CITY OF BEVERLY HILLS

PUBLIC WORKS SERVICES DEPARTMENT

MEMORANDUM

TO: PUBLIC WORKS COMMISSION

FROM: Josette Descalzo,
Environmental Compliance and Sustainability Program Manager JD

DATE: May 11, 2015

SUBJECT: Stormwater Compliance using the Draft Enhanced Watershed Management Program (EWMP) Plan

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INTRODUCTION

The City's urban and stormwater runoff goes through a network of storm drain lines that discharges to Ballona Creek and Estuary. The City's discharges are subjected to meeting water quality standards prescribed in the 2012 MS4 Permit for Ballona Creek and Estuary.

On December 28, 2012, the new Municipal Separate Storm Sewer System Permit (2012 MS4 Permit) was adopted by the Los Angeles Regional Water Quality Control Board (RWQCB) to ensure compliance with the regulations under the Federal Clean Water Act. The new permit prescribed additional regulations on incorporated cities in Los Angeles County and the Los Angeles County Flood Control District (Permittees) to ensure acceptable water quality standards with respect to urban runoff, stormwater discharges and the water bodies of the United States.

In developing the 2012 MS4 Permit, it was apparent to the RWQCB that they needed to provide additional compliance pathways for the Permittees because compliance through previous versions would likely not be met and therefore unsuccessful in improving water quality. For these two reasons, the 2012 MS4 Permit has three compliance pathways: 1) traditional approach requiring Permittees to meet strict numeric standards in the storm drain outfalls and water bodies of the United States; 2) preparation and implementation of a Watershed Management Program (WMP); and 3) preparation and implementation of an Enhanced Watershed Management Program (EWMP). The WMP and EWMP compliance pathways are adaptive management approaches that allows Permittees to comply with the 2012 MS4 Permit through action-based standards (variety of Best Management Practices and careful planning) as compared to strict numeric standards.

At the May 23, 2013, City Council meeting, staff presented their findings on the three compliance pathways and recommended joining a EWMP group was best for the City. The EWMP provides the City the following advantages:

1. Planning documents to integrate the various permit provisions, including water quality standards through the means of Total Daily Maximum Loads (TMDLs).

2. Monitoring and reporting through Coordinated Integrated Monitoring Program (CIMP).

3. Planning and implementation documents such as the EWMP Plan where it outlines the Watershed's action-based approach to meeting water quality standards of the permit.

4. Extends the interim and final compliance deadlines for Ballona Creek TMDLs.

The City Council agreed with the recommendations and authorized staff to join the Ballona Creek EWMP group. The Ballona Creek EWMP group is comprised of the City of Los Angeles (lead agency), County of Los Angeles and Flood Control District, Culver City, Inglewood, Santa Monica and West Hollywood. The Ballona Creek EWMP group was officially recognized by the Regional Water Quality Control Board (RWQCB) when it submitted a joint Notice of Intent (NOI) on June 27, 2013.

Since then, the Ballona Creek EWMP group has drafted and submitted regulatory documents to the RWQCB to comply with the 2012 MS4 Permit. On June 28, 2015, the EWMP group will be submitting in the Draft EWMP Plan. The objective of the EWMP Plan is to determine the many control measures (Best Management Practices actions) that are needed to comply with the 2012 MS4 Permit, especially to meet the provisions of the Ballona Creek Bacteria TMDL and the Ballona Creek Metals and Toxics TMDL. The EWMP Plan also provides multiple benefits to the community by promoting sustainable green infrastructure practices.

The Draft EWMP Plan is divided to the following elements:

1. Water Quality Priorities: The plan identifies priority pollutants based on years of monitoring data and pollutants identified in the TMDL regulations. The EWMP Plan focuses on bacteria, metals and toxics pollutants that are listed in the Ballona Creek Bacteria and Metals & Toxics TMDLs. Under the provisions of the TMDLs, the pollutant loadings must be reduced to meet the interim and final water quality limits for each TMDLs. For instance:

    a. Constituents in the Ballona Creek Metals and Toxics (i.e. copper, zinc, cadmium, etc.) must be reduced by 50 percent by 2015. Achieve 100% compliance by 2021.

    b. Achieve 100% compliance by 2021 for Ballona Creek Bacteria TMDL (i.e. total coliform, fecal coliform, and E.coli).

2. Watershed Control Measures: The plan identifies strategies and BMPs that will need to be implemented by individual jurisdictions or collectively at a watershed-scale to address the Water Quality Priorities. These control measures are divided by Regional (Signature) projects and Distributed (local) projects. Regional projects are typically watershed-scale projects that collect, infiltrate and/or treat urban and stormwater runoff. These projects are designed to capture the 85th percentile of a 24-hour event storm volume based on a drainage area(s). Regional projects sites are usually in public lands such as recreational parks, medians and public golf courses. Distributed BMP projects are projects that implement structural BMPs (i.e. LID, green streets, small-scale treatment) and institutional BMPs (i.e. LID ordinance, green streets policy, street sweeping, and source control elimination program). An example of a structural BMP project is the implementation of LID on a new residential or commercial project. Likewise, municipalities can adopt a LID ordinance and Green Streets Policy to enhance their institutional BMPs program.

    The EWMP Plan predicts that the implementation of both Regional and Distributed projects are the "recipe" for compliance. The plan estimates that the implementation of these two

watershed control measures can capture up to six Rose Bowls of urban and stormwater runoff; hence achieving final compliance with the TMDLs.

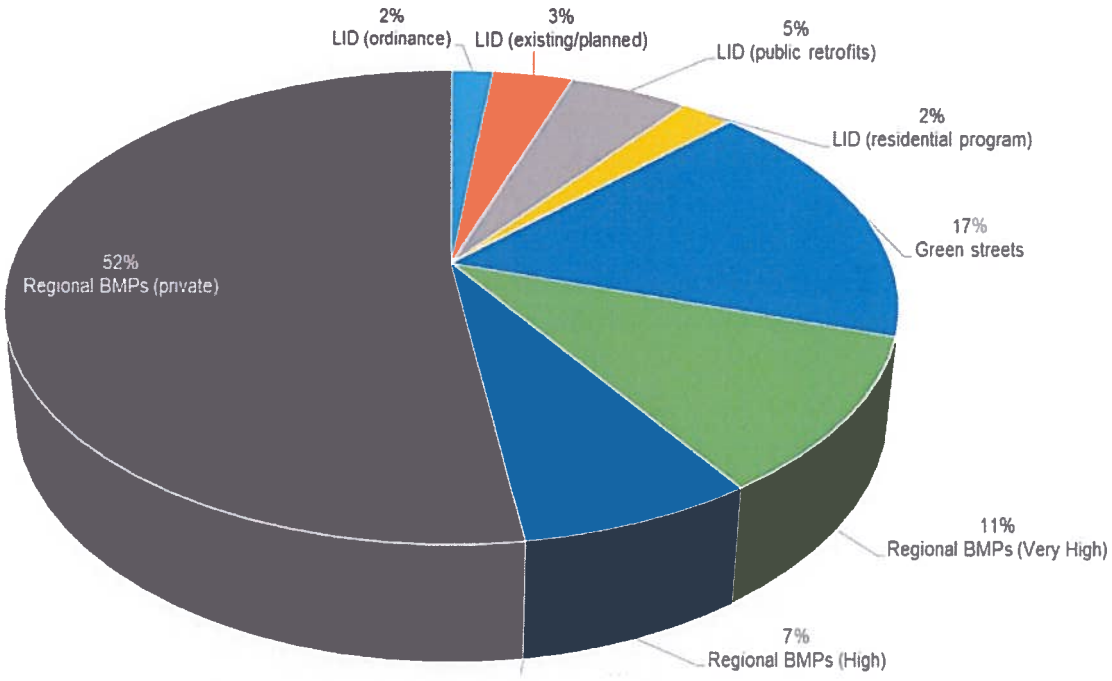
It is noteworthy to further explain the three structural BMPs categories that are essential to for compliance. These structural BMPs are the following:

a. Low-Impact Development: These are distributed structural practices that capture, infiltrate, and/or treat runoff at the parcel (normally less than 10 tributary acres). Common LID practices include bioretention, permeable pavement and other infiltration BMPs that prevent runoff from leaving a parcel. LID designs for bioretention and biofiltration BMPs have incorporated water efficient landscaping such as rain garden concepts and efficient irrigation systems. Rainfall harvesting practices such as rain barrels and cisterns are also part of LID where it is used to capture rain rainwater that would otherwise runoff a parcel. Water collected during rain harvesting can be used to offset potable water demands for irrigation. Implementation of LID BMPs starts with the adoption of LID Ordinances in municipalities. The EWMP Plan identifies LID as a major control measure in the watershed since the runoff is captured and treated on-site before it runs off from the parcel and onto the watershed.

b. Green Streets: These are also distributed structural practices that are typically implemented as linear bio-retention/biofiltration BMPs installed parallel to roadways. Green streets receives its runoff from the curb and gutter; and it is infiltrated through native or engineered soil media. In addition to stormwater management, green streets provides additional benefits to the community such pedestrian safety, traffic calming, street tree canopy, reducing heat island effect and implement water efficient landscaping to reduced irrigation consumption. As result, communities with green streets have seen an increase in property values and reduced crime rates. Similar to LID, the EWMP Plan identifies green streets as a major control measure since it serves the same function and the watershed is mostly built out.

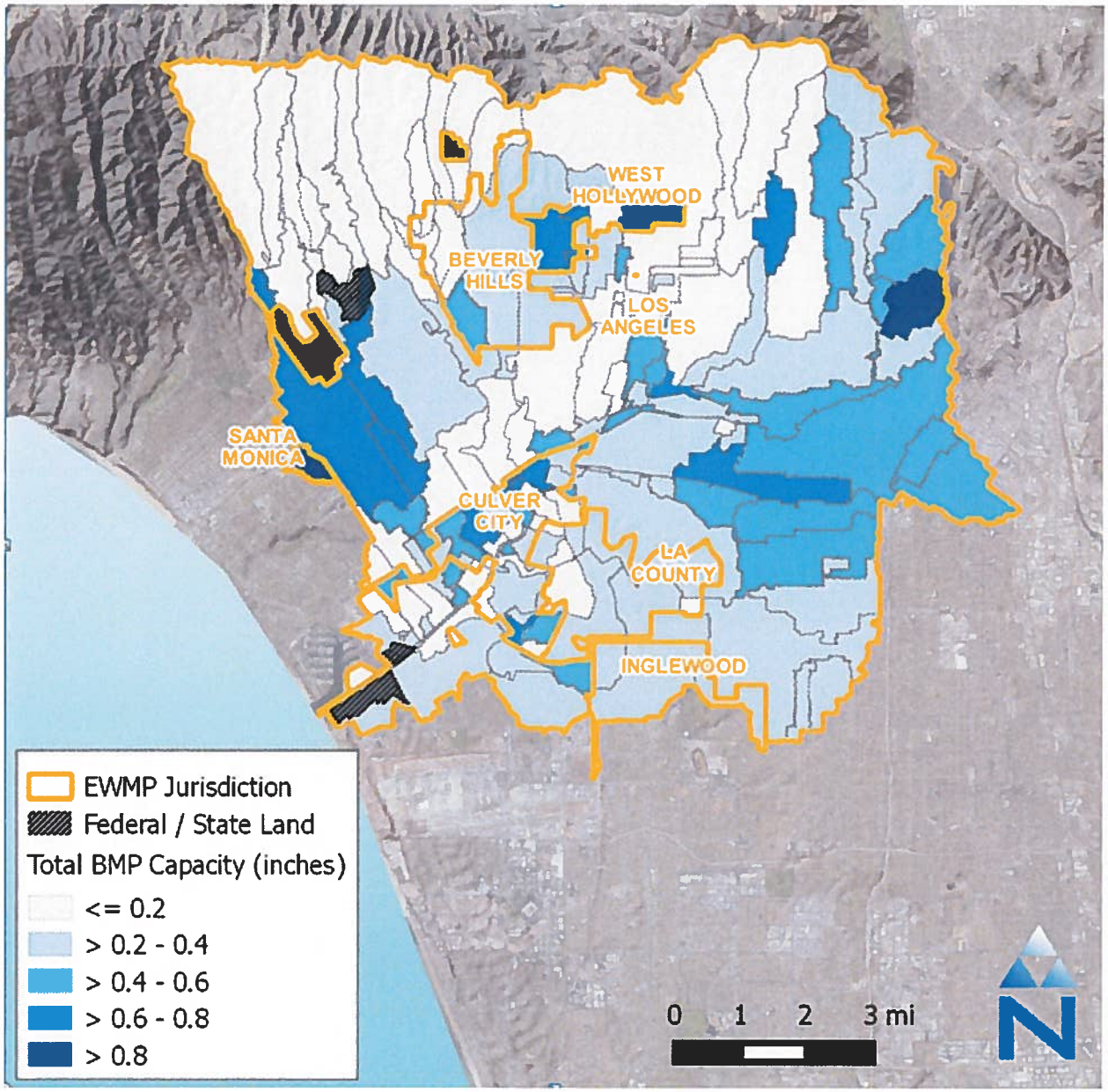
c. Regional (Signature) Projects: These are centralized facilities located near the downstream ends of large drainage areas, typically treating 10s to 100s of acre-ft of runoffs. Regional projects receive large amounts of urban and stormwater runoff from large drainage areas. These projects have been known to be cost-effective since it has a large area to construct BMPs and capture large amounts of runoff. In addition, these projects do not require land acquisition. Regional projects are designed to capture and infiltrate 85th percentile, 24-hour storm event volume from a large (very large) drainage area; this is a requirement of the MS4 Permit. In the draft EWMP plan, there are 4 regional projects that will retain the 85th percentile, 24-hour storm event.

Figure 1: Watershed Control Measures Relative Capacities



3. Implementation Strategy and Compliance Schedule: The Implementation Strategy and Compliance Schedule is the "recipe for compliance" for each jurisdiction and in a watershed-scale. The Implementation Strategy provides what types of control measures (such as LID, green streets and regional projects); where these control measures should be constructed for feasibility and achieve optimum pollutant reduction; and when these need to be constructed to comply with the MS4 Permit. For instance, the Ballona Creek Bacteria TDML and the Metals and Toxics TMDL has a final compliance date is set for 2021. Figure 2 identifies these areas where these structural BMPs can be installed to capture urban and stormwater runoff to meet compliance.

Figure 2: Total Watershed Structural BMP Relative Capacity Opportunities



4. Costs and Financial Strategy: The capital cost estimates for compliance by 2021 is **$2.5 billion. This equates to $9,422 per parcel and operations and maintenance costs exceeding $77M per year. The cost estimates are only on the planning level. Land acquisition was not considered in the Draft EWMP Plan because land value differs for each jurisdiction.** However, the cost estimates can be refined as the implementation strategies progress for each jurisdiction. Funds are currently not available to implement all of the control measures in the draft EWMP Plan, but each member jurisdiction is evaluating all potential sources such as grants, fees and charges, legislative and policy remedies.

DISCUSSION

The Draft EWMP Plan provides the City of Beverly Hills the "recipe" to comply with the MS4 Permit. The City will need to capture approximately 89 acre-ft of urban and stormwater runoff using structural BMPs to comply with the permit (TMDLs). The draft plan identifies the City needing three Regional projects and various Distributed projects to attain this captured volume and compliance.

The City will be participating in the following Regional (Signature) projects:

1. La Cienega/Frank Fenton Field
2. Rancho Park Golf Course
3. Low Flow Treatment Facility (LFTF-1)

The La Cienega/Frank Fenton Park

The maximum drainage area for this project site is approximately 7,776 acres. The cities of Beverly Hills, West Hollywood and Los Angeles will be draining to this project site. Based on the EWMP modeling evaluation, 24 acre-ft active BMP volume is recommended to meet regional project design criteria requirements of the MS4 Permit.

Thus far, the Draft EWMP Plan did not provide cost estimates for regional projects because the model did not provide cost-sharing estimates for each municipality draining to a regional project. The EWMP group and its consultants are refining the model to produce the most accurate estimates for all regional projects.

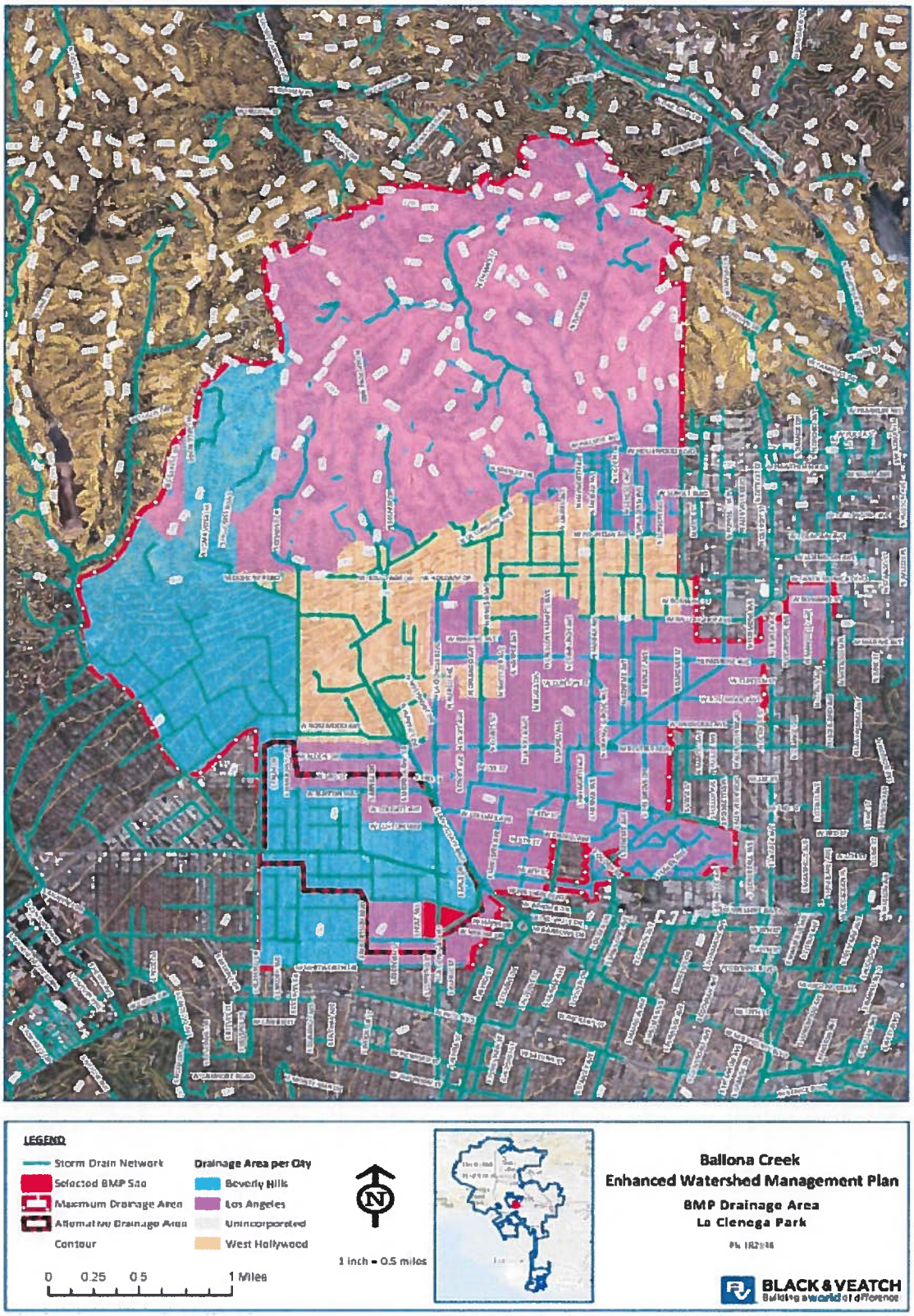
Table 1 summarizes some key conceptual design parameters for this project site. The figures provided show proposed site features and tributary drainage area(s) considered during the engineering and environmental feasibility analysis.

Table 1: La Cienega/Frank Fenton Field Design Parameters

Summary of La Cienega Park / Frank Fenton Field (BH01)		
Project Site Parameters	Total (Maximum) Drainage Area	7,776 acres
	Alternative (Minimum) Drainage Area	578 acres
	Maximum Required BMP Volume	352 AF
	Alternative Required BMP Volume	24 AF
	Groundwater Depth	25 feet
BMP Design Parameters	BMP Opportunity Area	6.4 acres
	Recommended Maximum BMP Depth	8 feet
	Available BMP Volume	51.3 AF
	Recommended Active BMP Volume	**24** AF

Figure 3: La Cienega Park Subsurface Infiltration Site – Site Map

Figure 4: La Cienega Park Drainage Map



Rancho Park Golf Course

Rancho Park Golf Course is located in the City of Los Angeles. The cities of Los Angeles and Beverly Hills will be draining to this proposed Regional project site. The maximum drainage area for this project site is 7,723 acres. The drainage areas includes the watershed draining from Benedict Canyon, located less than two miles to the east of the BMP opportunity area. Based on the modeling, the recommended active BMP volume for this site is 11.6 acre-ft. Similar to La Cienega Park/Frank Fenton Field Project, there are no cost estimates for this project.

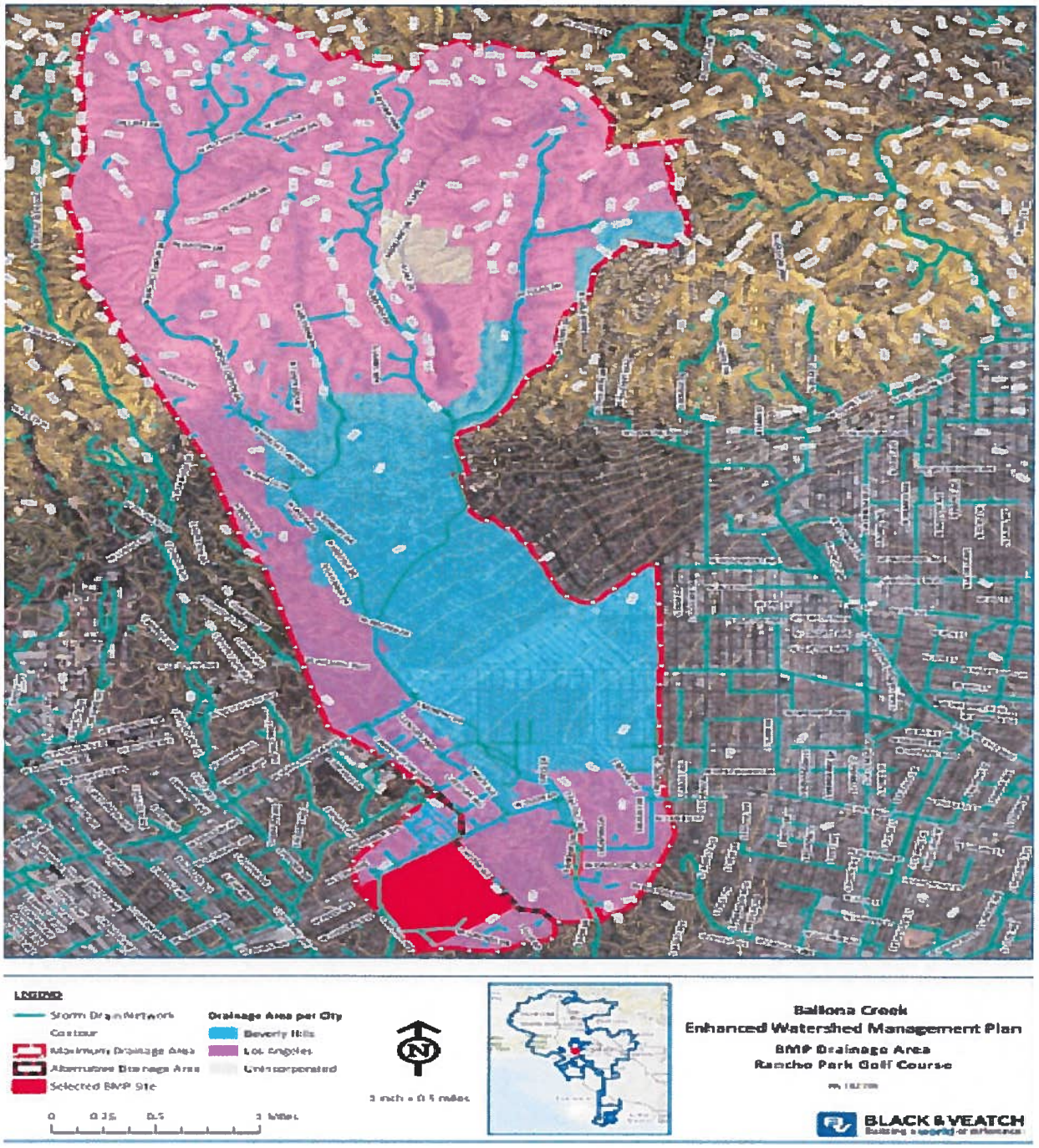
Table 2 summarizes some key conceptual design parameters for this project site. The figures provided show proposed site features and tributary drainage area(s) considered during the engineering and environmental feasibility analysis.

Table 2: Rancho Park Golf Course Design Parameters

Summary of Rancho Park Golf Course (LA10)		
Project Site Parameters	Total (Maximum) Drainage Area	7,273 acres
	Alternative (Minimum) Drainage Area	359 acres
	Maximum Required BMP Volume	181.4 AF
	Alternative Required BMP Volume	7.7 AF
	Groundwater Depth	50 feet
BMP Design Parameters	BMP Opportunity Area	15.5 acres
	Recommended Maximum BMP Depth	26 feet
	Available BMP Volume	403 AF
	Recommended Active BMP Volume	11.6 AF

Figure 5: Rancho Park Golf Course Surface and Subsurface Infiltration Site – Site Map

Figure 6: Rancho Park Golf Course Surface and Subsurface Infiltration Basin- Drainage Map

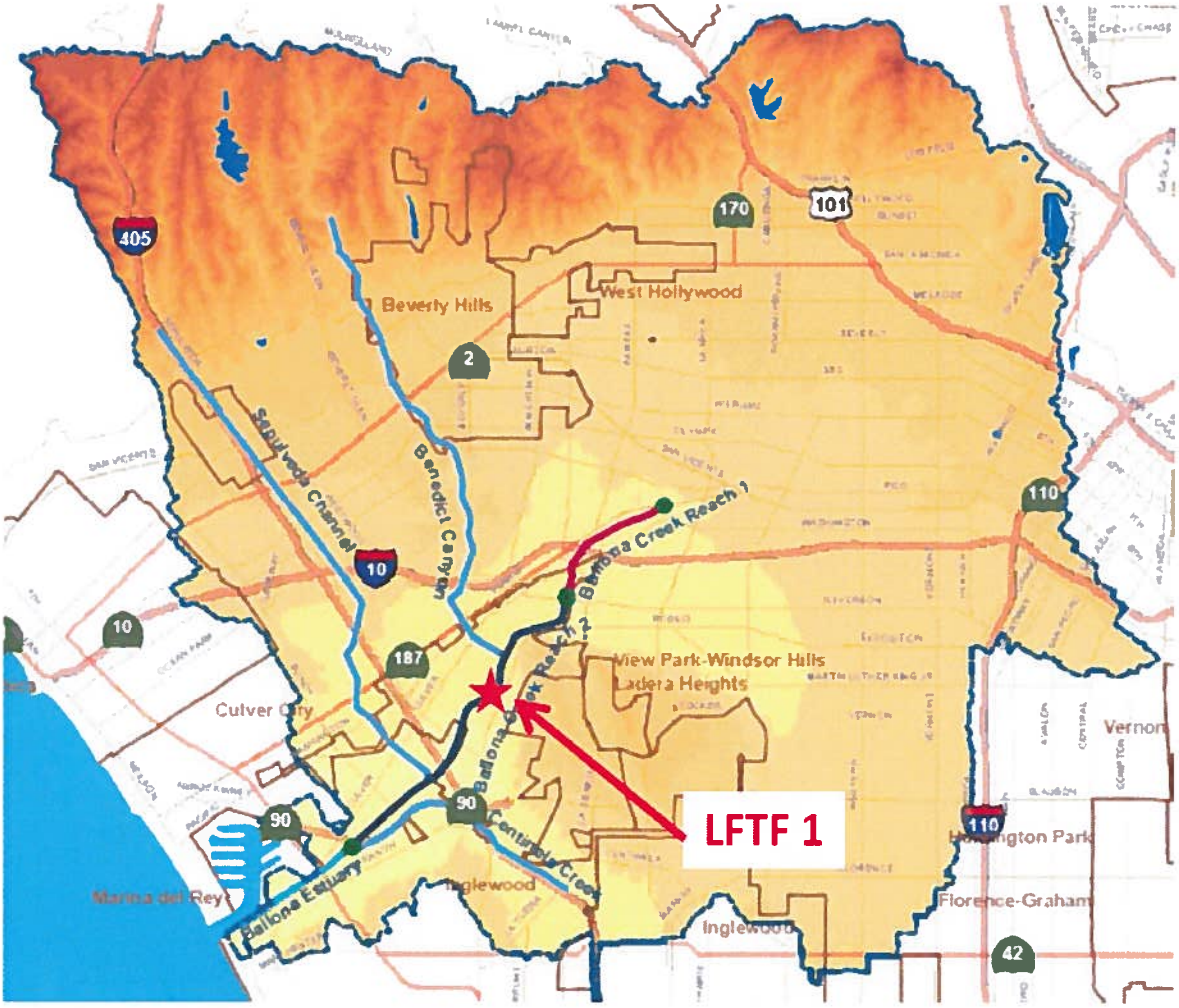


Low Flow Treatment Facility #1 (LFTF -1)

LFTF-1 is a Regional Project that all Ballona Creek agencies will be participating in. This is a treatment plant project that would treat the combined flow from Benedict Canyon Channel and the northern flow of Ballona Creek and discharge it to Ballona Creek. The goal of the project is to reduce the bacteria levels from the contributing tributaries and comply with the Ballona Creek Dry-Weather Bacteria TMDL.

The permit, design and construction cost for this project is estimated to be $6.7 M. The EWMP group expects to receive grant money worth $2.5 M and with a 5 % administration cost, the cost estimate to be shared among agencies is approximately $4.5 M. Since the City of Beverly Hills is 4.6 percent of the watershed, the City's cost sharing responsibility is estimated at $207 K. In addition to the initial capital cost, the City will need to plan for the O&M cost to maintain the facility. The initial planning stages suggest the City will need to execute a Memorandum of Agreement every 3, 5 and 10 years to cover costs incurred in this project.

Figure 7: LFTF-1 Drainage Map



Distributed (local) Projects

The Draft EWMP Plan used a modeling software approved by the Regional Water Quality Control Board to assess each jurisdiction's capabilities to comply with the MS4 Permit. The results of the model divided the City to subwatershed sections (See Figure 8) and identified the required BMP capacities for each subwatershed and for each BMP type. Based on the model, structural BMPs (i.e. LID, Green Streets, small treatment-facilities) are the key components to achieving compliance targets set by the MS4 Permit.

Figure 8: Beverly Hills Subwatershed BMP Map

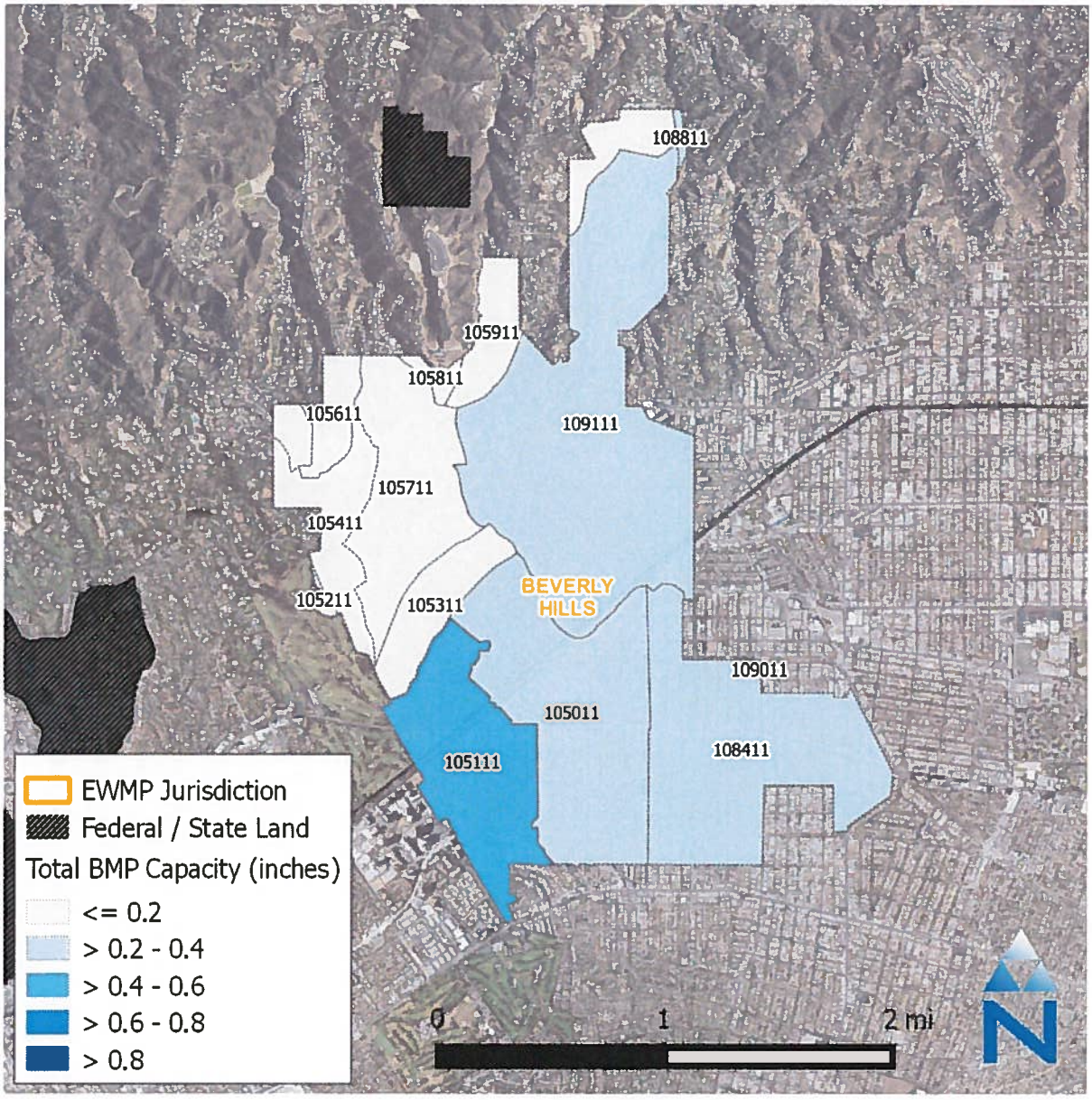


Table 3 provides a list of subwatersheds and the BMP capacity needed for each type of structural BMPs to achieve compliance.

Table 3: Beverly Hills Implementation Strategy

Subwatershed ID	COMPLIANCE TARGETS: MEASURABLE AND ENFORCEABLE BMP GOAL		EWMP IMPLEMENTATION PLAN: APPROACH TO ACHIEVE COMPLIANCE TARGETS, SUBJECT TO ADAPTIVE MANAGEMENT (BMP capacity expressed in units of acre-feet)												
	For Metals by 2021	For Bacteria by 2021	For Metals Attainment by 2021											For Bacteria Attainment by 2021	
				Low-Impact Development				Streets	Regional BMPs						
	24-hour Volume Managed (acre-ft)	Additional 24-hour Volume to be Managed (acre-ft)	% Load Reduction Critical Condition	Ordinance	Planned LID	Public LID	Residential LID	Green Streets	Very High (public, owned)	High (public, owned)	Medium (public, non-owned)	Private	Total BMP Capacity (acre-ft)	Regional BMPs (private)	Total BMP Capacity (acre-ft)
105011	19.86	3.94	58%	0.29	—	2.29	0.44	15.86	0.00	0.00	0.00	0.00	18.9	3.94	22.8
105111	18.62	0.00	90%	0.19	—	1.08	0.33	8.13	0.00	0.00	0.00	6.95	16.7	0.00	16.7
105211	0.00	0.02	5%	0.00	—	—	—	0.00	0.00	0.00	0.00	0.00	0.0	0.02	0.0
105311	1.14	0.25	48%	0.07	—	0.02	0.19	0.86	0.00	0.00	0.00	0.00	1.1	0.25	1.4
105411	0.55	0.31	37%	0.09	—	0.07	0.03	0.42	0.00	0.00	0.00	0.00	0.6	0.31	0.9
105511	0.00	0.07	6%	0.02	—	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.07	0.1
105611	0.27	0.13	37%	0.04	—	—	0.03	0.19	0.00	0.00	0.00	0.00	0.3	0.13	0.4
105711	0.24	1.32	6%	0.20	—	0.41	0.10	0.00	0.00	0.00	0.00	0.00	0.7	1.32	2.0
105811	0.05	0.02	21%	0.01	—	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.1	0.02	0.1
105911	0.14	0.57	7%	0.08	0.00	0.17	0.19	0.00	0.00	0.00	0.00	0.00	0.4	0.57	1.0
106011	0.00	0.00	5%	0.00	—	—	—	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
108411	181.55	3.26	84%	0.29	—	1.18	0.51	8.96	2.40	0.00	0.00	0.00	13.3	3.26	16.6
108811	0.21	0.00	53%	0.00	—	—	0.01	0.04	0.12	0.00	0.00	0.00	0.2	0.00	0.2
109011	0.00	0.00	63%	0.00	—	—	—	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
109111	35.34	1.57	43%	0.53	—	0.69	0.95	4.65	18.30	0.00	0.00	0.00	25.1	1.57	26.7
Total	258.0	11.5	73%	1.8	0.0	6.0	2.8	39.1	20.8	0.0	0.0	6.9	77.5	11.5	89.0

FISCAL IMPACT PROJECTIONS

The fiscal impact to Beverly Hills to achieve compliance by 2021 is estimated to be $75.20M in capital costs and $4.92 M on O&M. These costs estimates are derived from the model used in the Draft EWMP Plan. These cost estimates include LID retrofits in public properties, green streets retrofits, and the two Regional (Signature) Projects. Currently, the Draft EWMP Plan does not provide cost estimates for each Regional (Signature) Projects because the model did not provide the cost-sharing estimate for each agency draining to a regional project. The EWMP Group and its consultants are refining the model to produce the most accurate estimates for these projects..

This cost estimate also doesn't include the estimated $207K cost sharing for the Low Flow Treatment Facility No. 1 (LFTF-1) because this project is under a separate compliance deadline.

The fiscal impact to comply with the MS4 Permit is a big undertaking for all agencies complying with the MS4 Permit. Currently, stormwater is not considered a utility under State Law to help fund for compliance. There were attempts by the County of Los Angeles to initiate a stormwater bond measure but was not successful. Currently, municipalities are using minimal general fund monies and are always looking for grant opportunities to help alleviate from the exorbitant costs for compliance. As for the City of Beverly Hills, the City is continuing to set aside around $4M a year to fund compliance projects.