Reconsideration of the Santa Monica Bay Nearshore and Offshore Debris TMDL and the Machado Lake Trash TMDL

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Los Angeles Regional Water Quality Control Board

Table of Contents

I. Introduction 3
A. Regulatory Background 3
B. Los Angeles Water Board Trash TMDLs 4
II. Statewide Trash Amendments 4
III. Comparison of Statewide Trash Amendments and Los Angeles Water Board Trash TMDL Requirements 7
IV. Santa Monica Bay Nearshore and Offshore Debris TMDL 10
A. Background and Compliance Approach 10
1. Point Sources 11
2. Nonpoint sources 12
B. Implementation 13
1. Nonpoint Source Compliance 14
2. Point Source Compliance 17
C. Criteria for Reconsideration 20
D. Amendment to the Santa Monica Bay Debris TMDL 48
V. Machado Lake Trash TMDL 50
A. Background and Compliance Approach 50
1. Point Sources 51
2. Nonpoint Sources 51
B. Implementation 52
1. Nonpoint Source Compliance 52
2. Point Source Compliance 53
C. Criteria for Reconsideration 56
D. Amendment to the Machado Lake Trash TMDL 63
VI. Conclusion 64
VII. References 66
VIII. Appendices 68

I. Introduction

This staff report provides the rationale for the reconsideration of two existing trash total maximum daily loads (TMDLs) that were previously adopted by the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board): the Santa Monica Bay Nearshore and Offshore Debris TMDL and the Machado Lake Trash TMDL. The staff report discusses the effectiveness of the current implementation measures of these TMDLs and reconsiders certain aspects of the TMDLs as they compare to new statewide provisions for trash control. The two TMDLs are similar in compliance approaches but vary in geographical locations and land use types. These similarities and differences were considered when determining the need for TMDL revisions.

A. Regulatory Background

Section 303(d) of the Clean Water Act (CWA) requires that "Each State shall identify those waters within its boundaries for which the effluent limitations are not stringent enough to implement any water quality standard applicable to such waters." The CWA also requires states to establish a priority ranking for waters on the 303(d) list of impaired waters and establish TMDLs for such waters.

The elements of a TMDL are described in Title 40 of the Code of Federal Regulations (40 CFR), sections 130.2 and 130.7 and Section 303(d) of the CWA, as well as in U.S. Environmental Protection Agency guidance (U.S. EPA, 2000). A TMDL is defined as the "sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background" (40 CFR §130.2) such that the capacity of the waterbody to assimilate pollutant loadings (the Loading Capacity) is not exceeded. TMDLs are also required to account for seasonal variations and include a margin of safety to address uncertainty in the analysis.

States must develop water quality management plans to implement the TMDL (40 CFR §130.6). The U.S. EPA has oversight authority for the CWA Section 303(d) program and is required to review and either approve or disapprove the TMDLs submitted by states.

B. Los Angeles Water Board Trash TMDLs

The Los Angeles Water Board has adopted several TMDLs for waters listed on the 303(d) list as impaired by trash and debris in order to attain applicable water quality standards. These TMDLs have been established for waterbodies in various watersheds within the Board's jurisdiction pursuant to state and federal requirements. The Santa Monica Bay Debris TMDL and Machado Lake Trash TMDL have been in effect since March 20, 2012 and March 6, 2008, respectively. The TMDLs assign waste load allocations (WLAs) to point sources of trash, such as discharges from the municipal separate storm sewer system (MS4), and nonpoint sources of trash, such as direct discharge to waterbodies by wind or littering. The TMDLs require MS4 permittees to implement WLAs by installing and maintaining full capture systems on all catch basins in their jurisdiction or through any other lawful manner that will achieve an equivalent level of trash control. A full capture system consists of any device or series of devices that traps all particles that are 5 mm or greater in size and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour storm in the area draining to the device(s). The TMDLs require nonpoint sources of trash to implement LAs through a minimum frequency of assessment and collection (MFAC)/best management practice (BMP) program.

II. Statewide Trash Amendments

On April 7, 2015, the State Water Resources Control Board (State Water Board) adopted Resolution No. 2015-0019, which approved an "Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash" and "Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries" (Trash Amendments) (SWRCB, 2015a, 2015b). The statewide Trash Amendments became effective on January 12, 2016. The Trash Amendments were developed to provide statewide consistency for the regional water boards' regulatory approaches to protect aquatic life and public health beneficial uses from impacts due to

trash and debris by establishing a statewide water quality objective and implementation provisions to reduce trash in state waters, while focusing resources on high trash generating areas.

The statewide Trash Amendments require MS4 permittees to comply with a prohibition on the discharge of trash via one of two tracks.

Track 1 requires MS4 permittees to install, operate, and maintain full capture systems for all storm drains that capture runoff from the priority land uses in their jurisdictions. Priority land uses are defined by the Trash Amendments as follows:

> (1) **High-density residential**: all land uses with at least ten (10) developed dwelling units/acre.
> (2) **Industrial**: land uses where the primary activities on the developed parcels involve product manufacture, storage, or distribution (e.g., manufacturing businesses, warehouses, equipment storage lots, junkyards, wholesale businesses, distribution centers, or building material sales yards).
> (3) **Commercial**: land uses where the primary activities on the developed parcels involve the sale or transfer of goods or services to consumers (e.g., business or professional buildings, shops, restaurants, theaters, vehicle repair shops, etc.)
> (4) **Mixed urban**: land uses where high-density residential, industrial, and/or commercial land uses predominate collectively (i.e., are intermixed).
> (5) **Public transportation stations**: facilities or sites where public transit agencies' vehicles load or unload passengers or goods (e.g., bus stations and stops).

Track 2 requires MS4 permittees to install, operate, and maintain any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4 permittees. The MS4 permittee determines the locations or land uses within its jurisdiction to implement any combination of controls. For Track 2, the MS4 permittee must demonstrate that such a combination of controls

achieves full capture system equivalency. The State Water Board, however, does expect MS4 permittees to elect to install full capture systems where such installation is not cost-prohibitive.

Similar to Track 2 for MS4 permittees, Caltrans must install, operate, and maintain any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls for all storm drains that capture runoff from significant trash generating areas. Caltrans must demonstrate that this combination achieves full capture equivalency. For Caltrans, significant trash generating areas could include areas such as: highway on- and off-ramps in high-density residential, commercial, mixed urban and industrial land uses; rest areas and park-and-ride facilities/lots; state highways in commercial and industrial land use areas; and other mainline highway segments that may be identified by Caltrans through pilot studies and/or surveys.

While the statewide Trash Amendments generally only require trash controls in priority land use areas, the amendments provide that a regional water board may determine that specific land uses or locations (e.g., parks) generate substantial amounts of trash. In the event that the permitting authority makes that determination, the permitting authority may require the MS4 permittees to comply with Track 1 or Track 2 with respect to such land uses or locations.

The statewide Trash Amendments apply to all surface waters of the State, with the exception of those waters within the jurisdiction of the Los Angeles Water Board where trash or debris TMDLs were in effect prior to the effective date of the Trash Amendments. The statewide Trash Amendments required the Los Angeles Water Board to reconsider the scope of its trash TMDLs, with the exception of those for the Los Angeles River and Ballona Creek watersheds, to particularly consider an approach that would focus MS4 permittees' trash-control efforts on high-trash generation areas within their jurisdictions.

III. Comparison of Statewide Trash Amendments and Los Angeles Water Board Trash TMDL Requirements

The Trash TMDLs subject to reconsideration as required by the Statewide Trash Amendments are the Revolon Slough/Beardsley Wash Trash TMDL, the Malibu Creek Watershed Trash TMDL, the Ventura River Estuary Trash TMDL, the Legg Lake Trash TMDL, the Santa Clara River Lakes Trash TMDL, the Santa Monica Bay Debris TMDL, and the Machado Lake Trash TMDL. The Los Angeles Water Board reconsidered the Revolon Slough/Beardsley Wash Trash TMDL and the Malibu Creek Watershed Trash TMDL on June 14, 2018 and will reconsider the Ventura River Estuary Trash TMDL, the Legg Lake Trash TMDL, and the Santa Clara River Lakes Trash TMDL at a future Board meeting. This staff report focuses on reconsideration of the Santa Monica Bay Debris TMDL and the Machado Lake Trash TMDL.

The Santa Monica Bay Debris TMDL and the Machado Lake Trash TMDL require responsible entities to comply with waste load allocations by addressing ***all*** point sources of trash in their respective watersheds with full capture systems, or through any lawful manner. As mentioned previously, the statewide Trash Amendments require MS4 permittees to address point sources of trash ***in priority land use areas only***, which the State Water Board has defined as high-density residential, industrial, commercial, mixed urban, and public transportation stations. In order to determine where the priority land use areas are in these respective watersheds, Los Angeles Water Board staff analyzed Southern California Association of Governments (SCAG) land use data to determine which SCAG land use codes correspond to the priority land uses listed in the statewide Trash Amendments (Table 1).

Table 1. Priority Land Uses and Associated SCAG Land Use Codes.

Priority Land Uses in Statewide Trash Amendments	SCAG Land Use Categories/Codes
High-density residential	Multi-Family Residential: 1120 Mobile Homes and Trailer Parks: 1131 Mixed Residential: 1140 Rural Residential: 1151[1]
Industrial	Industrial: 1300
Commercial	Commercial and Services[2]: 1200
Mixed urban	Mixed urban: 1600
Public transportation stations	Transportation, Communication, and Utilities: 1400

1- SCAG land use code 1151 is "Rural Residential High Density". The description for this land use code states that the density is >2 units/acre. The "high density" residential definition in the statewide Trash Amendments is "at least 10 developed dwelling units/acre". Due to the fact that >2 units/acre could mean >10 units/acre, the SCAG land use code 1151 is included in the definition of Priority Land Uses for the purposes of this comparison. A responsible jurisdiction may remove this particular land use from the definition of Priority Land Uses if they can demonstrate that the rural residential land use areas under its jurisdiction have less than 10 units/acre.

2- Includes schools

Los Angeles Water Board staff created maps of the Santa Monica Bay WMA and the Wilmington Drain/Machado Lake subwatershed, including the SCAG land use codes associated with priority land uses, to compare the areas addressed in the Los Angeles Water Board trash TMDLs to the areas that would be addressed in the statewide Trash Amendments. In order to determine whether the Los Angeles Water Board might change the requirements of the Santa Monica Bay Debris TMDL and Machado Lake Trash TMDL to align with the scope of the statewide Trash Amendments while ensuring that water quality standards are attained in these waterbodies, Los Angeles Water Board staff analyzed the maps and evaluated three criteria for these two trash TMDLs. The purpose of the criteria is to determine if the non-priority land use areas in the watersheds subject to these TMDLs are discharging trash to the impaired waterbodies and, if so, if there are effective MFAC Programs in the impaired waterbodies that would adequately address these discharges by collecting and removing the trash before it could harm beneficial uses. If the non-priority land use areas are discharging trash to

the impaired waterbodies and there are not effective MFAC Programs in the waterbodies, then excluding these areas from full capture system or equivalent requirements would not be protective of beneficial uses.

The first criterion evaluated for the reconsideration of the point source compliance strategy for the trash TMDLs was:

1. *Is there a potential for non-priority land use areas to discharge significant amounts of trash to impaired waterbodies?*

Los Angeles Water Board staff analyzed the number of catch basins in non-priority land use areas and the amounts and types of trash found at monitoring sites downstream of these areas to determine whether non-priority land use areas are contributing significant amounts of trash to impaired waterbodies. Staff also examined the amounts and types of trash at all monitoring sites to determine which sites had the highest amounts of trash and if those sites corresponded to priority land use areas.

The second criterion evaluated for the reconsideration of the point source compliance strategy for the trash TMDLs was:

2. *Are there priority land use areas upstream of and/or in near proximity to non-priority land use areas, such that trash from the priority land use areas may enter the MS4 in nearby non-priority land use areas?*

Los Angeles Water Board staff analyzed map data to see if there were priority land use areas adjacent to or interspersed with non-priority land use areas where there was a potential for trash to be carried to non-priority land use areas by wind, foot traffic, auto traffic, or other means. Staff generally considered roads and neighborhoods on a broad scale to determine how non-priority and priority land use areas may be connected within a community. This analysis was intended to reflect the possibility, for example, of a low-density residential neighborhood that was located between two busy transportation corridors where traffic between the corridors may have an impact on trash generated in

the low-density residential neighborhood. While staff did not conduct a street-level analysis of each neighborhood, we relied upon our knowledge of these watersheds to make general conclusions about how land uses were interconnected.

The third criterion evaluated for the reconsideration of the point source compliance strategy for the trash TMDLs was:

3. *Is there an effective MFAC program downstream of the non-priority land use areas that will serve as a back stop in the event that trash is discharged from non-priority land use areas?*

Los Angeles Water Board staff analyzed MFAC Programs, including the frequencies of collection events, the number and locations of monitoring sites, and the amount of trash remaining in the impaired waterbodies following each collection event to determine the effectiveness of the programs. If staff determined that MFAC Programs were effective, then staff found that potential discharges from non-priority land use areas could be adequately addressed by the MFAC Program such that beneficial uses would be protected.

IV. Santa Monica Bay Nearshore and Offshore Debris TMDL

A. Background and Compliance Approach

On November 4, 2010, the Los Angeles Water Board adopted the Santa Monica Bay Nearshore/Offshore Debris TMDL (Santa Monica Bay Debris TMDL) through Resolution No. R10-010. Subsequently, the State Water Board, Office of Administrative Law, and U.S. EPA approved the TMDL. The Santa Monica Bay Debris TMDL became effective on March 20, 2012.

The Santa Monica Bay Debris TMDL established a numeric target of zero trash and zero plastic pellets in the Santa Monica Bay based on the narrative water quality objectives for Floating Material and Solid, Suspended, or Settleable Materials, specified in the Basin Plan. The numeric targets were also based on a narrative water quality

objective for floating particulates the 2005 Water Quality Control Plan for Ocean Waters of California (California Ocean Plan). The TMDL defined zero trash for nonpoint sources as no trash on the shoreline or beaches or in harbors adjacent to Santa Monica Bay immediately following each assessment and collection event consistent with an established MFAC Program. The TMDL defined zero trash for point sources as no trash discharged into waterbodies within the Santa Monica Bay Watershed Management Area (WMA) and then into Santa Monica Bay, or on the shoreline of Santa Monica Bay.

The Santa Monica Bay Debris TMDL is inclusive of the entire Santa Monica Bay WMA. However, separate trash TMDLs were established for the Malibu Creek and Ballona Creek subwatersheds (of the Santa Monica Bay WMA) prior to the adoption of the Santa Monica Bay Debris TMDL. As such, the TMDL allows responsible parties located solely within the Malibu Creek and Ballona Creek subwatersheds to comply with the trash component of the Santa Monica Bay Debris TMDL through the requirements in the Malibu Creek and Ballona Creek Trash TMDLs.

1. Point Sources

The TMDL assigned WLAs for trash to Caltrans, co-permittees of the Los Angeles County MS4 Permit (Los Angeles County and the cities of Agoura Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Hidden Hills, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Torrance, and Westlake Village) and co-permittees of the Ventura County MS4 Permit (County of Ventura and the City of Thousand Oaks) within the Santa Monica Bay WMA.

The TMDL provides that point sources may comply with WLAs in any lawful manner, including the use of full capture systems, partial capture systems, and/or institutional controls. Point sources that chose to comply with waste load allocations via full capture systems were required to demonstrate a phased implementation of full capture systems over an 8-year period until 100% of the stormwater conveyances were addressed by full

capture systems by March 20, 2020. Point sources that chose to comply with waste load allocations via partial capture systems were required to determine percent reductions from the baseline WLA by calculating the annual discharge of trash from their jurisdictional area until a 100% reduction was achieved by March 20, 2020. If a city or county voluntarily adopted local ordinances to ban plastic bags, smoking in public places and single use expanded polystyrene food packaging within three years of the Regional Board adoption date of the TMDL (by March 20, 2015), they received a three-year extension of the final compliance date (March 20, 2023). The cities of Hermosa Beach, ~~and~~ Manhattan Beach, and Malibu established these bans and received this extension.

The TMDL required responsible jurisdictions to submit a Trash Monitoring and Reporting Plan (TMRP) that described the methodologies used to assess trash, defined a trash baseline WLA, and prioritized of areas for implementation.

In addition to trash, the Santa Monica Bay Debris TMDL also addresses plastic pellets through requirements for MS4 permittees to establish plastic pellet monitoring and reporting plans (PMRP), including spill response plans. However, there are no WLAs for MS4 permittees or requirements for MS4 permittees to implement structural or equivalent controls for plastic pellets in the TMDL. WLAs for plastic pellets are assigned to industrial storm water permittees. Although the Santa Monica Bay Debris TMDL includes a component for plastic pellets, the reconsideration of this TMDL will be focusing on the trash component, as the State Water Board required the Los Angeles Water Board to reconsider the scope of its trash TMDLs in relation to MS4 permittees' requirements.

2. Nonpoint sources

The TMDL assigned LAs to jurisdictions that own and/or manage beaches and harbors along Santa Monica Bay (California Department of Parks and Recreation, County of Los Angeles Department of Beaches and Harbors, and cities of Hermosa Beach, Los Angeles, Santa Monica, and Redondo Beach) and jurisdictions that own and/or manage

non-beach open space and/or park areas (National Park Service, California Department of Parks and Recreation, County of Los Angeles, County of Ventura, and State Lands Commission). The TMDL required LAs to be implemented consistent with the statewide Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program through a general waiver of waste discharge requirements (WDRs), individual waivers, general WDRs, individual WDRs, an MOU, a cleanup and abatement order, or any other appropriate order or orders, provided the program is consistent with the assumptions and requirements of the reductions in the MFAC implementation schedule.

Nonpoint source responsible parties could comply with load allocations by implementing an MFAC/BMP Program that, to the satisfaction of the Executive Officer, met several criteria, including:

- The MFAC/BMP Program included an initial minimum frequency of trash assessment and collection and suite of structural and/or nonstructural BMPs.
- The MFAC/BMP Program included the collection and disposal of all trash found in the source areas and along the shoreline.

The Santa Monica Bay Debris TMDL required responsible jurisdictions to specify an initial minimum frequency of assessment and collection in their TMRPs. The TMDL also required, for areas where daily cleanups are implemented, responsible jurisdictions to demonstrate that the daily trash generated in nonpoint source areas does not show an increasing trend and does not exceed the benchmark of 310 pounds per mile per day. If the daily trash generated exceeded the benchmark or trends increased, the TMDL required responsible jurisdictions to initiate additional BMPs. The TMDL allowed for revisions to the MFAC/BMP Program in the TMRP to reflect the results of trash assessment and collection and to prevent trash from accumulating in deleterious amounts.

B. Implementation

All point source and nonpoint source responsible jurisdictions have submitted TMRPs or coordinated integrated monitoring programs (CIMPs) as part of their MS4 permit

requirements, which satisfy the TMDL's requirements for a TMRP, and have begun implementing their trash reduction programs.

1. Nonpoint Source Compliance

Nonpoint source responsible entities have been implementing MFAC programs to comply with load allocations. MFAC programs are being implemented both at the receiving water (at beaches and harbors), and in non-beach open space and parks in the Santa Monica Bay WMA. The Los Angeles County Department of Beaches and Harbors (in coordination with the City of Hermosa Beach), and the cities of Redondo Beach, Santa Monica, and Los Angeles are implementing MFAC programs at the receiving water (on the sandy areas of the beaches, along the boardwalk, or in the harbors along Santa Monica Bay).

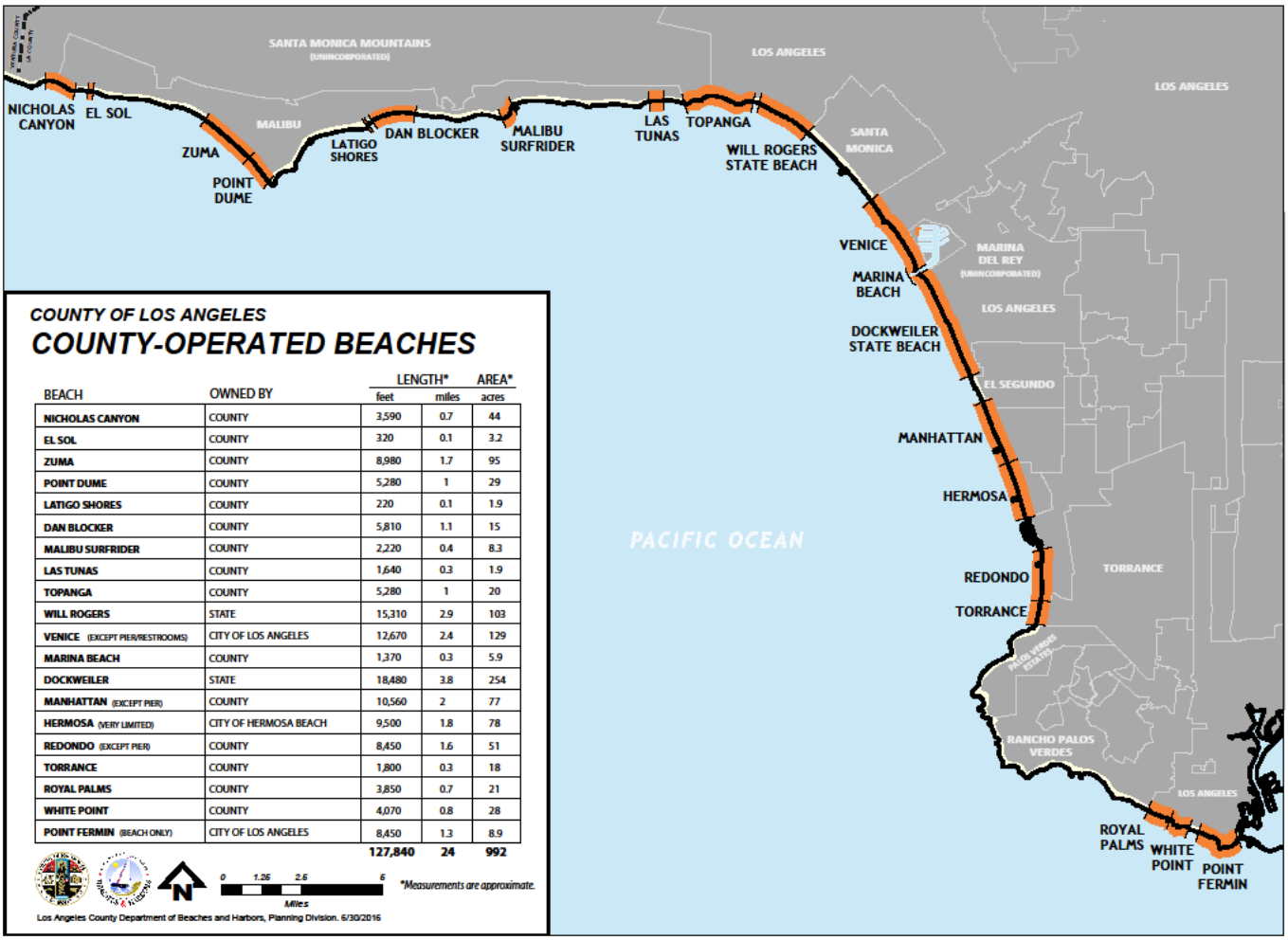
The County of Los Angeles MFAC program includes daily cleanups at all County owned or operated beaches, annual monitoring at MFAC sites, and semi-annual monitoring at source area evaluation sites.

The Los Angeles County Department of Beaches and Harbors cleans all County operated beaches that are accessible by tractor along the Santa Monica Bay and in Marina del Rey Harbor (Figure 1). Although the beaches are cleaned daily, the entire length and width of the beaches are not cleaned daily. Specifically, the Department of Beaches and Harbors cleans the beaches daily in areas that are known to be crowded and frequented by visitors. Other areas of the beaches are not necessarily cleaned daily, but the entire length and width of the beaches are generally cleaned within one week. The Los Angeles County Department of Beaches and Harbors utilizes a trailer with mechanical attachments to clean the beaches above the high tide line. The attachments rake the beach and clean the top six inches of sand at the surface. Below the high tide line, trash is picked up by hand (County of Los Angeles, 2018).

MFAC sites are located adjacent to the Santa Monica Bay (on the shoreline, breakwater, or in the water at Marina del Rey Harbor) and are used to assess the metric

of trash remaining after a cleanup event. MFAC sites are generally 100 feet long. The County of Los Angeles MFAC program does not assess total trash collected per MFAC event, but rather the amount of trash remaining after the daily cleanup is performed (County of Los Angeles, 2015).

Evaluation sites were chosen to determine daily trash generation rates from nonpoint sources and identify high trash generating nonpoint source areas adjacent to MFAC sites. Evaluation sites include parking lots and shoreline areas, and in some cases, the sites are identified as both MFAC and evaluation sites (County of Los Angeles, 2015).



BEACH	OWNED BY	LENGTH* feet	LENGTH* miles	AREA* acres
NICHOLAS CANYON	COUNTY	3,590	0.7	44
EL SOL	COUNTY	320	0.1	3.2
ZUMA	COUNTY	8,980	1.7	95
POINT DUME	COUNTY	5,280	1	29
LATIGO SHORES	COUNTY	220	0.1	1.9
DAN BLOCKER	COUNTY	5,810	1.1	15
MALIBU SURFRIDER	COUNTY	2,220	0.4	8.3
LAS TUNAS	COUNTY	1,640	0.3	1.9
TOPANGA	COUNTY	5,280	1	20
WILL ROGERS	STATE	15,310	2.9	103
VENICE (EXCEPT PIER/RESTROOMS)	CITY OF LOS ANGELES	12,670	2.4	129
MARINA BEACH	COUNTY	1,370	0.3	5.9
DOCKWEILER	STATE	18,480	3.8	254
MANHATTAN (EXCEPT PIER)	COUNTY	10,560	2	77
HERMOSA (VERY LIMITED)	CITY OF HERMOSA BEACH	9,500	1.8	78
REDONDO (EXCEPT PIER)	COUNTY	8,450	1.6	51
TORRANCE	COUNTY	1,800	0.3	18
ROYAL PALMS	COUNTY	3,850	0.7	21
WHITE POINT	COUNTY	4,070	0.8	28
POINT FERMIN (BEACH ONLY)	CITY OF LOS ANGELES	8,450	1.3	8.9
		127,840	24	992

Figure 1. Beaches operated by County of Los Angeles. (Source: County of Los Angeles Department of Beaches and Harbors)

In the City of Redondo Beach, the County of Los Angeles MFAC program cleans and assesses the beach area south of the pier, but the City is implementing a separate MFAC program at the beach immediately adjacent to the pier and in King Harbor. The City of Redondo Beach TMRP specifies daily clean up and monthly assessments at all MFAC sites.

The City of Santa Monica is implementing an MFAC program at Santa Monica Beach. The City of Santa Monica performs daily trash collection at Santa Monica Beach during the summer (May - September), and five days per week during the winter (October-April), along with quarterly assessments. The City of Santa Monica MFAC program also includes Clover Park, which is not adjacent to Santa Monica Bay, but is one of the largest parks in the City's jurisdiction.

The City of Los Angeles is implementing an MFAC program at Ocean Front Walk (Venice Boardwalk) and in the recreational developed areas along Ocean Front Walk. The City of Los Angeles revised TMRP (2015) specifies daily clean up and annual assessments at MFAC sites. Source area evaluation sites are assessed twice per year.

As stated in section IV.A., zero trash for nonpoint sources is defined as no trash on the shoreline or beaches, or in harbors adjacent to Santa Monica Bay immediately following each MFAC event. Data from Los Angeles County annual reports show that some trash remains after daily clean up at beaches and harbors (County of Los Angeles, 2016, 2017). Similarly, although the City of Santa Monica has not submitted MFAC data as part of its annual reports, personal communications with City of Santa Monica staff revealed that there is trash present after MFAC clean up events at Santa Monica Beach. Therefore, at the City of Santa Monica and Los Angeles County MFAC programs are not fully in compliance with the load allocation of zero. According to the City of Redondo Beach annual reports, there was zero trash following each MFAC event, indicating the City's compliance with the load allocations (Redondo Beach, 2016, 2017). In discussions with the County of Los Angeles and the City of Hermosa Beach, it was clarified that although the County of Los Angeles performs the clean up at Hermosa

Beach, the City of Hermosa Beach should be conducting the assessments (per an agreement between the two jurisdictions). There was a miscommunication between the County and City, and the City of Hermosa Beach was not conducting the assessments. The City will begin assessments immediately. Since assessments were not being performed at Hermosa Beach, it is not known whether the City of Hermosa Beach is in compliance with the load allocations. It is unclear if the City of Los Angeles is in compliance with load allocations, as they did not submit nonpoint source MFAC data with their MS4 annual reports, and the MFAC information that they do collect submitted per the Los Angeles Water Board staff's request does not quantify trash collected or remaining after MFAC events (City of Los Angeles, 2018).

2. Point Source Compliance

The City of Los Angeles proposed to comply with its WLA by implementing structural BMPs and institutional controls. The City conducted a Quantification Study of Institutional Measures that demonstrated that their institutional measures resulted in a decrease of 18,908 gallons of trash in the watershed. The City's baseline WLA is 25,112 gallons/year, resulting in a 75% reduction (City of Los Angeles, 2017). According to personal communications with City of Los Angeles staff, the City also installed full capture devices on all City-owned catch basins within their jurisdiction in the Santa Monica Bay WMA, except for catch basins along Pacific Coast Highway. The catch basins along Pacific Coast Highway have not been retrofitted because of permitting issues with Caltrans (City of Los Angeles, 2018).

The Beach Cities Watershed Management Group (WMG) consists of the cities of Hermosa Beach, Manhattan Beach, Redondo Beach, and Torrance and the Los Angeles County Flood Control District (LACFCD). All members of the Beach Cities WMG proposed to comply with their WLAs by installing full capture devices except Torrance, which proposed to comply using partial capture devices and institutional controls. According to the City of Hermosa Beach MS4 annual report, the City has installed full capture devices on 26 catch basins, addressing 21% of the catch basins within the City. The City has also installed partial capture devices on an additional 26

catch basins. The City of Manhattan Beach has installed seven continuous deflective separation (CDS) systems on major storm drains addressing 110 catch basins, and full capture devices on 119 individual catch basins, addressing a total of 67% of the catch basins in the City with full capture systems. In addition, the City has installed partial capture devices on 107 catch basins. The cities of Manhattan Beach and Hermosa Beach have also adopted bans for public smoking, plastic bags, and polystyrene. Therefore, the cities of Manhattan Beach and Hermosa Beach do not need to comply with final WLAs until March 20, 2023. The City of Redondo Beach has installed four CDS units and four connector pipe screen full capture devices in catch basins in the Santa Monica Bay WMA. These full capture devices address 20% of the City's jurisdiction in the Santa Monica Bay WMA. The City of Redondo Beach has also installed four partial capture devices on catch basins. In addition, the City of Redondo Beach is utilizing Wylie Sump as a point source compliance measure, as it does not have an outlet and the City and County manually remove all trash from the sump area. The City of Torrance has installed partial capture systems on 82% of the catch basins in its jurisdiction within the Santa Monica Bay WMA in conjunction with institutional controls (Beach Cities EWMP Group, 2017).

The Palos Verdes Peninsula WMG (cities of Rancho Palos Verdes, Palos Verdes Estates, and Rolling Hills Estates, County of Los Angeles, and LACFCD) proposed to comply with their WLAs via full capture systems. In March 2017, the Palos Verdes Peninsula WMG was awarded a Proposition 84 grant to install 1,368 connector pipe screen (CPS) full capture devices in existing catch basins draining to the Santa Monica Bay. It is anticipated that funding from this grant will enable the Palos Verdes Peninsula WMG to attain the final WLAs before the final compliance date of March 20, 2020. The City of Rancho Palos Verdes is the lead agency for this project and owns 818 of the 1,368 catch basins that will be addressed with full capture devices. In addition, the City of Rancho Palos Verdes conducted a trash daily generation rate (DGR) study in the summer of 2018 to calculate trash discharges using a mass balance approach to determine whether current interim limits are being met. If the study indicates a that the load reduction is not achieving interim limits, the City of Rancho Palos Verdes will

implement trash controls (such as the installation of full capture trash devices) as soon as possible to meet the interim limit independent of the status of the Proposition 84 grant. The City of Rolling Hills Estates originally proposed to comply with their WLA through the installation of full capture devices. However, the City found that it was not feasible to retrofit some catch basins with full capture devices due to non-standard construction or flooding concerns. As a result, the City of Rolling Hills Estates revised their approach to demonstrate compliance with WLAs for trash through already installed full captures systems in 100% of the catch basins in commercial and high density areas of the City, and a comprehensive MFAC/BMP program in conjunction with institutional controls in the remaining areas. The first year of data from the MFAC program associated with point source areas without full capture devices was submitted in December 2018. (PVP EWMP Group, 2017)

Due to the nature of its infrastructure, the City of Rolling Hills has been implementing a modified MFAC program and calculated a daily generation rate (DGR) of 2,860 gallons. The City found a trash discharge rate of 0 gallons during the implementation of their MFAC Program and has met the 100% reduction of trash from the baseline WLA (City of Rolling Hills, 2016).

The City of Santa Monica proposed to comply with its WLA via full capture systems. The City has installed CDS systems on various beach outfalls (Montana Avenue, Wilshire Blvd., the Santa Monica Pier, and Pico Blvd.). The Ashland storm drain outlet also has a full capture device before the low flow diversion. The City is in the process of installing full capture devices on catch basins within the Pico-Kenter drainage area. In total, the City of Santa Monica owns 743 catch basins, and 270 of those (36%) are addressed with full capture systems (City of Santa Monica, 2017).

The City of El Segundo proposed to comply with its WLA via full capture systems. The City has installed an end of pipe full capture device at the terminus of one of the City's watershed subareas. This device covers approximately 20% of the area within the

Santa Monica Bay WMA. The City has also installed catch basin filter screens on 70 catch basins. (City of El Segundo, 2017)

The North Santa Monica Bay Coastal Watersheds WMG consists of the City of Malibu, County of Los Angeles, and LACFCD. Outside of the Malibu Creek Watershed, the City of Malibu is evaluating trash control strategies, but has not yet installed partial or full capture devices (NSMBCW WMG, 2017). The County of Los Angeles has retrofitted 100% of their identified catch basins with full capture devices within the County unincorporated areas of the Santa Monica Bay WMA (County of Los Angeles, 2017). In discussions with County staff, Los Angeles Water Board staff determined that rural drainage inlets do not meet the definition of catch basins. Therefore, rural drainage inlets are not required to be addressed with full capture systems.

A very small portion of Culver City lies outside the Ballona Creek Watershed, but inside of the Santa Monica Bay WMA. The City has installed full capture devices on 996 catch basins (94%) within its jurisdiction. The City has implemented institutional controls to address the remaining 6% of the catch basins that could not be retrofitted (Culver City, 2017).

The County of Ventura and the cities of Agoura, Calabasas, Westlake Village, Hidden Hills, and Thousand Oaks do not have any ~~catch basins~~MS4 infrastructure outside the Malibu Creek Watershed within the Santa Monica Bay WMA (County of Ventura, 2017). As described later in the report, the TMDL will be revised to reflect this information.

C. Criteria for Reconsideration

Figures 2 and 3 illustrate priority land uses, MFAC and evaluation sites, and catch basins within the north and south portions of the Santa Monica Bay WMA, respectively. Close ups of these maps are provided in Appendix A, figures A-1 through A-6. Land uses shown in these maps represent the SCAG land use codes which correlate to the priority land uses described in the statewide Trash Amendments (Table 1).

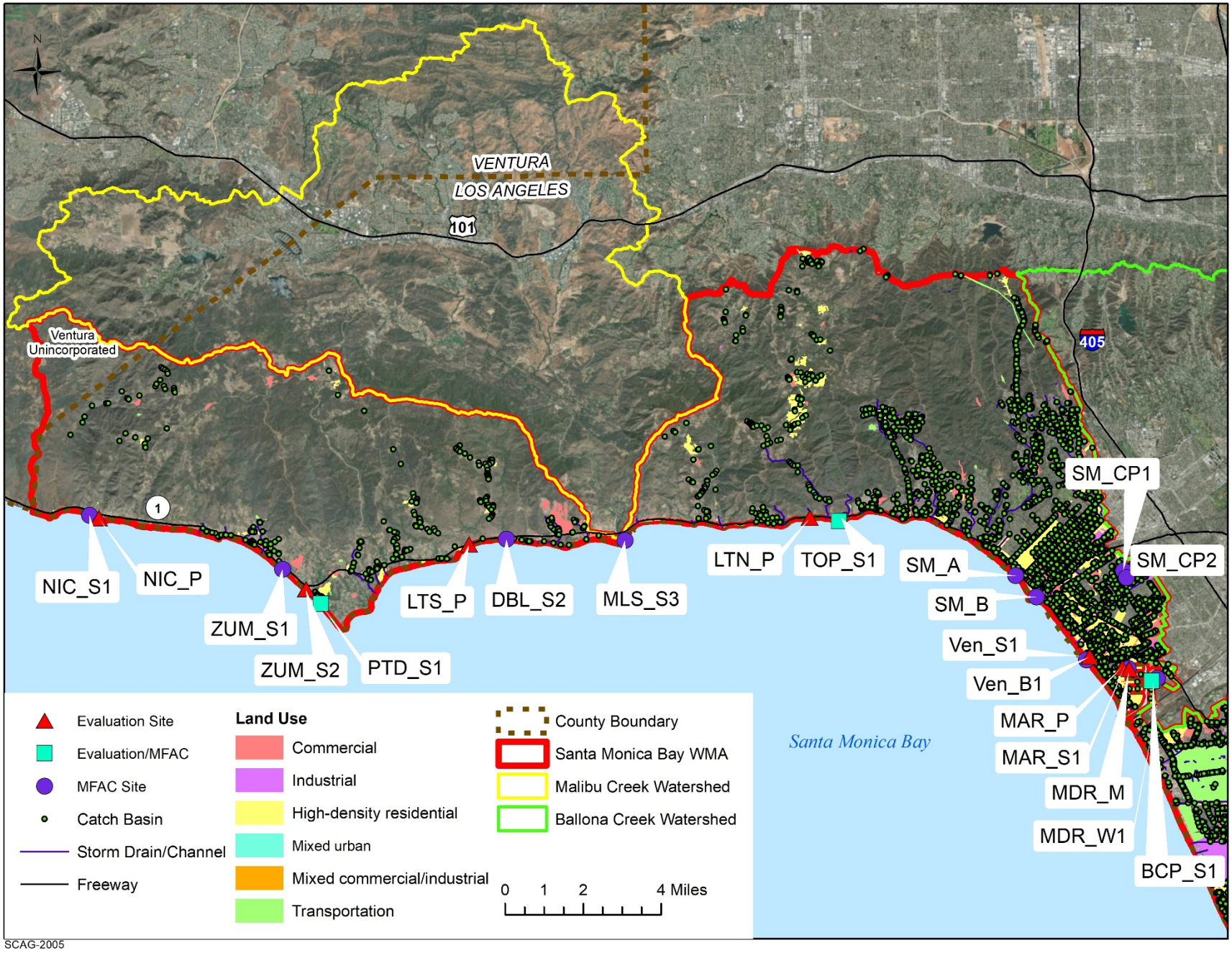


Figure 2. Priority land use areas, catch basins, and MFAC/Evaluation sites in the North Santa Monica Bay WMA (excluding Malibu Creek and Ballona Creek Watersheds).

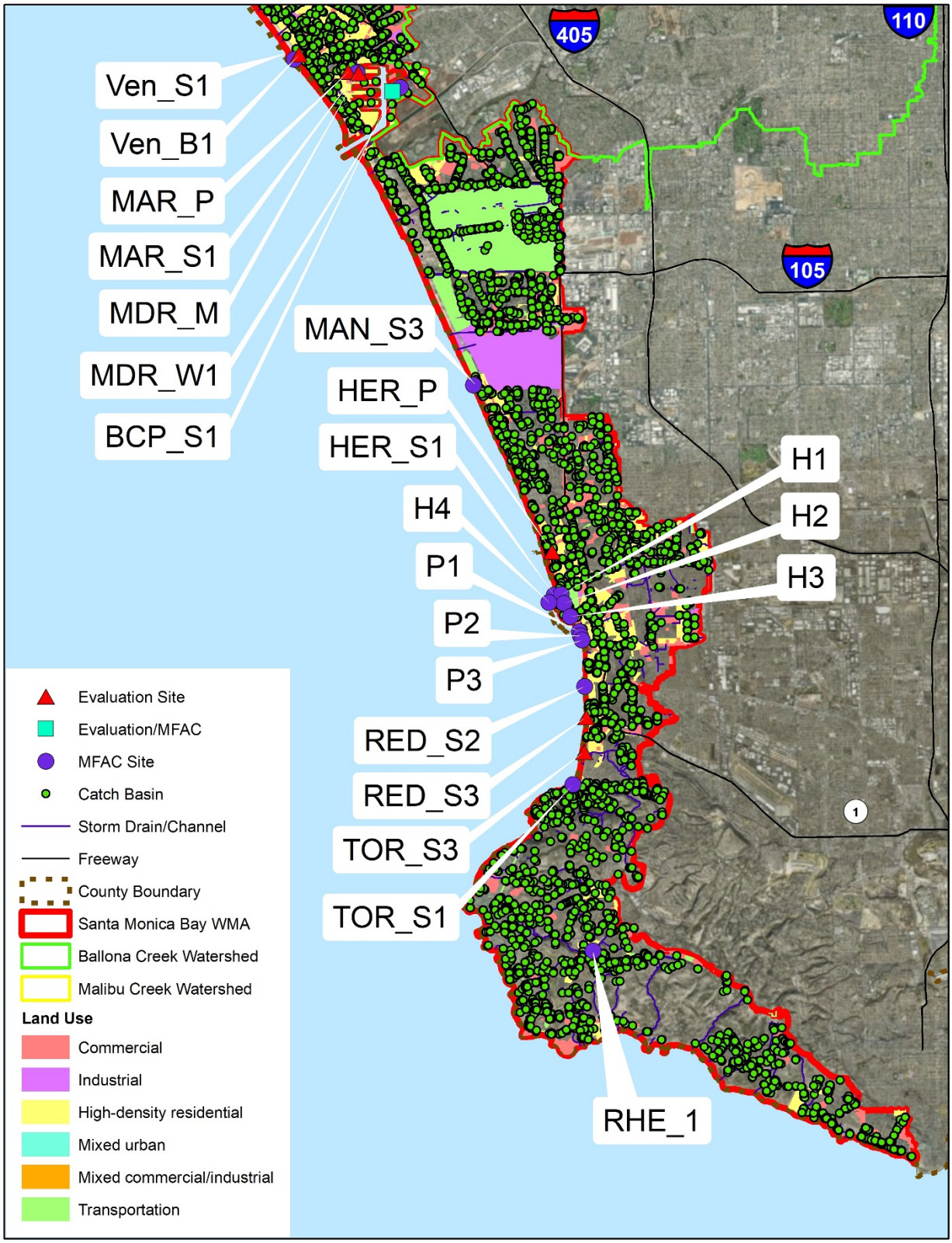


Figure 3. Priority land use areas, catch basins, and MFAC/Evaluation sites in the South Santa Monica Bay WMA (excluding Malibu Creek and Ballona Creek Watersheds).

Los Angeles Water Board staff analyzed the maps in Figures 2 and 3 and Appendix A and evaluated the criteria described previously to determine whether to revise the TMDL to align it with the scope of the statewide Trash Amendments.

1. *Is there a potential for non-priority land use areas to discharge significant amounts of trash to impaired waterbodies?*

To evaluate this criterion, this section first describes the number and locations of catch basins in non-priority land use areas and their proximity to MFAC sites on a city-by-city basis. This section then describes the trash data collected from each MFAC site to determine how much trash may be originating from upstream non-priority land use areas. The intended purpose of the MFAC sites is to assess compliance with nonpoint source load allocations; i.e., to quantify the amount of trash deposited directly on beaches by littering or wind-blown sources. However, given the lack of data quantifying the relative contribution of trash from MS4 priority and non-priority land use areas, the MFAC sites provide the best available data for this purpose. Data from both MFAC assessment and evaluation sites are discussed in this section. The data from the MFAC evaluation sites are less indicative of MS4 trash loading because they are specifically used to determine daily trash generation rates from adjacent nonpoint sources, but they are included in this section for informational purposes.

Catch Basins

There are approximately 9,720 catch basins in the Santa Monica Bay WMA (outside of the Malibu Creek and Ballona Creek Watersheds) and approximately 5,730 of them are in non-priority land use areas. Table 2 shows an approximation of the total number of catch basins within each jurisdiction based on LACFCD GIS storm drain data, and the number (and percentage) of those catch basins in non-priority land use areas. The number of catch basins reflected in the breakdown in Table 2 includes city owned, LACFCD owned, and privately owned catch basins within each city's jurisdiction, and therefore may differ from the number of catch basins reported within the point source compliance discussion. Caltrans was not included in this table, since transportation land use is a priority land use area per the Trash Amendments.

Table 2. Total number of catch basins per jurisdiction and number (and percentage) of catch basins in non-priority land use areas.

Permittee	Total No. Catch Basins	No. (%) Catch Basins within Non-Priority Areas
Unincorporated County of Los Angeles	350	250 (71%)
Malibu	280	230 (82%)
Los Angeles	3,610	2,380 (66%)
Santa Monica	1,810	410 (23%)
Culver City	10	1 (10%)
El Segundo	350	170 (49%)
Manhattan Beach	650	460 (71%)
Hermosa Beach	230	70 (30%)
Redondo Beach	780	360 (46%)
Torrance	190	140 (74%)
Palos Verdes Estates	520	470 (90%)
Rancho Palos Verdes	870	730 (84%)
Rolling Hills Estates	70	60 (86%)
Rolling Hills	10	10 (100%)

Based on LACFCD GIS storm drain data, there are approximately 350 catch basins in the County of Los Angeles unincorporated area of the Santa Monica Bay WMA (excluding the Malibu Creek and Ballona Creek watersheds) and about 250 of those are within non-priority land use areas. Most of the County unincorporated area is in north Santa Monica Bay, north of the City of Malibu (Figure 2). Marina del Rey Harbor is also in the jurisdiction of the County of Los Angeles. The non-priority land use areas are scattered throughout the County's jurisdiction in the northwest part of the watershed. These areas ultimately drain to the northern Santa Monica Bay coastline, including Leo Carrillo Beach, Nicholas Canyon Beach, Latigo Shores Beach, and Dan Blocker Beach (Appendix A, Figure A-1), and La Costa Beach and Las Tunas Beach (Appendix A, Figures A-2 and A-3). There are no MFAC or evaluation sites at Leo Carrillo Beach or

La Costa Beach; however, there is one MFAC site (NIC_S1) and one evaluation site (NIC_P) at Nicholas Canyon Beach, one MFAC site at Dan Blocker Beach (DBL_S2), and one evaluation site at both Latigo Shores Beach (LTS_P) and Las Tunas Beach (LTN_P). There is also one combined MFAC/evaluation site at Burton Chace Park (BCP_S1) adjacent to Marina del Rey Harbor (Appendix A, Figure A-4).

There are approximately 280 catch basins in the City of Malibu within the Santa Monica Bay WMA (excluding the Malibu Creek Watershed) and about 230 of those are within non-priority land use areas. The non-priority land use areas in the City of Malibu occur throughout the City, along the coast of northern Santa Monica Bay. There are non-priority land use areas along some portions of Pacific Coast Highway that drain to Sea Level Beach, Trancas Beach, and Zuma Beach (Appendix A, Figure A-1). There are also primarily non-priority land uses upstream that drain to Escondido Beach (Appendix A, Figure A-1), La Costa Beach (Appendix A, Figure A-2), and Big Rock Beach (Appendix, Figure A-3). In addition, there are interspersed areas of priority and non-priority land uses near Puerco Beach (Appendix A, Figure A-2). There are no MFAC or evaluation sites at Sea Level Beach, Escondido Beach, La Costa Beach, or Big Rock Beach. There are also no MFAC or evaluation sites at Trancas Beach, but there is an MFAC site immediately downshore at Zuma Beach (ZUM_S1).

There are approximately 3,610 catch basins in the City of Los Angeles within the Santa Monica Bay WMA (excluding the Ballona Creek Watershed) and about 2,380 of those are within non-priority land use areas. The portions of the City of Los Angeles within the Santa Monica Bay WMA are northwest and southeast of the City of Santa Monica, and at the southern tip of the Palos Verdes Peninsula. The non-priority land use areas within the City of Los Angeles are located throughout the City. There are intermixed areas of priority and non-priority land uses in the northwestern part of the City that drains to Castlerock Beach and Will Rogers Beach (Appendix A, Figure A-3). In the portion of the City between Santa Monica and Marina del Rey, the mixed priority and non-priority land use areas drain to Venice Beach and Marina Beach (Appendix A, Figure A-4). In the part of the City southeast of Marina del Rey, the mixed priority and

non-priority land use areas drain to Dockweiler Beach (Appendix A, Figure A-4). At the southern tip of the Palos Verdes Peninsula, there are mixed priority and non-priority land use areas that drain to Royal Palms Beach and White Point Beach (Appendix A, Figure A-6). There are no MFAC or evaluation sites at Castlerock Beach, Will Rogers Beach, Dockweiler Beach, Royal Palms Beach, or White Point Beach. There is one MFAC site (VEN_S1) and one evaluation site (VEN_B1) at Venice Beach and one MFAC site (MAR_S1) and one evaluation site (MAR_P) at Marina Beach.

There are approximately 1,810 catch basins in the City of Santa Monica within the Santa Monica Bay WMA (excluding the Ballona Creek Watershed) and about 410 of those are within non-priority land use areas. The non-priority land use areas in the City of Santa Monica are primarily in the northwest portion of the City near the border with the City of Los Angeles. These areas drain to Will Rogers Beach and Santa Monica Beach (Appendix A, Figures A-3 and A-4). There are intermixed areas of priority and non-priority land uses in the southeast part of the City that drain to Santa Monica Beach (Appendix A, Figure A-4). There are no MFAC sites at Will Rogers Beach. There are two MFAC sites at Santa Monica Beach (SM_A and SM_B) and two MFAC sites at Clover Park (CP_1 and CP2).[1]

There are approximately 10 catch basins in Culver City within the Santa Monica Bay WMA (excluding the Ballona Creek Watershed) and one of those is within a non-priority land use area. The portion of Culver City that is in the Santa Monica Bay WMA (outside of the Ballona Creek Watershed) drains to Marina del Rey via the Oxford Basin. There is one MFAC site (MAR_S1) and one evaluation site (MAR_P) at Marina Beach, and one MFAC site (MDR_W1) and one evaluation site (MDR_M) in Marina del Rey Harbor (Appendix, Figure A-4), which do not reflect discharges from the Oxford Basin and thus Culver City.

[1] The two MFAC sites at Clover Park in the City of Santa Monica are not located at the receiving water along the Santa Monica Bay.

There are approximately 350 catch basins in the City of El Segundo and about 170 of those are within non-priority land use areas. The non-priority land use areas in the City of El Segundo are intermixed with priority land use areas in the northern half of the City and drain to Dockweiler Beach (Appendix A, Figure A-4). There are no MFAC or evaluation sites at Dockweiler Beach.

There are approximately 650 catch basins in the City of Manhattan Beach and about 460 of those are within non-priority land use areas. The non-priority land use areas are interspersed throughout the City and drain to Manhattan Beach (Appendix A, Figure A-5). There is one MFAC site at Manhattan Beach (MAN_S3).

There are approximately 230 catch basins in the City of Hermosa Beach and about 70 of those are within non-priority land use areas. The non-priority land use areas are generally located in the northern and eastern edges of the City. These areas drain to Hermosa Beach (Appendix A, Figure A-5). There is one MFAC site (HER_S1) and one evaluation site (HER_P) at Hermosa Beach.

There are approximately 780 catch basins in the City of Redondo Beach and about 360 of those are within non-priority land use areas. The non-priority land use areas are primarily in the northeast and southeast portions of the City, and they drain to Redondo Beach and King Harbor (Appendix A, Figure A-5). The area surrounding King Harbor is primarily comprised of priority land uses. There is one MFAC site (RED_S2) and one evaluation site (RED_S3) at Redondo Beach implemented under the Los Angeles County Department of Beaches and Harbors TMRP and an additional four MFAC sites in King Harbor (H1, H2, H3, and H4) and three MFAC sites along the shoreline at the Redondo Beach Pier (P1, P2, and P3) implemented under the City of Redondo Beach TMRP.

There are approximately 190 catch basins in the City of Torrance and about 140 of those are within non-priority land use areas. The City is comprised of mostly non-priority land use areas. A majority of the priority land use areas are located between

Del Amo Blvd. and Torrance Blvd., and along 190th Street and south of the City's border with the City of Redondo Beach. The non-priority land use areas of the City of Torrance drain to Redondo Beach and Torrance Beach (Appendix A, Figures A-5 and A-6). There is one MFAC site (TOR_S1) and one evaluation site (TOR_S3) at Torrance Beach. As mentioned above, there is one MFAC site (RED_S2) and one evaluation site (RED_S3) at Redondo Beach.

There are approximately 520 catch basins in the City of Palos Verdes Estates and about 470 of those are within non-priority land use areas. A majority of the City is made up of non-priority land use areas. The City of Palos Verdes Estates drains to Malaga Cove Beach, Flat Rock Point Beach, Bluff Cove Beach, Rocky Point Beach, Lunada Beach, and Resort Point Beach (Appendix A, Figure A-6). There are no MFAC or evaluation sites at the receiving water on the Palos Verdes Peninsula.

There are approximately 870 catch basins in the City of Rancho Palos Verdes and about 730 of those are within non-priority land use areas. The City is primarily comprised of non-priority land use areas, and drains to Point Vicente Beach, Long Point Beach, Abalone Cove Beach, and Portuguese Bend Beach (Appendix A, Figure A-6). As mentioned above, there are no MFAC or evaluation sites at the receiving water on the Palos Verdes Peninsula.

There are approximately 70 catch basins in the City of Rolling Hills Estates and about 60 of those are within non-priority land use areas. The non-priority land use areas are located throughout the City, and drain to the neighboring cities of Rancho Palos Verdes and Palos Verdes Estates, before ultimately draining to Lunada Beach and Point Vicente Beach (Appendix A, Figure A-6). There is one MFAC site in the portion of the City of Rolling Hills Estates that lies within the Santa Monica Bay WMA.[2]

[2] As mentioned in the point source compliance section, the City of Rolling Hills Estates is demonstrating compliance with WLAs for trash through the installation of full capture systems and a comprehensive MFAC/BMP program in conjunction with institutional controls. However, this MFAC site is not located at the receiving water along the Santa Monica Bay.

There are approximately 10 catch basins in the City of Rolling Hills and all of those are within non-priority land uses. These catch basins drain to the City of Rancho Palos Verdes before eventually draining to Abalone Cove Beach and Portuguese Bend Beach where there are no MFAC or evaluation sites (Appendix A, Figure A-6).

MFAC Sites

As mentioned in the implementation section of this report, the Los Angeles County Department of Beaches and Harbors (in coordination with the City of Hermosa Beach) is implementing an MFAC program at the receiving water (on the sandy areas of the beaches along Santa Monica Bay and in Marina del Rey Harbor) (Figure 1). In addition, the City of Santa Monica and the City of Redondo Beach are implementing MFAC programs (on the sandy areas of the beaches and in King Harbor). The City of Los Angeles is implementing an MFAC program at Venice Beach (boardwalk). The City of Santa Monica and the City of Rolling Hills Estates are also implementing MFAC programs at open space/parks areas or in areas that are not adjacent to the receiving water. Table 4 summarizes all MFAC assessment and evaluation sites used to implement the Santa Monica Bay Debris TMDL.

Table 3. MFAC and Evaluation Sites in the Santa Monica Bay Debris TMDL.

Location	Site Type	Site Name	TMRP
Nicholas Canyon Beach			
Shoreline	MFAC Assessment	NIC_S1	County of Los Angeles
Parking Lot	Evaluation	NIC_P	County of Los Angeles
Zuma Beach			
Shoreline	MFAC Assessment	ZUM_S1	County of Los Angeles
Shoreline	Evaluation	ZUM_S2	County of Los Angeles
Point Dume Beach			
Shoreline	MFAC Assessment/ Evaluation	PTD_S1	County of Los Angeles

Location	Site Type	Site Name	TMRP
Latigo Shores Beach			
Parking Lot	Evaluation	LTS_P	County of Los Angeles
Dan Blocker Beach			
Shoreline	MFAC Assessment	DBL_S2	County of Los Angeles
Malibu Lagoon/Surfrider Beach			
Shoreline	MFAC Assessment	MLS_S3	County of Los Angeles
Las Tunas Beach			
Parking Lot	Evaluation	LTN_P	County of Los Angeles
Topanga Beach			
Shoreline	MFAC Assessment/ Evaluation	TOP_S1	County of Los Angeles
Santa Monica Beach			
Shoreline	MFAC Assessment	SM_A	City of Santa Monica
Shoreline	MFAC Assessment	SM_B	City of Santa Monica
Venice Beach			
Shoreline	MFAC Assessment	VEN_S1	City of Los Angeles
Adjacent to Ocean Front Walk	Evaluation	VEN_B1	City of Los Angeles
Marina Beach			
Shoreline	MFAC Assessment	MAR_S1	County of Los Angeles
Parking Lot	Evaluation	MAR_P	County of Los Angeles
Marina Del Rey Harbor			
Water	MFAC Assessment	MDR_W1	County of Los Angeles
Shoreline	Evaluation	MDR_M	County of Los Angeles
Manhattan Beach			
Shoreline	MFAC Assessment	MAN_S3	County of Los Angeles
Hermosa Beach			
Shoreline	MFAC Assessment	HER_S1	County of Los Angeles

Location	Site Type	Site Name	TMRP
Parking Lot	Evaluation	HER_P	County of Los Angeles
Redondo Beach			
Shoreline	MFAC Assessment	RED_S2	County of Los Angeles
Shoreline	Evaluation	RED_S3	County of Los Angeles
Shoreline	MFAC Assessment	P1	City of Redondo Beach
Shoreline	MFAC Assessment	P2	City of Redondo Beach
Shoreline	MFAC Assessment	P3	City of Redondo Beach
King Harbor			
Water	MFAC Assessment	H1	City of Redondo Beach
Water	MFAC Assessment	H2	City of Redondo Beach
Water	MFAC Assessment	H3	City of Redondo Beach
Breakwater	MFAC Assessment	H4	City of Redondo Beach
Torrance Beach			
Shoreline	MFAC Assessment	TOR_S1	County of Los Angeles
Shoreline	Evaluation	TOR_S3	County of Los Angeles
Burton Chace Park			
Shoreline	MFAC Assessment/ Evaluation	BCP_S1	County of Los Angeles
*Clover Park (Santa Monica)**			
Park	MFAC Assessment	SM_CP1	City of Santa Monica
Park	MFAC Assessment	SM_CP2	City of Santa Monica
*Agua Amarga Canyon**			
Canyon trail	MFAC Assessment	RHE_1	City of Rolling Hills Estates

* MFAC sites at these locations are not located at the receiving water along the Santa Monica Bay

In order to determine whether there is a potential for non-priority land use areas to discharge trash to the Santa Monica Bay, the following discussion focuses on the locations of the MFAC assessment sites in proximity to priority and non-priority land uses, and the trash found at those sites. Data from MFAC evaluation sites are presented as well. The maps in Appendix A are used for this analysis.

Nicholas Canyon Beach (Appendix A, Figure A-1)

MFAC site NIC_S1 is downstream of mostly nonpoint source areas. MFAC assessments are conducted annually at this site. Data from the 2015-2016 and 2016-2017 annual reports for this site show that after the beach was cleaned, 0.006 pounds and 0.729 pounds of trash, respectively, remained[3] (County of Los Angeles, 2016, 2017). Since this site collects runoff from mostly nonpoint source areas, the trash data from this site cannot be used to determine whether non-priority land use areas are contributing trash to Santa Monica Bay. These data are more indicative of the trash generated from nonpoint source areas.

Evaluation site NIC_P is in a parking lot southeast of MFAC site NIC_S1. Evaluations are conducted twice per year at this site. This site is in an area where trash gets caught in the dirt and vegetation in the planters. Data from the 2016-2017 annual report show 0.050 pounds of trash collected after 3.5 hours between clean up events in the first event of the year, and 0.063 pounds of trash collected after 3.7 hours between clean up events in the second event of the year. These two evaluations demonstrate generation rates of 6,608 lbs/mi/yr and 7,884 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since this site is intended to determine the daily nonpoint source trash generation rate, the trash data for this site are not appropriate for determining whether point source non-priority land use areas are contributing trash to Santa Monica Bay.

Zuma Beach

MFAC site ZUM_S1 is on the shoreline, adjacent to picnic tables and a parking lot. ZUM_S1 is downstream of primarily non-priority land use areas. MFAC assessments are performed annually at this site. Data from the 2016-2017 annual report for this site show that after the beach was cleaned, no trash remained. Data from the 2015-2016 annual report show that after the beach was cleaned, 0.094 pounds of trash remained

[3] As stated in section II.B., the County of Los Angeles MFAC program does not assess total trash collected per MFAC event, but rather the amount of trash remaining after the collection is performed. Separate evaluation sites were chosen to determine daily trash generation rates.

(County of Los Angeles, 2016, 2017). Since the amount of trash on the beach prior to cleaning was not quantified, and only the trash that was left after the beach cleaning was quantified, the total amount of trash that may be originating from non-priority land use areas is unknown. However, the fact that there was trash present after beach cleaning suggests that there was trash present before beach cleaning. Because this site is downstream from non-priority land use areas, it can be concluded that non-priority land use areas have the potential to contribute trash to Santa Monica Bay.

Evaluation site ZUM_S2 is on the shoreline south of MFAC site ZUM_S1 and is adjacent to volleyball courts and a parking lot. Evaluations are conducted twice per year at this site. Data from the 2016-2017 annual report for this site show 0.006 pounds of trash collected after 2.3 hours between clean up events in the first event of the year, and no trash collected after 4.2 hours between clean up events in the second event of the year. These two evaluations demonstrate generation rates of 1,285 lbs/mi/yr and 0 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since this site is intended to determine the daily nonpoint source trash generation rate, the data for this site are not appropriate for determining whether point source non-priority land use areas are contributing trash to Santa Monica Bay.

Point Dume Beach

MFAC/Evaluation site PTD_S1 is on the shoreline south of lifeguard station 4 and is downstream of primarily priority land use areas. MFAC assessments are conducted annually at this site, while evaluations are conducted twice per year. Data from the 2015-2016 and 2016-2017 annual reports for this site show that after the beach was cleaned, 0.075 pounds of trash and no trash, respectively, remained. Data for evaluations from the 2016-2017 annual report show no trash collected after 2.8 hours between clean up events in the first evaluation of the year, and 0.031 pounds of trash collected after 4.6 hours between clean up events in the second evaluation of the year. These two evaluations demonstrate generation rates of 0 lbs/mi/yr and 3,154 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since the MFAC assessment site collects runoff from mostly priority land use areas and the MFAC evaluation site is intended to

determine the daily nonpoint source trash generation rate, the trash data from this site cannot be used to determine whether point source non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Latigo Shores Beach (Appendix A, Figure A-2)

Evaluation site LTS_P is located in a parking lot on the roadside off of Pacific Coast Highway where trash collects at the road/fence interface. LTS_P collects runoff from mostly nonpoint sources. Evaluations are conducted twice per year at this site. The 2016-2017 annual report did not contain any data for this site. However, data from the 2015-2016 annual report show 23.3 pounds of trash collected after 6.0 hours between clean up events in the first event of the year, and 0.056 pounds of trash collected after 6.0 hours between clean up events in the second event of the year. The first event included a mirror that weighed approximately 20 pounds. These two evaluations demonstrate generation rates of 1,790,000 lbs/mi/yr and 4,340 lbs/mi/yr, respectively (County of Los Angeles, 2016, 2017). Since this site is intended to determine the daily nonpoint source trash generation rate, the data from this site cannot be used to determine whether point source non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Dan Blocker Beach

MFAC site DBL_S2 is on the shoreline east of lifeguard tower 2. DBL_2 is downstream of mixed priority and non-priority land use areas. MFAC assessments are conducted annually at this site. Data from the 2015-2016 annual report show no trash remained at this site after the beach was cleaned. However, data from the 2016-2017 annual report show 0.006 pounds of trash remained after the beach was cleaned (County of Los Angeles, 2016, 2017). Since this site collects runoff from both priority and non-priority land use areas, the data from this site cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Malibu Lagoon/Surfrider Beach

MFAC site MLS_S3 is at approximately the midpoint of the beach, north of lifeguard tower 2. MLS_S3 is downstream of both priority and non-priority land use areas in the Malibu Creek watershed. MFAC assessments are conducted monthly at this site. Data from the 2015-2016 annual report show that after the beach was cleaned, 0.056 pounds of trash remained, while data from the 2016-2017 annual report show that no trash remained (County of Los Angeles 2016, 2017). Since the site collects runoff from priority and non-priority land use areas, it is not clear whether non-priority land use areas alone are contributing trash to Santa Monica Bay at this site.

Las Tunas Beach (Appendix A, Figure A-3)

Evaluation site LTN_P is in a dirt lot east of lifeguard tower 1. Evaluations are conducted twice per year at this site. Data from the 2016-2017 annual report for this site shows 1.063 pounds of trash collected after 4.3 hours between clean up events in the first event of the year, and 0.738 pounds of trash collected after 5.3 hours between clean up events in the second event of the year. These two collections demonstrate generation rates of 114,732 lbs/mi/yr and 64,974 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since this site is intended to determine the daily nonpoint source trash generation rate, the data cannot be used to determine whether point source non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Topanga Beach

MFAC/Evaluation site TOP_S1 is on the shoreline, northwest of the Lifeguard Headquarters building. TOP_S1 is downstream of mostly nonpoint source areas and priority land use areas; however, there are no catch basins in the priority land use areas; therefore, this area is representative of nonpoint source areas. MFAC assessments are conducted annually at this site, while evaluations are conducted twice per year. MFAC assessment data from the 2015-2016 and 2016-2017 annual reports for this site show that after the beach was cleaned, 0.056 pounds and 0.013 pounds of trash, respectively, remained. Data for evaluations in the 2016-2017 annual report show 0.019 pounds of trash collected after 1.0 hour between clean up events in the first

evaluation of the year, and 0.156 pounds of trash collected after 5.8 hours between clean up events in the second evaluation of the year. These two collections demonstrate generation rates of 8,672 lbs/mi/yr and 12,496 lbs/mi/yr, respectively (County of Los Angeles, 2016, 2017). Since this site collects runoff from mostly nonpoint source areas, the trash data from this site cannot be used to determine whether non-priority land use areas are contributing trash to Santa Monica Bay. These data are more indicative of the trash generated from nonpoint source areas.

Santa Monica Beach (Appendix A, Figure A-4)

MFAC site SM_A is located on the shoreline of Santa Monica Beach near Wilshire Blvd. MFAC site SM_B is located along the shoreline of Santa Monica Beach near the pier. Both sites are downstream of primarily priority land use areas. City of Santa Monica staff presented the results of its MFAC/BMP program in a meeting with Los Angeles Water Board staff on October 4, 2018. According to the City's presentation, during quarterly assessments in the 2015-2016 reporting year, the combined trash found at sites SM_A and SM_B ranged from 1,580 pounds to 87,880 pounds. In the 2016-2017 reporting year, data were only available for one quarterly assessment, which showed a combined trash load from both sites of 25,920 pounds. Although these MFAC sites are located downstream of priority land use areas, based on discussions with City of Santa Monica staff, the sites are too far away from nearby MS4 storm drains outlets to reflect trash originating from the MS4. In addition, either low-flow MS4 diversions or sand, which has piled up in front of MS4 outlets to the beach, would prevent trash from the upstream land area from reaching the beach. Thus, data from these MFAC sites are truly representative of nonpoint source trash deposited by people visiting the beach and cannot be used to determine the relative loading of trash to the beach from priority and non-priority land uses upstream of the beach.

Clover Park

MFAC site SM_CP1 and SM_CP2 are at Clover Park in the City of Santa Monica. These MFAC sites are downstream of priority land use areas. These two sites are not located at the receiving water along the Santa Monica Bay, so they will not be helpful in

determining if non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay. In addition, data for these two sites would be representative of trash from nonpoint source and priority land use areas, and not non-priority land use areas.

Venice Beach

MFAC site VEN_S1 is along the shoreline at Venice Beach. VEN_S1 is immediately downstream of priority land use areas, with non-priority land use areas further upstream. The City of Los Angeles has not submitted MFAC annual reports with MS4 annual reports, and the supplemental information submitted per the Los Angeles Water Board staff's request did not quantify trash collected or remaining during MFAC events. Therefore, there is no data for site VEN_S1 that can be used for this analysis.

Evaluation site VEN_B1 is adjacent to Ocean Front Walk (Venice Boardwalk). Like MFAC site VEN_S1, VEN_B1 is immediately downstream of priority land use areas, with non-priority land use areas further upstream. As mentioned above, the City of Los Angeles has not submitted MFAC annual reports with MS4 annual reports, and the supplemental information submitted per the Los Angeles Water Board staff's request did not quantify trash collected or remaining, so there is no data for site VEN_B1 that can be used for this analysis.

Marina Beach

MFAC site MAR_S1 is on the shoreline near the Circulator Dock and is bordered by riprap. MAR_S1 is surrounded by primarily priority land use areas, with some non-priority land use areas further upstream. MFAC assessments are conducted annually at this site. Data from the 2015-2016 and 2016-2017 annual report show that after the beach was cleaned, 0.519 pounds and 0.488 pounds of trash, respectively, remained (County of Los Angeles, 2016-2017). Since this site collects runoff from primarily priority land use areas, data from this site cannot be used to determine if non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Evaluation site MAR_P is in Parking Lot 10, close to a gazebo, barbeque/picnic table area, lifeguard station, and buoyed swim area. Evaluations are conducted twice per year at this site. Data from the 2016-2017 annual report for this site show 0.031 pounds of trash collected after 2.4 hours between clean up events in the first event of the year, and 0.050 pounds of trash collected after 2.7 hours between clean up events in the second event of the year. These two evaluations demonstrate generation rates of 6,065 lbs/mi/yr and 8,672 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since Site MAR_P is an evaluation site, data from this site cannot be used to determine whether point source non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Burton Chace Park

MFAC/Evaluation site BCP_S1 is located at Burton Chace Park, on the sidewalk along the fence between the park and Marina del Rey Harbor. Site BCP_S1 is in a nonpoint source area and is downstream of mainly priority land uses. MFAC assessments are conducted annually at this site, while evaluations are conducted twice per year. Data from the 2015-2016 and 2016-2017 annual report show that after the beach was cleaned, 0.025 pounds and 0.019 pounds of trash, respectively, remained. Data from the 2016-2017 annual report for this site shows 0.013 pounds of trash collected after 3.4 hours between clean up events in the first evaluation of the year, and 0.013 pounds of trash collected after 3.6 hours between clean up events in the second evaluation of the year. These two evaluations demonstrate generation rates of 1,786,937 lbs/mi/yr and 1,703,824 lbs/mi/yr, respectively (County of Los Angeles 2016, 2017). Since the MFAC assessment site collects runoff from mostly priority land use areas and the MFAC evaluation site is intended to determine the daily nonpoint source trash generation rate, the trash data from this site cannot be used to determine whether point source non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Marina Del Rey Harbor

MFAC site MDR_W1 is in the water in the Marina del Rey Harbor, parallel to a floating dock. Site MRD_W1 is downstream of mostly nonpoint source and priority land use areas. Data from the 2015-2016 and 2016-2017 annual report show that after the marina was cleaned, no trash and 0.13 pounds, respectively, remained (County of Los Angeles, 2016, 2017). Since this site collects runoff from nonpoint source and priority land use areas, these data are not representative of trash from non-priority land use areas.

Evaluation site MDR_M is on the water and riprap area in the harbor, near MFAC site MAR_S1 and parallel to the Circulator Dock. Evaluation assessments are conducted twice per year at this site. Data from the 2016-2017 annual report for this site show 6.188 pounds of trash collected after 2.7 hours between clean up events in the first event of the year, and 5.965 pounds of trash collected after 3.0 hours between clean up events in the second event of the year. These two collections demonstrate generation rates of 1,066,544 lbs/mi/yr and 929,993 lbs/mi/yr, respectively (County of Los Angeles 2016, 2017). Since this site is intended to determine the daily nonpoint source trash generation rate, the data cannot be used to determine whether point source non-priority land use areas are contributing significant amounts of trash.

Manhattan Beach (Appendix A, Figure A-5)

MFAC site MAN_S3 is on the shoreline at the north end of the beach. Site MAN_S3 is immediately downstream of priority land use areas, with a mix of non-priority land use areas further upstream. MFAC assessments are conducted annually at this site. Data from the 2015-2016 and 2016-2017 annual reports for this site show that after the beach was cleaned, 1.77 pounds and 0.006 pounds of trash, respectively, remained (County of Los Angeles, 2016, 2017). Although this site collects runoff from the non-priority land use adjacent to the beach, this non-priority land use area is very narrow, and immediately bordered by much larger priority land use areas. Therefore, data from this site reflect trash from mixed priority and non-priority areas and cannot be used to

determine whether the non-priority land use areas alone are contributing significant amounts of trash to Santa Monica Bay.

Hermosa Beach

MFAC site HER_S1 is on the shoreline at the southern end of the beach, bordered by the jetty. Site HER_S1 is downstream of primarily priority land use areas. Evaluation site HER_P is located in Lot A, at the corner of 11th Street and Hermosa Ave. There were no annual assessment data for these sites contained in the County of Los Angeles annual reports. As mentioned previously, there was a miscommunication between the County of Los Angeles and the City of Hermosa Beach regarding which jurisdiction would be performing the assessments at these sites. The City will begin conducting assessments immediately.

Redondo Beach

MFAC site RED_S2 is on the shoreline between the lifeguard station at Avenue A and the Department of Beaches and Harbors maintenance building. Site RED_S2 is immediately downstream of priority land use areas, with non-priority land uses further upstream. MFAC assessments are conducted annually at this site. Data from the 2015-2016 and 2016-2017 annual reports show that after the beach was cleaned, <0.03 pounds of trash and no trash, respectively, remained (County of Los Angeles, 2016, 2017). Since this site collects runoff from primarily priority land use areas and some non-priority land use areas further upstream, data from this site cannot be used to determine if non-priority land uses are contributing significant amounts of trash to Santa Monica Bay.

Evaluation site RED_S3 is also on the shoreline, near the lifeguard station at Avenue H. Data from the 2016-2017 annual report for this site show 0.006 pounds of trash collected at both assessment events after 3.3 hours between clean up events in the first event of the year, and after 3.7 hours between clean up events in the second event of the year. These two collections demonstrate generation rates of 889 lbs/mi/yr and 778 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since this site is intended to

determine the daily nonpoint source trash generation rate, data from this site cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

MFAC site P1 is located on the shoreline at the north edge of the north portion of the Redondo Beach pier. Site P1 is downstream of priority land use areas. MFAC assessments for this site are conducted monthly. Data from the 2015-2016 annual report show trash at this site ranging from 4.6 pounds to 6.1 pounds collected during monthly assessments. Data from the 2016-2017 annual report show trash at this site ranging from 0.09 pounds to 7.01 pounds of trash collected during monthly assessments (City of Redondo Beach, 2016, 2017). Since this site collects runoff from priority land use areas, these data suggest that priority land use areas, in addition to nonpoint sources in the immediate vicinity of the site, are contributing significant amounts of trash to Santa Monica Bay.

MFAC site P2 is on the shoreline at the midpoint of the beach along the pier. Like Site P1, this site is downstream from priority land use areas. MFAC assessments for this site are conducted monthly. Data from the 2015-2016 annual report showed trash at this site ranging from 8.4 pounds to 10 pounds of trash collected per assessment. Data from the 2016-2017 annual report show trash at this site ranging from 0.23 pounds to 3.7 pounds of trash collected per assessment (City of Redondo Beach, 2016, 2017). Since this site collects runoff from priority land use areas, these data suggest that priority land use areas, in addition to nonpoint sources in the immediate vicinity of the site, are contributing significant amounts of trash to Santa Monica Bay.

MFAC site P3 is on the shoreline at the south edge of the south portion of the pier. Site P3 is downstream of priority land use areas. MFAC assessments for this site are conducted monthly. Data from the 2015-2016 annual report showed trash at this site ranging from 12 pounds to 13.6 pounds of trash collected per assessment. Data from the 2016-2017 annual report show trash at this site ranging from 0.54 pounds to 5.2 pounds of trash collected per assessment (City of Redondo Beach, 2016, 2017). Since

this site collects runoff from priority land use areas, these data suggest that priority land use areas, in addition to nonpoint sources in the immediate vicinity of the site, are contributing significant amounts of trash to Santa Monica Bay.

Torrance Beach

MFAC site TOR_S1 is on the shoreline at the south end of Torrance Beach near the City of Palos Verdes Estates. Site TOR_S1 is downstream of primarily non-priority land use areas, with a small area of priority land use areas interspersed. MFAC assessments for this site are conducted annually. Data from the 2015-2016 and 2016-2017 annual reports show that after the beach was cleaned, 0.044 pounds and 0.006 pounds of trash, respectively, remained (County of Los Angeles, 2016, 2017). Since the amount of trash on the beach prior to cleaning was not quantified and only the trash that was left behind (after the cleaning) was quantified, the total amount of trash that may be originating from upstream land use areas is unknown. However, the fact that there was trash present after the beach was cleaned suggests that there was trash present before beach cleaning. Because this site is downstream from non-priority land use areas, it can be concluded that non-priority land use areas have the potential to contribute significant amounts of trash to Santa Monica Bay.

Evaluation site TOR_S3 is on the shoreline, north of MFAC site TOR_S1. Evaluation assessments are conducted twice per year for this site. Data from the 2016-2017 annual report for this site shows 0.038 pounds of trash collected after 4.3 hours between clean up events in the first event of the year, and 0.006 pounds of trash collected after 4.1 hours between clean up events in the second event of the year. These two evaluations demonstrate generation rates of 4,081 lbs/mi/yr and 708 lbs/mi/yr, respectively (County of Los Angeles, 2017). Since this site is intended to determine the daily nonpoint source trash generation rate, these data cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

King Harbor

MFAC site H1 is in the water in the northwest corner of Basin 1 in King Harbor. Site H1 is downstream of primarily priority land use areas. MFAC assessments are conducted monthly at this site. Data from the 2015-2016 annual report show trash at this site ranging from 0.4 pounds to 3.6 pounds collected during monthly assessments. Data from the 2016-2017 annual report show trash ranging from 0.05 pounds to 3.8 pounds collected during monthly assessments (City of Redondo Beach, 2016, 2017). Since this site collects runoff from mostly priority land use areas and is located within the marina, these data reflect trash from priority land use areas and nonpoint source areas. As a result, the data from this site cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

MFAC site H2 is in the water in the northwest corner of Basin 2 in King Harbor. MFAC assessments are conducted monthly at this site. Site H2 is downstream of a mixture of priority and non-priority land use areas. Data from the 2015-2016 annual report show trash at this site ranging from 5.1 pounds to 6.1 pounds collected during monthly assessments. Data from the 2016-2017 annual report show trash ranging from 0.08 pounds to 3.6 pounds collected during monthly assessments (City of Redondo Beach, 2016, 2017). Since this site is located in the marina and collects runoff from both priority and non-priority land use areas, these data are representative of trash from a combination of nonpoint source, priority, and non-priority land use areas. Therefore, these data cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

MFAC site H3 is in the water in the southwest corner of Basin 2 in King Harbor. Site H3 is downstream from primarily priority land use areas. MFAC assessments are conducted monthly at this site. Data from the 2015-2016 annual report show trash at this site ranging from 4.8 pounds to 5.1 pounds collected during monthly assessments. Data from the 2016-2017 annual report show trash ranging from 0.11 pounds to 4.2 pounds collected during monthly assessments (City of Redondo Beach, 2016, 2017). Since this site is in the marina and collects runoff from mostly priority land use areas,

these data cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

MFAC site H4 is along the breakwater at the north end of the main harbor channel of King Harbor. Site H4 is downstream of primarily priority land use areas. MFAC assessments are conducted monthly at this site. Data from the 2015-2016 annual report show trash at this site ranging from 12.8 pounds to 23.6 pounds collected during monthly assessments. Data from the 2016-2017 annual report show trash ranging from 4.22 pounds to 18.34 pounds collected during monthly assessments (City of Redondo Beach, 2016, 2017). Since this site is located along the breakwater and collects runoff from primarily priority land use areas, data from this site are indicative of trash from nonpoint source and priority land use areas. Therefore, data from this site cannot be used to determine whether non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay.

Agua Amarga Canyon

MFAC site RHE_1 is on a trail in Agua Amarga Canyon in the City of Rolling Hills Estates. This site is located between two priority land use areas, and downstream of non-priority land use areas. As mentioned in the point source compliance section of the report, this MFAC site is used to determine the City's compliance with WLAs. Since the City recently changed their point source compliance approach, the first year of MFAC assessment data was not submitted until December 2018. However, similar to Clover Park MFAC sites, this site is not located at the receiving water along the Santa Monica Bay, so it will not be helpful for this analysis of determining if non-priority land use areas are contributing significant amounts of trash to Santa Monica Bay. In addition, since this site is located on a canyon trail and collects runoff from priority and non-priority land use areas, data from this site will be representative of nonpoint source, priority, and non-priority land use areas.

In conclusion, there may be a potential for non-priority land use areas to discharge significant amounts of trash to Santa Monica Bay. More than half of the catch basins in

the Santa Monica Bay watershed are within non-priority land use areas (Table 2). There are two MFAC assessment sites downstream from primarily non-priority land use areas that can be used to assess data: Zuma Beach and Torrance Beach. The data from these sites show little trash remaining after beach cleanups (ranging from zero trash to 0.094 pounds of trash). It is difficult to evaluate these data because only the trash that was left on the beach after cleaning was quantified, and not the amount of trash on the beaches prior to cleaning. These data are better suited to evaluate compliance with nonpoint source load allocations and the efficacy of trash removal devices. However, the fact that these data show any trash present after beach cleaning suggests that there was trash present before beach cleaning, which, for these sites, may have originated from upstream non-priority land use areas. Moving forward, responsible parties should revise their TMRPs to ensure that MFAC assessments account for the trash deposited on the beach prior to cleanups.

Another issue to consider when evaluating the MFAC data is the statement from City of Santa Monica staff that the MFAC sites are too far away and disconnected from nearby MS4 storm drains outlets to reflect trash originating from the MS4. However, as stated at the beginning of this section, these MFAC sites represent the only available data that can be used to determine the loading of trash from non-priority to the Santa Monica Bay.

2. *Are there priority land use areas upstream of and/or in near proximity to non-priority land uses, such that trash from priority land uses may enter the MS4 in nearby non-priority land use areas?*

There are priority land use areas upstream of and in near proximity to non-priority land uses throughout the Santa Monica Bay WMA, such that trash from priority land use areas may enter the MS4 in nearby non-priority land use areas (Figure 2 and Appendix A, Figures A-1 through A-6). Although the priority land use areas are generally smaller and more sparse in northern Santa Monica Bay and on the Palos Verdes Peninsula, there are priority land use areas upstream of and in near proximity to non-priority land

use areas. In the City of Malibu, there are small interspersed areas of priority land use areas upstream of non-priority land use areas near Trancas Beach (Appendix, Figure A-1). There are some areas upstream of Dan Blocker Beach, La Costa Beach, and Las Tunas Beach in the County of Los Angeles unincorporated area in northern Santa Monica Bay where priority land use areas drain to non-priority land use areas downstream (Appendix, Figure A-1 to A-3). There are interspersed priority and non-priority land use areas throughout the City of Los Angeles where priority land use areas are located upstream of or in near proximity of non-priority land uses. In the cities of Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills, and Rolling Hills Estates, and in the portion of the City of Los Angeles on the Palos Verdes Peninsula, there are interspersed areas where priority land use areas are located adjacent to or upstream of non-priority land use areas.

Near the middle of the bay, in the cities of Santa Monica and El Segundo and the portion of the City of Los Angeles that lies within the Santa Monica Bay WMA (Appendix, Figure A-4), the priority land use areas are much denser (i.e. more and closer together), but they are interspersed with non-priority land use areas. In all of these jurisdictions, there are priority land use areas upstream or in near proximity to non-priority land uses. There are major roads running through and adjacent to the non-priority areas.

In the south bay cities of Manhattan Beach, Hermosa Beach, Redondo Beach, and Torrance (Appendix, Figure A-5 and A-6), the priority land use areas are denser than that in the northern Santa Monica Bay and Palos Verdes Peninsula, but less dense than in the jurisdictions in the middle of the Bay. All of the South Bay cities have occurrences of priority land use areas upstream or in near proximity to non-priority land uses. There are also major roads running through and adjacent to the non-priority areas in the South Bay cities.

As summarized above, although the density of priority land use areas varies in different parts of the Santa Monica Bay WMA, there are priority land use areas upstream or in

near proximity of non-priority land use areas throughout. There are major roads running through and adjacent to the non-priority areas. Therefore, there is a potential for trash from priority land use areas to enter the MS4 in nearby non-priority land use areas.

3. *Is there an effective MFAC program downstream of the non-priority land use areas that will serve as a back stop in the event that trash is discharged from non-priority land use areas?*

As discussed previously, the Santa Monica Bay Debris TMDL includes MFAC programs at the receiving water (at beaches and harbors) and in non-beach open space and parks in the Santa Monica Bay WMA. The Los Angeles County Department of Beaches and Harbors (in coordination with the City of Hermosa Beach), and the cities of Santa Monica, Los Angeles, and Redondo Beach are implementing MFAC programs at the receiving water (on the sandy areas of the beaches, along the boardwalk, or in the harbors along Santa Monica Bay). The TMDL requires MFAC programs that include assessments and collections at various locations and frequencies in addition to BMP implementation.

Although there are MFAC sites at most of the beaches and both harbors along the Santa Monica Bay, there are not MFAC sites at all of the beaches downstream of non-priority land use areas (Figure 1). For example, there is not an MFAC program downstream of Escondido Beach, La Costa Beach, and Big Rock Beach in northern Santa Monica Bay, where there are primarily non-priority land use areas upstream. There are also no MFAC programs at the receiving water along the Santa Monica Bay on the Palos Verdes Peninsula, where there are sparse priority land use areas, but a majority of the land use areas are non-priority. Since there are not MFAC sites at the beaches downstream of all non-priority land use areas, there are not effective MFAC programs downstream to serve as a backstop in the event that trash is discharged from non-priority land use areas.

In addition, the County of Los Angeles MFAC program, which includes a majority of the beach MFAC and evaluation sites in the Santa Monica Bay Debris TMDL (Table 3), does not assess total trash collected per MFAC clean up event, but rather the amount of trash remaining after the daily cleanup is performed. Therefore, these data are not useful in determining how much trash is accumulating at each MFAC site along the shore or in Marina del Rey Harbor between collections. Although the amount of trash gathered between collections is measured at evaluation sites, most of the evaluation sites are in other nonpoint source areas such as parking lots, and not at the receiving water. Data collected from these evaluation sites reflect trash generated and trends in these other nonpoint source areas. As such, it is not known whether the amount of trash collected on the shorelines and in Marina del Rey Harbor is accumulating in deleterious amounts and whether the amount accumulating between collections is increasing or decreasing.

The Redondo Beach MFAC/BMP program has resulted in attainment of the load allocation of zero trash immediately following each assessment and collection event at the MFAC sites on the shore near the pier and in King Harbor. It is not clear whether the MFAC programs at Venice Beach (City of Los Angeles) and Santa Monica Beach (City of Santa Monica) are effective, as no MFAC data has been submitted with MS4 annual reports.

D. Amendment to the Santa Monica Bay Debris TMDL

Revising the Santa Monica Bay Debris TMDL to require full capture devices in only the priority land use areas will not address 100% of the trash in the Santa Monica Bay WMA because effective MFAC/BMP programs are not in place at all of the beaches and harbors downstream. Available MFAC data show that there is a potential for non-priority land use areas to discharge trash. In addition, analysis of land use maps shows that there are priority land use areas upstream of and in near proximity to non-priority land uses throughout the Santa Monica Bay WMA, such that trash from priority land use areas may enter the MS4 in nearby non-priority land use areas. Since there are not effective MFAC programs downstream of all non-priority land use areas, there is no

backstop to address trash from non-priority land use areas if they are not required to have full capture devices installed. Since this backstop does not exist, the only way to address 100% of the trash in the Santa Monica Bay WMA is to require full capture systems or equivalent controls on all catch basins, regardless of land use types. As such, the Santa Monica Bay Debris TMDL requirements will not be revised to align with the more limited scope of the statewide Trash Amendments.

The Santa Monica Bay Debris TMDL specified that responsible entities that were also named in the Ballona Creek Watershed or Malibu Creek Watershed Trash TMDLs would be in compliance with the Santa Monica Bay Debris TMDL so long as they were in compliance with those respective TMDLs. However, some cities located in the Malibu Creek and Ballona Creek subwatersheds have significant portions of their cities in the Santa Monica Bay watershed outside of these subwatersheds. For example, only a small portion of the City of Malibu is in the Malibu Creek Watershed, while a much larger portion of the City is in the Santa Monica Bay Watershed. As a result, the Los Angeles Water Board is revising the Santa Monica Bay Debris TMDL to clarify that only responsible parties that are solely in the Malibu Creek and Ballona Creek watersheds can comply with the trash WLAs in the Santa Monica Bay Debris TMDL through those TMDLs.

Conversely, the Santa Monica Bay Debris TMDL identified responsible parties within the Santa Monica Bay WMA, but outside of the Ballona Creek and Malibu Creek Watershed Trash TMDLs. However, the cities of Agoura Hills, Calabasas, Westlake Village, Hidden Hills, and Thousand Oaks were named in the Santa Monica Bay Debris TMDL. These five cities are entirely located in the Malibu Creek watershed and complying with the Malibu Creek Watershed Trash TMDL. Therefore, the cities of Agoura Hills, Calabasas, Westlake Village, Hidden Hills, and Thousand Oaks will be removed as point source responsible parties for trash in the Santa Monica Bay Debris TMDL, but will remain as point source responsible parties for plastic pellets.

In addition, the County of Ventura does not have any MS4 infrastructure within the Santa Monica Bay WMA (outside of the Malibu Creek watershed). Therefore, the County of Ventura will be removed as a point source responsible party in the Santa Monica Bay Debris TMDL, but will remain as a point source responsible party for plastic pellets.

The requirements for Caltrans will be amended in the Santa Monica Bay Debris TMDL. Caltrans will not be included with Los Angeles and Ventura County MS4 permittees, as they will have their own requirements consistent with the statewide Trash Amendments. According to the statewide Trash Amendments, Caltrans may comply with WLAs by installing, operating, and maintaining any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls for all storm drains that capture runoff from significant trash generating areas to achieve full capture equivalency as defined by the Trash Amendments.

V. Machado Lake Trash TMDL

A. Background and Compliance Approach

On June 7, 2007, the Los Angeles Water Board adopted the Machado Lake Trash TMDL through Resolution No. R4-2007-006. Subsequently, the State Water Board, Office of Administrative Law, and U.S. EPA approved the TMDL. The Machado Lake Trash TMDL became effective March 6, 2008.

The Machado Lake Trash TMDL established a numeric target of zero trash based on the narrative water quality objectives for Floating Material, and Solid, Suspended, or Settleable Materials, specified in the Water Quality Control Plan for the Los Angeles Region (Basin Plan). The TMDL defined zero trash for nonpoint sources as no trash immediately following each assessment and collection event consistent with an established MFAC Program. The MFAC Program was established at an interval that prevents trash from accumulating in deleterious amounts that cause nuisance or

adversely affect beneficial uses between collections. The TMDL defined zero trash for point sources as zero trash discharged into Machado Lake and on the shoreline.

1. Point Sources

The TMDL assigned WLAs for trash to Caltrans and the co-permittees of the Los Angeles County MS4 Permit (Los Angeles County, Los Angeles County Flood Control District, and the Cities of Carson, Lomita, Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance) within the Machado Lake subwatershed. The TMDL allows point sources to comply with WLAs in any lawful manner, including the installation of full capture systems and the implementation of MFAC Programs in conjunction with BMPs. Point sources that chose to comply with waste load allocations via the installation of full capture systems were required to demonstrate a phased implementation of full capture devices over an 8-year period until 100% of the stormwater conveyances were addressed by full capture systems by March 6, 2016. The TMDL required responsible jurisdictions to submit a TMRP that described the methodologies used to assess trash, defined a trash baseline WLA, and prioritized of areas for implementation.

2. Nonpoint Sources

The TMDL assigns an LA to the City of Los Angeles. Pursuant to Water Code section 13269, waste discharge requirements were waived for any responsible jurisdiction that implemented an MFAC/BMP Program that, to the satisfaction of the Executive Officer, met several criteria, including:

- The MFAC/BMP Program included an initial frequency of trash assessment and collection and suite of structural and/or nonstructural BMPs.
- The MFAC/BMP Program included collection and disposal of all trash found in the water and on the shoreline.

The initial frequency of assessment and collection was prescribed in the Machado Lake Trash TMDL; however, the TMDL allowed for revisions to the MFAC/BMP Program in

the TMRP to reflect the results of trash assessment and collection and to prevent trash from accumulating in deleterious amounts.

Other than complying with nonpoint source requirements of the Machado Lake Trash TMDL through a conditional waiver and MFAC/BMP Program, responsible jurisdictions also had the option of proposing, or the Los Angeles Water Board could impose, an alternative program implemented through waste discharge requirements, an individual waiver, a cleanup and abatement order, or any other appropriate order or orders consistent with the assumptions and requirements of the nonpoint source LA and implementation schedule.

B. Implementation

The Machado Lake Jurisdictional Group (Caltrans, Los Angeles County, and the cities of Los Angeles, Torrance, Redondo Beach, Carson, Lomita, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills, and Rolling Hills Estates) submitted a joint TMRP to document compliance with the Machado Lake Trash TMDL and has begun implementing their trash reduction programs to comply with WLAs. The City of Los Angeles submitted a TMRP and has been implementing an MFAC program to comply with LAs.

1. Nonpoint Source Compliance

As stated in section IV.A.2., in order for nonpoint sources to be in compliance, they must achieve the zero trash load allocation. Zero trash for nonpoint sources is defined as no trash immediately following each assessment and collection event. It is unclear if the City of Los Angeles is in compliance with load allocations, as they have not been submitting nonpoint source MFAC data with their MS4 annual reports. According to personal communications with City of Los Angeles staff, the City of Los Angeles Department of Recreation and Parks (RAP) collects trash seven days per week in in the park around the lake and on the shoreline of the lake. The City submitted additional data in response to Los Angeles Water Board staff's request, and while the MFAC information did document the frequency and completion of clean up events, it did not quantify the amount of trash collected or remaining after MFAC events. The current

frequency of clean up events along the shoreline and in the park is more frequent than the five times per week that was initially prescribed in the TMDL.

2. Point Source Compliance

The County of Los Angeles has retrofitted 100% of their identified catch basins within the County unincorporated areas of the Dominguez Channel Watershed and Greater Harbor Waters WMA, which includes the Machado Lake subwatershed (County of Los Angeles, 2017).

The City of Los Angeles proposed to comply with its WLA by implementing structural BMPs and institutional controls. According to personal communications with City of Los Angeles staff, the City has installed full capture devices on 100% of the City-owned catch basins draining to Machado Lake and Wilmington Drain (City of Los Angeles, 2018). The City of Los Angeles has also installed CDS units addressing all of the major inputs to Machado Lake as part of its Proposition O Machado Lake Restoration Project. However, there are two smaller inputs that have not been addressed with full capture systems (Appendix B, Figure B-1). One of these inputs that has not been addressed with full capture systems is Drain P-6545, which flows to an In-lake Sedimentation Basin before flowing to the lake; much of the trash is retained in this area. Both of these smaller inputs have minimal flow from smaller drainage areas that did not warrant a BMP device during the lake restoration project. In addition to the City installing full capture devices, they ~~City~~ conducted a Quantification Study of Institutional Measures that demonstrated that their management actions resulted in a decrease of 1,280.3 gallons of trash annually in the Machado Lake subwatershed (City of Los Angeles, 2017).

The City of Torrance originally proposed to comply with their WLA via the installation of full capture devices (specifically, CPS units). The City conducted a Pilot Study on CPS units and ultimately decided to install partial capture devices (specifically, automatic retractable screens) and implement institutional controls instead. Partial capture devices have been installed on all catch basins that were able to be retrofitted (82%). In

FY 2016-2017, the weight of trash collected from street sweeping and catch basin cleaning from the entire City was recorded, and prorated amounts were reported for the Machado Lake Watershed. A total of 1,540,408 gallons of trash were collected in the Machado Lake Watershed in 2015, while 1,467,950 gallons were collected in 2016 (City of Torrance, 2016, 2017).

The City of Redondo Beach is assigned a WLA, but does not have any catch basins in the portion of the City draining to Machado Lake.

The City of Carson proposed to comply with their WLA via the implementation of BMPs and institutional controls. The City of Carson has installed trash capture devices on the catch basins that drain to Dominguez Channel and Machado Lake. It cannot be determined whether the City is in compliance with the requirements of the Machado Lake Trash TMDL, as it is unclear if the installed trash capture devices are certified full capture systems. The City of Carson did not provide further documentation or data in their MS4 annual reports (City of Carson, 2017).

The City of Palos Verdes Estates proposed to comply with their WLA via the installation of sub-regional and certified full capture devices The City of Palos Verdes Estates has installed full capture devices on 75 out of 76 (99%) of the catch basins in their jurisdiction (City of Palos Verdes Estates, 2017).

The City of Rancho Palos Verdes proposed to comply with their WLA via full capture devices. The City of Rancho Palos Verdes installed full capture devices (i.e., CPS units) or partial capture devices (i.e., automatic retractable screens, or ARS) on the 146 catch basins in their jurisdiction, depending on their technical feasibility. Full capture devices have been installed on 39 catch basins in the City's jurisdiction, while partial capture devices have been installed on 107 catch basins. The City received comments from the Los Angeles Water Board regarding the 2015-2016 MS4 annual report requesting demonstration of compliance with the final WQBEL where partial capture devices were installed, as specified in MS4 NPDES Permit Part VI.E.5.b.i.(2)(a) or VI.E.5.b.i.(2)(b).

The City of Rancho Palos Verdes conducted a DGR study in the Summer of 2018 to calculate trash discharges using a mass balance approach (City of Rancho Palos Verdes, 2017, 2018).

The City of Rolling Hills Estates proposed to comply with their WLA via full capture devices. The City of Rolling Hills Estates has installed full capture systems on 65 out of 194 catch basins. In addition, approximately 14 catch basins lie within the Chandler Ranch full capture retention area. Of the catch basins that are located in commercial and high-density residential land use areas, all 43 have been retrofitted with full capture devices. The City of Rolling Hills Estates revised, and the Los Angeles Water Board approved their TMRP for the Machado Lake Trash TMDL. The revised TMRP utilizes a combined approach to comply with WLAs through the already completed installation of full capture systems in 100% of the catch basins in commercial and high-density areas of the City, and a comprehensive program of institutional controls and MFAC in the areas of the City that have not been addressed by full capture systems. The results of the first year of monitoring under the revised TMRP were submitted with the City's annual report due on December 15, 2018 (City of Rolling Hills Estates, 2017).

The City of Lomita proposed to comply with their WLA via the implementation of BMPs and institutional controls. The City of Lomita installed both full capture systems (i.e., CPS) and partial capture devices (i.e., ARSs) on all of their 281 catch basins draining to Machado Lake. However, due to engineering restrictions and standards of the LACFCD, four catch basins had both CPSs and ARSs removed, and 36 catch basins had CPSs removed, but retained the partial capture ARSs. The four catch basins that are not addressed by full or partial capture devices are located in sump conditions or should not be retrofitted due to technical infeasibilities. The City of Lomita conducted an Institutional Control Measure Verification Study in the areas of these four open catch basins to verify the effectiveness of the City's institutional trash control measures (City of Lomita, 2017).

The City of Rolling Hills does not have a storm drain system that is amenable to the installation of full capture devices, so they proposed to comply with their WLA through the implementation of a program that has characteristics of both an MFAC program and a partial capture/institutional controls program. The City calculated a modified daily generation rate (DGR) to determine its annual trash discharge by using data collected from trash clean ups on residential roads and equestrian trails. The City also calculated their annual trash discharge rate by using data collected during trash clean up events at six MFAC sites located at the bottom of natural drainage canyons. The City of Rolling Hills used these respective rates to determine the percent reduction of trash within their jurisdiction. In addition, the City has determined that the WLA assigned to the City by the Los Angeles Water Board is based on an incorrect area of the City. Instead of 0.56 square miles, the City reported the correct area as 1.3 square miles, making the amended WLA 6,934.2 gallons of trash. The City of Rolling Hills calculated an annual trash generation rate of 2,860 gallons, and a discharge rate of zero gallons of dry uncompressed trash during three collection events, equating to a 100% reduction of trash (City of Rolling Hills, 2015, 2016).

C. Criteria for Reconsideration

Figure 4 illustrates the Wilmington Drain (Machado Lake) subwatershed, including priority land uses, city boundaries, and catch basins within the subwatershed. Land uses shown in this map represent the SCAG land use codes that correlate to the priority land uses described in the statewide Trash Amendments (Table 1).

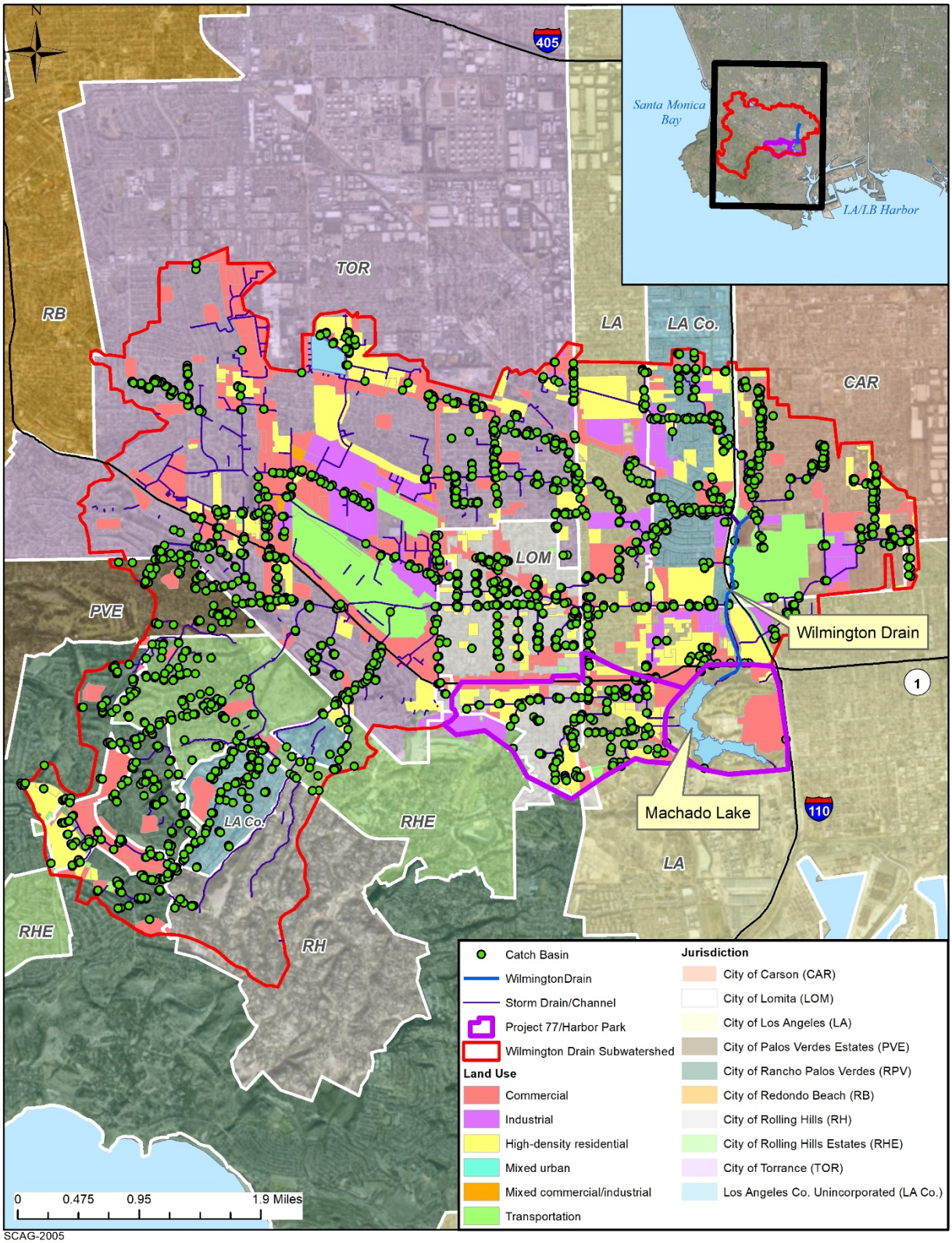


Figure 4. Priority land use areas and catch basins in the Wilmington Drain (Machado Lake) Subwatershed.

Los Angeles Water Board staff analyzed the map in Figure 4 and evaluated the criteria described previously to determine whether to revise the TMDL to align it with the scope of the statewide Trash Amendments.

1. *Is there a potential for non-priority land use areas to discharge significant amounts of trash to impaired waterbodies?*

To evaluate this criterion, this section describes the number and locations of catch basins in non-priority land use areas in each city in the Machado Lake subwatershed. The MFAC information collected at Machado Lake verified daily clean ups, but did not quantify the amount of trash collected. Therefore, unlike the analysis for the Santa Monica Bay Debris TMDL, this section does not consider the trash data collected from the MFAC sites at the lake to determine how much trash may be originating from upstream non-priority land use areas.

There are approximately 2,150 catch basins in the Machado Lake subwatershed, and approximately 1,370 of them are in non-priority land use areas. Table 4 shows an approximation of the total number of catch basins within each jurisdiction based on LACFCD GIS storm drain data, and the number (and percentage) of those catch basins in non-priority land use areas. The number of catch basins reflected in the breakdown in Table 4 includes city owned, LACFCD owned, and privately-owned catch basins within each city's jurisdiction, and therefore may differ from the number of catch basins reported within the point source compliance discussion. Caltrans was not included in this table, since transportation land use is a priority land use area per the Trash Amendments.

Table 4. Total number of catch basins per jurisdiction and number (and percentage) of catch basins in non-priority land use areas.

Permittee	Total No. Catch Basins	No. (%) Catch Basins within Non-Priority Areas
Unincorporated County of Los Angeles	260	180 (69%)
Carson	240	180 (75%)
Lomita	290	180 (62%)
Los Angeles	320	140 (44%)
Palos Verdes Estates	70	70 (100%)
Rancho Palos Verdes	150	130 (87%)
Rolling Hills Estates	180	120 (67%)
Rolling Hills	10	10 (100%)
Torrance	630	360 (57%)

Based on LACFCD GIS storm drain data, there are approximately 260 catch basins in the County of Los Angeles unincorporated area of the Machado Lake subwatershed and about 180 of those are within non-priority land use areas. The County unincorporated area is located in a narrow strip to the north of Machado Lake on the west side of the 110 freeway, and a small area in the southwest portion of the subwatershed. The non-priority land use areas are mostly in the areas in the southwest portion of the subwatershed and also scattered throughout the County's jurisdiction in the narrow strip north of the lake (Figure 4).

There are approximately 240 catch basins in the City of Carson within the Machado lake subwatershed and about 180 of those are within non-priority land use areas. The City of Carson is located to the east of the 110 freeway, northeast of Machado Lake. The non-priority land uses in Carson within the Machado Lake subwatershed are scattered throughout, but are more concentrated in the southwest portion of the City (Figure 4).

There are approximately 290 catch basins in the City of Lomita within the Machado Lake subwatershed and about 180 of those are within non-priority land use areas. The

City of Lomita is located to the southeast of the City of Torrance, and to the west of the City of Los Angeles and Machado Lake. The City is located both north and south of Pacific Coast Highway. The non-priority land uses in Lomita within the Machado Lake subwatershed are scattered throughout the City (Figure 4).

There are approximately 320 catch basins in the City of Los Angeles within the Machado Lake subwatershed and about 140 of those are within non-priority land use areas. Machado Lake is located in the southeast portion of the subwatershed, in the City of Los Angeles. The City boundary also extends to the west and north of Machado Lake. The non-priority land uses in the City of Los Angeles within the subwatershed are scattered throughout the areas to the west and northwest of the lake. The areas immediately surrounding the lake are nonpoint source areas (Figure 4).

There are approximately 70 catch basins in the City of Palos Verdes Estates within the Machado Lake subwatershed and all 70 of those are within non-priority land use areas. The City of Palos Verdes Estates is located on the eastern border of the subwatershed. The City is primarily non-priority land uses, although there is a very small priority land use area (commercial). All of the catch basins are located in the non-priority areas of the City (Figure 4).

There are approximately 150 catch basins in the City of Rancho Palos Verdes within the Machado Lake subwatershed and about 130 of those are within non-priority land use areas. Rancho Palos Verdes is located in the southwest part of the subwatershed. The non-priority land use areas are scattered throughout the City (Figure 4).

There are approximately 180 catch basins in the City of Rolling Hills Estates and about 120 of those are within non-priority land use areas. Rolling Hills Estates is located in the southwest part of the Machado Lake subwatershed. The non-priority land use areas primarily occur in the northern portion of the City, south of Palos Verdes Estates and Torrance (Figure 4).

There are approximately 10 catch basins in the City of Rolling Hills and all 10 of those are within non-priority land use areas. Rolling Hills is located in the southwest part of the Machado Lake subwatershed. The portion of the City of Rolling Hills that lies within the subwatershed is comprised of non-priority land use areas (Figure 4).

There are approximately 630 catch basins in the City of Torrance and about 360 of those are within non-priority land use areas. Torrance is located in the northwest portion of the Machado Lake subwatershed. The non-priority land use areas are scattered throughout the City (Figure 4).

Since the only nonpoint source area in the Machado Lake subwatershed is generally the area surrounding Machado Lake in the Ken Malloy Regional Harbor Park (in the City of Los Angeles' jurisdiction), there is only one MFAC Program being implemented around Machado Lake and in Ken Malloy Regional Harbor Park. As previously mentioned, the MFAC data and information reported by the City of Los Angeles did not quantify trash collected during daily clean ups, but only documented that trash was collected. Although it is not possible to determine if non-priority land use areas are contributing significant amounts of trash to Machado Lake, since the City of Los Angeles collects trash around the lake and in the park daily, it can be concluded that there is trash present.

More than half of the catch basins in the Machado Lake subwatershed are within non-priority land use areas (Table 4~~6~~). There is a potential for these catch basins to discharge trash to Machado Lake. Although trash collected by the City of Los Angeles MFAC program is not quantified, the fact that there is trash present (that may have originated upstream in non-priority land use areas) suggests that there is a potential for these catch basins to discharge trash to Machado Lake.

2. *Are there priority land use areas upstream of and/or in near proximity to non-priority land use areas, such that trash from the priority land use areas may enter the MS4 in nearby non-priority land use areas?*

There are priority land use areas upstream of and in near proximity to non-priority land uses throughout the Machado Lake subwatershed, such that trash from priority land use areas may enter the MS4 in nearby non-priority land use areas (Figure 4). The priority land use areas are generally denser in the northern portion of the subwatershed, north of Pacific Coast Highway, although there are mixed areas of priority and non-priority land use areas throughout the entire subwatershed. The priority land use areas in the jurisdictions on the Palos Verdes Peninsula are generally not as dense. In the City of Rolling Hills, there is only one small priority land use area. However, all catch basins in that portion of the City of Rolling Hills are located in non-priority land use areas where trash could enter the MS4. There are major roads running through and adjacent to the non-priority land use areas in most of the jurisdictions in the Machado Lake subwatershed. Since there are priority land use areas upstream of and in near proximity to nonpriority land use areas in all jurisdictions of the Machado Lake subwatershed, and there are major roads running through these jurisdictions, trash from priority land use areas have the potential to enter the MS4 in catch basins downstream of or in nearby non-priority land use areas.

3. *Is there an effective MFAC program downstream of the non-priority land use areas that will serve as a back stop in the event that trash is discharged from non-priority land use areas?*

As discussed previously, the Machado Lake Trash TMDL includes an MFAC program at Ken Malloy Regional Harbor Park and Machado Lake. The City of Los Angeles Department of Recreation and Parks is implementing the program throughout the park and on the shoreline of the lake. The TMDL requires the MFAC program to include assessments and collections at various locations and frequencies. The City of Los Angeles is performing clean ups at all locations throughout the park and shoreline, but the assessments do not include a quantification of the trash present. As a result, it is not possible to determine whether the MFAC program is effective to serve as a back stop in the event that trash is discharged from non-priority land use areas. The information collected from the City of Los Angeles MFAC program is useful in determining the presence of trash, but not in determining whether trash is accumulating

in deleterious amounts and whether the amount accumulating between collections is increasing or decreasing.

D. Amendment to the Machado Lake Trash TMDL

Revising the Machado Lake Trash TMDL to require full capture devices in only the priority land use areas may not address 100% of the trash in the Machado Lake subwatershed because it cannot be determined if an effective MFAC/BMP program is in place at Machado Lake. Available MFAC data show that there is a potential for non-priority land use areas to discharge trash. In addition, there are major roads running through and adjacent to the non-priority land use areas in much of the subwatershed. Analysis of land use maps shows that there are priority land use areas upstream of and in near proximity of non-priority land uses throughout the Machado Lake subwatershed, such that trash from priority land use areas may enter the MS4 in nearby non-priority land use areas. Since it cannot be determined if the MFAC program is effective and can be used as a backstop for trash originating in non-priority land use areas, the only way to ensure that 100% of the trash in the Machado Lake subwatershed is addressed is to require full capture systems or equivalent controls on all catch basins, regardless of land use types. As such, the Machado Lake Trash TMDL requirements will not be revised to align with the scope of the statewide Trash Amendments.

The requirements for Caltrans will be amended in the Machado Lake Trash TMDL. Caltrans will not be included with Los Angeles County MS4 permittees, as they will have their own requirements consistent with the statewide Trash Amendments. According to the statewide Trash Amendments, Caltrans may comply with WLAs by installing, operating, and maintaining any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls for all storm drains that capture runoff from significant trash generating areas to achieve full capture equivalency as defined by the Trash Amendments.

The conditional waiver for nonpoint source discharges of trash will be removed from this Trash TMDL and replaced with language referencing the Statewide Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program. The new language will state that load allocations for nonpoint sources shall be implemented consistent with the Statewide Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program through a general waiver of waste discharge requirements, individual waivers, general WDRs, individual WDRs, a MOU, a cleanup and abatement order, or any other appropriate order or orders, provided the program is consistent with the assumptions and requirements of the load reductions and associated schedule in the MFAC program. The waiver implementing the LAs will be issued in a separate Board action from the action to revise the TMDL so that the waiver may be renewed every five years without having to reconsider the TMDL. In the future, the Los Angeles Water Board may consider WDRs instead of a waiver so that the regulatory mechanism implementing the LAs will not have to be renewed every five years.

VI. **Conclusion**

After analyzing maps (including priority and non-priority land use areas, catch basins, and storm drains) and trash data from MFAC programs submitted with responsible entities' annual reports, the three criteria discussed in section I.C. were used to determine whether the Los Angeles Water Board could revise the implementation requirements to achieve the WLAs in the Santa Monica Bay Debris TMDL and Machado Lake Trash TMDL to align with the more limited scope of the statewide Trash Amendments.

Analysis for the Santa Monica Bay Debris TMDL suggested that there is a potential for some non-priority land use areas to discharge significant amounts of trash, but there are not MFAC programs downstream of all non-priority areas that can effectively collect any trash from non-priority land use areas, thus impacting beneficial uses. In addition, some data may not be representative of trash originating from the MS4, such as the City of

Santa Monica data, which are more representative of nonpoint source trash from beach goers. Furthermore, MFAC data for most of the beaches along the Santa Monica Bay are not useful in determining whether trash is accumulating in deleterious amounts, as the MFAC program that is being implemented by the Los Angeles County Beaches and Harbors does not quantify the total amount of trash collected during clean up events, but rather quantifies trash left after the beaches are cleaned.

Analysis for the Machado Lake Trash TMDL also suggested that there is a potential for some non-priority land use areas to discharge significant amounts of trash, but it is not clear if there is an effective MFAC program downstream that can effectively collect trash from non-priority land use areas. The MFAC data for Ken Malloy Regional Harbor Park and Machado Lake is not useful in determining whether trash is accumulating in deleterious amounts, as the MFAC program that is being implemented by the City of Los Angeles Department of Recreation and Parks does not quantify trash collected during clean up events.

The Los Angeles Water Board concludes that in order to ensure that water quality standards are still attained, full capture devices or equivalent controls must be installed in both priority and non-priority land use areas in the Santa Monica Bay WMA (Santa Monica Bay Debris TMDL) and Machado Lake subwatershed (Machado Lake Trash TMDL). Therefore, MS4 permittees assigned WLAs in the Santa Monica Bay Debris TMDL and Machado Lake Trash TMDL will still be required to address point sources of trash in all land use areas. The Santa Monica Bay Debris TMDL will be amended as described in section II.D to require the City of Malibu to comply with the Santa Monica Bay Debris TMDL and to separate Caltrans from the Los Angeles and Ventura County MS4 permittee requirements. In addition, the Santa Monica Bay Debris TMDL will be amended to remove Agoura Hills, Calabasas, Westlake Village, Hidden Hills, and Thousand Oaks as responsible parties assigned WLAs for trash. The Machado Lake Trash TMDL will be amended as described in section III.D to separate Caltrans from the Los Angeles County MS4 permittee requirements and to remove the conditional waiver for nonpoint sources of trash.

VII. **References**

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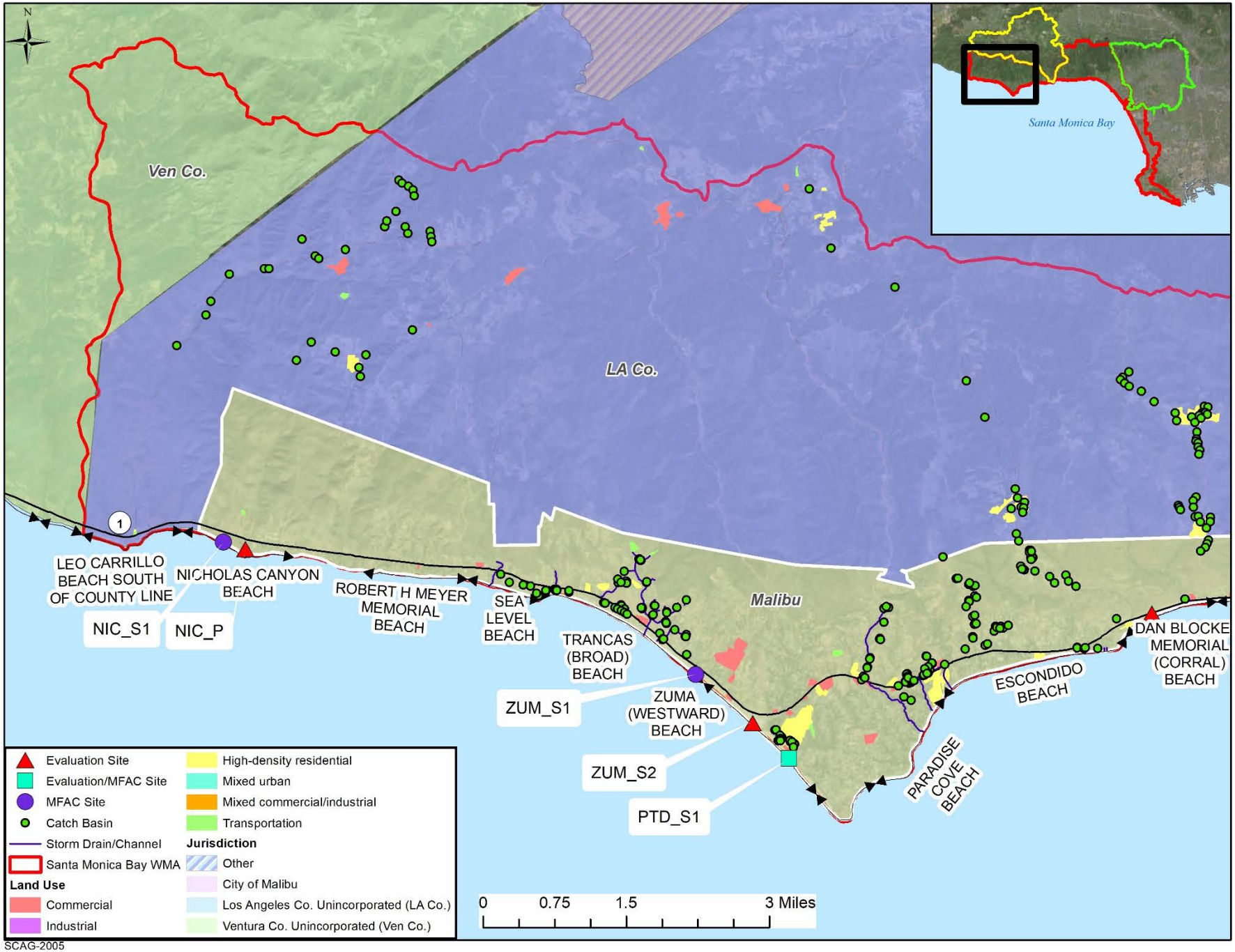
VIII. **Appendices**

Appendix A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Ven Co.
LA Co.
Malibu
Santa Monica Bay
1
LEO CARRILLO BEACH SOUTH OF COUNTY LINE
NICHOLAS CANYON BEACH
ROBERT H MEYER MEMORIAL BEACH
SEA LEVEL BEACH
TRANCAS (BROAD) BEACH
ZUMA (WESTWARD) BEACH
ESCONDIDO BEACH
DAN BLOCKE MEMORIAL (CORRAL) BEACH
PARADISE COVE BEACH
NIC_S1
NIC_P
ZUM_S1
ZUM_S2
PTD_S1
Evaluation Site
Evaluation/MFAC Site
MFAC Site
Catch Basin
Storm Drain/Channel
Santa Monica Bay WMA
Land Use
Commercial
Industrial
High-density residential
Mixed urban
Mixed commercial/industrial
Transportation
Jurisdiction
Other
City of Malibu
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Ventura Co. Unincorporated (Ven Co.)
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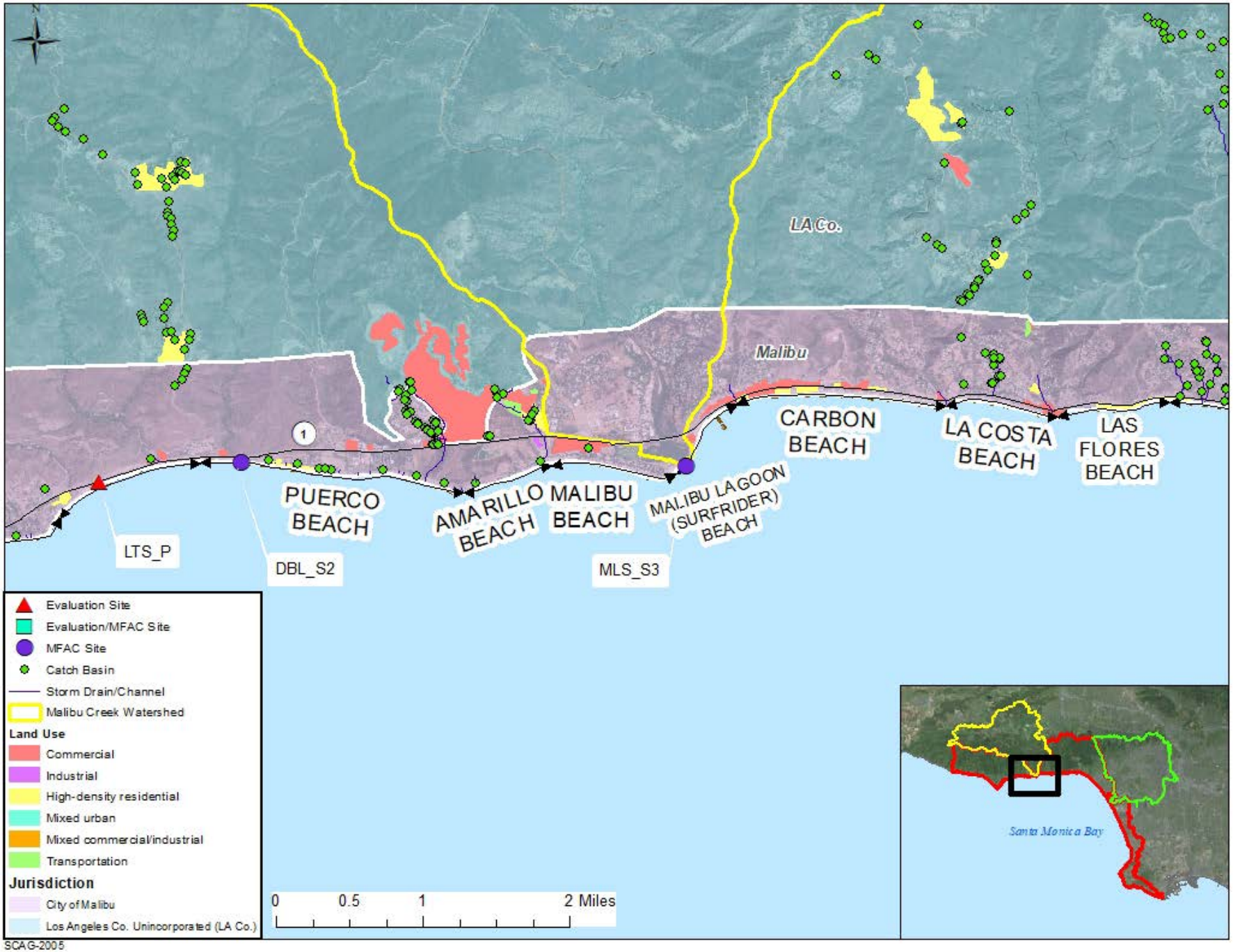
0.75
1.5
3 Miles
SCAG-2005

Figure A- 1


LA Co.
Malibu
CARBON BEACH
LA COSTA BEACH
LAS FLORES BEACH
PUERCO BEACH
AMARILLO BEACH
MALIBU BEACH
MALIBU LAGOON (SURFRIDER) BEACH
LTS_P
DBL_S2
MLS_S3
Evaluation Site
Evaluation/MFAC Site
MFAC Site
Catch Basin
Storm Drain/Channel
Malibu Creek Watershed
Land Use
Commercial
Industrial
High-density residential
Mixed urban
Mixed commercial/industrial
Transportation
Jurisdiction
City of Malibu
Los Angeles Co. Unincorporated (LA Co.)
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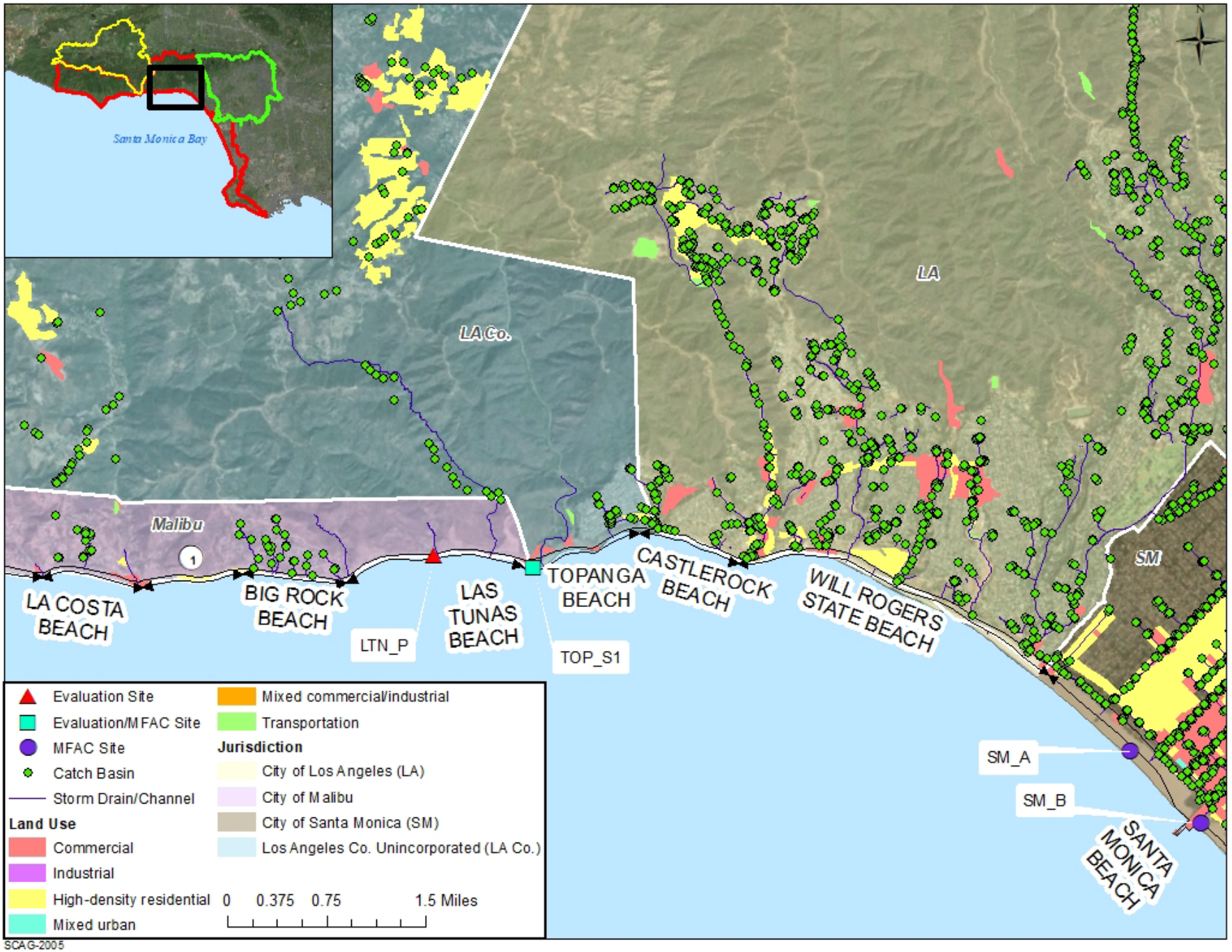
Santa Monica Bay
SCAG-2005

Figure A- 2


Santa Monica Bay
LA Co.
LA
Malibu
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LA COSTA BEACH
BIG ROCK BEACH
LAS TUNAS BEACH
TOPANGA BEACH
CASTLEROCK BEACH
WILL ROGERS STATE BEACH
SM
LTN_P
TOP_S1
SM_A
SM_B
SANTA MONICA BEACH
Evaluation Site
Evaluation/MFAC Site
MFAC Site
Catch Basin
Storm Drain/Channel
Land Use
Commercial
Industrial
High-density residential
Mixed urban
Mixed commercial/industrial
Transportation
Jurisdiction
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City of Malibu
City of Santa Monica (SM)
Los Angeles Co. Unincorporated (LA Co.)
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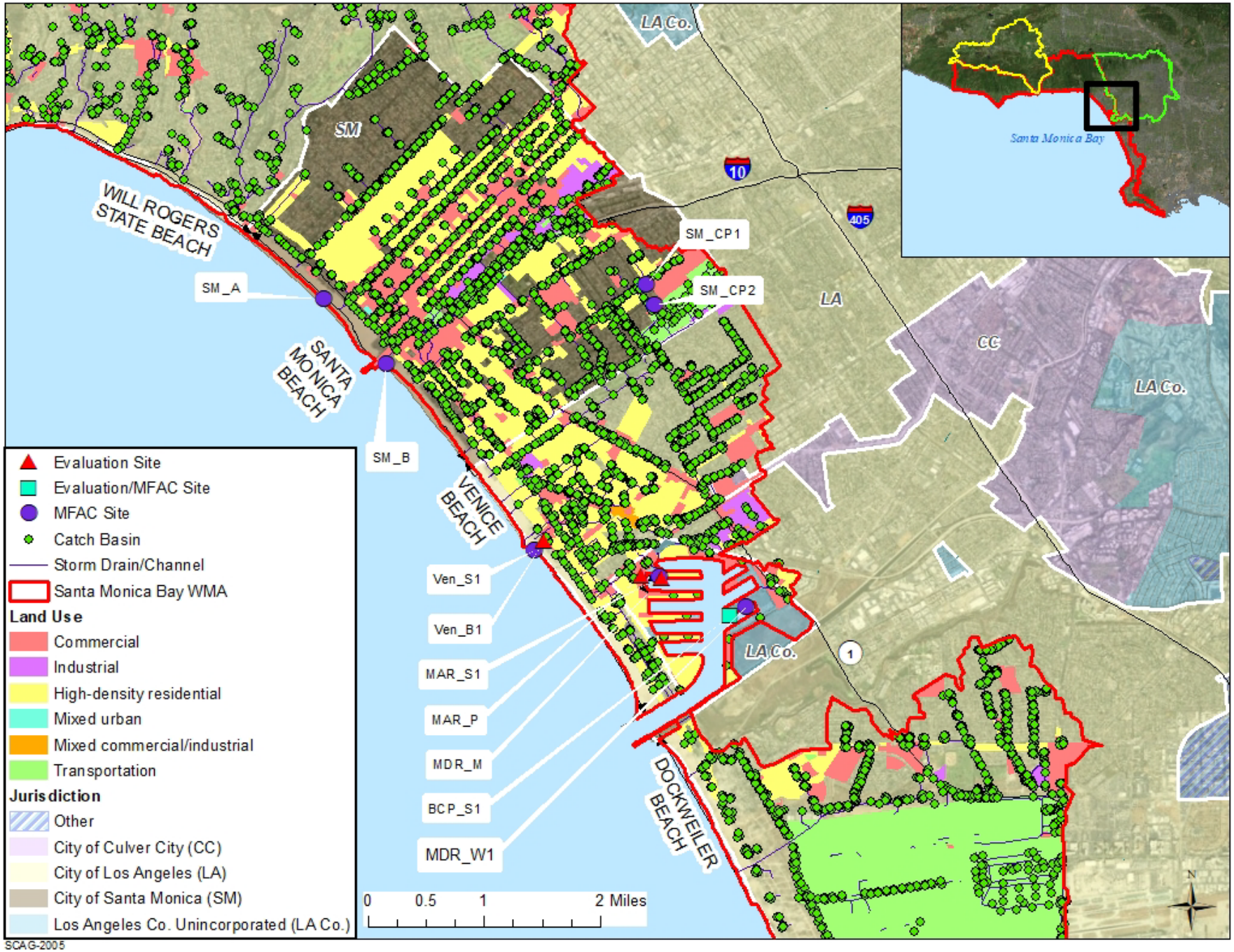
SCAG-2005

Figure A- 3


LA Co.
SM
WILL ROGERS STATE BEACH
SM_A
SANTA MONICA BEACH
SM_B
VENICE BEACH
SM_CP1
SM_CP2
LA
CC
LA Co.
10
405
Santa Monica Bay
Ven_S1
Ven_B1
MAR_S1
MAR_P
MDR_M
BCP_S1
MDR_W1
DOCKWEILER BEACH
1
Evaluation Site
Evaluation/MFAC Site
MFAC Site
Catch Basin
Storm Drain/Channel
Santa Monica Bay WMA
Land Use
Commercial
Industrial
High-density residential
Mixed urban
Mixed commercial/industrial
Transportation
Jurisdiction
Other
City of Culver City (CC)
City of Los Angeles (LA)
City of Santa Monica (SM)
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SCAG-2005

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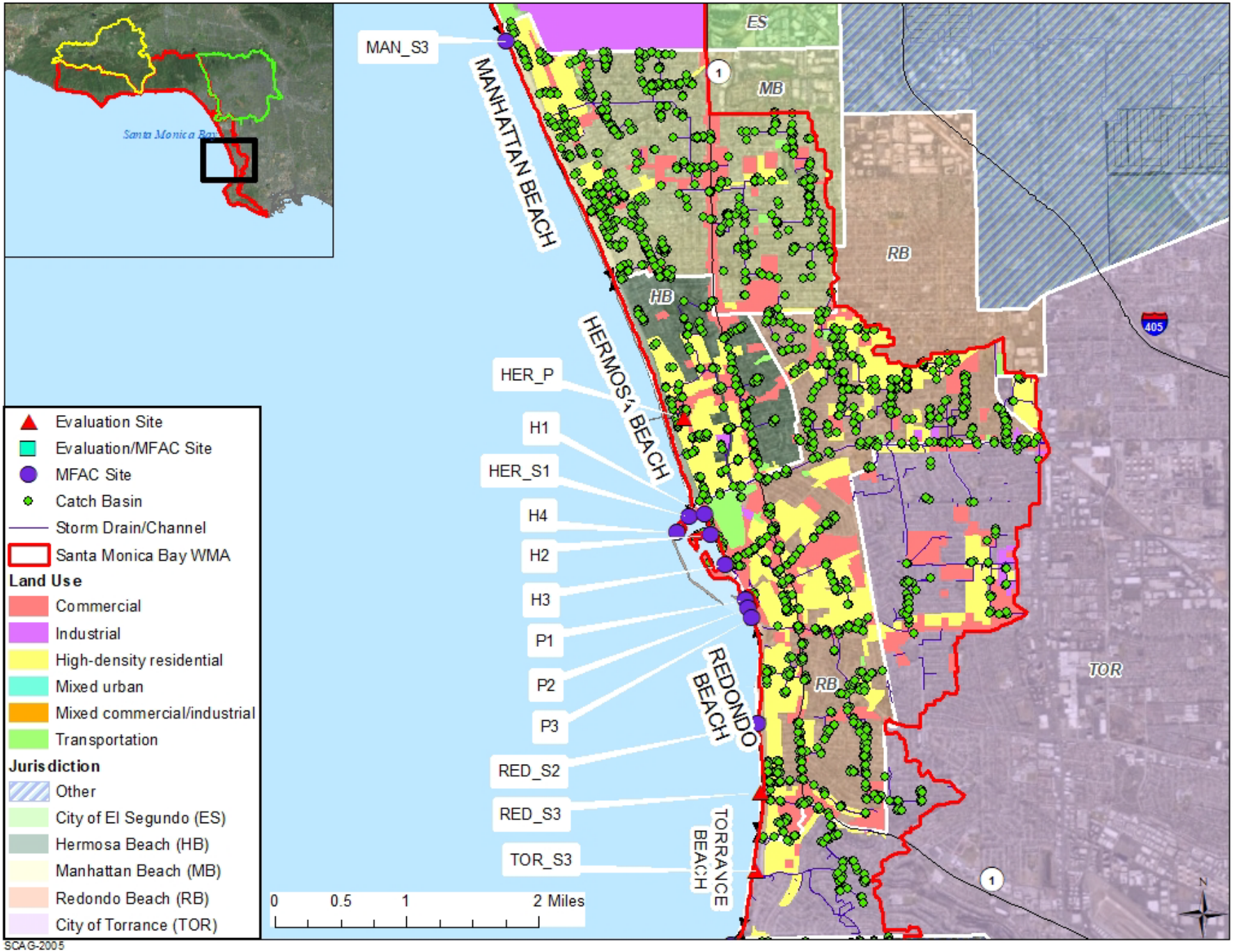
MAN_S3
MANHATTAN BEACH
HERMOSA BEACH
REDONDO BEACH
TORRANCE BEACH
HER_P
H1
HER_S1
H4
H2
H3
P1
P2
P3
RED_S2
RED_S3
TOR_S3
ES
MB
HB
RB
TOR
405
1
Evaluation Site
Evaluation/MFAC Site
MFAC Site
Catch Basin
Storm Drain/Channel
Santa Monica Bay WMA
Land Use
Commercial
Industrial
High-density residential
Mixed urban
Mixed commercial/industrial
Transportation
Jurisdiction
Other
City of El Segundo (ES)
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Manhattan Beach (MB)
Redondo Beach (RB)
City of Torrance (TOR)
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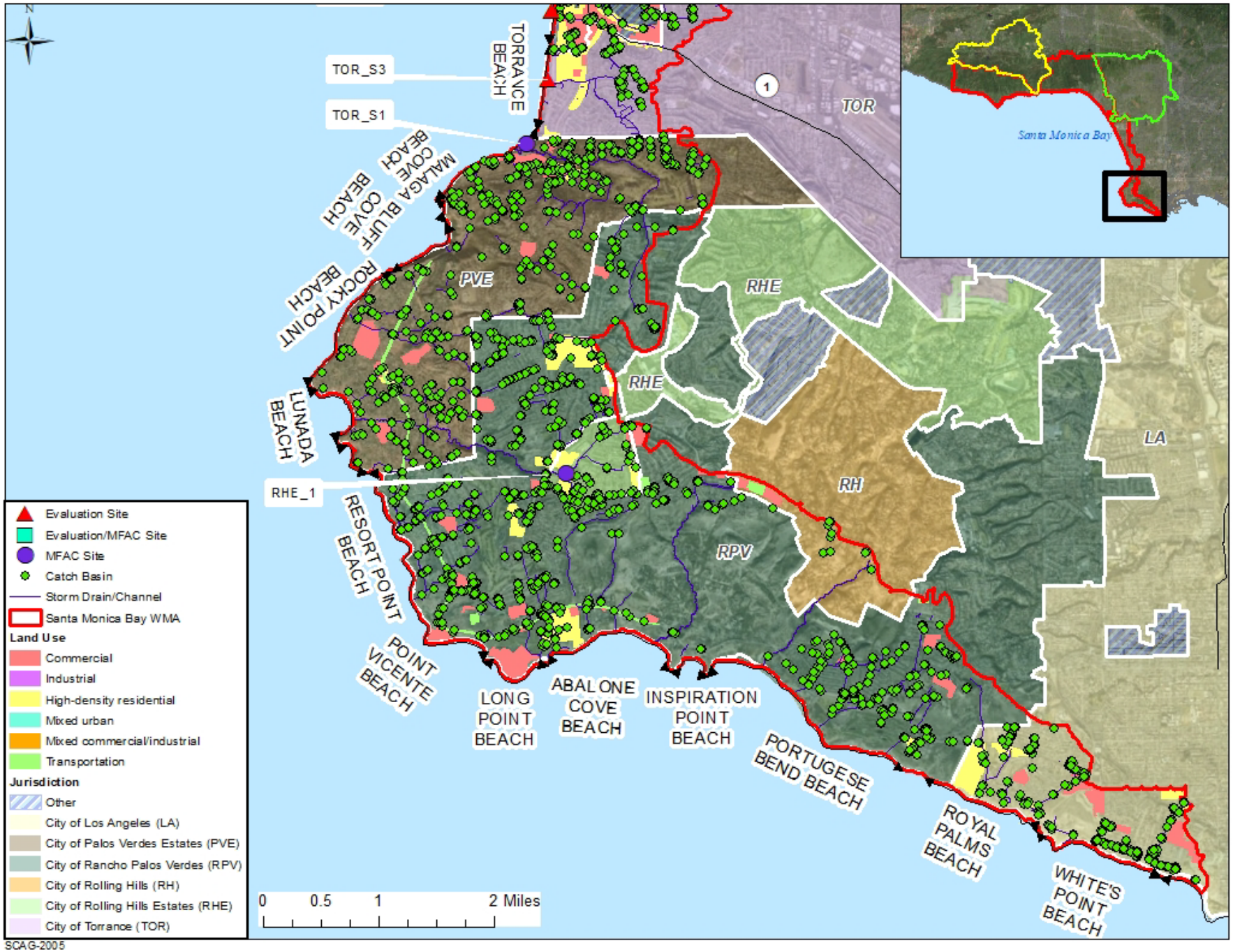
SCAG-2005

Figure A- 5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TOR_S3
TOR_S1
RHE_1
TORRANCE BEACH
MALAGA COVE BEACH
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ROCKY POINT BEACH
LUNADA BEACH
RESORT POINT BEACH
POINT VICENTE BEACH
LONG POINT BEACH
ABALONE COVE BEACH
INSPIRATION POINT BEACH
PORTUGESE BEND BEACH
ROYAL PALMS BEACH
WHITE'S POINT BEACH
TOR
PVE
RHE
RHE
RH
RPV
LA
1
Santa Monica Bay
Evaluation Site
Evaluation/MFAC Site
MFAC Site
Catch Basin
Storm Drain/Channel
Santa Monica Bay WMA
Land Use
Commercial
Industrial
High-density residential
Mixed urban
Mixed commercial/industrial
Transportation
Jurisdiction
Other
City of Los Angeles (LA)
City of Palos Verdes Estates (PVE)
City of Rancho Palos Verdes (RPV)
City of Rolling Hills (RH)
City of Rolling Hills Estates (RHE)
City of Torrance (TOR)
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SCAG-2005

Figure A- 6

Appendix B

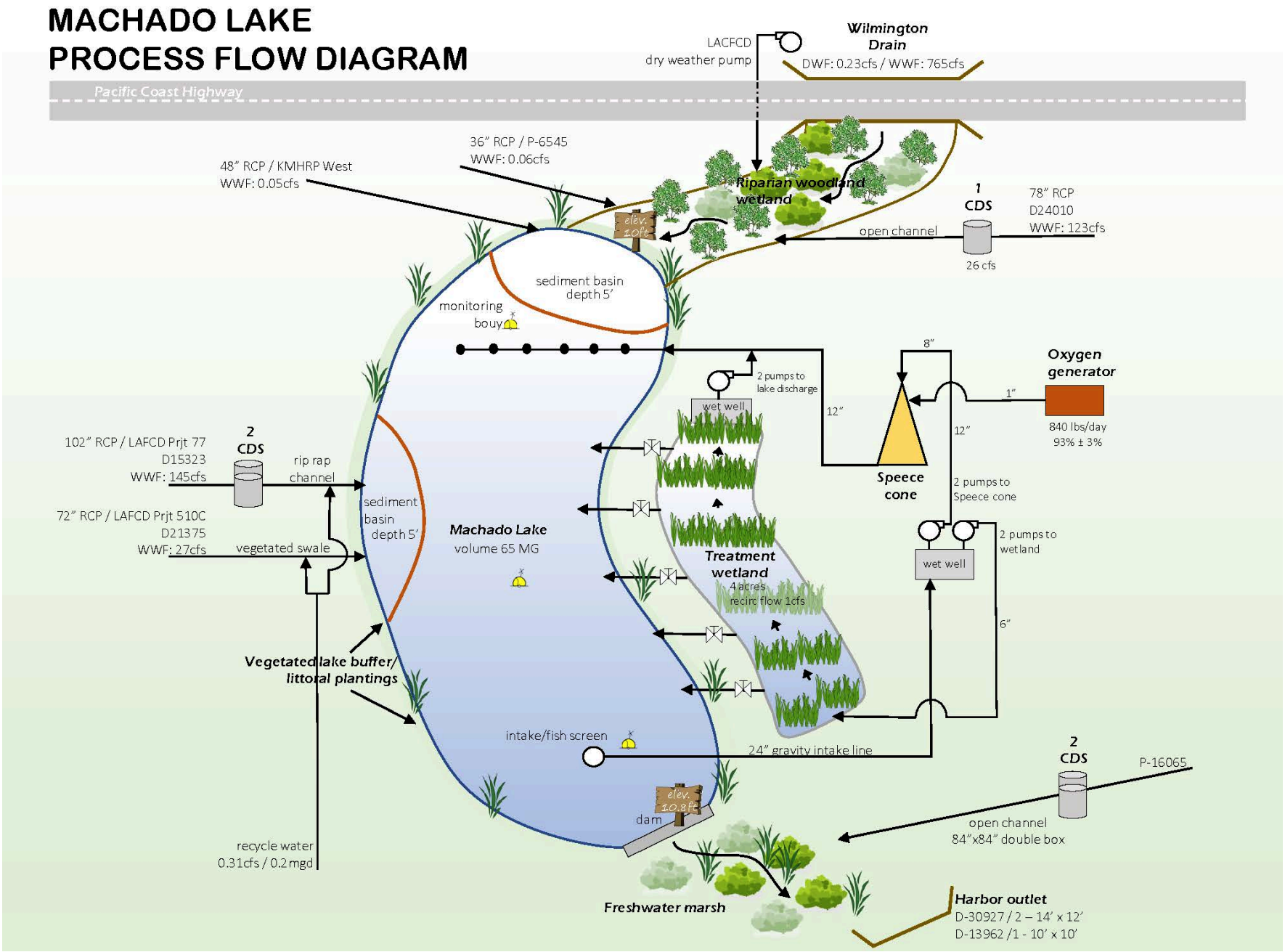

Figure B- 1 (Source: City of Los Angeles)