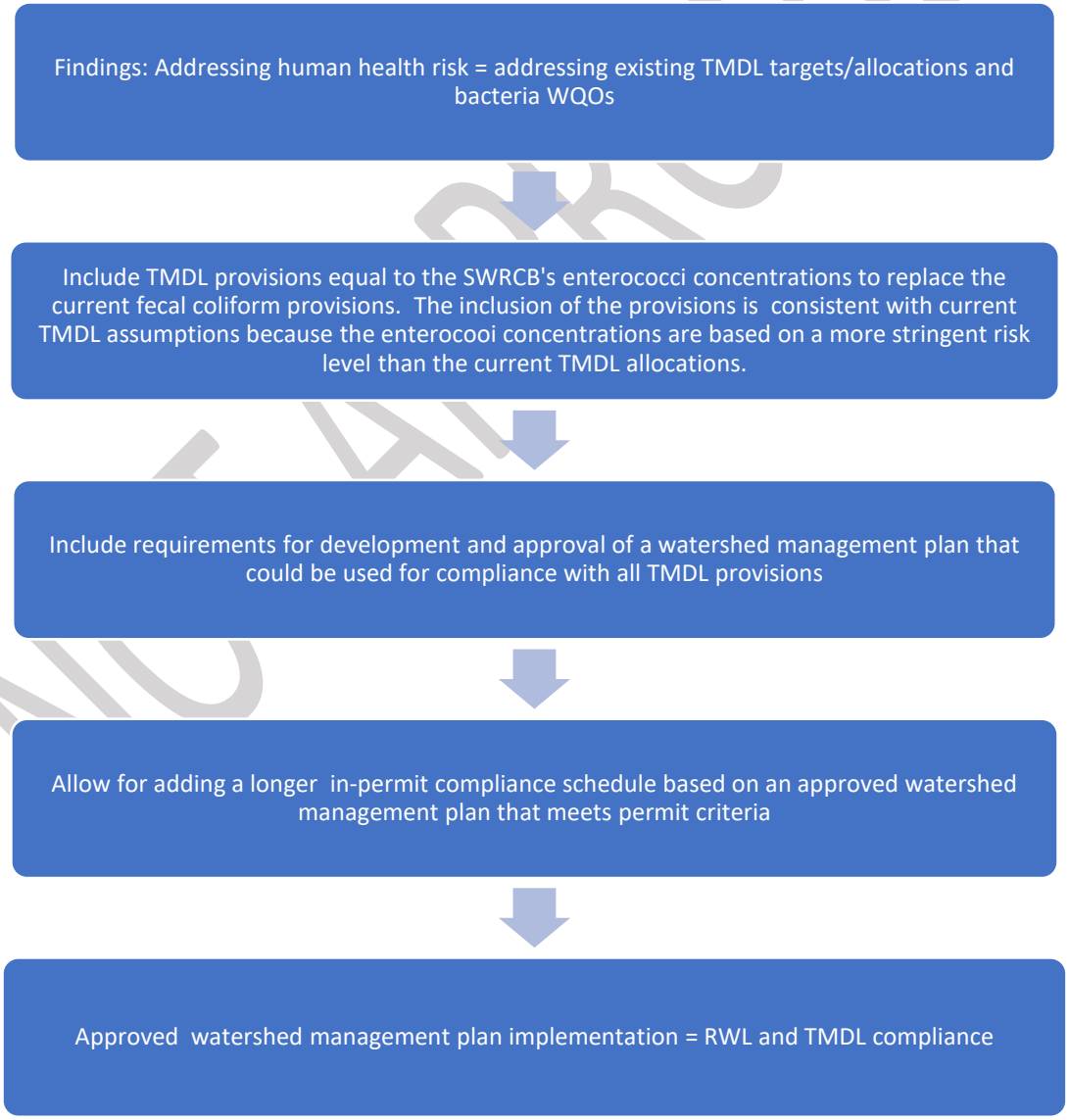
Adopt New MS4 Permit or Amend Current Permit

Under the proposed approach, when the MS4 Permit is renewed, it would provide three compliance pathways: (1) the meeting of WQBELs; (2) the meeting of receiving water limitations; and (3) through the development and implementation of a watershed management plan. The watershed management plan will include milestones and a schedule, the adherence to which will provide a means for meeting the REC-1 and SHEL targets and allocations in the TMDL. The proposed permit modifications and rationale are summarized in the following figure and discussed in more depth below.



PERMIT COMPONENTS

Following is an overview of the proposed content of the permit language to meet the approach shown in the figure.

- Finding that explains the basis for the existing FIB Basin Plan objectives is risk to human health. As noted above, the EPA 2012 criteria clarified that the FIB criteria were designed to be indicators of health risk. The EPA 2012 criteria also changed the indicator of risk for water contact recreation from fecal coliform to enterococci but clarified that the underlying basis of both criteria is the number of excess illnesses allowed to protect recreators. Permit provisions implementing the TMDL include enterococci targets and allocations and compliance pathways based on health risk. These permit provisions are consistent with and more stringent than the assumptions of the Newport Bay Fecal Coliform TMDL because they are designed to protect human health and set a risk protection level that is lower than the one used as the basis for the current TMDL targets and allocations (i.e., 32 vs. 36 excess illnesses per thousand recreators).
- Modified TMDL provisions that include targets and allocations (or receiving water limitations and water quality based effluent limitations) that are set equal to a health protection level of 32 excess gastrointestinal illnesses per 1000 recreators interpreted as enterococci concentrations for the REC-1 TMDL requirements and other necessary modifications to reflect the current status of impairment in Newport Bay.
- A section outlining the minimum requirements of the watershed management plans and the process for approval of the plans. The minimum requirements will include:
    - BMPs that will be implemented to meet TMDL requirements.
    - Schedule and milestones for implementation of the BMPs.
    - Monitoring and assessment procedures to determine if TMDL requirements are being met.
    - Adaptive management process that describes how monitoring and assessment results will be used to trigger implementation of additional studies, source control or source identification measures, or BMPs.
- Provisions that allow inclusion of a new compliance schedule and a new final compliance date in the permit for additional time to implement a Watershed Management Plan. Justification for allowing the compliance schedule is based on the following information:
    - Enterococci is a new objective and 32/1000 is more stringent than 36/1000.

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    - New science and information has shown that focusing on reducing health risk rather than just reducing FIB concentrations may require different implementation actions. If watershed management plan demonstrates that this is the case, a compliance schedule is warranted to allow time to implement the newly identified actions.

- Methods for demonstrating compliance with the TMDL requirements (both REC-1 and SHEL) that include the following pathways at a minimum:
    - Meeting the WLAs at monitored outfalls; OR
    - Meeting the TMDL targets in the receiving waters; OR
    - No discharge; OR
    - Demonstrating that exceedances are due to non-controllable sources; OR
    - Implementing an approved watershed management plan; OR
    - Demonstrating that the risk to recreators is below 32/1000 (e.g. through a QMRA) (REC-1 only)

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Adaptive Management for Implementation Actions

If the watershed management plan compliance approach is included in the next MS4 permit, the Co-permittees intend to evaluate the following types of projects for implementation within the Newport Bay watershed. These types of projects would also be considered should the actions outlined in the Time Schedule Order not result in attainment of the wasteload allocations and an additional TSO were to be needed.

The projects in this list are conceptual and need to be evaluated for technical feasibility and funding would need to be secured prior to their implementation. Additionally, as the watershed management plan is developed, other projects may be identified that are more effective or technically feasible and may be implemented instead of the projects on this list.

1) Divert flows from lower San Diego Creek below IRWD intake (i.e. UCI drain, Bonita Creek, Sand Canyon Wash) to San Joaquin Marsh for treatment
2) Upgrade Dunes parking lot diversion to add more dry weather days or reroute drain outside of lagoon
3) Upgrade Dunes parking lot drains that are currently plugged
4) Add circulation devices to Dunes lagoon
5) Identify opportunities for capture of dry weather flows for potable water sources
6) Divert Barranca Channel to sanitary sewer
7) Reroute storm drains south of Mason Park into Mason Park lake for natural treatment
8) Install additional hydrodynamic separators in Tustin
9) Install additional modular wetlands and swales in Tustin
10) Divert flows from the East Costa Mesa Channel (G02)
11) Divert flows from the Santa Isabel Channel (G03) diversion to sewer or via pipeline to the Santa Ana-Delhi Diversion

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