

Watershed Management Plan

City of Walnut



Submitted to:

California Regional Water Quality Control Board, Los Angeles Region
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Submitted by:

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1.0- Municipal Separate Storm Sewer System Permit

On November 8, 2012 the Los Angeles Regional Water Quality Control Board adopted Order R4-2012-0175 Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within Coastal Watersheds of Los Angeles County, except those discharges originating from the City of Long Beach MS4. Order R4-2012-0175 became effective 50 days later on December 28, 2012. Order R4-2012-0175 serves as the National Pollution Discharge Elimination System (NPDES) permit for Coastal Watershed storm water and non-storm water discharges originating from the Los Angeles County Region, excluding the City of Long Beach. The permit covers the land areas of the Los Angeles County Flood Control, unincorporated areas of Los Angeles County and 84 Cities within the County of Los Angeles. Permittees are subject to the requirements set forth in the MS4 permit for all storm water and non- storm water discharges into the MS4. The City of Walnut is located in the Los Angeles Region and is identified in the MS4 Permit as a permittee under Order R4-2012-0175.

The MS4 permit regulates municipal discharges of storm water and non-storm water from the MS4s of the permittees. Storm water and non-storm water discharges have been identified as a transport mechanism for pollutants into the receiving waters of the Los Angeles Region. Pollutants originating from various land uses are mobilized by surface flow of water which is then directed into the MS4 and eventually deposited into receiving water bodies. In many cases pollutant deposition into receiving water bodies has a noticeable impact on the local ecological system of the water body and recreational uses. It is the intent of the MS4 Permit to protect water quality and mitigate existing and potential sources of pollutants that are cause for impairment of receiving water bodies.

Conditions of the MS4 Permit require that all permittees develop a watershed management plan on an individual or joint basis that will address water quality issues with in the permittee's jurisdictional area. The City of Walnut submitted a Notice of Intent to the Los Angeles Regional Water Board on June 28, 2013 identifying the City's selected watershed management plan option. Due to the topographic nature and land use of the City of Walnut, the single permittee Watershed Management Plan (WMP) option was selected. A copy of the NOI is included in Attachment A of this document. The intention of the WMP is to provide a viable plan for implementing water quality improving infrastructure, policies and programs. The end result of the WMP is focused on complying with final effluent limitations and numeric targets for known pollutants in the receiving water.

The WMP is paired with an Integrated Monitoring Plan (IMP) to provide a complete program that will assess and address water quality in the City. The IMP will serve as the method for determining the need for pollutant reductions and ultimate compliance with the established water quality goals. The WMP and IMP were developed by RKA Consulting Group with exception to the Reasonable Assurance Analysis which was developed by Geosyntec Consultants.

1.1- The City of Walnut

The City of Walnut is a General Law city that was incorporated on January 19, 1959, and has a jurisdictional area of 8.9 square miles. Based on the 2010 Census, the City of Walnut has an approximate population of 30,000. One defining feature of the City is its rural charm which is preserved by a well-defined general plan. The City is located in the San Gabriel Valley region of Los Angeles County north of State Route 60 and west of State Route 57. Los Angeles County's map of the San Gabriel River Watershed (Figure 1-1) highlights in green, the City's location with respect to the watershed.

Land use in the City is primarily devoted to residential development consisting of 3,760 acres or 65% of the City. The remaining land use in the City is composed of 1,680 acres of open space or 29% of the jurisdictional area, 255 acres of commercial use or 4.5% of the jurisdictional area, and 86 acres of agricultural use or 1.5% of the jurisdictional area. Figure 1-2 is a map of the City of Walnut’s land use. Table 1-1 compares the land uses of the City of Walnut with those of the entire San Gabriel River Watershed.

Table 1-1

Watershed Land Use		
Land Use	City of Walnut	San Gabriel River Watershed
Residential	65%	26%
Open Space	29%	50%
Agriculture/Other	1.5%	9%
Commercial/Industrial	4.5%*	15%

**There are no current industrial land uses in the City of Walnut.*

The City boundary extends from the San Jose Hills north of the City to Valley Boulevard to the south, and from Nogales Street to the west to the easterly boarder of the City with unincorporated areas of Los Angeles County and the City of Pomona. Other cities identified as MS4 Permittees bordering or in close proximity to the City of Walnut include: City of La Puente, City of Industry, City of West Covina, City of Diamond Bar, City of Pomona, and unincorporated areas of Los Angeles County (see Figure 1-1 for San Gabriel River Watershed Map).

1.2- Walnut Watershed Characteristics

The City of Walnut drains to the San Gabriel River Watershed and is part of the San Gabriel River Watershed Management Area (SGRWMA). The City’s runoff drains to the San Gabriel River through two tributary water bodies in the SGRWMA. Reach 1 of the San Jose Creek is located to the south of the City and Walnut Creek Wash is located to the north. Both water bodies connect to Reach 3 of the San Gabriel River which runs parallel with State Route 605 and eventually drains directly to the Pacific Ocean. Figure 1-3 shows the City of Walnut and the two drainage areas within the City’s jurisdiction.

1.2.1- San Jose Creek Reach 1

Due to the topography and location of the San Jose Hills, approximately 93% of the City drains to the South and is tributary to Reach 1 of the San Jose Creek. Storm water and non-storm water runoff is captured by catch basins and then carried through a network of storm drains and open channels to multiple outfalls connected to Reach 1 of the San Jose Creek.

The San Jose Creek transports runoff for the City of Walnut’s outfalls approximately 12 miles to its confluence with San Gabriel River Reach 3 just north of the interchange of State Route 60 and State Route 605. The San Jose Creek is channelized from the area adjacent to the City of Walnut to approximately three quarters of a mile east of Workman Mill Road where the Creek is transitioned to soft bottomed. A number of other upstream and downstream permittees contribute runoff to Reach 1 of the San Jose Creek in addition to the City of Walnut. The Creek extends north east to connect with Thomson Wash which originates at easterly limits of Los Angeles County. Thompson Creek Dam is located at the very top of Thomson Wash.

Figure 1-1: San Gabriel River Watershed Management Area

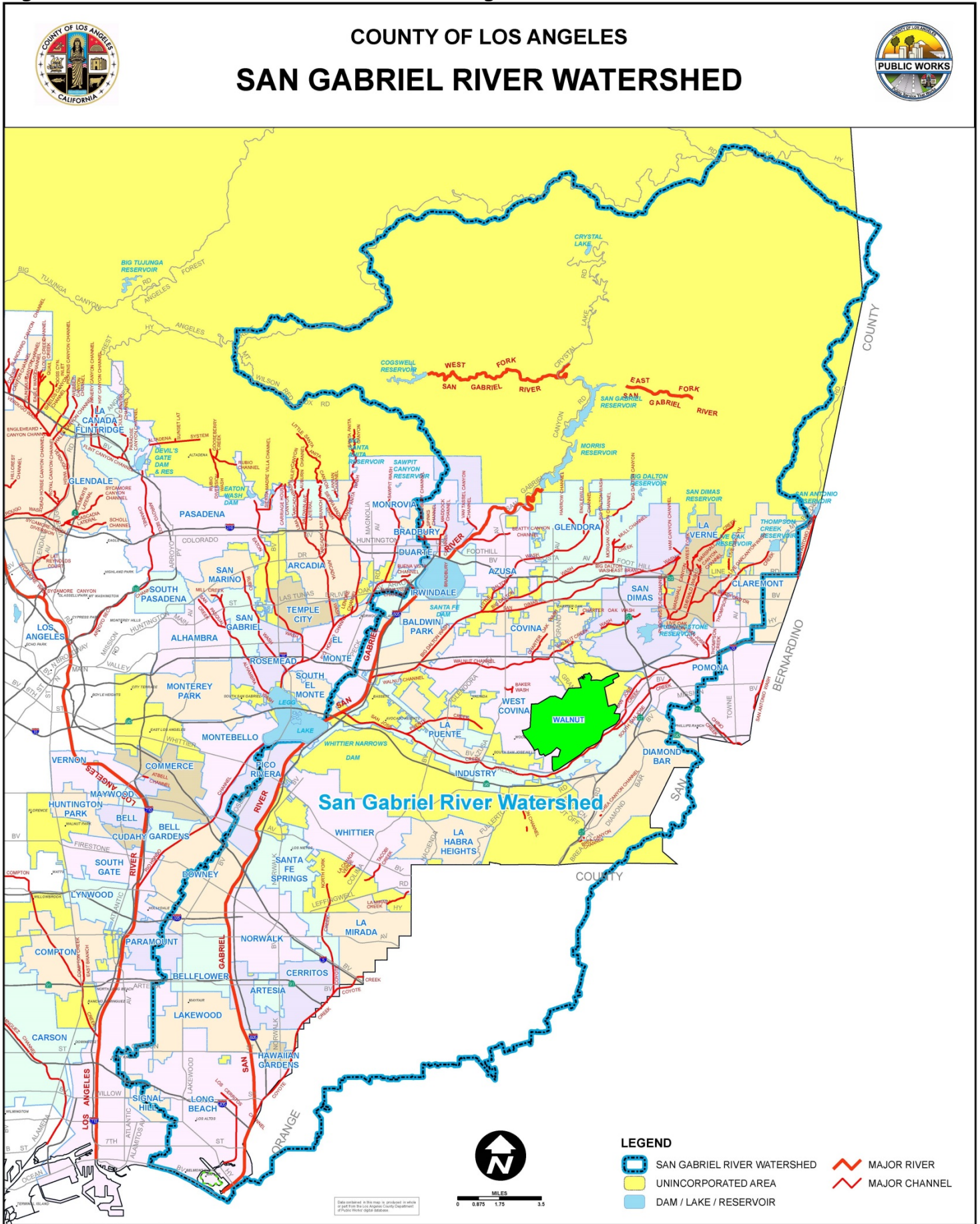
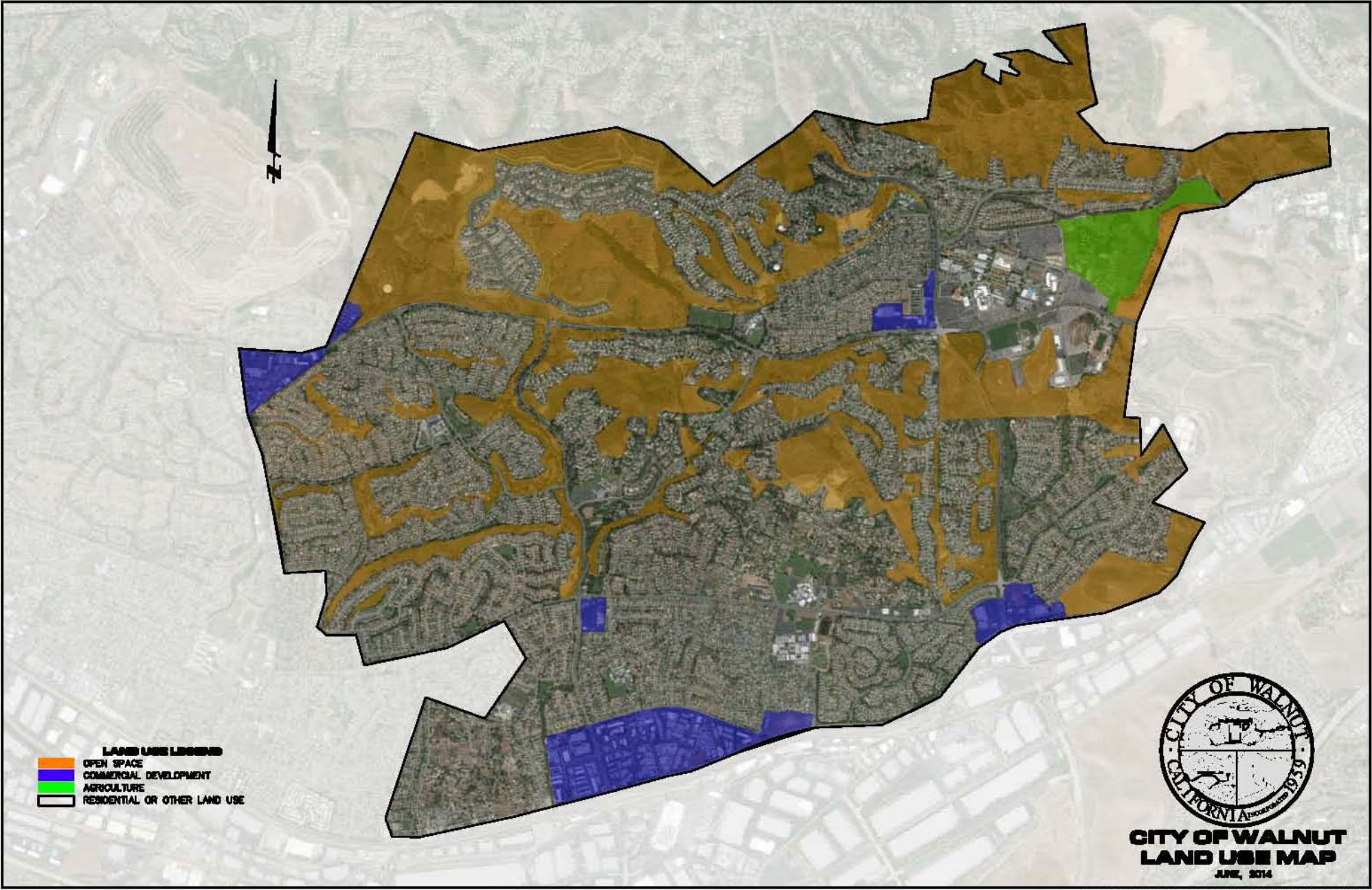


Figure 1-2: City of Walnut Land Use Map



PL- GIS/SP/PLANNING/2006- WILSON'S MANAGEMENT PLAN/PLANNING USE MAPS

1.2.2- Walnut Creek Wash

The remaining 7% of the City of Walnut's jurisdictional area drains to the Walnut Creek Wash. A majority of the City's tributary area to Walnut Creek Wash watershed is open space with a small portion of residential development. With a majority of the tributary area land use categorized as open space, MS4 discharges originating from this area are minimal. The existing MS4 flows drain to the north of the City into unincorporated Los Angeles County and eventually into Walnut Creek Wash.

Walnut Creek Wash originates at the Puddingstone Dam, and is soft bottom up to a quarter mile east of Covina Hills Road where it transitions to a channelized wash. The channelized wash returns to a soft bottom channel at Baldwin Park Boulevard and continues as such to confluence with the San Gabriel River. The confluence of Walnut Creek Wash and the San Gabriel River is located south west of the interchange of State Route 10 and State Route 605. The City of Walnut contributes a very small portion of flow to the Walnut Creek Wash which is primarily composed of flow from a number of other permittees in the SGRWMA

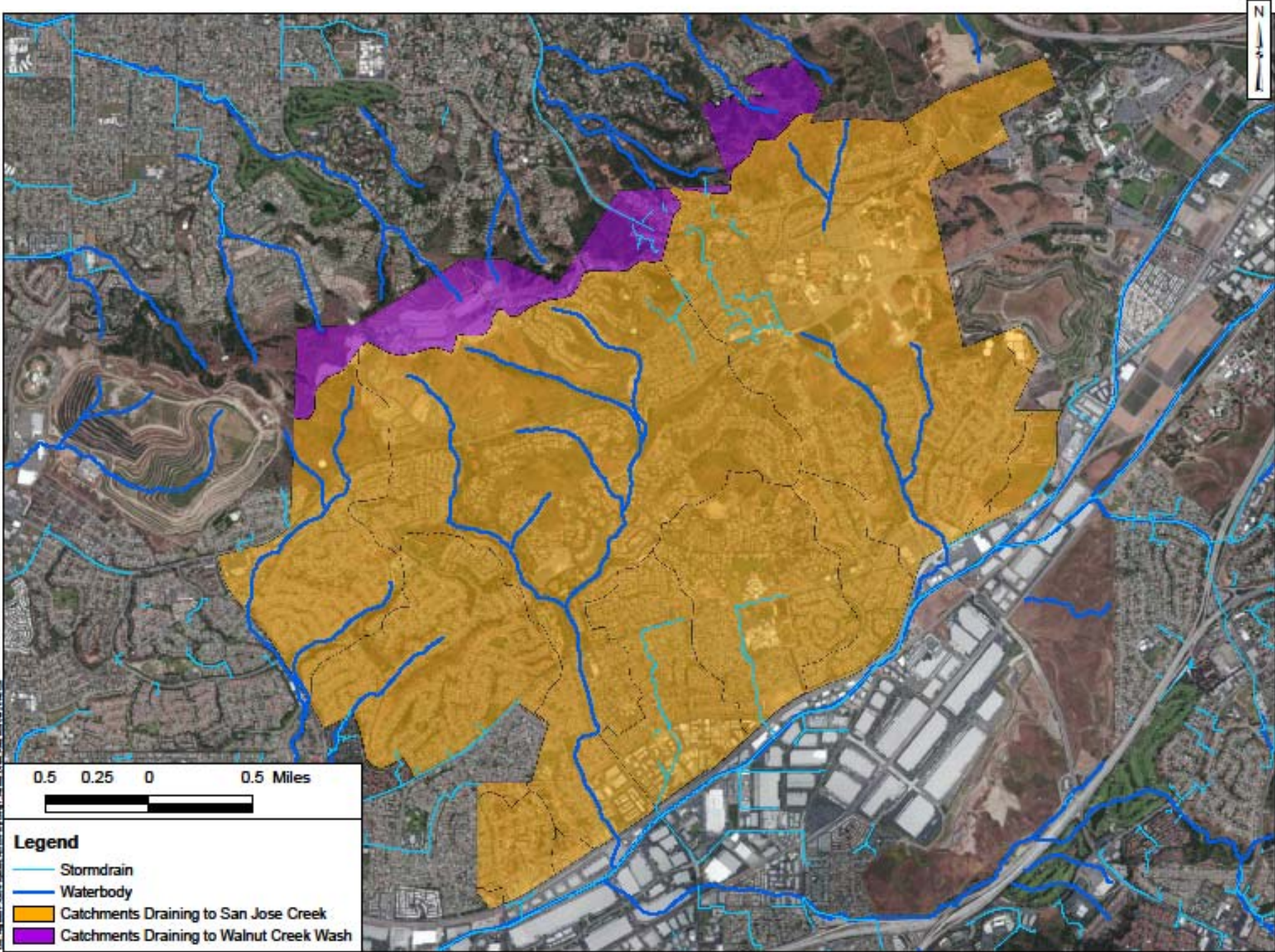
1.2.3- City of Walnut MS4 System

The City of Walnut's storm drain system consists of 644 City owned catch basins and 142 Los Angeles County Flood Control owned catch basins. A majority of the City's storm drain system outlets connect directly to Reach 1 of the San Jose Creek.

There is one storm drain outfall that contains flows originating from the Walnut Creek Wash watershed area of the City of Walnut. This singular outfall is an underground storm drain that drains to the north of the City into unincorporated Los Angeles County and eventually into Walnut Creek Wash. The referenced storm drain carries a relatively small amount of the total City run off and has 13 catch basins connected the line from the City of Walnut.

There are two open soft bottom creeks in the City which for much of their extents run in or adjacent to parks. Lemon Creek drains portions of the western side of the city and begins in the San Jose hills in the Vicinity of the Three Oaks Development and extends south to its confluence with Reach 1 of the San Jose Creek. Snow Creek begins near the intersection of Grand Avenue and Temple Avenue at Mount. San Antonio Community College located in the north eastern section of the City. Snow Creek travels south along Grand Boulevard to just south of Snow Creek Park where it connects to an underground reinforced concrete box (RCB). The RCB eventually connects directly with Reach 1 of San Jose Creek near the intersection of Somerset Drive and Valley Boulevard.

Figure 1-3: City of Walnut Drainage Areas



2.0- Water Quality Priorities

Per section VI.C.5.a.ii of the MS4 Permit, permittees are required to identify and prioritize water body pollutants within each Watershed Management Area (WMA) that overlays their jurisdictional area. The City of Walnut is wholly encompassed by one WMA. Per table K-6 of Attachment K in the MS4 Permit, the City of Walnut is included in the SGRWMA.

2.1- Water Quality Impairments

As described in section 1.2.1 “Watershed Characteristics” of this document, the City of Walnut is tributary to two tributary water bodies of the San Gabriel River. Each of the receiving water bodies that the City of Walnut is tributary to have individual water quality issues that have been established by a TMDL or by the California Clean Water Act Section 303(d) list. Table 2-1 of this document outlines the impairments for each of the receiving waters that the City of Walnut discharges MS4 flows into. These pollutants will be the primary focus for the City of Walnuts WMP.

Table 2-1

Watershed Management Area Impairments			
Water Body	TMDL	303(d) List	Other Pollutants of Concern
San Jose Creek Reach 1	<ul style="list-style-type: none"> • Selenium 	<ul style="list-style-type: none"> • Ammonia • Coliform Bacteria • pH • Total Dissolved Solids • Toxicity 	N/A
San Gabriel River Reach 3	N/A	<ul style="list-style-type: none"> • Indicator Bacteria 	N/A
San Gabriel River Reach 2	<ul style="list-style-type: none"> • Lead 	<ul style="list-style-type: none"> • Coliform Bacteria • Cyanide • Lead 	N/A
Walnut Creek Wash	N/A	<ul style="list-style-type: none"> • Benthic-Macroinvertebrate Bio-assessments • Indicator Bacteria • pH 	N/A

The MS4 Permit’s prioritization of pollutants is categorized into three levels. The highest prioritization (Category 1) is reserved for water body pollutant combinations for which water quality based effluent limitations and/or receiving water limitations are established in Part IV.E and Attachments L through R of the MS4 Permit. High prioritization (Category 2) has been defined as including pollutants for which data indicate water quality impairment in the receiving water according to the State’s Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List (State Listing Policy) and for which MS4 discharges may be causing or contributing to the impairment. Medium Priority Pollutants (Category 3) are defined as pollutants for which insufficient data indicate water quality impairment in the receiving water according to the States Listing Policy, but which exceed applicable receiving water limitations contained in this Order and for which MS4 discharges may be causing or contributing to the exceedance.

The City will maintain the prioritization of pollutants as defined by the categorization priorities. In the event that a pollutant(s) of a category is determined to be within the allowable limit, the City will shift focus to the next tier down. For example, if all the Category 1 pollutants are found to be within allowable limits the City will then focus on the Category 2 pollutants of that receiving water body.

Table 2-2 identifies the prioritization of the individual constituents per the organization method defined in section VI.C.2.a. of the MS4 Permit.

Table 2-2

Water Quality Priorities		
Priority	Water Body Pollutant	Source
Category 1 (Highest)	Lead	TMDL
	Selenium	TMDL
Category 2 (High)	Ammonia	303(d)
	Benthic Macroinvertebrates	303(d)
	Coliform Bacteria	303(d)
	Cyanide	303(d)
	pH	303(d)
	Total Dissolved Solids	303(d)
	Toxicity	303(d)
Category 3 (Medium)	N/A	N/A

Pollutants identified as Category 1 priority in Table 2-2 have Waste Load Allocations determined by their applicable TMDL. Both Lead and Selenium Waste Load Allocations (WLA) are established by the San Gabriel River and Impaired Tributaries Metals and Selenium TMDL .

Table 2-3 identifies the established WLA for each of the applicable TMDL pollutants. Pollutants identified in Table 2-3 should be referenced against Table 2-1 to determine the applicable WLA for the associated water body.

Table 2-3

Category 1 (Highest Priority) Pollutant Waste Load Allocation		
Pollutant	Daily Maximum	Weather
Lead	81.34 µg/L X Daily Storm Volume (L)	Wet
Selenium	5 µg/L	Dry

Pollutants identified as Category 2 priority in Table 2-2 have Receiving Water Limitations (RWLs) identified in the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. RWLs are established based on the beneficial uses also determined in the Basin Plan. Some Category 2 pollutants that are identified in Table 2-4 do not originate from MS4 discharges and will not be included in the Reasonable Assurance Analysis portion of this document.

Table 2-4

Category 2 (High Priority) Pollutant Receiving Water Limitation	
Pollutant	RWL
Ammonia	See LARWQCB Basin Plan Table 3-1 through 3-4
Benthic Macroinvertebrates	See Attachment D for Bio assessment
Coliform Bacteria	See Table 2-5
Cyanide	.005mg/L
Dissolved Oxygen (DO)	Mean Annual 7mg/L, but not less than 5 mg/L
pH	6.5-8.5 Standard Units
Total Dissolved Solids	750mg/L
Toxicity	See Attachment E for Toxicity Assessment

Allowable coliform bacteria loadings are based on the beneficial uses assigned to the impaired water body. As previously discussed in the document, the City of Walnut is tributary to two sub watersheds in the SGRWMA. Table 2-5 identifies the applicable bacteria RWL for each of the sub-watershed receiving water bodies that the City is tributary to.

Table 2-5

Bacteria Receiving Water Limitation		
Receiving Water Segment	Recreational Beneficial Use	RWL E Coli Density
San Jose Creek	REC1 (potential), REC2 (intermittent) with High Flow Suspension*	Geometric Mean Limit: 126/100 ml Single Sample Limit: 235/100 ml
Walnut Creek Wash	REC1 (intermittent), REC2 (intermittent)	Geometric Mean Limit: 126/100 ml Single Sample Limit: 235/100 ml

REC1 = water contact recreation

REC2 = non-water contact recreation

Existing water quality monitoring data and land use in the City were examined to determine if there was significant evidence identifying the presence of Category 3 pollutants. Los Angeles County Mass Emissions Station S14 was chosen for this analysis.

Most of the pollutants identified as exceeding RWLs at S14 already have been established as either Category 1 or Category 2 pollutants. The remaining pollutants identified as exceeding the RWL over a 10 year period, only had few instances of exceedances. When considering the size of the watershed tributary to the monitoring station it is impossible to truly establish the City of Walnut’s potential contribution of the pollutants in question. The limited data available does not provide any clear correlation between the monitored exceedances at station S14 and the City of Walnut’s storm drain outfalls.

The City will continue to examine monitoring data made available by other agencies in addition to the data that the City gathers under the City IMP. Under the permit requirements, the City is required the monitor for all of the pollutants identified in Table E-2 of the permit for the first year of the program.

The City will utilize future data to determine the presence of Category 3 pollutants. If any pollutants are identified by the City's IMP, they will be added to the WMP during the adaptive management process.

2.2- Pollution Source Assessment

Pollutants identified as causing impairments on the applicable receiving waters originate from various sources in the watershed. MS4 discharges from the City of Walnut are composed of surface runoff from storm events or other non-storm water sources. Pollutants that are mobilized by surface runoff are likely from non-point sources which are difficult to eliminate prior to mobilization.

Existing receiving water monitoring data from within the San Gabriel River watershed was examined to determine the existing water quality conditions. Data from the Los Angeles County monitoring station S14 was selected for this review. Los Angeles County monitoring station S14 is located below San Gabriel River Parkway in Pico Rivera. The upstream tributary area is 450 square miles at this location. The City of Walnut is directly tributary to San Jose Creek Reach 1 which is located upstream of monitoring station S14. The last ten years of data from the Los Angeles County Storm water Monitoring program mass emissions station S14 was compiled and reviewed. A summary of the exceedances is included as Attachment E. The pollutants with exceedances identified by the S14 monitoring data are mostly established on the 303(d) list. Due to vast area that drains to the S14 monitoring station, it is unclear how MS4 flows originating from the City of Walnut impact the San Gabriel River watershed.

This section highlights potential sources of the specific pollutants of concern that have been established as causing or contributing to impairment of the local water bodies that the City is tributary to.

Ammonia

Ammonia has been identified on the 303(d) list as causing impairment in the San Jose Creek Reach 1. The 303(d) list support documents identify that discharges from Publicly Owned Treatment Works (POTWs) as a potential source of most of the ammonia in the Los Angeles Region Watersheds. The City of Walnut is downstream from a POTW facility that discharges to the San Jose Creek.

POTWs have since been issued NPDES permits that include water quality objectives for Ammonia. Based on County monitoring data, it appears that Ammonia exceedances are decreasing in occurrence. Modifications to treatment processes and facilities are expected to yield results that will reduce previously measured amounts of ammonia to acceptable levels. This pollutant does not likely originate from the MS4. The City of Walnut's WMP will not address this pollutant any further other than as required in the monitoring program.

Benthic Macroinvertebrate Bio assessment

The 303(d) listing for bio assessment of benthic macroinvertebrates was established by the State Water Board after recommendation by the LARWQCB. The Walnut Creek Wash has been identified as having pollutant combinations in concentrations that are detrimental to the populations of benthic macroinvertebrates in the water body. MS4 discharges with toxic properties are identified as causing impacts to populations of benthic macroinvertebrates. The jurisdictional area of Walnut that is tributary to Walnut Creek Wash is composed of open space and single family residential land use. A 30" RCP storm drain conveys all of water contributed to the Walnut Creek Wash. The volume of MS4 discharges contributed by the City of Walnut is relatively small and not likely to contribute pollutants in toxic levels. Water quality conveyed by said storm drain will be monitored as part of the IMP. The runoff that is

deposited into the wash is connected to the channelized portion of the wash. It is unclear if this requirement is incorrectly assigned to the City of Walnut based on the beneficial uses applicable to channelized water bodies.

Bacteria

E Coli is used to determine the likelihood of pathogenic bacteria present in surface waters. E. coli and other pathogens that originate from fecal contamination in surface waters. Storm water and non-storm water runoff originating from residential development land uses have been known to contribute to bacteria loading in receiving waters. Potential sources may be natural or from contamination caused by interaction of septic or sanitary sewer system flows with the MS4 or agricultural runoff that is captured by the MS4. Homeless populations and wild life have also been identified a potential sources of coliform bacteria in the Basin Plan.

Cyanide

Cyanides are produced in both natural and manmade processes. The source of cyanide deposition into the receiving waters is not clear. Due to the land uses within the City it is assumed that the MS4 is not a likely source of this pollutant. Further data will be gathered though the City's monitoring program.

Lead

Lead has been identified as a Category 1 priority pollutant per the MS4 permit. Section 4 "Source Assessment" of the Total Maximum Daily Loads for Metals and Selenium San Gabriel River and Impaired Tributaries defines that the sources of metals in the San Gabriel River as originating from either point sources or atmospheric deposition.

The potential sources of lead in the watershed have been identified as natural and manmade. Potential manmade sources identified in the EPA TMDL document as contributing lead to storm water runoff are: automobile brake pads, vehicle wear, building materials, pesticides, erosion of paint, and atmospheric deposition from fuel ignition and industrial facilities.

Within the City of Walnut, it is not likely that potential lead pollution is originating from industrial discharges due to current the land uses. Atmospheric deposition and naturally occurring sources may account for some of the lead loading found in the local watershed. Automobile related sources and urbanized land use are also potential sources within the City of Walnut. Lead deposited on impervious surfaces such as a street is mobilized by surface runoff and transported to the receiving waters.

pH

The CWA 303(d) list identifies pH as causing impairment in both San Jose Creek Reach 1 and Walnut Creek Wash. pH is a measure of acidic or basic chemistry properties of water. The scale is a range from 0 to 14 with 7 being the measurement that reflects pure water at a temperature of 25°C. pH measurements of <7 indicate that the water sample is acidic whereas measurements of >7 are considered to have basic chemistry properties. Natural waters tend to have a pH slightly higher than 7, and are very sensitive to major shifts in either the acidic or basic direction. A number or environmental conditions can impact the pH of a receiving water including natural or manmade conditions. MS4 discharges may contribute to changes in pH in receiving waters.

Selenium

Selenium has been identified as a Category 1 priority pollutant per the MS4 permit. Selenium in the San Jose Creek is suspected to likely be from a natural source. Limited data is available to verify this assumption. However, because there are no industrial facilities that manufacture products known to utilize selenium in the production process within the City, natural sources are the only apparent remaining potential source. Selenium is an element (Se on the periodic table) that is found naturally in local marine sedimentary soils. The local watershed area is known to have marine sedimentary soils. While the source is natural in nature the possibility that urbanization in the watershed has increased mobilization and deposition of the element in the receiving waters. The source may also be in the soft bottom portion of the San Jose Creek. Further studies are required to better understand the source of selenium. The IMP portion of this plan will be utilized as a tool to determine if the City of Walnut's MS4 discharges are contributing to the Selenium impairment in the San Jose Creek.

Total Dissolved Solids

Total Dissolved Solids (TDS) includes both organic and inorganic particles that are fully suspended in water. TDS identified in the watershed may be naturally occurring but can also be from compounds that are mobilized by urban runoff. Residential development is a known potential source of TDS in storm water and non-storm water runoff.

Toxicity

Toxicity in receiving waters is defined as when chemical properties of water adversely affect organism's ability to normally survive. Chronic Toxicity is identified as a level of toxicity that results in an impact in an organism's ability to grow or reproduce, but not result in death. Toxicity at a level that results in death of an organism is classified as acute toxicity. Toxicity is not limited to concentrations of a singular pollutant, and can be caused by a number of pollutants. Urban runoff has been identified as a potential source of toxicity in MS4 discharges.

3.0- Minimum Control Measures

The MS4 Permit requires permittees to implement policies and practices that will aid in the improvement of water quality in the City and WMA. These policies and practices are defined as Minimum Control Measures (MCMs) and are outlined in section VI.D.5 for Non-LACFCD permittees. Many of the City's existing MCMs were implemented under the previous permit, but latest permit has expanded some of the requirements for the existing programs. Per the MS4 Permit, the City of Walnut is required to have the following MCM Programs.

- Public Information and Participation Program
- Industrial/Commercial Facilities Program
- Planning and Land Development Program
- New Development/Re-Development Program
- Development Construction Program
- Public Agency Activities Program
- Illicit Connection and Illicit Discharge Elimination Program

3.1- Public Information and Participation Program

Each permittee is required to implement a Public Information and Participation Program (PIPP) under the MS4 Permit. Improving public education and awareness is likely to have a positive impact on water quality by changing activities or actions of the public that negatively impact water quality. The PIPP encompass a number of outreach and education opportunities and expected to have a positive effect in water quality. The MS4 Permit identifies the primary goals of the PIPP as follows:

- The PIPP shall measurably increase the knowledge of the target audiences about the MS4, and the adverse impacts of storm water pollution on receiving waters and potential solution to mitigate the impacts.
- The PIPP shall also measurably change the waste disposal and storm water pollution generation behavior of target audiences by developing and encouraging the implementation of appropriate alternatives.
- The PIPP shall involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of storm water pollution.

The City of Walnut is approaching compliance with the MS4 Permit as a singular permittee implementing an individual WMP. The City currently maintains a PIPP program that was implemented under the previous MS4 Permit. Much of the same requirements from the previous permit are included in the latest permit, however this document will describe the program moving into the current permit term.

3.1.1- Public Reporting

The City currently contracts with Los Angeles County for maintenance of catch basins, storm drain and sanitary sewer networks. The City of Walnut is a contract city and utilizes the 888-CLEAN-LA hotline for its general public reporting contact in coordination with the Los Angeles County Maintenance Crews.

County hotline and City contact information for the Environmental Department and the Building and Safety Department is made available on the City's Website on the Storm Water pollution Prevention page. Contact information related to public reporting of storm water issues is also provided in pamphlets available at the City Hall and the City's Environmental Services Guide page on the City Website. The City maintains and will continue to maintain current contact information as updates are made necessary.

3.1.2- Public Outreach

The City's Environmental Services department hosts a community outreach booth at the Walnut Family Festival. At this booth, the City provides educational material regarding the importance of Walnut's commitment to storm water pollution prevention as well as specific information on how Walnut residents can help improve or reduce impacts on the local environment. Flyers on the importance of proper pet waste are distributed along with promotional pet waste bag dispensers to promote picking up after pets. The City also provides used oil containers for residents to facilitate the proper disposal of used oil, keeping it out of our storm water system.

In addition to the booth at the Family Festival, the City provides environmental information and storm water education material at all major city events including: Concerts in the Park, National Night Out, Fourth of July, and Arbor Day.

The City of Walnut also conducts two free composting workshops per year through SmartGardening. This workshop covers backyard composting as well as water-wise gardening. An information table and storm water education is provided at these events as well.

3.1.3- Public Education Materials

The City of Walnut develops a recreation brochure on a quarterly basis which has a section dedicated to environmental issues in Walnut. This section highlights environmental topics including storm water pollution. This section also promotes the "Go Green with Walnut" page of the City's website. The "Go Green with Walnut" page is where residents can find educational material related to environmental issues. The City also produces a quarterly mailer that is sent to every resident four times a year.

On the "Go Green with Walnut" page there is a specific page for Storm Water Pollution Prevention. This page provides a brief overview of the storm drain system and the importance of keeping common forms of storm water pollution out of the system. Here residents can find information on ways that they can contribute to Walnut's commitment to protect the environment and water resources. Listed are best management practices (BMPs) that they can implement as residents and business owners.

There are a number of helpful links to information sheets that outline proper procedures for handling and disposal of vehicle waste fluids, household waste materials, construction waste materials, gardening related materials and animal wastes. Copies of these information sheets have been included in Attachment C of this document. These information sheets are also distributed to local auto parts stores, home improvements centers, garden centers and pet supply stores. Additionally, the City includes environmental related education on a City mailer that is sent out quarterly.

The City's storm water pollution prevention page is easily accessible from the City Services tab on the City's website. The page is maintained by City staff and continuously updated with new information as it becomes available. The following is a direct link to the City's storm water pollution prevention page:

<http://www.ci.walnut.ca.us/general.asp?id=282>

The environmental services department is present at all of the City's special events where material regarding the City's storm water pollution prevention program is handed out. All the city facilities have access to and post the material for patrons. An environmental services brochure was created by the City which contains an overview of the storm water pollution prevention program and is passed out at the City facilities.

3.1.4- Storm Water Education in Schools

City staff works closely with environmental clubs at local educational sites. The City works with student groups at the high school, middle school, and elementary school levels to host park cleanup events twice a year. The City also interacts with other student community groups including the Boy Scouts of America and Girl Scouts of America which have partnered with the City of Walnut to host additional educational events throughout the year. Education material is made available to all of the local environmental clubs and the school district, as well as available at all of the park clean up events.

The City reaches out to the environmental club participants when looking for volunteers for the environmental services booth at the Family Festival. Staff is available for outreach to the local school districts and continuing to foster that partnership.

3.1.5- PIPP Outreach to Multi Cultural Communities

The City of Walnut has a number of culturally diverse communities that live and/or work in the City. Effectively communicating educational materials related to storm water quality can be a challenge when there is a language barrier. To address this hurdle, multilingual City staff located at City Hall are available to translate and answer any questions including environmental issues such as storm water pollution. Members of city staff are fluent in Spanish, Mandarin, Tagalog, German, Japanese, and Korean. All members of the public with questions or concerns relating to storm water or any other topic are encouraged communicate with City staff.

3.2- Industrial/Commercial Facilities Program

The industrial Facilities Program is designed to prevent illicit discharges from industrial and commercial facilities into the MS4 and receiving waters. It will also reduce storm water discharges from industrial and commercial facilities and prevent industrial and commercial discharges from causing or contributing to a violation of receiving water limitations. The MS4 permit identifies the minimum components of this program to include tracking, education, inspection and enforcement.

3.2.1- Industrial/Commercial Facilities Tracking

The City's tracking program will include an electronic based inventory that will identify all qualifying commercial and industrial facilities within the city boundaries. Information regarding the facility location and operations will be logged into the tracking system.

The City land use is primarily dedicated to single family residential and open space, allowing for only a small portion of the City to be utilized for commercial and industrial facilities. The MS4 Permit recommends that a Geographic Information System (GIS) is utilized for this task, however due to the relatively small number of these facilities a spreadsheet program will be utilized to track qualifying facilities. As the city develops its GIS program, the tracking information gathered as part of this plan will be reassessed to determine if adding a GIS element to the tracking program will improve effectiveness of the system.

The MS4 Permit requires that commercial and industrial facilities that are tracked. The following list outlines four categories that tracking is mandatory for.

1. Commercial Facilities
 - Restaurants
 - Automotive service facilities (including facilities located at automotive dealerships)
 - Retail Gasoline
 - Nurseries and Nursery Centers
2. USEPA "Phase I" Facilities [as specified in 40 CFR §122.26(b)(14)(i)-(xi)]
3. Other federally-mandated facilities [as specified in 40 CFR §122.26(d)(2)(vi)(C)]
 - Municipal Landfills
 - Hazardous waste treatment, disposal and recovery facilities
 - Industrial facilities subject to section 313 "Toxic Release Inventory" reporting requirements of the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA) [42 U.S.C. § 11023]
4. All other commercial or industrial facilities that the permittee determines may contribute a substantial pollutant load to the MS4.

The MS4 Permit requires the City to track minimum parameters under the commercial and industrial facilities program. Not all of this information is currently tracked by the City. Although the City has a limited number of commercial facilities and no industrial facilities, gathering and organizing the required data is a demanding task. Upon receipt of the Regional Boards approval of the City's WMP, the City will begin the process of organizing and centralizing all available tracking information.

Outstanding tracking information will be assessed and gathered within a reasonable time frame. Once a complete inventory is developed, the City's Planning department will maintain and update the database on an as needed basis with the frequency of updates occurring at least annually. The information for new Commercial/Industrial site data will be gathered from the City's permitting program and field inspections.

The following list includes the minimum parameters to be included in the tracking program:

- Name of facility
- Name of owner/ operator and contact information
- Address of Facility (physical and mailing)
- North American Industry Classification System (NAICS) code
- Standard Industrial Classification (SIC) code
- A narrative description of the activities performed and/or principal produces produced
- Status of exposure of materials to storm water
- Name of receiving water
- Identification of whether the facility is tributary to a CWA §303(d) listed water body segment or water body segment subject to a TMDL, where the facility generates pollutants for which the water body segment is impaired.
- Ability to denote if the facility is known to maintain coverage under the State Water Board's General NPDES Permit for the Discharge of Storm water Associated with Industrial Activities (Industrial General Permit) or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.
- Ability to denote if the facility has filed a No Exposure Certification with the State Water Board.

3.2.2- Industrial/Commercial Education

Per section VI.D.6.c, the City of Walnut is required to notify commercial and industrial site owners/operators of applicable BMPs based on the activities that take place at the site. City Staff will utilize the commercial and industrial facilities tracking data base to identify sites requiring notice. Notices sent will include a list of BMPs and related BMP implementation information applicable to the commercial site. Notices will be directed to the owner/operator of each of the inventoried commercial and industrial sites. This notice will occur at least once during the five year period of the MS4 permit. The City Environmental Services Department will utilize the commercial/industrial facility tracking database to document when such notification is made.

In coordination with the City's BMP education notice, the City will provide all commercial/industrial facility owners with contact information for a City Business Assistance Program. The program will provide additional information to businesses, upon request, to facilitate their efforts in the reduction of pollutant discharges. The Business Assistance Program will also further target business sectors or small businesses that have been determined as potential sources of pollutant loads to the MS4 or receiving water. The City will utilize the results from the monitoring of MS4 outfalls and receiving waters to better direct efforts in reducing or eliminating pollutant loading.

Additional technical information provided to businesses in the City of Walnut may include the following items listed below:

- Provision of education materials
- Telephone and/or e-mail consultation
- On-site technical assistance

A determination of what will be provided to the business will be made on a case by case basis and will be tailored to the needs of the businesses that fit the criteria for providing additional assistance. All additional information and support provided to will be at the discretion of the City.

3.2.3- Commercial Facility Inspection

Per section VI.D.6.d of the MS4 permit the City of Walnut will implement a commercial facility inspection program. Inspections at all of the facilities identified in the City's database will take place at least twice during the five year term of the MS4 Permit. The first inspection will take place no later than December 28, 2014, two years after the effective date of the permit (December 28, 2012). The second inspection will have a minimum interval of at least six months following the first inspection.

Parameters to be included in the above mentioned inspections are as follows:

- Proper Implementation of storm water and non-storm water BMPs
- Proper maintenance of storm water and non-storm water BMPs
- Verification of effective source control BMP implementation
- Review/Enforcement for proper BMP implementation in areas that drain to a Significant Ecological Areas (SEA), water body subject to a TMDL or CWA § 303(d) listed impaired water body.
- Require additional BMPs if necessary

In the past City inspectors have performed random inspections on commercial businesses that the City has identified as having a higher potential for contributing to storm water pollution. These random inspections were not previously tracked. The City will develop a system to track and log these drop in type inspections for recording purposes.

3.2.4- Industrial Facility Inspection

Per section VI.D.6.e of the MS4 permit the City of Walnut will implement an industrial facility inspection program. Currently, there are no Industrial facilities within the Jurisdictional boundaries of the City. Should that change in the future the following inspection program will be implemented.

Inspections at all of the facilities identified in the City's database will take place at least once during the five year term of the MS4 Permit. The deadline established by the MS4 permit of December 28, 2015 will not apply to the City of Walnut due to the lack of industrial facilities at the time of adoption of this plan. Should that change, the City will inspect the industrial site within a reasonable time period after the site begins normal operations. After the initial inspection, all facilities that have not filed a No Exposure Certification with the State Water board are subject to a second mandatory inspection to take place at least six months after the first inspection.

As part of the first industrial facility inspection, the City will identify if a facility has filed a No Exposure Certification with the State Water Board. Approximately three to four years after the effective date of the MS4 Permit, the City will evaluate its inventory of industrial facilities and perform a secondary inspection for at least 25% of the facilities identified to have a No Exposure Certification if any exist in the City.

Industrial facilities that have been inspected by the Regional Water Board within prior a 24 period are not required to be inspected. The City will review the State Water Board’s Storm Water Multiple Application and Report Tracking System (SMARTS) database on an annual basis if an industrial site opened in the City. If a facility is subject to a second inspection, it shall take place approximately four years following the effective date of the MS4 Permit. Similar to the conditions of the first inspection, a second inspection is not required if the Regional Water Board has previously inspected the site within a 24 month period.

Parameters to be included in the above mentioned inspections are as follows:

- Verify Waste Discharge Identification (WDID) number for coverage under the Industrial General Permit.
- Verify that a Storm Water Pollution Prevention Plan (SWPPP) is on site; or
- Verify the site has applied for, and has received a current No Exposure Certification for facilities subject to the requirement
- Verify BMPs are effectively implemented in compliance with municipal ordinances. Facilities must implement the source control BMPs identified in table 3-1 below.

Applicable industrial facilities identified as not having either a current WDID or No Exposure Certification shall be notified that they must obtain coverage under the Industrial General Permit and shall be referred to the Regional Water Board per the Progressive Enforcement Policy identified in part VI.D.2.

Table 3-1

Industrial Facility BMP Applications	
Pollutant-Generating Activity	BMP Narrative Description
Unauthorized Non-Storm water Discharges	Effective elimination of non-storm water discharges
Accidental Spills/Leaks	Implementation of effective spills/leaks prevention and response procedures
Vehicle/Equipment Fueling	Implementation of effective fueling source control devices and practices
Vehicle/Equipment Cleaning	Implementation of effective equipment vehicle cleaning practices and appropriate wash water management
Vehicle/Equipment Repair	Implementation of effective vehicle/equipment repair practices and source control devices
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage control devices and practices
Outdoor Equipment Operations	Implementation of effective outdoor equipment source control devices and practices
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices

Table 3-1 (Continued)

Industrial Facility BMP Applications	
Pollutant-Generating Activity	BMP Narrative Description
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/handling practices and appropriate control measures
Building and Grounds Maintenance	Implementation of effective facility maintenance practices
Parking/Storage Area Maintenance	Implementation of effective parking /storage area designs and housekeeping/maintenance practices
Storm water conveyance system maintenance practices	Implementation of proper conveyance system operation and maintenance protocols
Sidewalk Washing	Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area.
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW) Note: POTW approval may be needed.

3.3- Planning and Land Development Program

Per section VI.D.7 the City of Walnut will implement a Planning and Land Development Program for all new development and redevelopment projects. The goal of the Planning and Land Development Program is to lessen the potential water quality impact from new or redevelopment through implementation of water quality driven development practices.

The program will promote smart growth practices that minimize adverse impacts from storm water runoff on the biological integrity of Natural Drainage Systems, and the beneficial uses of water bodies in accordance with requirements under the California Environmental Quality Act (CEQA). Future developments will focus on minimizing the percentage of impervious surfaces and utilize Low Impact Development features and BMPs to maintain a site’s predevelopment hydrology in accordance with the MS4 Permit requirements.

3.3.1- Low Impact Development Ordinance

On November 13, 2013, the Walnut City Council adopted a Low Impact Development (LID) Ordinance in compliance with the requirements VI.C.4.c.ii. and section VI.D.7 of the MS4 permit. A copy of the adopted ordinance is included in Attachment B of this document. The LID Ordinance is an enforcement

tool the City will utilize when reviewing and permitting development projects that qualify under the triggering requirements of the ordinance.

The list below outlines project parameters that qualify for implementation of LID design requirements under the City of Walnut's LID Ordinance.

- All Development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area.
- Industrial parks 10,000 square feet or more of surface area.
- Commercial malls 10,000 square feet or more of surface area.
- Retail gasoline outlets with 5,000 square feet or more of surface area.
- Restaurants (SIC of 5812) with 5,000 square feet or more of surface area.
- Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces.
- Streets and roads construction of 10,000 square feet or more of impervious surface area.
- Automotive service facilities (SIC of 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area.
- Projects located in or directly to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will:
 - Discharge storm water runoff that is likely to impact a sensitive biological species or habitat; and
 - Create 2,500 square feet or more of impervious surface area
- Single family hillside homes (see ordinance for definition)
- Redevelopment Projects
 - Land Disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site on Planning Priority Project categories.
 - Where redevelopment would result in an alteration to more than 50% of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, only the alteration must be mitigated, and not the entire development.
 - Where redevelopment results in an alteration of less than 50% of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, only the alteration must be mitigated, and not the entire development.
 - Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

- Existing single-family dwelling and accessory structures area exempt from the redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.

3.3.2- New Development/Redevelopment Project Performance Criteria

Qualifying development projects will be subject to storm water pollution control requirements including retention of all storm water resulting from a specified rain event as outlined in more detail in the City's LID ordinance. The City Planning department will work with developers to ensure that all requirements set forth in the LID ordinance are met.

Should a project applicant find that technical infeasibilities prevent a new or re-development project from meeting the storm water pollution control requirements, they must demonstrate to the City that the project cannot retain 100% of the water resulting from the design storm volume on-site. The technical infeasibility demonstration must include the maximum application of City approved BMPs. Such a demonstration would include a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect and/or landscape architect.

Alternative compliance measures are available in instances of technical infeasibility or if there is the opportunity for regional ground water replenishment. These options include on-site biofiltration, offsite infiltration, ground water replenishment projects, and offsite retrofits to existing development.

3.4- Development Construction Program

The MS4 Permit requires that the City of Walnut develop and implement a Development Construction Program. The general nature of construction activities has a high potential for discharges of pollutants and/or sediment from a site. Conditions on construction sites often include potential sources of pollution including but not limited to disturbed soils, stockpiled materials and construction vehicles. General construction activities or storm water surface flow can often result in transport and discharge of these pollutants. It is the intent of the development construction program to prevent discharges from construction sites to the MS4.

The program shall prevent illicit construction-related discharges of pollutants into the MS4, require the implementation and maintenance of structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites, reduce construction site discharges of pollutants to the MS4 or to the maximum extent practicable, and prevent construction site discharges to the MS4 from causing or contributing to a violation of water quality standards. The Development Construction Program shall also include an enforceable erosion control and sediment control ordinance for all construction sites that disturb soil.

3.4.1- Construction Sites of Less Than One Acre

Construction sites of less than one acre are required to comply with the provisions of this section and section VI.D.8.d of the MS4 Permit. Construction activities covered by this section include but are not limited to grading, vegetation clearing, soil compaction, paving re-paving and linear underground/overhead projects (LUPs).

The City of Walnut will require that all qualifying construction sites implement the BMPs identified in Table 3-2 in an effective manner to prevent erosion and the discharge of construction wastes.

The City will maintain an inventory of construction sites with soil disturbing activities requiring a permit. The City will conduct inspections at these sites on an as-needed basis. When determining the need for inspection the City will take into account factors that may result in the discharge of construction site pollutants. Factors in the construction site assessment may include soil erosion potential, site slope, project size and type, receiving water body sensitivities, past record of construction site compliance by the operator of the construction site. The City will also utilize a progressive enforcement policy to ensure that construction sites found to be out of compliance are brought back into compliance with the requirements of the MS4 Permit.

Table 3-2

Applicable Set of BMPs for All Construction Sites	
BMP Type	BMP
Erosion Control	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exist
Non-Storm Water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

3.4.2- Construction Site Inventory

The City of Walnut will develop and maintain permit tracking data base for all grading, encroachment, demolition, building and construction permits issued by the City. The database will be an electronic system that includes the following site specific information.

- Owner and Contractor Contact Information
- Site location, size, status and disturbed area
- Proximity of Water Bodies to the Construction Site
- Significant threat to water quality status (Appendix 1 of the Construction General Permit)
- Current Phase of Construction
- Required Inspection Frequency
- Start and anticipated end date
- Is the project covered under the Construction General Permit
- Date of City approval of the Erosion and Sediment Control Plan (ESCP)
- Post Construction Structural BMPs subject to operation and maintenance requirements

3.4.3- Construction Plan Review and Approval Procedures

The City of Walnut will review and approve relevant construction documents prior to issuing permits. Each operator of a construction activity within the City's jurisdiction will be required to prepare and submit to the City, for review and approval, an Erosion and Sediment Control Plan (ESCP). An ESCP shall include site specific BMPs that are appropriate for the activities that will take place on the site and elements of a Storm Water Pollution Prevention Plan (SWPPP). SWPPPs that conform to the requirements of the Construction General Permit may be accepted as a project's ESCP.

ESCP Shall include the Following:

- Methods used to minimize the foot print of disturbed area and to prevent soil compaction of outside of the disturbed area
- Methods used to protect native vegetation and trees
- Sediment and Erosion Control
- Controls to prevent tracking on and off site
- Non-storm water controls
- Materials Management
- Spill Prevention and Control
- Waste Management
- Site Risk Level as classified by the Construction General Permit
- BMP Selection Rationale including expected soil loss
- ESCP Developed and certified by QSD
- BMPs are designed by a California licensed Engineer

Additionally the City will require that the landowner or the landowner's agent include and sign the following certification statement on the ESCP:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/ or inaccurate information, failing to update the ESCP to reflect current conditions or failing to properly and/or adequately implement the ESCP may result in revocation of grading and/ or other permits or other sanctions provided by law."

Prior to issuing a grading or building permit, The City of Walnut will verify that the construction site operators have existing coverage under applicable permits, including, but not limited to the State Water Board's Construction General Permit, and State Water Board 401 Water Quality Certification.

The City of Walnut will also develop and implement an ESCP checklist for City staff to use when conducting a document review of each ESCP.

3.4.4- BMP Implementation Requirements

The City of Walnut will develop and implement a construction site BMP program that adequately addresses the potential for construction site pollutants reaching the City’s MS4. The City will utilize the Los Angeles County Department of Public Works BMP Design Manual as a technical reference for construction site operators to select, design and maintain BMPs on their construction site.

All construction sites shall undergo a risk assessment during the ESCP development process. The risk assessment shall identify a projects risk level on a low risk (Risk 1) to high risk (Risk 3) scale. The project risk assessment will be based on the potential for erosion from the site and the sensitivity of the receiving water. Receiving waters listed on the Clean Water Act (CWA) section 303(d) list for sediment or siltation are considered to be high risk. Receiving water bodies that have beneficial uses of SPWN, COLD and MIGR will also be categorized high risk. The risk assessment shall conform to the procedures defined in Appendix 1 of the California Construction General Permit. Minimum BMPs for high risk construction sites shall include BMPs identified in Table 3-3.

Table 3-3

Enhanced BMPs for High Risk Sites	
BMP Type	BMP
Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch
	Geotextiles and Mats
	Wood Mulching
	Slope Drains
Sediment Controls	Silt Fence
	Fiber Rolls
	Sediment Basin
	Check Dam
	Gravel Bag Berm
	Street Sweeping and / or Vacuum
	Sand Bag Barrier
	Storm Drain Inlet Protection
Additional Controls	Wind Erosion Controls
	Stabilized Construction Entrance/ Exit
	Stabilized Construction Roadway
	Entrance/ Exit Tire Wash
	Advanced Treatment Systems
Non-Storm Water Management	Water Conservation Practices
	Dewatering Operations (Ground water dewatering only under NPDES Permit No. CAG994004)
	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management

BMPs identified in Table 3-4 and the List of Minimum BMPs for Paving Projects shall be utilized for all construction sites of one acre or more and paving projects.

Table 3-4

Applicable Set of BMPs for All Construction Sites	
BMP Type	BMP
Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch
	Geotextiles and Mats
	Wood Mulching
Sediment Controls	Fiber Rolls
	Gravel Bag Berm
	Street Sweeping and / or Vacuum
	Storm Drain Inlet Protection
	Scheduling
Additional Controls	Check Dam
	Wind Erosion Controls
	Stabilized Construction Entrance/ Exit
	Stabilized Construction Roadway Entrance/ Exit Tire Wash
Non-Storm Water Management	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage
	Spill Prevention and Control

Paving Project Minimum BMPs

- Restrict paving and re-paving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions.
- Install gravel beds and filter fabric or to the equivalent inlet protection at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat.
- Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or receiving waters.
- Minimize non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt.
- Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.
- Collect solid waste by vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.
- Cover the “Cold-mix” asphalt (i.e. per-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.
- Cover loads with tarp before haul-off to a storage site, and do not overload trucks.
- Minimize airborne dust by using water spray or other approved dust suppressants during grinding.

Paving Project Minimum BMPs (continued)

- Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or receiving waters.
- Protect stockpiles with a cover or sediment barriers during rain.

All ESCPs submitted to the City shall include BMP cut sheets, design guidelines and maintenance expectations that are approved by the City of Walnut. BMPs design guidelines shall conform to the Los Angeles County Department of Public Works BMP Design Manual or a City approved equal.

3.4.5- Construction Site Inspection

The construction site inspection program is critical to the Development and Construction Program. Construction site inspections aid the City in verifying and enforcing the requirements of an ESCP or standard practices focused on maintain water quality in the City. The City of Walnut will continue to implement a construction site inspection program and train inspectors on NPDES related concerns that may originate from construction sites.

Inspection frequencies will vary based on construction site size and activities. Sites of one acre or larger that discharge to a receiving water listed on the CWA section 303(d) for sedimentary or turbidity list, or determined to pose a significant threat to water quality shall be inspected at minimum, prior to a rain event of two or more consecutive days with greater than 50% chance of rain fall forecasted by NOAA, within 48 hours of a ½-inch rain event and at least once every two weeks. All other construction sites of one acre or more shall be inspected at least monthly.

The City will inspect construction sites during all phases of construction. The first inspection will take place prior to disturbance of soil to ensure that all required BMPs are in place. Site inspections shall also take place during active construction activities to ensure that all applicable BMPs are in place and properly maintained. A final inspection shall take place as a condition of, and prior to issuing a Certificate of Occupancy. The final inspection will confirm that the site has reached final stabilization and that all temporary erosion and sediment BMPs are removed.

Construction site inspections shall include:

- Verification of active coverage under the Construction General Permit (sites >1 acre)
- Review of applicable ESCP and verification of installation of all selected BMPs
- Assessment of appropriateness of the planned and installed BMPs
- Observation of record keeping of non-storm water discharges
- Development of a written or electronic inspection report
- Tracking of inspections

When a site inspection results in observed deficiencies in an ESCP implementation or other NPDES related requirements, the City will notify the construction site operator of the issues identified. The site operator will be assigned a reasonable time period to fix the issue prior to the enforcement being escalated through the progressive enforcement policy.

3.5- Public Agency Activities

The City of Walnut is required to develop and implement a Public Agency Activities Program. It is the intent of this program to minimize storm water pollution impacts from city owned or operated facilities and activities. The program will also identify opportunities to reduce storm water pollution impacts from areas of existing development.

Requirements for Public Facilities and Activities Program shall include the following:

- Public Construction Activities Management
- Public Facilities Inventory
- Inventory of Existing Development for Retrofitting Opportunities
- Public Facility and Activity Management
- Vehicle and Equipment Wash Areas
- Landscape, Park, and Recreational Facilities Management
- Storm Drain Operational and Maintenance
- Emergency Procedures
- Municipal Employee and Contractor Training

3.5.1- Public Construction Activities Management

The City of Walnut’s public construction activities shall conform to the Planning and Development (Section 3.3) and Development Construction Programs (Section 3.4) included in this document. The City will require that all contractors and construction related activities that take place under a City contract will conform to the requirements of the MS4 Permit and the California Construction General Permit.

3.5.2- Public Facility Inventory

The City will develop an inventory of all City owned or operated facilities that are potential sources of storm water pollution within its jurisdiction. Facilities that are required to be tracked are as follows:

- Chemical Storage Facilities
- Composting Facilities
- Equipment Storage and Maintenance Facilities
- Fueling or Fuel Storage Facilities
- Material Storage Yards
- Pesticide Storage Facilities
- Fire Stations
- Public Restrooms
- Public Parking Lots
- Public Pools
- Public Parks
- Public Works Yard
- Vehicle Storage and Maintenance Yards
- Storm Water Management Facilities
- All Other City Owned Facilities

Not all of the facilities listed in the MS4 Permit are included in the above list. City owned facilities excluded from the list are not found within the City’s jurisdiction.

Of the facilities identified in this document, the following minimum information shall be tracked by the City:

- Name of the Facility
- Name of the Facility Manager
- Address of the facility (physical and mailing)
- Narrative of the activities performed at the site
- If the site has coverage under the Industrial General Permit

The City will update the inventory at least once during the five year term of the MS4 Permit.

3.5.3- Inventory of Existing Retrofitting Opportunities

The MS4 Permit requires that Permittees develop an inventory of retrofitting opportunities with in the public right of way. The inventory of retrofitting opportunities will be utilized by permittees when considering potential projects. All opportunities considered for retrofitting are required to undergo a screening process. Factors that may be considered when screening a project are outlined below.

- Feasibility
- Cost Effectiveness
- Pollution Removal Effectiveness
- Tributary Area Potentially Treated
- Maintenance Requirements
- Land Owner Cooperation
- Neighborhood Acceptance
- Aesthetic Qualities
- Potential Improvements to Public Health and Safety

Projects determined to have high levels of feasibility and effectiveness in water quality improvement shall be given the highest priority for implementation. High priority projects should be considered when off-site mitigation is required for a re-development or new development project. The City of Walnut will work with residents and land owners to develop and implement an effective retrofitting program. The City will educate residents and landowners of the benefits for implementing BMPs through the education and outreach program. City staff will work with owners of development projects subject to the requirements of the LID Ordinance to ensure that feasible opportunities for water quality improvement are maximized. At the discretion of the City, retrofit projects may also be included in other public infrastructure projects.

3.5.4- Public Agency Facility and Activity Management

Permittees are required to obtain coverage under the Industrial General Permit for all permittee owned or operated facilities that require coverage based on activities that take place at the sites. The City of Walnut does not currently have any public facilities that require separate coverage under the Industrial General Permit.

All other City owned or operated sites shall implement activity based BMPs identified in Table 3-5:

Table 3-5

BMPs for Public Agency Facilities and Activities	
Activity	BMP
General BMPs	Scheduling and Planning
	Spill Prevention and Control
	Sanitary/Septic Waste Management
	Material Use
	Safer Alternative products
	Vehicle/Equipment Cleaning, Fueling and Maintenance
	Illicit Connection Detection, Reporting and Removal
	Illegal Spill Discharge Control
	Maintenance Facility Housekeeping Practices
Flexible Pavement	Asphalt Cement Crack and joint Grinding/ Sealing
	Asphalt Paving
	Structural Pavement Failure (Digouts) Pavement Grinding and Paving
	Emergency Pothole Repairs
	Sealing Operations
Rigid Pavement	Portland Cement Crack and Joint Sealing
	Mudjacking and Drilling
	Concrete Slab and Spall Repair
Slope/Drains/ Vegetation	Shoulder Grading
	Non-landscape Chemical Vegetation Control
	Non-landscape Mechanical Vegetation Control/
	Mowing
	Nonlandscape Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Fence Repair
	Drainage Ditch and Channel Maintenance
	Drain and Culvert Maintenance
Litter/ Debris/ Graffiti	Sweeping Operations
	Litter and Debris Removal
	Emergency Response and Cleanup Practices
	Graffiti Removal
Landscaping	Chemical Vegetation Control
	Manual Vegetation Control
	Landscape Mechanical Vegetation Control
	Landscape Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Irrigation Line Repairs
	Irrigation (Watering), Potable and Non-potable
Environmental	Storm Drain Stenciling
	Roadside Slope Inspection
	Roadside Stabilization
	Storm Water Treatment Devices
	Traction Sand Trap Devices

Table 3-5 (Continued)

BMPs for Public Agency Facilities and Activities	
Activity	BMP
Bridges	Welding and Grinding
	Sand Blasting, Wet Blast with Sand Injection and Hydroblasting
	Painting
	Bridge Repairs
Other Structures	Pump Station Cleaning
	Tube and Tunnel Maintenance and Repair
	Tow Truck Operations
	Toll Booth Lane Scrubbing Operations
Electrical	Sawcutting and Loop Installation
Traffic Guidance	Thermoplastic Striping and Marking
	Paint Striping and Marking
	Raised/ Recessed Pavement Marker Application and Removal
	Sign Repair and Maintenance
	Median Barrier and Guard Rail Repair
	Emergency Vehicle Energy Attenuation Repair
Storm Maintenance	Minor Slides and Slipouts Cleanup/ Repair
Management and Support	Building and Grounds Maintenance
	Storage of Hazardous Materials (Working Stock)
	Material Storage Control (Hazardous Waste)
	Outdoor Storage of Raw Materials
	Vehicle and Equipment Fueling
	Vehicle and Equipment Cleaning
	Vehicle and Equipment Maintenance and Repair
	Aboveground and Underground Tank Leak and Spill Control

**These BMPs may not all apply to the public facilities and activities that are conducted by the City of Walnut. These have been included in the WMP to conform to the requirements of the MS4 Permit.*

3.5.5- Vehicle and Equipment Washing

All vehicle and equipment washing activities that take place at a City owned or maintained facility will conform to the requirements of the MS4 Permit. Per section VI.D.9.f of the MS4 Permit, the City of Walnut will implement and maintain applicable BMPs identified in table 3-5 of this document.

All vehicles washing of public vehicles and equipment takes place at the City yard. The City retains all runoff from washing activities in an on-site tank which is emptied on an as-needed basis. The contents of the tank are hauled off site and disposed outside of the City of Walnut in accordance with all local and state requirements.

No vehicle or equipment maintenance takes place at a City owned or operated facility. City staff are trained to address spills and prevent discharge of pollutants to the MS4. The City also works with Los Angeles County Fire and Public Works to provide spill response for spills that are beyond the City's ability to mitigate.

3.5.6- Landscape, Park, and Recreational Facilities Management

All landscape, park and recreational facilities that are City owned or maintained will conform to the requirements of the MS4 Permit. Per section VI.D.9.g of the MS4 Permit, the City of Walnut will implement and maintain applicable BMPs identified in Table 3-5 of this document.

The MS4 Permit requires that the City implement an Integrated Pest Management (IPM) program. The intent of the IPM is to limit or prevent the impact on water quality from the use of pesticides. The IPM is required to have the following provisions:

- Pesticides are only used if monitoring indicates that they are needed, and pesticides are applied according to applicable permits and established guidelines.
- Treatments are made with the goal of removing only the target organism.
- Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-targeted organisms, and the environment.
- The use of pesticides, including Organophosphates and Pyrethroids, does not threaten water quality.
- Partner with other agencies and organizations to encourage the use of IPM.
- Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.
- Policies, procedures, and ordinances shall include commitments and a schedule to reduce the use of pesticides that cause impairment to surface waters by implementing the following procedures:
 - Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.
 - Quantify pesticides use by staff and hired contractors.
 - Demonstrate implementation of IPM alternatives where feasible to reduce pesticide use.

As part of a normal landscaping maintenance program, the City does utilize fertilizers. The City of Walnut does not use pesticides or herbicides on a regular basis. On an as needed basis, pesticides are used to eliminate fire ants and gofers. Pesticides are applied by qualified staff that have been trained on the proper application methods and potential impacts of the pesticides utilized. Pesticides and fertilizers are not applied prior to forecasted rain and irrigation is ceased during the days following application. All use of pesticides is recorded and reported to the Los Angeles County Agriculture Commission.

3.5.7- Storm Drain Operation and Maintenance

The City of Walnut is required to conform to the requirements of the section VI.D.9.h of the MS4 Permit. The City of Walnut will implement and maintain applicable BMPs identified in table 3-5 of this document.

The City has an effective trash management program in place for public events. If required, additional trash receptacles are placed throughout the area that an event is to take place. Following the conclusion of the event trash receptacles are emptied within one business day after the event.

The City utilizes staff and volunteers in an effort to minimize trash and litter generated at an event. Sites of public events are restored to their daily operation following the conclusion of an event.

The City contracts to Los Angeles County Public Works for maintenance of the City’s storm drain system and catch basins. City owned catch basins are cleaned of any trash or debris present on an annual basis prior to the start of the rainy season. Also included in the Los Angeles County Departments maintenance services is the painting of “No Dumping” messages on catch basins. There is no current Trash TMDL for the San Gabriel River thus no Catch Basin Connector Pipe Screens have been installed in the City.

The City of Walnut is required to prevent infiltration from the sanitary sewer system into the MS4. The City of Walnut utilizes the following program controls:

- Adequate plan checking for construction and new development
- Incident response training for its municipal employees that identify sanitary sewer spills
- MS4 maintenance and inspections
- Interagency coordination with sewer agencies
- Proper education of municipal staff and contractors conducting field operations on the sanitary sewer or MS4

The City of Walnut has a Sanitary Sewer management Plan (SSMP) in place to prevent or minimize the effects on receiving waters and public health from a sanitary sewer overflow. One of the measures put in place by the SSMP involves video inspection of the City’s Sanitary Sewer System. The video inspection in addition to the City’s plan check and inspection system and clean up response coordination with the Los Angeles County maintenance crews are critical programs that the City utilizes to eliminate sewer leaks from infiltrating into the MS4.

The City owned treatment control BMPs shall be maintained per the requirements of the MS4 Permit. The City shall implement an inspection program that ensures that BMPs are properly maintained. The City will conduct inspections of all City owned Structural BMPs on a quarterly basis or as required by manufacture recommendations or special site conditions.

Any residual water that is produced by a treatment control BMP not being internal to the BMP performance shall be removed by an approved method. The MS4 Permit allows residual water to be hauled away and legally disposed of, applied to the land without runoff, discharged to the sanitary sewer system, or treated/filtered to remove bacteria, sediments, and nutrients to limitations identified in Table 3-6.

Table 3-6

Discharge Limitations for Dewatering Treatment BMPs		
Parameter	Units	Limitation
Total Suspended Solids	mg/L	100
Turbidity	NTU	50
Oil and Grease	mg/L	10

3.5.8- Streets, Roads and Parking Facilities Maintenance

Streets, Roads and Parking Facilities play a major role in the generation and transportation of pollutants to the MS4. The City of Walnut plans to utilize aggressive programs to limit or reduce the contamination of surface flow water in an effort.

The City of Walnut has classified all of the street segments in the City as “Priority C” streets. The City is predominately single family residential developments which generate low volumes of trash and debris. Priority C streets are required to be swept at least once per year, however the City of Walnut utilizes a bi-monthly street sweeping frequency for all of the streets in the City’s jurisdiction.

Road reconstruction shall include the following BMPs:

- Restrict Paving and repaving activity to exclude periods of rainfall of predicted rainfall unless required by emergency conditions.
- Install sand bags or gravel bags and filter fabric at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat.
- Prevent the discharge of release agents including soybean oil, other oils or diesel into the MS4 or receiving waters.
- Prevent non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt.
- Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.
- Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.
- Collect solid waste by vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused recycled or disposed of properly.
- Cover the “cold-mix” asphalt with protective sheeting during a rain storm.
- Cover loads with tarp before haul-off to a storage site, and do not overload trucks.
- Minimize airborne dust by using water spray during grinding.
- Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in our near MS4 or receiving waters.
- Protect stockpiles with a cover or sediment barriers during a rain.

City owned or operated parking lots exposed to storm water shall be kept clear of debris and excessive oil buildup and cleaned no less than two times per month on the same schedule as the City’s street sweeping.

3.5.9- Emergency Procedures

The City of Walnut is a Contract City and depends on outside agencies or contractors to provide maintenance services. In the event of an NPDES emergency, the City will contact the applicable agency

or contractor that the City contracts with for maintenance services that are related to the emergency. Contact information is distributed to City staff and residents.

NDPES Emergency Contacts- City of Walnut

Emergency Contacts for the City of Walnut:		(909) 595-7543
Los Angeles County Sewer Maintenance District:		(800) 675-HELP
Los Angeles County Department of Public Works:		(888) CLEAN-LA
Los Angeles County Fire Department:	Non-Emergency	(909) 595-3001
	Emergency	911

The MS4 Permit allows for permittees to conduct repairs essential to public service systems and infrastructure in emergency situations with a self-waiver of the provisions of the order as follows:

- The City shall abide by all other regulatory requirements, including notification to other agencies as appropriate.
- Where the self-waiver has been invoked, the City of Walnut shall submit to the Regional Water Board Executive Officer a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality, no later than 30 business days after the situation of emergency has passed.
- Minor repairs of essential public services systems and infrastructure in emergency situation (that can be completed in less than one week) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

3.5.10- Employee and Contractor Training

The City of Walnut has implemented an employee training program that targets job specific and general BMP training to City maintenance staff. City staff receive training on NPDES related topics and procedures at least once per year.

The City's training program address the potential for pesticide-related surface water toxicity, proper use and disposal of pesticides, least toxic methods of pest prevention and control and the reduction of pesticide use.

3.6- Illicit Connection and Illicit Discharge Elimination Program

The City of Walnut is required to develop and implement an illicit connection and illicit discharge elimination program. The program will be utilized by City staff to identify and eliminate illicit connections and discharges to the MS4. MS4 discharges containing illicit connections and discharges have been known to contain pollutants which may cause or contribute to the impairment of a receiving water body. The program shall include the following components:

- Procedures for conducting source investigations for IC/IDs
- Procedures for eliminating the source of IC/IDs
- Procedures for public reporting of illicit discharges

- Spill response plan
- IC/IDs education and training for Permittee staff

3.6.1- Illicit Discharge Source Investigation and Elimination

The City of Walnut will make a reasonable effort to initiate an illicit discharge source investigation as soon as staff receives notification of an event. All reports of illicit discharges will be investigated. As required by the MS4 Permit, the City will initiate an illicit discharge source investigation within 72 hours of becoming aware to the illicit discharge. Investigations will be conducted by available qualified City or County Staff in the applicable department based on the initial details reported.

Illicit discharges suspected to contain sanitary sewage shall be the highest priority for investigation. The source of sanitary sewer discharges should be traced back to the point of origination and stopped immediately if possible. Discharges of sanitary sewage from the sanitary sewer system shall be differed to Los Angeles County Sewer Maintenance District. The City has a Sewer System Management Plan (SSMP) in place to address sanitary sewer overflows (SSOs). The City of Walnut, as a member of the Consolidated Sewer Maintenance District (CSMD) utilizes the County reporting hotline 1-800-675-HELP (4357) for sewer related emergencies. The SMD reporting hotline is posted on the City website for residents should an event occur after business hours. City Staff are also trained to contact SMD if a report is received directly by the City.

The City will track all reports and investigations of illicit discharges that are determined to originate from or enter the jurisdictional area of the City of Walnut. Minimum information included in the City's tracking program is as follows:

- Date and time of observed illicit discharge
- Location of observed illicit discharge
- Results of the investigation
- Date the investigation was closed

Illicit discharge inspection and response procedures shall conform to the following:

1. Following receipt of a reported illicit discharge qualified staff will be directed to investigate as soon as possible but no later than 72 hours after initial receipt of the report.
 - a. Suspected discharge from construction site, private residents, or commercial site: Staff shall contact the on call building inspector to conduct an investigation.
 - b. Suspected discharge from public works project site: Staff shall contact the City Engineer's office. The project manager will conduct an investigation or coordinate with the public works inspector to investigate.
 - c. Suspected Hazmat discharge: Staff shall contact Los Angeles County Fire Department. Station 61 is located at 20011 La Puente Road, Walnut. Phone:(909) 595-3001; Emergency: 911
 - d. All other suspected discharges: Staff shall contact Los Angeles Flood Control District at 1-888-CLEAN-LA.
2. Staff dispatched to the reported discharge site shall conduct an investigation and if possible identify the source of the discharge.

3. Dispatched staff shall notify the responsible party of the issue and require that corrective measures are taken to eliminate the illicit discharge. It shall be noted by staff if the illicit discharge has made it to the MS4 by catch basin or other route.
4. The City shall conduct a follow up investigation following the elimination of the illicit discharge to confirm that the illicit discharge is eliminated and that the site has been cleaned to the satisfaction of the City.
5. If the source is determined to be upstream from the City's jurisdiction, staff dispatched to the site shall report back to the City's Community Services Department staff. City staff will provide notice of the illicit discharge to the agency as soon as possible. City staff will notify in writing the upstream agency and the Regional Board of the illicit discharge no later than 30 days following the determination of the discharge origination.
6. If the source of an ongoing illicit discharge is unidentified the City shall proceed with the required actions identified in section VI.D.10.v of the MS4 Permit.

3.6.2- Illicit Connection Source Investigation and Elimination

The City of Walnut will make a reasonable effort to initiate an illicit connection source investigation as soon as staff receives notification. As required by the MS4 Permit, the City will initiate an illicit connection source investigation within 21 days of becoming aware of the illicit connection. Investigations will be conducted by available qualified City or County Staff.

During the initial investigation of a reported or identified illicit connection, Staff shall record the following conditions:

- Source of the connection
- Nature and volume of discharge from the connection
- Responsible party for the connection

Upon confirmation that the reported/identified connection is illicit the City shall ensure that the connection is permitted and documented only if the connection discharges storm water and exempt or conditionally exempt non-storm water discharges allowed under the MS4 Permit or other individual or general NPDEs permits. If the illicit connection does not qualify for undergoing the permitting or documentation option it shall be eliminated within 180 days of completion of the investigation. Formal enforcement authority shall be used if necessary, to eliminate the illicit connection. All illicit connection investigations shall be documented.

3.6.3- Public Reporting of Non-Storm Water Discharges and Spills

The City of Walnut publicizes and promotes the importance of public reporting of illicit discharges on the City's website and through the public outreach and education program. The City participates in the Los Angeles County Reporting hotline, and has made the hotline number available through the City website, quarterly mailers, and education materials. The City of Walnut has also implemented and will continue to maintain signage adjacent to open channels or creeks that display information regarding dumping prohibitions.

City staff will be trained to document all reports of complaint calls received by the City. Complaints will be documented and tracked. The City will investigate all complaints in a timely manner and will include the results and follow up actions if needed on the tracking system selected by the City to document complaints.

3.6.4- Spill Response Plan

The City of Walnut is a Contract City. Upon receipt of a complaint or notice of an illicit discharge during normal business hours the City will determine based on the details reported to either dispatch an inspector to investigate or forward the complaint to Los Angeles County. The County reporting hotline is available to residents and City Staff.

Once reported to Los Angeles County through the reporting hotline. County hotline operators direct the call to the appropriate maintenance crew. The County crew will then be dispatched to the location reported to address the issue identified.

3.6.5- Illicit Connection and Illicit Discharge Education and Training

The City of Walnut will continue to train all City staff on the critical impact that illicit discharges and connections play in MS4 discharge water quality. Field staff will receive annual training to reinforce how to recognize an illicit discharge or connection. Field staff will also receive training on the City's procedures for documenting and reporting illicit discharges and connections.

City field staff will be trained to properly eliminate and cleanup a site of an illicit discharge. City staff will only be trained to address sediment related illicit discharges that have not made it into the MS4. All other illicit discharges will be referred to the Los Angeles County Department of Public Works reporting hotline. The City of Walnut is a contract City and relies on the Los Angeles County Department of Public Works for spill response related to illicit discharges that are beyond the City's ability to address.

4.0- Reasonable Assurance Analysis

The Permit allows an agency to customize their storm water programs through the development and implementation of a Watershed Management Program to demonstrate compliance with relevant receiving water limitations through a Reasonable Assurance Analysis. Following the adoption of the Permit, the City of Walnut elected to develop an individual WMP.

The Permit specifies that a viable RAA must identify a suite of best management practices, both structural and non-structural, that demonstrates compliance with appropriate water quality standards as developed through applicable Total Maximum Daily Loads and other Permit limitations (water quality based effluent concentrations, receiving water limitations, and water quality objectives).

This section summarizes the City of Walnut's RAA approach and results of the following steps:

- Setting target load reductions based on Permit limitations;
- Modeling identified structural BMPs and quantifying their associated load reductions;
- Demonstrating, with reasonable assurance, that target load reductions (and therefore Permit limitations) can be met by the final compliance dates; and
- Phasing of structural and non-structural BMPs to achieve interim milestones.

The RAA modeling approach presented herein conforms to Part VI.C.5.b.iv(5) of the Permit, which states:

“Permittees shall conduct a Reasonable Assurance Analysis for each water body-pollutant combination addressed by the [WMP]. [The] RAA shall be quantitative and performed using a peer-reviewed model in the public domain. Models to be considered for the RAA, without exclusion, are the Watershed Management Modeling System (WMMS), Hydrologic Simulation Program-FORTRAN (HSPF), and the Structural BMP Prioritization and Analysis Tool (SBPAT)... The objective of the RAA shall be to demonstrate the ability of [the WMP] to ensure that Permittees' MS4 discharges achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.”

The Regional Board has developed a guidance document titled, “Guidelines for Conducting Reasonable Assurance Analysis in a Watershed Management Program, Including an Enhanced Watershed Management Program (March 25, 2014).” Although the guidance document presents guidelines and not necessarily requirements, the results of the RAA presented in this section have been developed to conform to the Regional Board guidance document where appropriate. The approach outlined in this section was presented to the Regional Board by Geosyntec during meetings on January 30, 2014 and April 9, 2014 (each for other Watershed Management Groups) and was found to be consistent with their guidelines.

4.1- Dry Weather RAA

The City of Walnut’s dry weather compliance approach is to eliminate 100% of non-exempt dry weather MS4 discharges using a suite of non-structural source controls (e.g., water conservation incentives, enhanced IC/ID efforts, and enhanced education/outreach and inspection/enforcement to prevent non-sources of storm water flow) and source investigations following dry weather outfall screening. By eliminating flows, this is equivalent to 100% load reduction for all pollutants, thereby demonstrating reasonable assurance of meeting all applicable Permit limitations during dry weather. Elimination of discharges is a pathway for compliance with RWLs and WQBELs in the MS4 permit (per section VI.E.2.e.i.(3)); without discharges there can be no “cause or contribute” to receiving water issues.

The remainder of the RAA addresses wet weather.

4.2- Water Body Pollutant Combinations

Permit Attachment K indicates that the Walnut Watershed Management Area (WMA) drains to two receiving water bodies, San Jose Creek to the south and Walnut Creek Wash to the north, and that the San Gabriel River and Impaired Tributaries Metals and Selenium TMDL applies to both. Both of these receiving waters are tributary to San Gabriel River Reach 3, which is itself tributary to San Gabriel River Reach 2. Permit Attachment P sets a daily waste load allocation (WLA) for lead¹ for San Gabriel River Reach 2 and all tributaries at $81.34 \mu\text{g/L} \times \text{daily storm volume (L)}$ for periods when the maximum daily flow of the River is greater than or equal to 260 cfs as measured at USGS station 11085000, which is located at the base of Reach 3 above the Whittier Narrows Dam. Therefore lead in San Jose Creek and Walnut Creek Wash are the only Category 1 (Highest Priority) Water Body Pollutant Combinations (WBPCs) evaluated in this RAA.

San Jose Creek and Walnut Creek Wash are 303(d) listed for indicator bacteria. These water bodies are also listed for other pollutants including ammonia, total dissolved solids, toxicity, pH, and benthic macroinvertebrate bioassessment; however, these pollutants are either not able to be modeled given currently available datasets or are not typically associated with MS4 wet weather discharges. Therefore indicator bacteria in San Jose Creek and Walnut Creek Wash are the only Category 2 (High Priority) WBPCs evaluated in this RAA. Applicable wet weather bacteria water quality objectives used for the RAA are identified in Table 4-1.

There are no Category 3 (Medium Priority, based on other receiving water exceedances) pollutants identified by the City.

¹ For selenium, based on the 1994-2000 LA County land use monitoring dataset, selenium concentrations are below the 5 ug/L detection level – which is equivalent to the applicable CTR freshwater chronic criterion -- in 100% of the 38 single family residential (SFR) samples. These data are available [at http://dpw.lacounty.gov/wmd/NPDES/Int_report/Tables/Table_4-12.pdf](http://dpw.lacounty.gov/wmd/NPDES/Int_report/Tables/Table_4-12.pdf). In the City of Walnut, SFR is the dominant land use. Therefore we do not believe there is any evidence to link Walnut’s MS4 discharges to elevated selenium concentrations that have been observed in the receiving waters, and no further response actions are proposed.

Table 4-1

Bacteria Objectives Used for the Walnut RAA		
Receiving Water Segment	Recreational Beneficial Use	Water Quality Objective
San Jose Creek	REC1 (potential) and REC2 (intermittent) with High Flow Suspension*	400/100mL fecal coliform* (single sample limit)
Walnut Creek Wash	REC1 (intermittent), REC2 (intermittent)	400/100mL fecal coliform* (single sample limit)

REC1 = water contact recreation

REC2 = non-water contact recreation

* While the REC1 fecal coliform objective was removed from the Los Angeles Basin Plan through Order R10-005, fecal coliform is used in this RAA as the modeling surrogate for *E. coli* due to its more robust modeling input datasets. Therefore, the old REC1 objective for fecal coliform (400 mpn/100mL) is used in this RAA for setting target load reductions, and this objective is considered equally protective of public health to the 235 mpn/100mL REC1 objective for *E. coli* based on illness relationships reported in the 1986 USEPA recreational water quality criteria documents.

There are no Category 3 (Medium Priority, based on other receiving water exceedances) pollutants identified by the City.

4.3- Target load Reductions, Critical Conditions

The Regional Board’s RAA guidance document requires that RAAs consider critical conditions when evaluating load removals for structural and non-structural BMPs. For bacteria, the critical condition is defined as the 90th percentile TMDL year (Nov 1-Oct 31, consistent with various Los Angeles region bacteria TMDLs). For lead, the critical condition, based on the metal TMDL WLA, is defined as the 90th percentile daily lead load for metal TMDL wet days (i.e., days with measured flowrates in the river above a certain threshold). The 90th percentile bacteria TMDL year for the Walnut WMA, based on both number of bacteria TMDL wet days (i.e., days with 0.1 inch of rain and the three days that follow, a definition taken from Los Angeles region bacteria TMDLs) and total rainfall depth, is 1993.² This is based on the most representative Los Angeles County Flood Control District precipitation gauge, or Mt. San Antonio College Station (D255), for the 1989-2011 period³. This gauge location is shown in Figure 4-1. A data summary for this gauge for each year in this period is shown in Table 4-2.

² The Regional Board’s definition of “TMDL year” (for example, as used in the Los Angeles River Bacteria TMDL), was used throughout this RAA. For 1993, this is November 1, 1992 to October 31, 1993.

³ The period of Nov 1, 1988 to Oct 31, 2011 (TMDL years 1989-2011) is based on the range of precipitation data available in Los Angeles County’s WMMS model. The model contains data between 1/28/1986 and 4/26/2012, but the model requires at least one year of “spin-up” time from initial conditions, and only whole TMDL years were used. Therefore, TMDL years 1989-2011 were chosen as the representative period for model outputs.

Wet days for lead are defined in the San Gabriel River metals TMDL as days in which the maximum daily flow at USGS gauge 11085000 is 260 cfs or greater; this value was set in the TMDL based on the 90th percentile flows at this gauge between 1990 and 2005. The 90th percentile daily lead load for wet days in the November 1, 1989 to October 31, 2011 period was determined based on modeling output as described below. An electronic file with daily model-predicted lead loads for the entire period at the outlets to San Jose Creek and Walnut Creek Wash, as well as at all catchments within the model domain is available .

Table 4-2

Annual Rainfall and Number of Wet Days at Mt. San Antonio College Station Rain Gauge for TMDL years 1989-2011				
TMDL Year	Annual Rainfall Depth (inches)	Percentile by Rainfall Depth (%)	Number of Bac. TMDL Wet Days*	Percentile by Number of Wet Days(%)
1989	6.12	5%	68	68%
1990	9.01	23%	49	27%
1991	18.68	68%	45	5%
1992	25.24	86%	70	73%
1993	26.67	91%	77	91%
1994	8.81	18%	67	64%
1995	24.74	77%	75	82%
1996	18.12	64%	54	45%
1997	14.61	45%	52	36%
1998	33.23	100%	118	100%
1999	4.76	0%	46	9%
2000	11.12	32%	47	14%
2001	15.6	50%	48	23%
2002	8.69	14%	41	0%
2003	16.33	55%	47	14%
2004	20.11	73%	63	59%
2005	25.13	82%	93	95%
2006	10.47	27%	62	55%
2007	6.34	9%	49	27%
2008	17.56	59%	53	41%
2009	11.52	36%	59	50%
2010	29.88	95%	72	77%
2011	11.88	41%	76	86%

*Wet days for bacteria are days in which 0.1" or greater rainfall occurs plus the three days following as defined in various Los Angeles area Bacteria TMDLs.



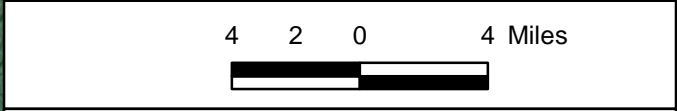
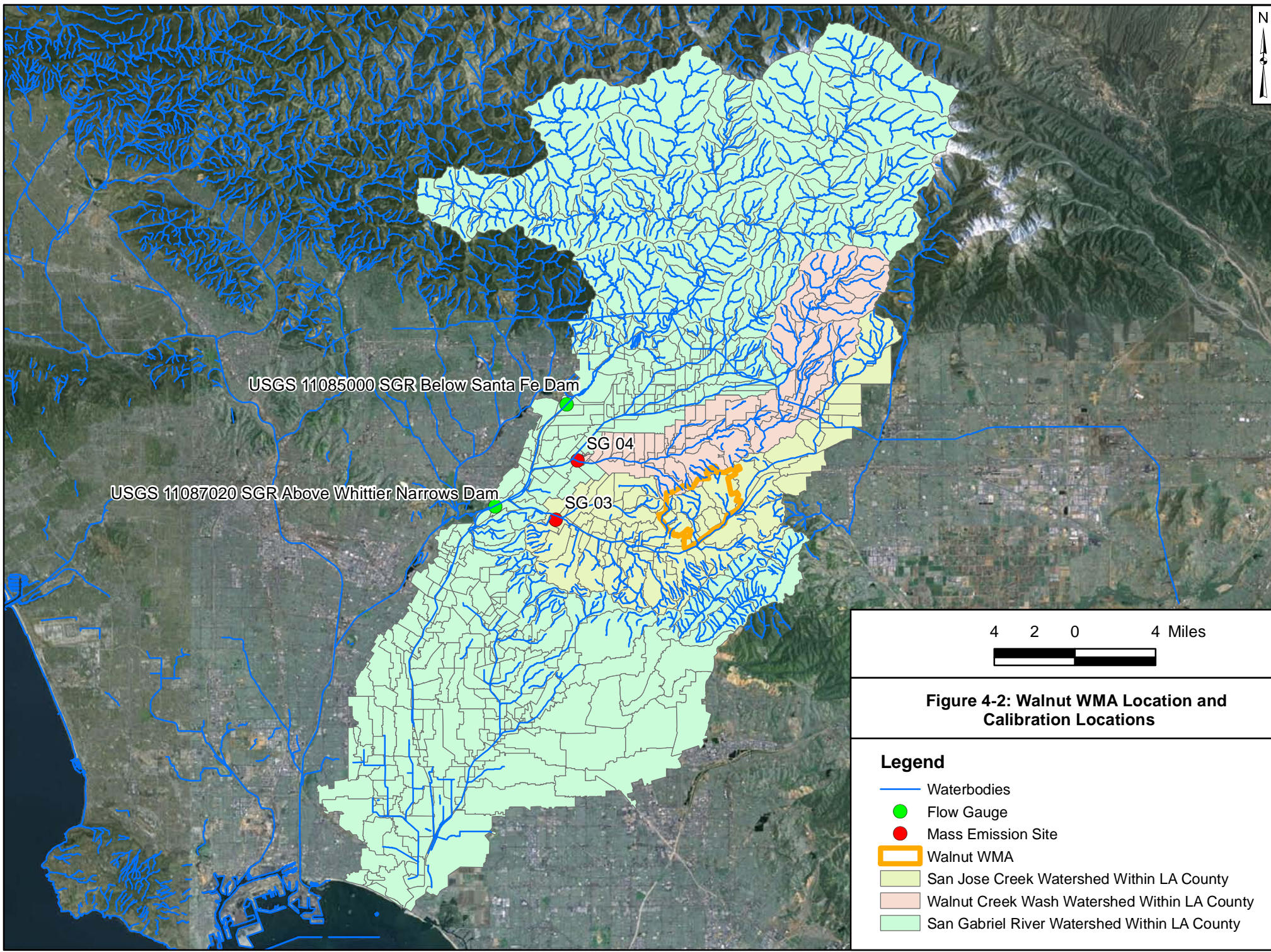


Figure 4-2: Walnut WMA Location and Calibration Locations

Legend

- Waterbodies
- Flow Gauge
- Mass Emission Site
- Walnut WMA
- San Jose Creek Watershed Within LA County
- Walnut Creek Wash Watershed Within LA County
- San Gabriel River Watershed Within LA County

4.4- Baseline Loads, Critical Conditions

The Los Angeles County Loading Simulation Program C++ (LSPC) model was used to compute baseline and allowed loads, and to determine target load reductions for the RAA. The Los Angeles County LSPC model is a publically available watershed model that was developed for Los Angeles County in connection with the greater Watershed Management Modeling System (WMMS) framework. LSPC uses Hydrologic Simulation Program Fortran (HSPF) algorithms to simulate hydrology, sediment transport, water quality, and the fate and transport of pollutants within receiving waters and through a watershed. GIS is used for the spatial component of the analysis as well as general visualization. WMMS' LSPC model has been calibrated for hydrology as well as water quality in the San Gabriel River Watershed. Default model settings and input parameter values were not changed for this project, therefore the original County calibration results still apply and are summarized here to the extent that documentation exists for the San Gabriel River Watershed. Additional documentation regarding the development and calibration of LSPC within the greater WMMS modeling framework can be found in the Los Angeles County Department of Public Works' WMMS portal (Los Angeles County DPW, 2010c).

The original County hydrology calibration of the LSPC model was done by comparing predicted flow rates with measured values at 30 stream gauge locations throughout Los Angeles County including four locations within the San Gabriel River Watershed (Los Angeles County Department of Public Works, 2010a). Areas with a single or dominant land use were calibrated first to establish attributes for that land use throughout the rest of the county. Attributes for other land uses were then calibrated using areas where the previously calibrated land uses had fixed attributes. Point sources and hydromodification features (such as dams and spreading grounds) were then calibrated once all land use attributes were calibrated. Analyses included both graphical and statistical comparisons of model prediction with measured stream gauge data, including comparisons of mean daily, monthly, and seasonal flow as well as flow exceedance probabilities.

The County calibrated the LSPC model for water quality in much the same way, where an area with a dominant land use was calibrated first, then the attributes of that land use were held fixed to calibrate the other land uses (Los Angeles County Department of Public Works, 2010b). Predicted pollutant concentrations were compared with land-use specific water quality data collected by the Southern California Coastal Water Research Project (SCCWRP) (SCCWRP, 2007) in order to adjust model input parameters for each pollutant for each land use. The County water quality calibration report includes visual comparisons only. The model was validated by comparing predicted versus measured water quality data for receiving water mass emission sites, again using measured data collected by SCCWRP.

The Walnut WMA represents 1.3% of the overall San Gabriel River watershed area (Figure 4-2). No stream gauge or mass emission site exists that represents stormwater discharges exclusively from the Walnut WMA. The nearest downstream flow gauge (USGS gauge #11087020 is located 10 miles downstream and drains an area 49 times larger than the Walnut WMA. The County used two San Gabriel River stream gauges for hydrology calibration of the LSPC model: one immediately upstream of the confluence with Walnut Creek Wash (USGS gauge #11085000 San Gabriel River below Santa Fe Dam near Baldwin Park, CA) and one immediately downstream of the confluence with San Jose Creek (USGS gauge #11087020 San Gabriel River above Whittier Narrows) (Figure 4-2). Although both of

these gauges were used for calibration of the model, the calibration statistics are only provided in the County hydrology calibration report for the downstream gauge. At this location, an average difference of 12.4% was computed based on a comparison between predicted and measured total volumes between October 1, 1986 and September 30, 1992 (Los Angeles County Department of Public Works, 2010a). For comparison, the RAA guidelines provided by the Los Angeles Regional Water Quality Control Board (LARWQCB) state that a difference between predicted and measured values of 10-15% is “good” for hydrology and flow (LARWQCB, 2014). An excerpt from the calibration report showing the mean daily and mean monthly flows measured at the stream gauge versus those predicted by the model is shown in Figure 4-3.

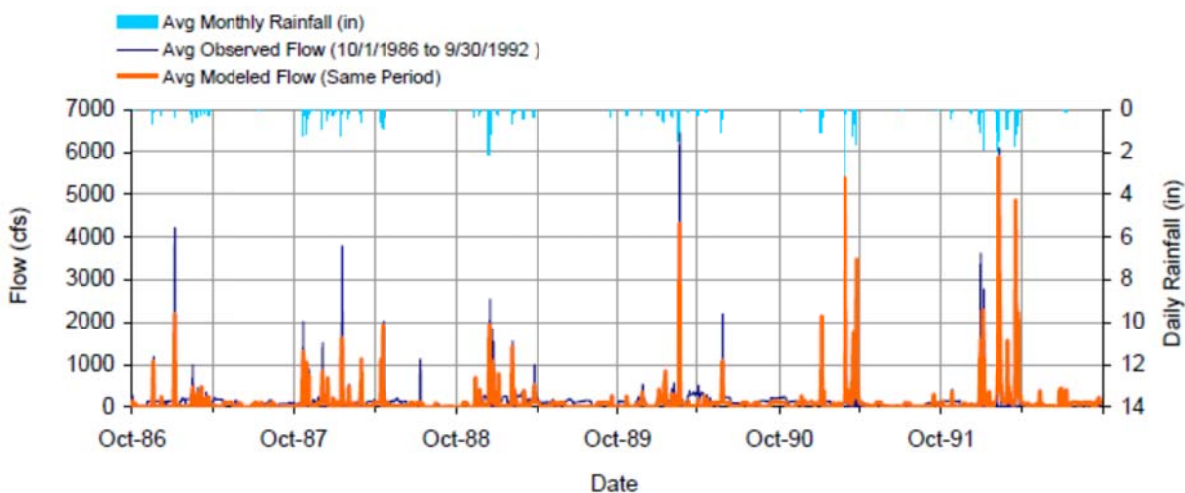


Figure F-1. Mean daily flow: Model Outlet 5156 vs. USGS 11087020 San Gabriel R Ab Whittier Narrows Dam CA

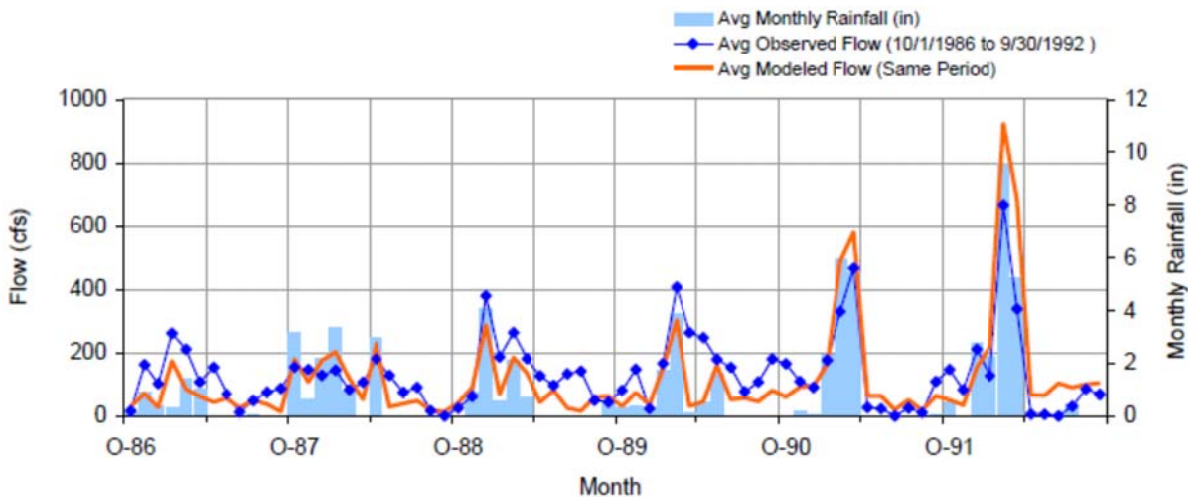


Figure F-2. Mean monthly flow: Model Outlet 5156 vs. USGS 11087020 San Gabriel R Ab Whittier Narrows Dam CA

Figure 4-3: LSPC Predicted vs Measured Stream Flow Rates. (Figure from Los Angeles County Department of Public Works, 2010a)

For water quality calibration, the County’s water quality calibration report evaluates four locations in the San Gabriel River Watershed, including mass emission sites on San Jose Creek (SG03) and Walnut Creek Wash (SG04), each located downstream of the WMA (Figure 4-2) (Los Angeles County Department of Public Works, 2010b). SG03 is located approximately 7 miles downstream of the WMA and has a drainage area of 85 square miles, of which the WMA makes up less than 10%. SG04 is located approximately 5.5 miles downstream of the WMA and has a drainage area of 59 square miles, of which the WMA makes up approximately 1%. Each site had 19-20 lead and 27-29 total coliform bacteria samples collected by SCCWRP between 2004 and 2005, which were used for model validation (as described earlier, SCCWRP land use monitoring sites were used for model water quality calibration). A time series of the predicted lead concentrations compared with measured concentrations at these mass emission sites is shown in Figures 4-4 and 4-5.

Through the WMP adaptive management process, as monitoring data from the Walnut WMA become available, the RAA models will be recalibrated – thus better reflecting site specific conditions – and the RAA results will be revised.

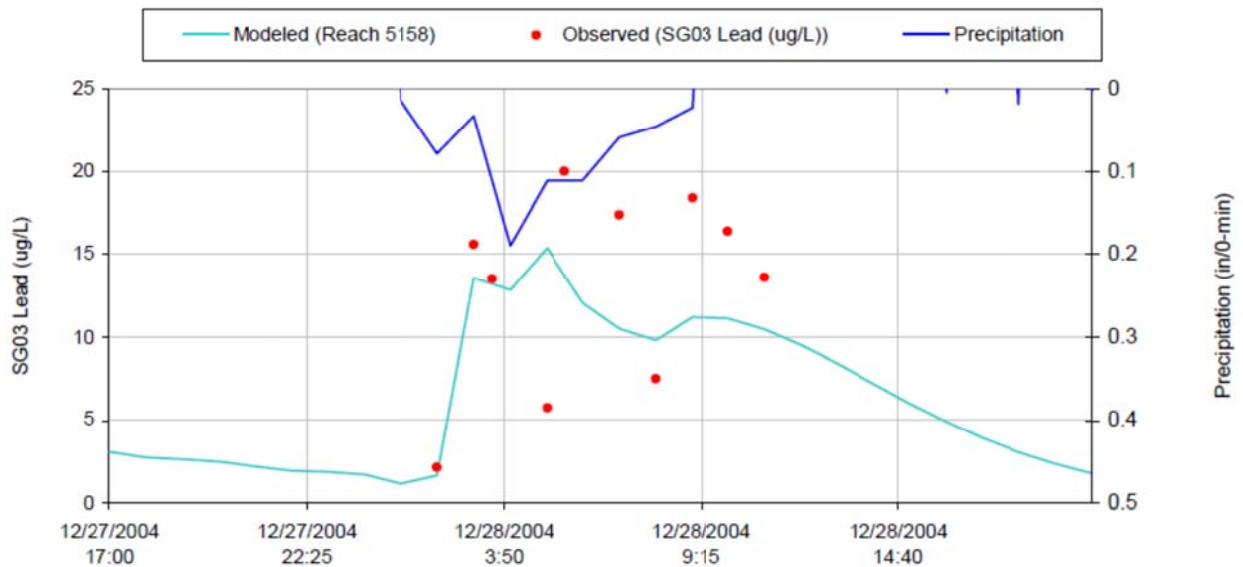


Figure 4-4: LSPC Predicted vs Measured Lead Concentrations at Mass Emission Site SG 03. (Figure from Los Angeles County Department of Public Works, 2010b)

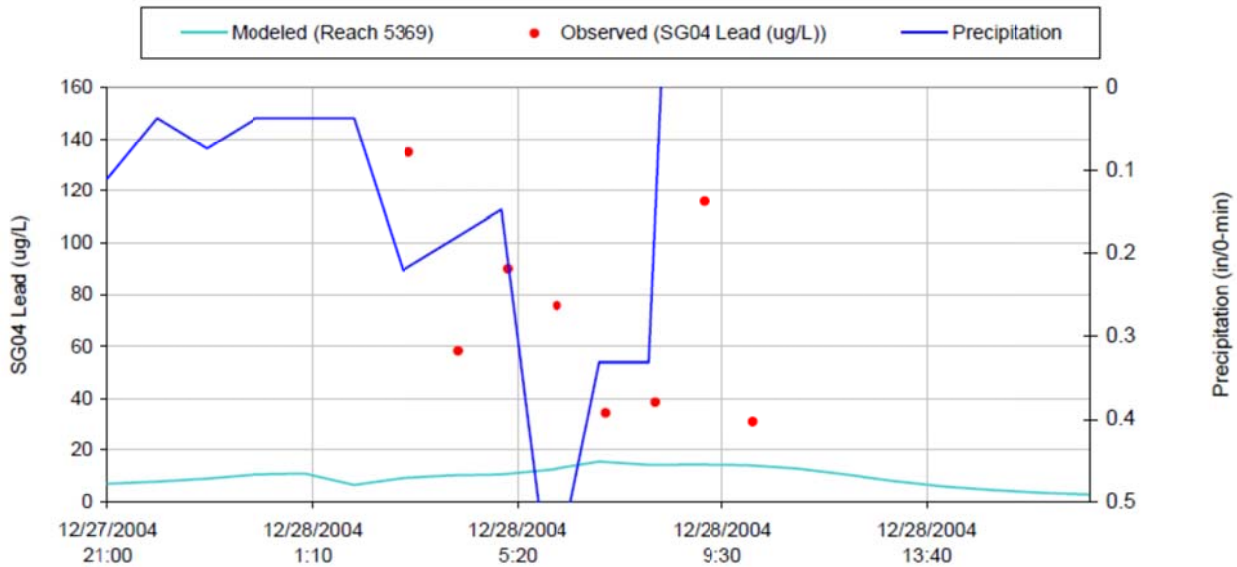


Figure 4-5: LSPC Predicted vs Measured Lead Concentrations at Mass Emission Site SG 04. (Figure from Los Angeles County Department of Public Works, 2010b)

4.4.1- Methodology

The County LSPC model's catchments were clipped to the boundary of the Walnut WMA. Figure 4-6 presents revised LSPC model catchments, storm drains, and receiving waters for the WMA. The majority of the WMA (93%) drains towards San Jose Creek.

LSPC land uses in the San Gabriel River Watershed are unchanged from the County's published LSPC model, and represent 2000 conditions. While new development has occurred in the City since 1996 (and therefore this developed area isn't captured by the existing LSPC model), the stormwater impacts of this development have been at least partially mitigated through Standard Urban Stormwater Management Plan (SUSMP) implementation consistent with requirements from the 2001 MS4 permit.

In order to establish baseline (or existing condition) pollutant loads, pollutant concentrations, and runoff volumes, a single model run without any BMPs or treatment control measures was carried out for both the San Jose Creek and Walnut Creek Wash sides of the WMA. Baseline bacteria loads (modeled using fecal coliform⁴) were predicted for the 90th percentile TMDL year by rainfall. Baseline lead loads were predicted for the 90th percentile lead load wet day, using the metals TMDL definition of wet day where the measured flow at USGS gauge #11085000 was 260 cfs or greater. These dates were found to be 5/10/1998 for both San Jose Creek and Walnut Creek Wash. Baseline predicted loads for both fecal coliforms and lead are shown in Table 4-3. LSPC-predicted daily flows, concentrations, and volumes for individual as well as summed catchments that drain to San Jose Creek and Walnut Creek Wash for the entire November 1, 1989 to October 31, 2011 modeling period, along with the LSPC modeling files, are available.

⁴ Fecal coliform is used as the representative indicator bacteria for RAA modeling given its relatively larger land use event mean concentration datasets and given that it is the basis for the REC2 objective, which is the applicable recreational use for the water body that most of the City drains to.

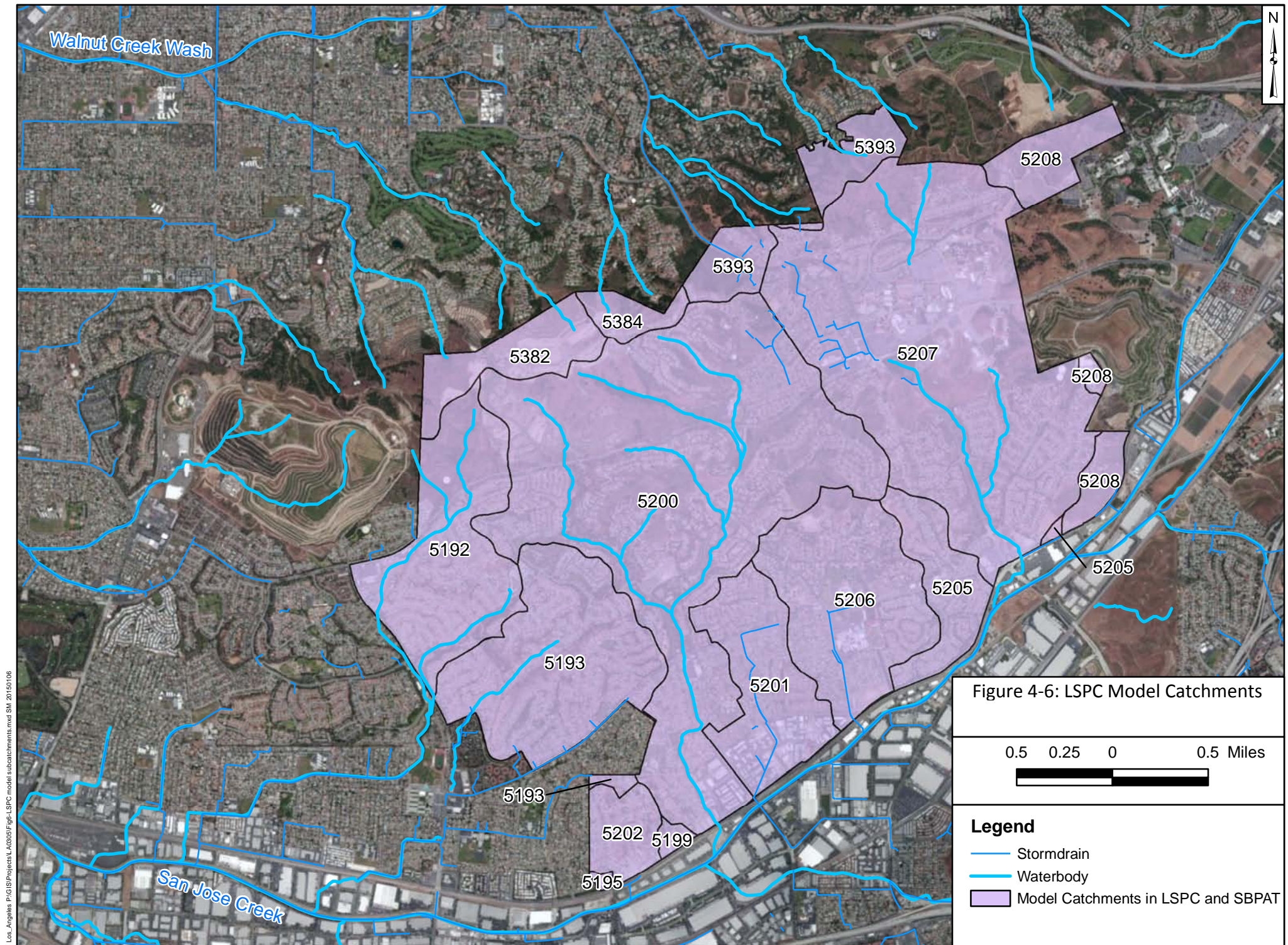


Figure 4-6: LSPC Model Catchments

0.5 0.25 0 0.5 Miles



Legend

- Stormdrain
- Waterbody
- Model Catchments in LSPC and SBPAT

Table 4-3

Baseline Loads Derived from LSPC for the Critical Condition		
Receiving Water Segment	90th Percentile Daily Lead Load on Wet Days (lbs)	90th Percentile Annual Fecal Coliform Load (MPN*10¹²)
San Jose Creek	0.62 (for 5/10/1998)	436 (for 11/1/1992-10/31/1993)
Walnut Creek Wash	0.018 (for 5/10/1998)	7.4 (for 11/1/1992-10/31/1993)

4.5- Allowable Loads

4.5.1- Lead

The allowable lead load for the WMA was computed by multiplying the concentration-based WQBEL (81.34 µg/L) by LSPC-predicted runoff volumes on the wet day with the 90th percentile lead load for the areas draining to San Jose Creek and Walnut Creek Wash. For both San Jose Creek and Walnut Creek Wash, the allowable load is approximately an order of magnitude greater than the baseline load (Table 4- 4).

Table 4-4

Allowable Daily Lead Loads (Computed for the Baseline Wet Day with the 90th Percentile Lead Load)			
Receiving Water Segment	Baseline Daily Runoff Volume (acre feet)	WQBEL (ug/L)	Allowable Daily Lead Load (lb)
San Jose Creek	26	81.34	5.7
Walnut Creek Wash	0.81	81.34	0.18

4.5.2- Bacteria

Since there is currently no adopted bacteria TMDL for the San Gabriel River Watershed, the bacteria allowable load is based on assumed allowable exceedance day⁵ (AED)-based limitations consistent with the Los Angeles River Bacteria TMDL, which allows a 19 percent wet weather exceedance percentage (of REC1 freshwater single sample objectives) based on SCCWRP reference stream monitoring data. The 90th percentile TMDL year (1993) has 77 wet days (i.e., days with 0.1 inch of rain and the three days that follow). In San Jose Creek, 30 of these days are exempt from recreational objectives through the High Flow Suspension (HFS)⁶, and 19 percent of the remaining wet days (47) are allowed to exceed REC1 objectives, resulting in 9 AEDs (in addition to the HFS days). The net result for San Jose Creek is

⁵ An exceedance day is a day in which bacteria concentrations exceed the applicable recreational objectives.

⁶ The HFS applies during days with greater than or equal to 0.5 inches of rain and the following day.

that, of the 77 wet days that occur during 1993, 39 are allowed to exceed recreational objectives (the combination of the HFS and reference-based AEDs). For Walnut Creek Wash, consistent with the Los Angeles region bacteria TMDLs for creeks, 19 percent of the 77 wet days are allowed to exceed REC1 objectives based on average reference stream exceedance rates, resulting in 15 AEDs. For both creeks, these AEDs were used to directly calculate target load reductions through a methodology that is described in the next section. Allowable loads were then calculated by subtracting target load reductions from baseline loads. Table 4-5 summarizes the allowable loads for lead and bacteria for the 90th percentile year.

Table 4-5

Allowable Bacteria Loads for 90th percentile year	
Receiving Water Segment	Annual Fecal Coliform Load (MPN*10¹²)
San Jose Creek	320
Walnut Creek Wash	3.6

4.6- Target Load Reductions

4.6.1- Lead

Target load reductions (TLRs) are the reduction of baseline loads needed to achieve allowable loads for the critical condition. The TLRs for lead were determined to be zero since baseline loads are already below allowable loads. The zero TLR serves as reasonable assurance demonstration that the lead WQBEL will be met in both receiving water bodies without the need for new BMPs. Therefore, quantification of BMP load reductions for lead are not reported in the BMP sections of this RAA. However, the BMPs proposed for addressing bacteria will also have a substantial load reduction benefit for lead and other metals.

4.6.2- Bacteria

TLRs for bacteria were established as the load reductions from baseline conditions that are required to decrease the number of wet-weather exceedance days (i.e., non-HFS wet days with receiving water concentrations above 400 MPN/100 mL) in the 90th percentile year to the AEDs described earlier. In order to calculate this required load reduction, a single regional retention basin was modeled at the outlets of the San Jose Creek and Walnut Creek Wash drainage areas in LSPC. Each basin was iteratively sized until the number of exceedance days was equivalent to the number of AEDs for the downstream receiving water body. Exceedance days for each basin were calculated as any non-HFS wet day with a predicted fecal coliform concentration in the basin discharge (i.e., during overflow events) that was above the applicable fecal coliform objective. Therefore, it was possible for each retention basin to overflow and not cause an exceedance as long as it either occurred on a dry day or an HFS day, or if concentrations did not exceed the criteria. Once each basin was sized appropriately so that the number of exceedance days did not exceed the allowable number of exceedance days in TMDL year 1993, TLRs

were calculated as the load reductions that were achieved by each infiltration basin. The percent reduction in the bacteria load relative to baseline was calculated by comparing the predicted annual bacteria loads from the WMA with the retention basin in place to the predicted annual bacteria loads from the WMA from the baseline conditions for the 90th percentile TMDL year. Table 4-6 summarizes the TLRs for lead and bacteria as a percentage reduction from the respective baseline loads.

Table 4-6

Target Load Reductions for the Critical Condition (as a percent of baseline load)		
Receiving Water Segment	Total Lead*	Fecal Coliforms**
San Jose Creek	0%	27%
Walnut Creek Wash	0%	51%

*Applicable on the 90th percentile lead load wet day where wet days are days where the maximum flow rate at USGS 11085000 is 260 cfs or greater.

**Applicable on the 90th percentile bacteria TMDL year for number of wet days where wet days are days with 0.1" or precipitation or greater plus the next three days

4.7- Modeling assumptions for WMP Control Measures

4.7.1- BMP Model Description

SBPAT, a public domain GIS-based water quality analysis tool was used to evaluate structural BMP performance for the purposes of this RAA. SBPAT links a modified USEPA Storm Water Management Model (SWMM) hydrologic engine to a Monte Carlo analysis capable of repeated random sampling of pollutant event mean concentrations (EMCs) and BMP effectiveness distributions to obtain numerical results regarding the expected performance of a specific BMP configuration (Geosyntec Consultants, 2012). SBPAT was designed specifically for the purpose of identifying structural retrofit BMP opportunities, and quantifying their benefits and costs. Each Monte Carlo analysis typically involves 10,000 iterations of EMC lognormal distributions fitted to Los Angeles region land use EMC datasets (the same datasets that were also used to calibrate LSPC), as well as BMP effluent EMC distributions based on recent data from the International BMP Database. SBPAT’s land use EMC log statistics are presented in Table 4-7. SBPAT is capable of quantifying model output variability, which is a component of the Regional Board’s RAA guidance. The model:

- Calculates and tracks inflows to BMPs, treated discharge, bypassed flows, evaporation, and infiltration at a user-defined time step (e.g., 15 minutes);
- Distinguishes between individual runoff events by defining six-hour minimum inter-event times in the rainfall record, yet tracks inter-event antecedent conditions;
- Tracks volume treated by BMPs and summarizes and records these metrics by storm event; and
- Produces a table of each BMP’s hydrologic performance, including concentration and load metrics by storm event, and consolidates these outputs on an annual basis.

SBPAT is specifically referenced in the MS4 Permit Part VI.C.5.b.iv and was presented at the first two Permit Group Technical Advisory Committee (TAC) RAA Subcommittee meetings. Additional information regarding SBPAT can found in the SBPAT portal at www.SBPAT.net.

Table 4-7

SBPAT Fecal Coliform Event Mean Concentrations for the Walnut WMA – Arithmetic Estimates of the Lognormal Summary Statistics (means with standard deviations in parentheses)^a	
Land Use	Fecal Coliform MPN/100mL
Single Family Residential	31,100 ^b (94,200)
Commercial	51,600 (173,400) ^c
Industrial	3,760 (4,860)
Education (Municipal)	11,800 ^d (23,700)
Transportation	1,680 (456)
Multi-Family Residential	11,800 ^e (23,700)
Agriculture (Row Crop)	60,300 (153,000)
Vacant / Open Space	484 (806)

^a Fecal coliform EMC statistics are calculated based on 2000-2005 SCCWRP Los Angeles region land use data (SCCWRP, 2007). These EMC datasets are summarized in the SBPAT User’s Guide (Geosyntec, 2012).

^b The fecal coliform EMC for the single-family residential land use is based on SCCWRP’s dataset for “low-density residential”.

^c The default log distribution best fit summary statistics for this land use-pollutant combination produced an unreasonably high deviation, therefore the arithmetic estimate of the log mean was held constant while the log summary statistics were recomputed based on the log CoV for SFR (SCCWRP’s low-density residential EMC).

^d Multi-family residential EMC used here since educational land use site not available in the SCCWRP fecal coliform dataset.

^e The fecal coliform EMC for the multi-family residential land use is based on SCCWRP dataset for “high-density residential”. High density single-family residential land use areas are also assigned this EMC.

4.7.1- BMP Model Calibration

The LSPC-derived TLRs were expressed as *percentages* of baseline loads to allow comparison with SBPAT’s BMP load reductions even if the LSPC and SBPAT baseline loads didn’t exactly match. However, some input parameter adjustments were made to SBPAT to improve the comparability between SBPAT output and the County-calibrated LSPC output for the baseline condition. First, SBPAT-predicted runoff volumes were calibrated to the LSPC-predicted runoff volumes. SBPAT uses the same catchment delineations as LSPC, and the dominant rain gauge used by LSPC (which applies to 93% of the total area in the WMA) is the rain gauge used by SBPAT. SBPAT was calibrated by adjusting the saturated hydraulic conductivity rates (Ksats) of the underlying soils until the predicted annual runoff volumes for the entire 1989-2011 modeling period and for TMDL year 1993 were within 10% of the LSPC-predicted volumes (after removal of base flows), to meet the “very good” threshold from the RAA guidance calibration performance criteria. Base flows were removed from the LSPC results using the Web-based Hydrograph Analysis Tool for porous aquifers with ephemeral streams; this tool was developed by Purdue University to separate base flows and runoff (Lim et al., 2005). Table 4-8 summarizes the annual runoff volume comparisons for the entire modeling period and for TMDL year 1993. In the future, through the WMP adaptive management process, as WMA-specific monitoring data become available, the LSPC and SBPAT calibrations may be updated, and the RAA revisited.

Table 4-8

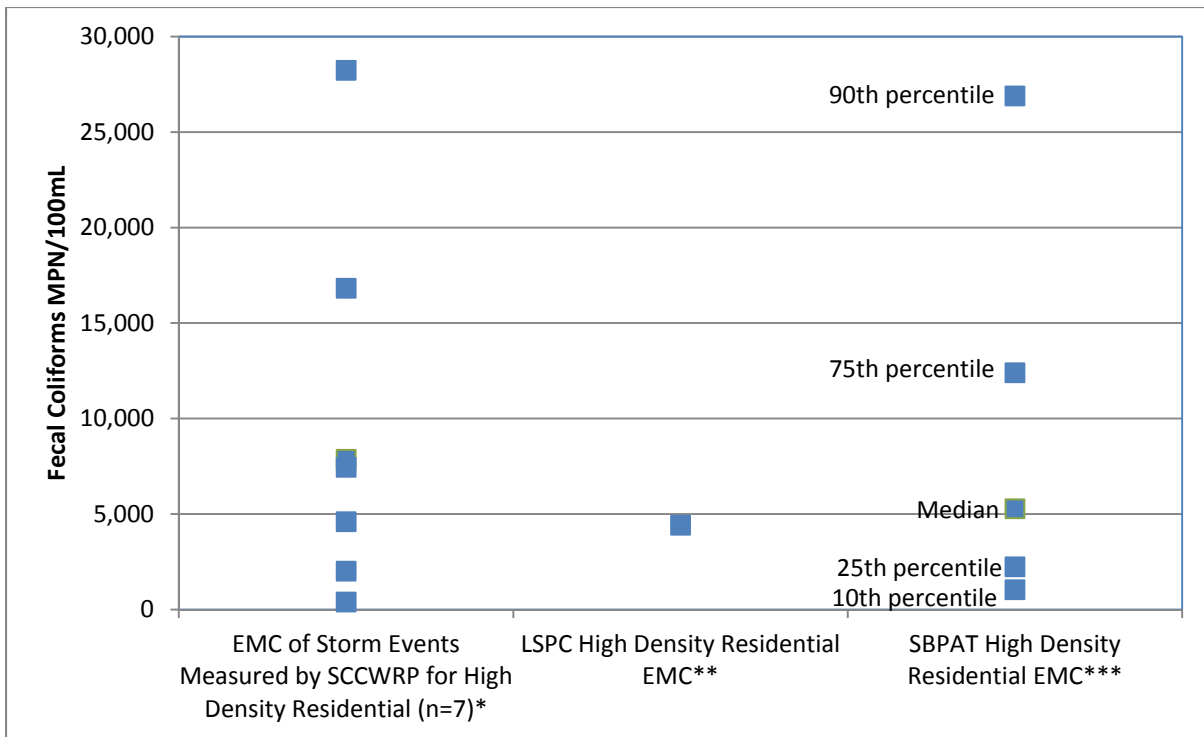
Annual Runoff Volume Comparison Between LSPC and SBPAT Models						
TMDL Year	San Jose Creek			Walnut Creek Wash		
	LSPC Runoff Volume (acre ft)	SBPAT Runoff Volume (acre ft)	Diff (%)	LSPC Runoff Volume (acre ft)	SBPAT Runoff Volume (acre ft)	Diff (%)
1993	6,542	7,156	9%	311	340	9%
1989-2011	61,337	65,501	7%	2,197	2,230	2%

Next, SBPAT’s land use pollutant EMC statistics – which are the only water quality parameters used by the model to compute baseline pollutant loads – were compared with raw SCCWRP land use EMC datasets and LSPC’s calibrated input values. The EMCs used by SBPAT for fecal coliforms are log-normal distributions calculated directly from the land use-specific monitoring data collected by SCCWRP. These were the same data used by the County to calibrate LSPC. These data are used directly in SBPAT by assigning each storm event a random concentration that is drawn from the log-normal distribution; then the modeling period is repeated for 10,000 iterations, to capture the effect of input variability on the variability of predicted output (a feature that makes SBPAT a “stochastic” model for water quality). While LSPC also used the SCCWRP land use data for calibration, static average land use EMC values are used deterministically, with no adjustment to capture variability.

The model EMC comparison was performed for the most representative urban land use in the WMA. Based on LSPC land use designations, 75% of the developed area in the Walnut WMA is high density single family residential (a land use the was originally calibrated by the County to the SCCWRP “high density residential” data), and 73% of the runoff volume is from this land use. In SBPAT, this areas is labeled “single family residential,” but because of its high density classification it is assigned the SCCWRP high density residential EMC distribution. Therefore, this is the land use category that is evaluated in Figure 4-7.

Even though LSPC and SBPAT use the same data to set their EMC input values, the EMCs are used differently in each model. This is illustrated in Figure 4-7, which compares fecal coliform EMC values for the high density residential land use category between the original SCCWRP measured dataset, the volume-weighted EMC used by the County’s calibrated LSPC model (extracted based on a runoff volume weighting of the high density residential impervious, urban pervious, and secondary street land use types which make up the whole high density single-family residential area), and the non-parametric summary statistics from the log-normal distribution used by SBPAT. Here it is evident how SBPAT’s distributional statistics well represent the variability that is inherent to the measured data. And while both land use EMC inputs used by the models are “correct” and based on the same measured data, it is evident how each model can produce different concentration and load results due to their statistical representations. It was therefore decided not to make changes to SBPAT’s land use EMC statistics based on a review of either LSPC concentration or load results or the raw SCCWRP measured land use EMC data.

To account for the difference in land use EMC statistics used by the two models, and to ensure comparability between the LSPC-derived TLRs and SBPAT’s BMP load reductions, the TLRs expressed as a *percentage* of the total baseline load for both models. Therefore, even if the resulting baseline loads differed between the models, the relative differences in loads resulting from BMP implementation were similar. The retention basins used in LSPC to determine the TLRs, as well as most of the BMPs chosen for implementation in SBPAT, rely primarily on reducing runoff volume to achieve bacteria load reductions. Therefore, the effect on the loads relative to baseline loads is similar, even with differing land use EMC statistics.



*Values from Table B-14 from Appendix B of SCCWRP, 2007

** Flow-weighted mean from Walnut WMA using high density single family residential, and the portion of urban pervious and secondary roads within the single-family residential land use area.

***Based on a ln mean of 8.38 and the ln standard deviation of 1.24.

Figure 4-7: Comparison of Fecal Coliform High Density Residential EMC Values Between SCCWRP Measurements (n=7), LSPC (only an average value is used by the model), and SBPAT Models (a full log distribution is used by the model, but non-parametric summary statistics are shown for comparison)

The following sections describe the approach for modeling each BMP category. An iterative process was employed to identify the final proposed suite of structural and non-structural BMPs that were found to be capable of achieving the bacteria TLRs.

4.8- Low Impact Development Ordinance

Implementation of Low Impact Development (LID) as a result of redevelopment was modeled uniformly throughout the WMA. Permit Section VI.C.4.c.i(1) requires permittees to develop and implement a LID ordinance applicable to redevelopment meeting minimum criteria thresholds of disturbance. City staff indicated that approximately one residential redevelopment project per year would meet the Permit’s post-construction onsite retention applicability requirements. Average residential lots within the Walnut WMA were assumed to be 0.15 acres. The redevelopment of a single lot would therefore account for 0.0053% of the WMA’s single family residential land use area. The City’s LID ordinance was assumed to become effective in 2014 and the area redeveloped each year was sampled without replacement (i.e., areas that had undergone redevelopment in previous years were not available to undergo redevelopment again in subsequent years). Extrapolating the annual redevelopment rate without replacement for 10 years, or until the 2024 final compliance date, suggests that 1.6 acres or

0.058% of the City's residential land use area would be required to implement onsite retention LID BMPs.

Areas treated by LID as a result of the ordinance were modeled assuming unlined (with infiltration) bioretention systems sized for the 85th percentile, 24 hour storm depth for the WMA, or 0.98 in (Los Angeles County DPW, 2004a), with a saturated hydraulic conductivity (Ksat) of 0.15 in/hr, which is similar in magnitude to the Ksats of the underlying soils throughout the WMA.

4.9- Green Streets

Green streets were applied to treat 30%⁷ of commercial and residential land uses in areas that were not tributary to a proposed regional BMP in the San Jose Creek portion of the WMA. A total of 748 acres of residential and 46 acres of commercial land uses were assumed to be treated by green streets on the San Jose Creek side of the WMA for the purposes of this analysis. Green streets were applied to treat 41 acres or 75% of the residential area on the Walnut Creek Wash side of the WMA. Green street treatment was modeled assuming bioretention systems with underdrains sized to treat 150% of the 85th percentile design storm of 0.2 in/hr. The bioretention with underdrain systems were modeled in SBPAT using the volume capture of bioswales and the pollutant effluent EMCs of bioretention systems.

4.10- Regional BMPs

The regional type BMPs described in this section are included in the RAA on the basis of a number of assumptions that include construction feasibility and project funding. For the purpose of this document, only a desktop level investigation was conducted for establishing potential sites and footprints. No field samples of existing soil conditions or underground utility research have been completed.

Four publicly-owned potential regional BMP opportunity parcels have been identified for the purpose of this study. The locations of these regional BMPs and their drainage areas are shown in Figure 4-8. In SBPAT, the catchments were modified to enable modeling of the drainage areas to these regional BMPs, as shown in Figure 4-9. All regional BMPs were sized to the maximum footprint available based on local siting constraints. Side slopes and pre-treatment were assumed to occupy 15% of the available footprint. Infiltration basins and subsurface infiltration structures were assumed to account for the remaining 85% of the available footprint while the remaining subsurface flow wetland footprint is assumed to be comprised of an equalization basin and the wetland itself. Regional BMP conceptual design attributes that were used for SBPAT modeling are summarized in the following subsections. The most effective (for bacteria reduction) implementable regional BMP type was modeled at each project site – i.e., where soil types indicated that infiltration rates might be sufficient for infiltration based BMPs to be feasible, an infiltration basin or a subsurface infiltration system was modeled (infiltration basins were assumed at parks where existing uses could accommodate periodic temporary flooding, whereas subsurface systems were assumed at parks where existing land uses, such as ball fields, were to be maintained); otherwise subsurface flow wetlands (which could alternatively be implemented as any equivalent-performing flow-through or filtration-based BMP type) were assumed.

⁷ The percent of area that drains to green street BMPs was iteratively determined based on meeting the TLRs.

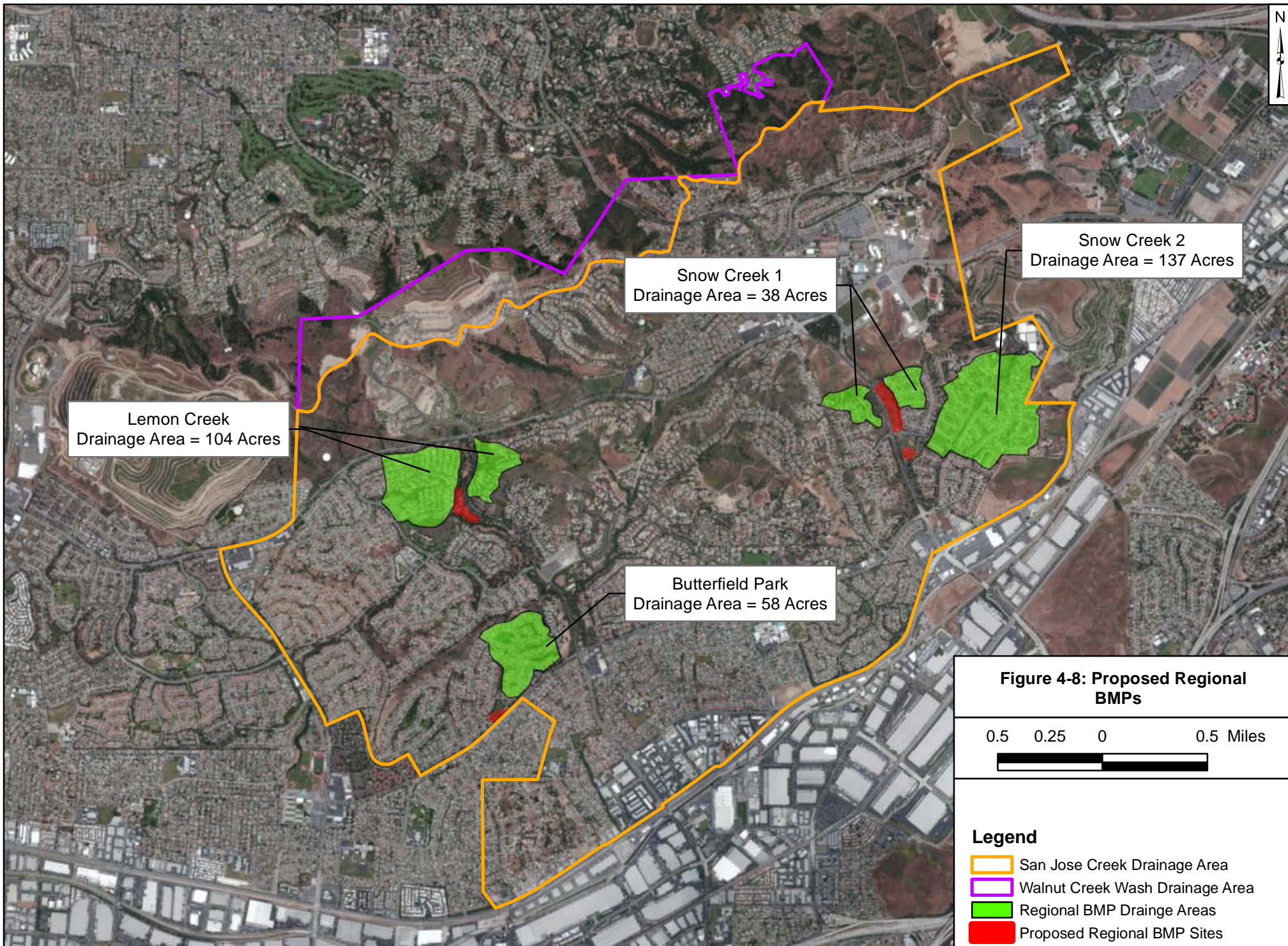
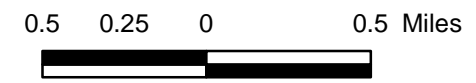


Figure 4-8: Proposed Regional BMPs



- Legend**
- San Jose Creek Drainage Area
 - Walnut Creek Wash Drainage Area
 - Regional BMP Drainage Areas
 - Proposed Regional BMP Sites

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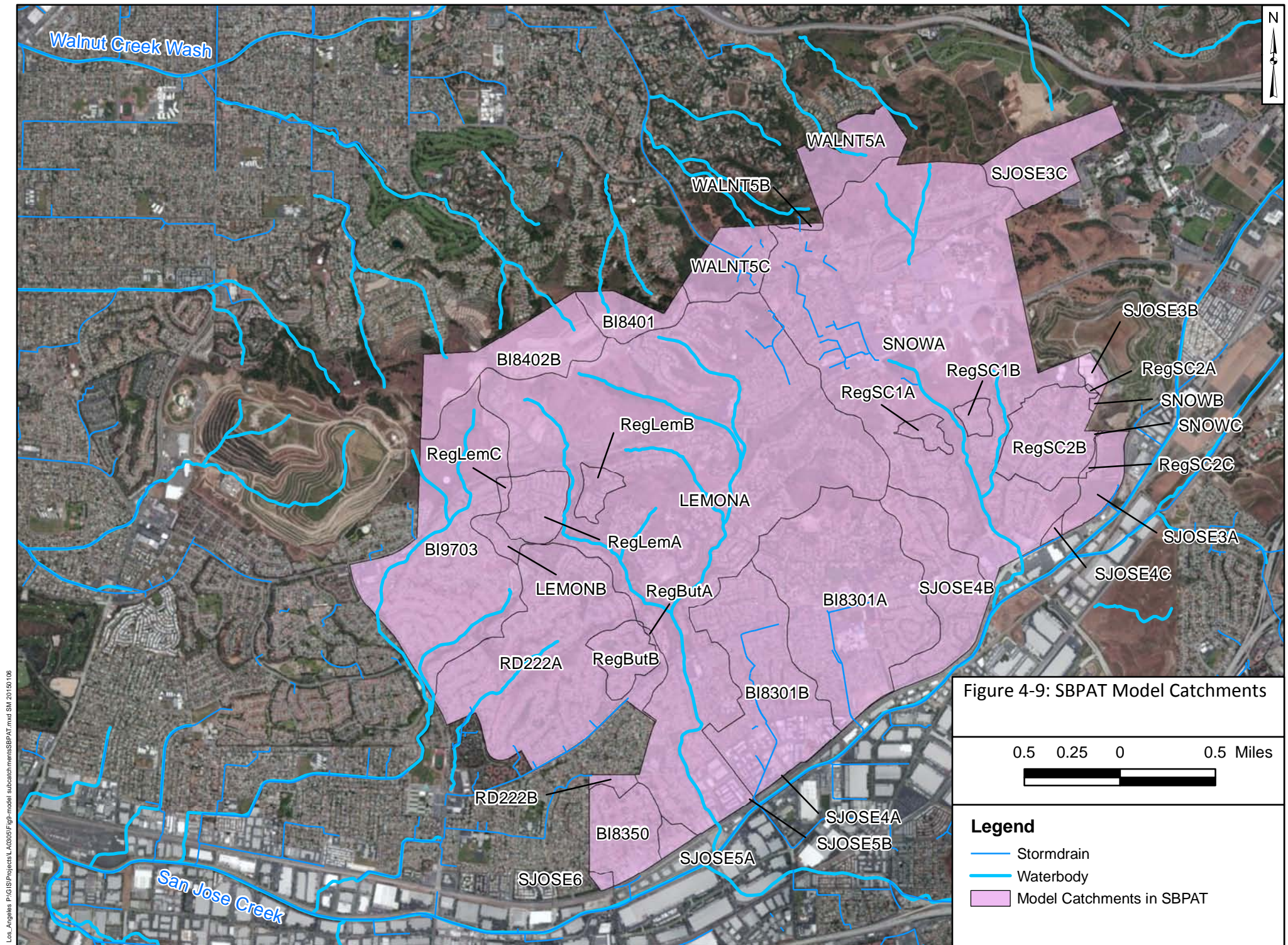
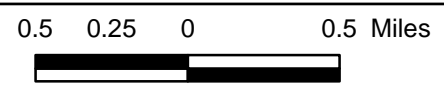


Figure 4-9: SBPAT Model Catchments



- Legend**
- Stormdrain
 - Waterbody
 - Model Catchments in SBPAT

Los Angeles P:\GIS\Projects\LA\020519\fig-models\subcatchmentsSBPAT.mxd, SN, 2/15/10 106

The project details in this section demonstrate a potential route to establish reasonable assurance as required by the Los Angeles Regional Water Quality Control Board adopted Order R4-2012-0175. The inclusion of these projects in this document does not assume that they will be constructed as identified in this document. No regional funding sources have been identified for these projects. Design and construction timelines cannot be estimated at this time.

4.10.1- Butterfield Creek Subsurface Flow Wetland

A subsurface flow wetland project opportunity was identified at Butterfield Park on the southwest portion of the WMA. A schematic representation of the regional BMP footprint is presented in Attachment F. This regional BMP was modeled in SBPAT using the following design parameters and assumptions:

- Approximate Footprint Area: 93,000 sq ft
- Drainage Area: 58 acres
- Design Storm Intensity: 0.06 in/hr
- Treatment Flow Rate: 1.6 cfs
- Equalization Volume⁸: 270,000 cu ft
- Hydraulic Residence Time: 24 hrs
- Infiltration Rate: [no infiltration modeled]
- Depth: 8 ft
- Treatment Assumption: Concentration⁹ and volume reduction

4.10.2- Lemon Creek Infiltration Basin

An infiltration basin project opportunity was identified in open space adjacent to North Lemon Avenue. A schematic representation of the regional BMP footprint is presented in Attachment F. This proposed facility was modeled as an infiltration basin in SBPAT using the following design parameters and assumptions:

- Approximate Footprint Area: 48,000 sq ft
- Drainage Area: 104 acres
- Water Quality Design Volume: 53,000 cu ft
- Design Storm: 0.3 in
- Infiltration Rate¹⁰: 0.30 in/hr
- Depth: 1.3 ft¹¹
- Treatment Assumption: Volume reduction

⁸ The equalization volume is the total volume required to attenuate peak flows after pretreatment occurs and before entering the SSF wetland.

⁹ Subsurface flow wetlands are not well represented by BMP categories in the International BMP Database, which is used as the basis for SBPAT's BMP performance statistics. Therefore, a percent removal of 90 percent (1 log removal) was conservatively estimated for fecal coliform, consistent with methodologies documented in Geosyntec's Combined Load Reduction Plans from the San Diego region (which can be found here: www.sbp.at.net/example.html). FC based on review of various SSF wetland studies

¹⁰ Infiltration rate extracted from Los Angeles County Department of Public Works Soil Types dataset for the footprint area (Los Angeles County DPW, 2004b).

¹¹ Infiltration basin depth limited by infiltration rate and 48 hour drawdown limit for vector control.

4.10.3- Snow Creek 1 Subsurface Flow Wetland

A subsurface flow wetland project opportunity was identified north of the intersection of Grand Ave. and Snow Creek Dr. in the eastern portion of the WMA. A schematic representation of the regional BMP footprint is presented in Attachment F. This regional BMP was modeled in SBPAT using the following design parameters and assumptions:

- Approximate Footprint Area: 110,000 sq ft
- Drainage Area: 38 acres
- Design Storm Intensity: 0.11 in/hr
- Treatment Flow Rate: 1.8 cfs
- Equalization Volume: 310,000 cu ft
- Hydraulic Residence Time: 24 hrs
- Infiltration rate: [no infiltration modeled]
- Depth: 8 ft
- Treatment Assumption: Concentration and volume reduction

4.10.4- Snow Creek 2 Subsurface Infiltration System

A subsurface infiltration project opportunity was identified at the baseball field in Snow Creek Park. A schematic representation of the regional BMP footprint is presented in Attachment F. The water quality design volume of this subsurface infiltration facility was modeled as an infiltration basin in SBPAT using the following design parameters and assumptions:

- Approximate Footprint Area: 130,000 sq ft
- Drainage Area: 137 acres
- Water Quality Design Volume: 190,000 cu ft
- Design Storm: 0.9 in
- Infiltration Rate¹²: 0.77 in/hr
- Depth: 2 ft¹³
- Treatment Assumption: Volume reduction

4.11- Non-Modeled Non-Structural BMPs

A range of load reductions derived from non-modeled non-structural BMPs were assumed based on Geosyntec discussion with Regional Board staff during an RAA meeting on April 9, 2014. A total of 8% of the baseline fecal coliform load was assumed to be removed for the average load reduction scenario, and a range of 5% to 10% was assumed for the “low” and “high” load reduction scenarios, respectively. These non-structural BMPs will include the following program enhancements (i.e., beyond the Permit minimum), with an emphasis on those BMPs that most effectively target urban stormwater bacteria sources:

¹² Infiltration rate extracted from Los Angeles County Department of Public Works Soil Types dataset for the footprint area (Los Angeles County DPW, 2004b).

¹³ BMP depth is based on approximate capture of the 85th percentile, 24 hour storm event. Alternatively, equivalent load reduction could be achieved by a larger depth and smaller area, as long as total volume is maintained.

- enhanced street sweeping,
- enhanced catch basin and stormdrain cleaning,
- enhanced commercial and food outlet inspection,
- enhanced pet waste controls,
- enhanced education and outreach,
- septic inspection/enforcement, and
- enhanced Illicit Discharge Detection Elimination (IDDE)

Further details of implementation and frequency for the above noted program enhancements is included in section 5.1 of this document.

4.12- Final Milestone Load Reductions

The following tables present individual and summed BMP load reductions for fecal coliform for the San Jose Creek and Walnut Creek Wash drainage areas as a percentage of the baseline loads for the 90th percentile year. Bacteria load reduction results (Tables 4-9 and 4-10) are shown for the final wet weather bacteria TMDL compliance date of 2024 (based on an assumed compliance schedule of 10 years from the WMP submittal date), modeled using rainfall data from the 90th percentile year (1993). Average (mean) load reduction results are shown, as well as the interquartile ranges (25th to 75th percentiles, to reflect the Monte Carlo-derived variability of these model output. A total BMP load reduction that exceeds the TLR indicates that reasonable assurance (of meeting the Permit limits) has been demonstrated for that drainage area.

Lead load reductions are not quantified here since target load reductions were determined to be zero, however lead loads will be reduced considerably through implementation of the proposed non-structural and structural BMPs.

Table 4-9

Fecal Coliform Load Reductions as a Percentage of Total Baseline Load for the San Jose Creek Drainage Area for the 90th Percentile Year			
BMP Program	Average	Low (25th %ile)*	High (75th %ile)*
Non-Structural BMPs			
LID Ordinance	0.01%	0.01%	0.02%
Other non-modeled	8%	5%	10%
Regional BMPs			
Butterfield (RBMP_01)	0.9%	0.6%	1.0%
Lemon Creek (RBMP_02)	0.3%	0.3%	0.4%
Snow Creek 1 (RBMP_03)	0.7%	0.4%	0.8%
Snow Creek 2 (RBMP_04)	1.3%	0.9%	1.3%
Distributed BMPs			
Green Streets	12.1%	7.7%	14.4%
Target Load Reduction	27%		

Total BMP Load Reduction	23%	15%	28%
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*All percentages shown are percentages of the average baseline load

Table 4-10

Fecal Coliform Load Reductions as a Percentage of Total Baseline Load for the Walnut Creek Wash Drainage Area for the 90th Percentile Year			
BMP Program	Average	Low (25th %ile)*	High (75th %ile)*
Non-Structural BMPs			
LID Ordinance	0.02%	0.01%	0.02%
Other non-modeled	8%	5%	10%
Distributed BMPs			
Green Streets	35.4%	20%	42%
Target Load Reduction	51%		
Total BMP Load Reduction	43.4%	25%	52%

*All percentages shown are percentages of the average baseline load

4.13- Interim Milestones

Fecal coliform bacteria is a Category 2 pollutant; therefore, a compliance schedule and interim milestones must be developed in the WMP. An interim milestone date was set as the end of the Permit term, or December 2017. The interim target for this date is assumed to be the estimated load reduction resulting from the BMPs that will be implemented by that date based on the City’s proposed phasing of BMPs. The final compliance date is set to 2036 consistent with the Draft San Gabriel River Bacteria TMDL.

Table 4-11 identifies the proposed BMP implementation schedule, based on City input. The resulting bacteria load reductions for the interim and final milestones are presented in Figures 4-14 and 4-15 for the San Jose Creek and Walnut Creek Wash drainage areas, respectively.

Table 4-11

Assumed BMP Implementation Schedule	
BMP Program	Assumed Date BMP is Implemented by:
LID Ordinance	June, 2024*
Non-Modeled Non-Structural BMPs	December, 2017*
Butterfield (RBMP_01)**	TBD
Lemon Creek (RBMP_02)**	TBD
Snow Creek 1 (RBMP_03)**	TBD
Snow Creek 2 (RBMP_04)**	TBD
Green Streets	June, 2036

* Non-structural program implementation may be continuous and ongoing, however the estimated load reduction for this BMP category is applied to this date for the purpose of this phasing analysis.

** The Regional BMPs identified in this section are major projects with no current or potential funding source identified at this time. The City has not established an implementation schedule for these projects due to the unforeseeable future of funding for projects of this magnitude. If a funding is established this schedule will be updated as part of the Adaptive Management Process.

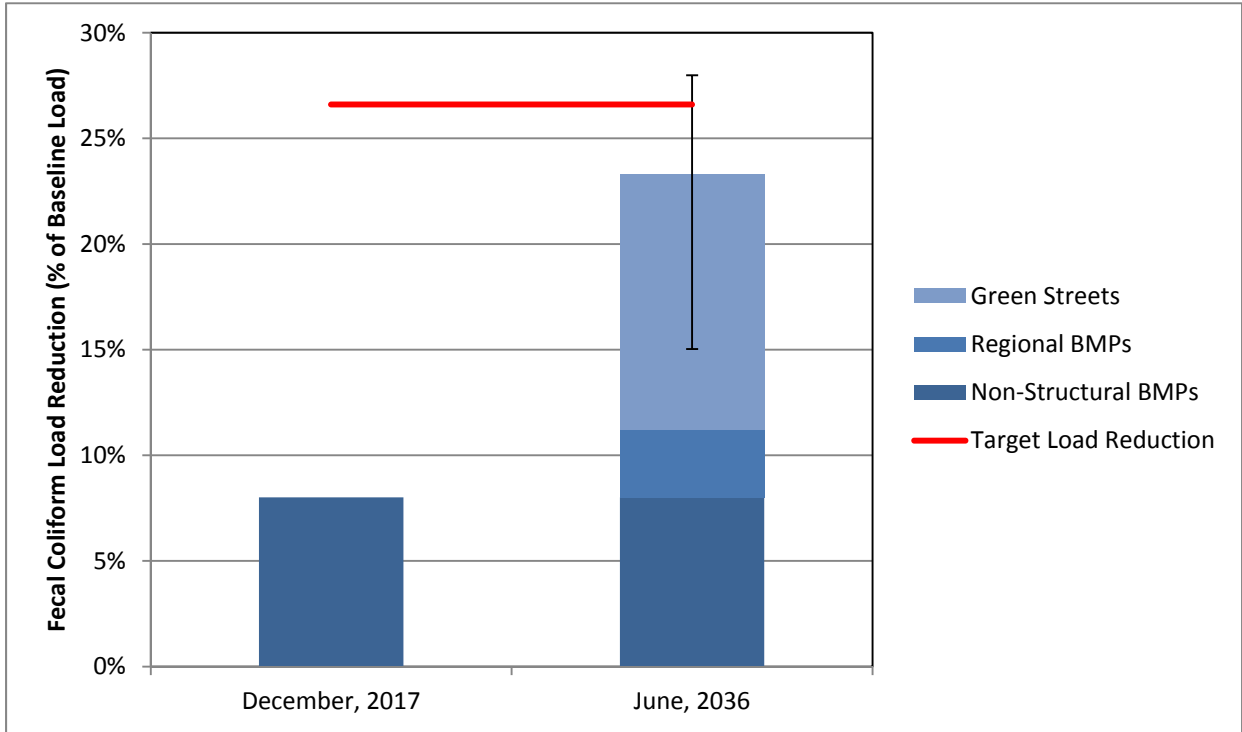


Figure 4-14: Fecal Coliform Interim and Final Load Reductions for the San Jose Creek Drainage Area. Bars Represent the Average Predicted Load Reduction and the Whiskers Represent the High and Low Estimates Using the Range of Load Reductions Non-Structural BMPs and the 75th and 25th Percentile Load Reductions from Modeled BMPs

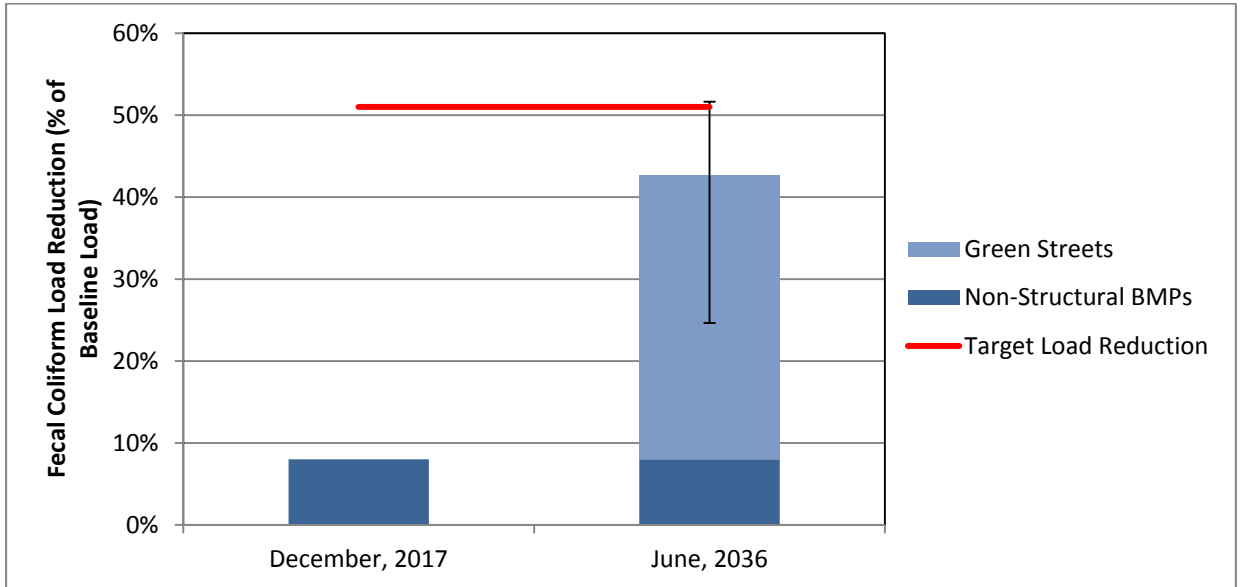


Figure 4-15: Fecal Coliform Interim and Final Load Reductions for the Walnut Creek Wash Drainage Area. Bars Represent the Average Predicted Load Reduction and the Whiskers Represent the High and Low Estimates Using the Range of Load Reductions Non-Structural BMPs and the 75th and 25th Percentile Load Reductions from Modeled BMPs.

4.14- Conditions for RAA Revision

As part of the WMP adaptive management process, as outfall and/or receiving water data specific to the Walnut WMA are accumulated, the RAA models will be recalibrated and/or validated, and the RAA will be updated as appropriate. This has the potential to result in modification of the proposed suite of structural and non-structural BMPs. Similarly, if the applicable recreational uses or bacteria objectives change, then relevant modeling assumptions and/or TLRs, and the resulting suite of structural and non-structural BMPs, will be adjusted accordingly. For example, during the compliance period, the City may elect to perform special studies to refine any Waste Load Allocations (WLAs) that become effective through the San Gabriel River Bacteria TMDL. Various pathways will be available to reopen the TMDL and modify the WLAs, including use of microbial source tracking to support a natural source exclusion, quantitative microbial risk assessment to develop site specific objectives, and/or use attainability analysis (or equivalent procedures) to support a high flow suspension of recreational uses on Walnut Creek Wash, all of which are procedures that may be clarified through the pending statewide bacteria objectives update. Therefore, through the WMP adaptive management process, this RAA may be reevaluated after any changes to the water quality objectives, TMDL WLAs, and/or MS4 Permit limits become effective.

4.15- Reasonable Assurance Demonstration

Lead TLRs were found to be zero for both drainage areas of the WMA, therefore new BMPs were not needed to demonstrate reasonable assurance of compliance with the applicable lead WQBEL. However, lead loads will be reduced considerably through implementation of the proposed non-structural and structural BMPs for bacteria. For bacteria in San Jose Creek and Walnut Creek Wash, total estimated BMP load reductions, using 75th percentile values¹⁴, meet or exceed the TLRs. Therefore, reasonable assurance has been demonstrated for both pollutants for both water bodies based on the proposed suite of non-structural and structural BMPs for the Walnut WMA.

¹⁴ In the future, through the adaptive management process, as the RAA models are revisited, different load reduction output statistics may be used to demonstrate compliance; for example, as compliance deadlines approach, the City's risk tolerance may narrow and therefore BMPs may be added to increase the average load reductions above the TLRs (whereas currently only the 75th percentile load reductions exceed the TLRs).

5.0- Proposed WMP Implementation Plan

The City of Walnut has developed an approach for complying with the MS4 Permit water quality requirements that includes a combination of Source Control BMPs and Structural BMPs in coordination with the MCMs outlined in section 3.0 of this document. The City’s proposed BMP plan has been confirmed through the RAA process to be effective in reducing the modeled pollutant loads to the allowable levels established by applicable TMDLs and the Basin Plan. Source control BMPs proposed by the City include policies, programs and ordinances that support practices that improve or prevent additional pollution from being deposited into the local rivers and creeks. A majority of the pollutant reductions will come from the proposed structural BMP plan.

The City’s planned structural BMPs include Regional and Local approaches. The combination of structural BMPs has been formulated to reach the water quality goals established by the Basin Plan and applicable TMDLs through the treatment of wet weather runoff originating from the City.

5.1- MCM Implementation

The City has proposed to implement an enhanced MCM program that will aid in the protection and improvement of water quality in the City. Much of the MCM program is prescribed by the MS4 Permit, but the City has elected to focus additional resources in some areas. Table 5-1a highlights the enhancements to the MCM program. Table 5-1b outlines the program enhancements and their implementation and frequency/duration.

Table 5-1a

MCM Program Enhancements	
Public Information and Participation Program	<ul style="list-style-type: none"> • Storm water education available at community events • Focused education materials provided to key businesses for distribution to public
Commercial Tracking and Inspections	<ul style="list-style-type: none"> • Random commercial site inspections of critical potential sources
Streets, Roads and parking Facilities Maintenance	<ul style="list-style-type: none"> • Streets are swept bi-monthly
Landscape, Park, and Recreational Facilities Management	<ul style="list-style-type: none"> • Installation of Pet waste stations
Other Non-Modeled Enhancements	<ul style="list-style-type: none"> • Stream Restoration projects to reduce erosion and improve local vegetation adjacent to the stream

Table 5-1b

Enhanced MCM Implementation Schedule and Frequency				
MCM Enhancement	Start	Permit Minimum	Frequency/Enhancement	Complete by December 28, 2017
Street Sweeping	FY 2014-2015	Once Per year for Priority C areas	Bi Monthly (24 times per year)	Continuous through Permit Term
Pet Waste Stations	FY 2015-2016	No Requirement	4 New stations installed per year	10 New Stations Installed, Locations to be determined by City staff.
Storm Water Education Materials	FY 2014-2015	The City is a partner with the Los Angeles County PIPP	At least two City Community events per year will have educational materials and staff present to answer questions. All other opportunities to be considered depending on staff availability	Continuous through Permit Term. Events attend will be tracked and reported in the annual report.
Random Commercial Inspections	FY 2015-2016	No Requirement	At least once a year for critical potential locations as determined by the inspectors	Continuous through Permit Term. Inspections to be documented tracked and reported in the annual reports.
Public Education Materials	FY 2015-2016	The City is a partner with the Los Angeles County PIPP	Materials Available on City's "Go Green" page	Materials to be maintained and updated as necessary with new material added based on monitoring program and Inspection findings
Stream Restoration Project (Snow Creek)	FY 2016-2017	No Requirement	Grant Applications and Conceptual Engineering	Efforts to apply for grant funds will be documented as well as all conceptual engineering and related permitting coordination. This project is not considered in the RAA however it will have some water quality benefits if funding is identified for construction.

5.2- Regional BMPs

The City has identified four potential regional BMPs to be located at existing parks modeled as sub-surface wetlands. The proposed regional BMPs will be complimentary to existing park uses after construction. As described in previous sections, no funding source for the design and construction of these BMPs has been identified. The City will continue to study potential funding opportunities for these projects during the duration of the Permit. Should a regional funding source be established, the project implementation schedule for these BMPs will be updated during the adaptive management process.

5.3- Local BMPs

In coordination with the regional BMPs, the City has developed a plan for local BMPs that has been demonstrated in the RAA portion of this document to provide adequate treatment for the City's storm water. As identified in the Section 4.9, the RAA calls for Green Streets BMPs to be implemented on a scale that covers a specified area summarized in Table 5-2. Bio filtration and bio retention BMPs will be utilized in the local BMP program, but other localized BMPs may be considered in the future.

Table 5-2

Green Streets BMPs	
San Jose Creek Watershed	
Land Use	Acreage Treated by BMPs
Residential	748
Commercial	46
Walnut Creek Wash	
Residential	41

Implementation of the local BMP program will be dependent on the results of the IMP. The monitoring results will help establish where the greatest need is within the City. If the local BMPs are necessitated through the results of the IMP, the City will initiate an annual CIP program over the remaining life of the permit to ensure the BMPs are cost feasible and contribute to pollutant load reductions. This stepped approach will enable the City to implement the BMPs with the most effective approach.

Pending the results of the IMP the City has established a planned implementation schedule. In an effort to maximize the programs initial impact, the City will review at least two years of monitoring data from the integrated monitoring plan to prioritize the potential Green Streets Project locations. Following the development of the prioritized projects schedule the City will begin implementation of an annual CIP program that will include the construction of Green Street type BMPs. The projected schedule for first 10 years of the WMP is identified in Table 5-3. Projects will continue on an annual schedule beyond 2025 as necessitated by monitoring results with the goal of meeting 100% compliance requirements by 2036.

Table 5-3

City of Walnut Green Streets Interim Implementation Schedule		
Task	Design Completion Date	Construction Completion Date
Project No. 1	December 31, 2018	December 31, 2019
Project No. 2	December 31, 2019	December 31, 2020
Project No. 3	December 31, 2020	December 31, 2021
Project No. 4	December 31, 2021	December 31, 2022
Project No. 5	December 31, 2022	December 31, 2023
Project No. 6	December 31, 2023	December 31, 2024
Project No. 7	December 31, 2024	December 31, 2025

5.4- Dry Weather Flow Elimination Program

The City of Walnut is proposing to eliminate manmade dry weather discharges to prevent exceedances in the receiving waters. The City will coordinate this program with the IMP and wet weather BMP program to maximize efficacy of available resources.

5.4.1- Dry Weather Water Quality Considerations

As outlined in Section 2.0 "Water Quality Priorities" the City is subject to a dry weather WAL for Category 1 pollutant Selenium. The source of selenium in the watershed is suspected to be natural. The man made dry weather flows originating from residential land uses are not expected to be a source of selenium with in the City.

Bacteria will be regarded as the primary Category 2 pollutant receiving focus during dry weather conditions. To reach the WQBEL established for bacteria the City proposes to utilize the dry weather source elimination program outline in this section. Eliminating all dry weather flows will also carry over to meet WQBELs for all of the other established Category 2 pollutants.

5.4.2- Dry Weather Flow Elimination Program Implementation #

The IMP includes a dry weather flow source investigation program that will include water quality testing and field source investigations. The City will utilize City staff and contractors to assess the sources of dry weather flows. Additionally, City field staff will be utilized to identify upstream dry weather flows within the City. Flows identified in the gutter, day lighted channel connections and a city outfall will be tracked during the first two years of the WMP implementation.

All the available data will be gathered and analyzed to best determine how to address the identified flows. The City of Walnut will utilize education, legal jurisdiction and BMP programs to eliminate dry weather flows. Table 5-4 highlights how the City will address the anticipated dry weather flows once a source is identified.

Table 5-4

Dry Weather Flow Elimination Program	
Over Irrigation	Illicit Discharge program / Education
Pool Draining	Illicit Discharge program / Education
Driveway/Sidewalk Walking	Illicit Discharge program / Education
Vehicle Washing	Education
Commercial Discharge	Illicit Discharge program / Education

Land use within the City of Walnut is primarily single family residential development. Dry weather flows are anticipated to be relatively small in volume and inconsistent in frequency. Dry weather flows within the City may also include conditionally exempt discharges. Should a flow be determined conditionally exempt or of an unidentifiable manmade source the City may consider structural BMPs to mitigate the dry weather flow. These considerations will also be included in the prioritization of the Green Streets Projects to address wet weather conditions.

Natural spring flows are known to exist within the City’s two soft bottom streams. Separating natural spring flows from man-made discharges will be a formidable task. The City will rely on the IMP results to confirm the water quality of dry weather flows. Additionally, the City will utilize staff to inspect storm drain connections to the streams for flows.

5.4.3- Implementation Schedule

The source tracking portion of program will be partially implemented upon the approval of the WMP. The remainder of the source tracking will be implemented with the dry weather source assessment conducted under the IMP. The City will take action on easily identified dry weather sources following identification. The more difficult sources to identify will be address later on in the program once a better understanding of the dry weather discharges form the city has been established. The following schedule highlights the interim implementation schedule (Table 5-5):

Table 5-5

Dry Weather Flow Elimination Program Implementation Schedule	
Task	Start Date
Develop Source Tracking Program	June 1, 2015
Field Staff Training	June 30, 2015
Establish Data Gathering Procedures	June 1, 2015
Coordinate IMP Dry weather flow Data	30 days following start of dry weather monitoring
Eliminate Identified Dry Weather Flow Sources	Ongoing during dry seasons starting 2015
Establish Potential Structural BMP Locations	Include in considerations for 2019 Green Streets

6.0- Interim and Final Compliance Schedule

The City of Walnut is subject to the interim TMDL compliance schedule established by Regional Board Resolution R13-004. The MS4 Permit requirements the City develop a compliance schedule for all categories of pollutants as part of the WMP. Source control BMPs will begin implementation during the remaining term of the MS4 Permit. The planning and cost required for the implementation of structural BMPs pushes actual implementation of structural water treatment options farther into and beyond the current MS4 Permit's term.

Implementing a program of this size and cost requires that the City fully understand the nature of storm water quality within the City's boundaries. The City has proposed that data gathering and source investigations take place during the first two years of the program. Following that period the City plans to begin scheduling design and construction of phased projects that will ensure the best application of available resources. The funding need that this program represents is also a considerable encumbrance that the City has been required to assume. Establishing and funding this program and its subsequent projects is a major task that will take time and planning. Currently there is no substantial funding source that has been identified to aid the City in implementing this program.

The City holds water quality in high regard. While the program demands are great, the City also recognizes that impacts on the watershed need to be address in a timely fashion. In consideration of the proposed San Gabriel River Bacterial TMDL currently in development and in an effort to balance budgetary demands, the City is proposing a 21 year compliance term associated with the proposed BMP implementation schedule. Results from the RAA process indicate that the City's existing category 1 pollutants have a zero load reduction necessary for compliance. Thus the next priority pollutant of concern is bacteria. It is also anticipated that the San Gabriel River Bacteria TMDL will be approved in the near future which would elevate the pollutant to a category 1 level. The use of a 21 year compliance schedule is in anticipation of the adoption of the proposed Bacteria TMDL.

Table 4-11 outlines the City's proposed BMP implementation schedule. Table 6-1 outline the proposed compliance schedules for all TMDL and 303(d) listed pollutants that the City is currently subject to.

Table 6-1

Compliance Schedule											
Selenium Waste Load Allocation (5µg/L) Compliance Schedule – Dry Weather TMDL											
Watershed	2017		2020		2023						
San Jose Creek Reach 1	30%		70%		100%						
Lead Waste Load Allocation (81.34µg/L) Compliance Schedule – Wet Weather TMDL											
City of Walnut	2017	2020		2023		2026					
	10%	35%		65%		100%					
E Coli RWL Compliance Schedule (Percent of Land Area In Compliance with RWL)											
Watershed	2016	2017	2020	2022	2024	2026	2028	2030	2032	2034	2036
San Jose Creek Reach 1	-	8%	10%	20%	30%	40%	50%	60%	70%	80%	100%
Walnut Creek Wash	-	8%	10%	20%	30%	40%	50%	60%	70%	80%	100%
pH RWL Compliance Schedule (Percent of Land Area In Compliance with RWL)											
City of Walnut	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
	1%	3%	10%	20%	30%	40%	50%	60%	70%	80%	100%
Total Dissolved Solids RWL Compliance Schedule (Percent of Land Area In Compliance with RWL)											
City of Walnut	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
	1%	3%	10%	20%	30%	40%	50%	60%	70%	80%	100%
Toxicity RWL Compliance Schedule (Percent of Land Area In Compliance with RWL)											
City of Walnut	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
	1%	3%	10%	20%	30%	40%	50%	60%	70%	80%	100%
Cyanide RWL Compliance Schedule (Percent of Land Area In Compliance with RWL)											
City of Walnut	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
	1%	3%	10%	20%	30%	40%	50%	60%	70%	80%	100%
Benthic- Macroinvertebrates RWL Compliance Schedule (Percent of Land Area In Compliance with RWL)											
City of Walnut	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036
	1%	3%	10%	20%	30%	40%	50%	60%	70%	80%	100%

7.0- Adaptive Management Process

The City of Walnut will utilize the MS4 Permit required adaptive management process to review and potentially modify the WMP in an effort to improve the effectiveness of the plan. The adaptive management process will take place every two years from the date of approval by the Regional Water Quality Control Board. The review process of the plan will include consideration of the following items:

- Progress toward achieving interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachment L through R, according to established compliance schedules.
- Progress toward achieving improved water quality in MS4 discharges and achieving receiving water limitations through implementation of the watershed control measures based on an evaluation of outfall-based monitoring data and receiving water monitoring data.
- Achievement of interim milestones.
- Re-evaluation of water quality priorities identified for the WMA based on more recent water quality data for discharges from the MS4 and the receiving water(s) and a reassessment of sources of pollutants in MS4 discharges.
- Availability of new information and data from sources other than the monitoring program with in the WMA that informs the effectiveness of the actions implemented by the WMP.
- Regional Water Board recommendations.
- Recommendations for modifications to the Watershed Management Program solicited through a public participation process.

The findings of the adaptive management review process can result in modifications to the WMP including changes to compliance deadlines, interim milestones necessary to improve the effectiveness of the program. Modifications to compliance deadlines established by TMDLs will not be allowed through the adaptive management process. Proposed modifications to the WMP shall be reported by the City of Walnut in the Annual Report. Proposed modifications identified through the adaptive management process shall be implemented upon approval by the Regional Board Executive Officer within 60 days of their submittal if the Regional Board Executive has not expressed any objections to the modifications.

8.0- References

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Attachment A

City of Walnut

Notice of Intent

P.O. Box 682, Walnut, CA 91788-0682
21201 La Puente Road
Walnut, CA 91789-2018
Telephone (909) 595-7543
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TOM KING
Mayor
ANTONIO "TONY" CARTAGENA
Mayor Pro Tem
ERIC CHING
Council Member
MARY SU
Council Member
NANCY TRAGARZ
Council Member

CITY OF WALNUT

June 26, 2013

California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Regional Board Staff:

Enclosed please find the Notice of Intent (NOI) for the City of Walnut required as part of the new National Pollution Discharge Elimination System Municipal Separate Storm Sewer Systems Permit. As stated in the NOI, the City of Walnut will be developing a Watershed Management Plan and associated Integrated Monitoring Plan.

Please do not hesitate to contact me should you require any additional information. Thank you in advance for your time and assistance.

Sincerely,

A handwritten signature in blue ink that reads "Alicia Jensen".

Alicia Jensen
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Notice of Intent

City of Walnut

Watershed Management Plan



Submitted to:

**California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013**

Submitted by:

**The City of Walnut
21201 La Puente Road
Walnut, CA 91789**

June 28, 2013

Notice of Intent to Develop a Watershed Management Plan and Integrated Monitoring Plan
 The City of Walnut hereby notifies the Los Angeles Regional Water Quality Control Board (LARWQCB) of the City's intent to proceed with the development of a Watershed Management Plan (WMP). Per Order No. R-2012-0175, NPDES Permit No. CAS 004001, Section VI.C.4.b.i. The City of Walnut will develop a Draft WMP and submit the plan for the Regional Board's review by June 28, 2014. Draft versions of the Low Impact Development Ordinance and Green Streets Policy are included in Appendix A and B. As required in Section VI.C.7 of NPDES Permit No. CAS 004001, the City will develop and submit an Integrated Monitoring Plan (IMP) in conjunction with the WMP.

Total Maximum Daily Loads (TMDL) & Water Quality Based Effluent Limitations (WQBEL)
 In accordance with Section VI.C.4.b.ii of NPDES Permit CAS004001, the jurisdictional area of the City of Walnut discharges to tributaries subject to the TMDLs listed in Table A. Currently, the City is not subject to any interim or final Water Quality Based Effluent Limitations (WQBELs), however, the City will continue its existing programs and Minimum Control Measures until the WMP is approved and implemented.

Table A TMDLs Applicable to the City of Walnut

TMDL	Resolution Number	Effective Date	EPA Approval Date	Water Body	Impairment
San Gabriel River and Impaired Tributaries Metals and Selenium	2006-014	July 13, 2006	TBD	San Jose Creek	Dry Weather WLA for Selenium*

**As noted at the Board's June 6, 2013, LA Basin Plan Public Hearing, Walnut objects to the inclusion of the San Gabriel River Metals TMDL in the LA Basin Plan amendment since Selenium was removed as a TMDL on the USEPA's 2010 303(d) list.*

City Contact Information

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Attachment A

**Draft LID Ordinance
City of Walnut**

DRAFT LID ORDINANCE

ORDINANCE NO. _____

AN ORDINANCE AMENDING [MUNICIPAL CODE SECTION REFERENCE(S)] OF THE CITY OF WALNUT MUNICIPAL CODE TO EXPAND THE APPLICABILITY OF THE EXISTING [NAME OF POST-CONSTRUCTION REQUIREMENTS – LIKELY “SUSMP” FOR MOST MUNICIPALITIES] REQUIREMENTS BY IMPOSING LOW IMPACT DEVELOPMENT (LID) STRATEGIES ON PROJECTS THAT REQUIRE BUILDING PERMITS.

CITY COUNCIL OF THE CITY OF WALNUT HEREBY ORDAINS THE FOLLOWING:

- (A) The City of Walnut is authorized by Article XI, §5 and §7 of the State Constitution to exercise the police power of the State by adopting regulations to promote public health, public safety and general prosperity.
- (B) The City of Walnut has authority under the California Water Code to adopt and enforce ordinances imposing conditions, restrictions and limitations with respect to any activity which might degrade the quality of waters of the State.
- (C) The city is a permittee under the “Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4,” issued by the California Regional Water Quality Control Board--Los Angeles Region,” (Order No. R4-2012-0175) which also serves as an NPDES Permit under the Federal Clean Water Act (NPDES No. CAS004001), as well as Waste Discharge Requirements under California law (the “Municipal NPDES permit”). In order to participate in a Watershed Management Program and/or Enhanced Watershed Management Program, the Municipal NPDES permit requires permittees to develop and implement a LID Ordinance.
- (D) The City of Walnut has applied an integrated approach to incorporate wastewater, stormwater and runoff, and recycled water management into a single strategy through its (_____) Plan.
- (E) The City of Walnut is committed to a stormwater management program that protects water quality and water supply by employing watershed-based approaches that balance environmental, social, and economic considerations.
- (F) It is the intent of the City of Walnut to expand the applicability of the existing Standard Urban Stormwater Mitigation Plan (SUSMP) requirements by providing stormwater and rainwater LID strategies for Development and Redevelopment projects as defined under “Applicability.”

[MUNICIPAL CODE SECTION REFERENCE(S)] of the [CITY NAME] Municipal Code is amended in its entirety to read as follows:

Definitions.

Except as specifically provided herein, any term used in this [SECTION REFERENCE] shall be defined as that term in the current Municipal NPDES permit, or if it is not specifically defined in either the Municipal NPDES permit, then as such term is defined in the Federal Clean Water Act, as amended, and/or the regulations promulgated thereunder. If the definition of any term contained in this chapter conflicts with the definition of the same term in the current Municipal NPDES permit, then the definition contained in the Municipal NPDES permit shall govern. The following words and phrases shall have the following meanings when used in this chapter:

Automotive Service Facility means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) codes. For inspection purposes, Permittees need not inspect facilities with SIC codes 5013, 5014, 5541, 5511, provided that these facilities have no outside activities or materials that may be exposed to stormwater (Source: Order No. R4-2012-0175).

Basin Plan means the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Water Board on June 13, 1994 and subsequent amendments (Source: Order No. R4-2012-0175).

Best Management Practice (BMP) means practices or physical devices or systems designed to prevent or reduce pollutant loading from stormwater or non-stormwater discharges to receiving waters, or designed to reduce the volume of stormwater or non-stormwater discharged to the receiving water (Source: Order No. R4-2012-0175).

Biofiltration means a LID BMP that reduces stormwater pollutant discharges by intercepting rainfall on vegetative canopy, and through incidental infiltration and/or evapotranspiration, and filtration. Incidental infiltration is an important factor in achieving the required pollutant load reduction. Therefore, the term "biofiltration" as used in this Ordinance is defined to include only systems designed to facilitate incidental infiltration or achieve the equivalent pollutant reduction as biofiltration BMPs with an underdrain (subject to approval by the Regional Board's Executive Officer). Biofiltration BMPs include bioretention systems with an underdrain and bioswales (Modified from: Order No. R4-2012-0175).

Bioretention means a LID BMP that reduces stormwater runoff by intercepting rainfall on vegetative canopy, and through evapotranspiration and infiltration. The bioretention system typically includes a minimum 2-foot top layer of a specified soil and compost mixture underlain by a gravel-filled temporary storage pit dug into the in-situ soil. As defined in the Municipal NPDES permit, a bioretention BMP may be designed with an overflow drain, but may not include an underdrain. When a bioretention BMP is designed or constructed with an underdrain it is regulated by the Municipal NPDES permit as biofiltration (Modified from: Order No. R4-2012-0175).

Bioswale means a LID BMP consisting of a shallow channel lined with grass or other dense, low-growing vegetation. Bioswales are designed to collect stormwater runoff and to achieve a uniform sheet flow through the dense vegetation for a period of several minutes (Source: Order No. R4-2012-0175).

City means the City of Walnut.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted in 1972, by Public Law 92-500, and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to Waters of the United States unless the discharge is in accordance with an NPDES permit.

Commercial Malls means any development on private land comprised of one or more buildings forming a complex of stores which sells various merchandise, with interconnecting walkways enabling visitors to easily walk from store to store, along with parking area(s). A commercial mall includes, but is not limited to: mini-malls, strip malls, other retail complexes, and enclosed shopping malls or shopping centers (Source: Order No. R4-2012-0175).

Construction Activity means any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that result in land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance activities required to maintain the integrity of structures by performing minor repair and restoration work, maintain the original line and grade, hydraulic capacity, or original purposes of the facility. See "Routine Maintenance" definition for further explanation. Where clearing, grading or excavating of underlying soil takes place during a repaving operation, State General Construction Permit coverage by the State of California General Permit for Storm Water Discharges Associated with Industrial Activities or for Stormwater Discharges Associated with Construction Activities is required if more than one acre is disturbed or the activities are part of a larger plan (Source: Order No. R4-2012-0175).

Control means to minimize, reduce or eliminate by technological, legal, contractual, or other means, the discharge of pollutants from an activity or activities (Source: Order No. R4-2012-0175).

Development means construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail, and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety (Source: Order No. R4-2012-0175).

Directly Adjacent means situated within 200 feet of the contiguous zone required for the continued maintenance, function, and structural stability of the environmentally sensitive area (Source: Order No. R4-2012-0175).

Discharge means any release, spill, leak, pump, flow, escape, dumping, or disposal of any liquid, semi-solid, or solid substance.

Disturbed Area means an area that is altered as a result of clearing, grading, and/or excavation (Source: Order No. R4-2012-0175).

Flow-through BMPs means modular, vault type "high flow biotreatment" devices contained within an impervious vault with an underdrain or designed with an impervious liner and an underdrain (Modified from: Order No. R4-2012-0175).

General Construction Activities Storm Water Permit (GCASP) means the general NPDES permit adopted by the State Board which authorizes the discharge of stormwater from construction activities under certain conditions.

General Industrial Activities Storm Water Permit (GIASP) means the general NPDES permit adopted by the State Board which authorizes the discharge of stormwater from certain industrial activities under certain conditions.

Green Roof means a LID BMP using planter boxes and vegetation to intercept rainfall on the roof surface. Rainfall is intercepted by vegetation leaves and through evapotranspiration. Green roofs may be designed as either a bioretention BMP or as a biofiltration BMP. To receive credit as a bioretention BMP, the green roof system planting medium shall be of sufficient depth to provide capacity within the pore space volume to contain the design storm depth and may not be designed or constructed with an underdrain (Source: Order No. R4-2012-0175).

Hazardous Material(s) means any material(s) defined as hazardous by Division 20, Chapter 6.95 of the California Health and Safety Code.

Hillside means a property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater and where grading contemplates cut or fill slopes (Source: Order No. R4-2012-0175).

Impervious Surface means any man-made or modified surface that prevents or significantly reduces the entry of water into the underlying soil, resulting in runoff from the surface in greater quantities and/or at an increased rate, when compared to natural conditions prior to development. Examples of places that commonly exhibit impervious surfaces include parking lots, driveways, roadways, storage areas, and rooftops. The imperviousness of these areas commonly results from paving, compacted gravel, compacted earth, and oiled earth.

Industrial Park means land development that is set aside for industrial development. Industrial parks are usually located close to transport facilities, especially where more than one transport modalities coincide: highways, railroads, airports, and navigable rivers. It includes office parks, which have offices and light industry (Source: Order No. R4-2012-0175).

Infiltration BMP means a LID BMP that reduces stormwater runoff by capturing and infiltrating the runoff into in-situ soils or amended onsite soils. Examples of infiltration BMPs include infiltration basins, dry wells, and pervious pavement (Source: Order No. R4-2012-0175).

LID means Low Impact Development. LID consists of building and landscape features designed to retain or filter stormwater runoff (Source: Order No. R4-2012-0175).

MS4 means Municipal Separate Storm Sewer System (MS4). The MS4 is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a combined sewer; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

(40 CFR § 122.26(b)(8)) (Source: Order No. R4-2012-0175)

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA §307, 402, 318, and 405. The term includes an "approved program" (Source: Order No. R4-2012-0175).

Natural Drainage System means a drainage system that has not been improved (e.g., channelized or armored). The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system (Source: Order No. R4-2012-0175).

New Development means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision (Source: Order No. R4-2012-0175).

Non-Stormwater Discharge means any discharge to a municipal storm drain system that is not composed entirely of stormwater (Source: Order No. R4-2012-0175).

Parking Lot means land area or facility for the parking or storage of motor vehicles used for businesses, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces (Source: Order No. R4-2012-0175).

Person means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, state, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine and the singular shall include the plural where indicated by the context.

Planning Priority Projects means development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, prior to completion of the project(s) (Modified from: Order No. R4-2012-0175).

Pollutant means any "pollutant" defined in Section 502(6) of the Federal Clean Water Act or incorporated into the California Water Code Sec. 13373. Pollutants may include, but are not limited to the following:

- (1) Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge).
- (2) Metals (such as cadmium, lead, zinc, copper, silver, nickel, chromium, and non- metals such as phosphorus and arsenic).
- (3) Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease).
- (4) Excessive eroded soil, sediment, and particulate materials in amounts that may adversely affect the beneficial use of the receiving waters, flora, or fauna of the State.
- (5) Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities).
- (6) Substances having characteristics such as pH less than 6 or greater than 9, or unusual coloration or turbidity, or excessive levels of fecal coliform, or fecal streptococcus, or enterococcus.

Project means all development, redevelopment, and land disturbing activities. The term is not limited to "Project" as defined under CEQA (Pub. Resources Code §21065) (Source: Order No. R4-2012-0175).

Rainfall Harvest and Use means a LID BMP system designed to capture runoff, typically from a roof but can also include runoff capture from elsewhere within the site, and to provide for temporary storage until the harvested water can be used for irrigation or non-potable uses. The harvested water may also be used for potable water uses if the system includes disinfection treatment and is approved for such use by the local building department (Source: Order No. R4-2012-0175).

Receiving Water means "water of the United States" into which waste and/or pollutants are or may be discharged (Source: Order No. R4-2012-0175).

Redevelopment means land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of routine maintenance activity; and land disturbing activity related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety (Source: Order No. R4-2012-0175).

Regional Board means the California Regional Water Quality Control Board, Los Angeles Region.

Restaurant means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812) (Source: Order No. R4-2012-0175).

Retail Gasoline Outlet means any facility engaged in selling gasoline and lubricating oils (Source: Order No. R4-2012-0175).

Routine Maintenance

Routine maintenance projects include, but are not limited to projects conducted to:

1. Maintain the original line and grade, hydraulic capacity, or original purpose of the facility.
2. Perform as needed restoration work to preserve the original design grade, integrity and hydraulic capacity of flood control facilities.
3. Includes road shoulder work, regrading dirt or gravel roadways and shoulders and performing ditch cleanouts.
4. Update existing lines* and facilities to comply with applicable codes, standards, and regulations regardless if such projects result in increased capacity.
5. Repair leaks

Routine maintenance does not include construction of new** lines or facilities resulting from compliance with applicable codes, standards and regulations.

* Update existing lines includes replacing existing lines with new materials or pipes.

** New lines are those that are not associated with existing facilities and are not part of a project to update or replace existing lines (Source: Order No. R4-2012-0175).

Significant Ecological Areas (SEAs) means an area that is determined to possess an example of biotic resources that cumulatively represent biological diversity, for the purposes of protecting biotic diversity, as part of the Los Angeles County General Plan. Areas are designated as SEAs, if they possess one or more of the following criteria:

1. The habitat of rare, endangered, and threatened plant and animal species.
2. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution on a regional basis.
3. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind or are restricted in distribution in Los Angeles County.

4. Habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or within Los Angeles County.
5. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent an unusual variation in a population or community.
6. Areas important as game species habitat or as fisheries.
7. Areas that would provide for the preservation of relatively undisturbed examples of natural biotic communities in Los Angeles County.
8. Special areas (Source: Order No. R4-2012-0175).

Site means land or water area where any “facility or activity” is physically located or conducted, including adjacent land used in connection with the facility or activity (Source: Order No. R4-2012-0175).

Storm Drain System means any facilities or any part of those facilities, including streets, gutters, conduits, natural or artificial drains, channels, and watercourses that are used for the purpose of collecting, storing, transporting or disposing of stormwater and are located within the City of Walnut.

Storm Water or Stormwater means water that originates from atmospheric moisture (rain or snow) and that falls onto land, water, or other surfaces. Without any change in its meaning, this term may be spelled or written as one word or two separate words.

Stormwater Runoff means that part of precipitation (rainfall or snowmelt) which travels across a surface to the storm drain system or receiving waters.

SUSMP means the Los Angeles Countywide Standard Urban Stormwater Mitigation Plan. The SUSMP was required as part of the previous Municipal NPDES Permit (Order No. 01-182, NPDES No. CAS004001) and required plans that designate best management practices (BMPs) that must be used in specified categories of development projects.

Urban Runoff means surface water flow produced by storm and non-storm events. Non-storm events include flow from residential, commercial, or industrial activities involving the use of potable and non-potable water.

[MUNICIPAL CODE SECTION REFERENCE(S)] is amended to read as follows:

SEC. [X]. STORMWATER POLLUTION CONTROL MEASURES FOR DEVELOPMENT PLANNING AND CONSTRUCTION ACTIVITIES

- (A) **Objective.** The provisions of this section contain requirements for construction activities and facility operations of Development and Redevelopment projects to comply with the current “Municipal NPDES permit,” lessen the water quality impacts of development by using smart growth practices, and integrate LID design principles to mimic

predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use. LID shall be inclusive of SUSMP requirements.

(B) Scope. This Section contains requirements for stormwater pollution control measures in Development and Redevelopment projects and authorizes the City of Walnut to further define and adopt stormwater pollution control measures, develop LID principles and requirements, including but not limited to the objectives and specifications for integration of LID strategies, grant waivers from the requirements of the Standard Urban Stormwater Mitigation Plan, and collect funds for projects that are granted waivers. Except as otherwise provided herein, the City of Walnut shall administer, implement and enforce the provisions of this Section.

(C) Applicability. The following Development and Redevelopment projects, termed "Planning Priority Projects," shall comply with the requirements of [SECTION NUMBER]:

- (1) All development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area.
- (2) Industrial parks 10,000 square feet or more of surface area.
- (3) Commercial malls 10,000 square feet or more of surface area.
- (4) Retail gasoline outlets with 5,000 square feet or more of surface area.
- (5) Restaurants (Standard Industrial Classification (SIC) of 5812) with 5,000 square feet or more of surface area.
- (6) Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces.
- (7) Streets and roads construction of 10,000 square feet or more of impervious surface area.
- (8) Automotive service facilities (Standard Industrial Classification (SIC) of 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area.
- (9) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will:
 - a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and
 - b. Create 2,500 square feet or more of impervious surface area
- (10) Single-family hillside homes.

(11) Redevelopment Projects

- a. Land disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site on Planning Priority Project categories.
 - b. Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, the entire project must be mitigated.
 - c. Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, only the alteration must be mitigated, and not the entire development.
 - d. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.
 - e. Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.
- (D) Effective Date.** The Planning and Land Development requirements contained in Section 7 of Order No. R4-2012-0175 shall become effective 90 days from the adoption of the Order (February 6, 2013). This includes Planning Priority Projects that are discretionary permit projects or project phases that have not been deemed complete for processing, or discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals within 90 days of adoption of the Order. Projects that have been deemed complete within 90 days of adoption of the Order are not subject to the requirements Section 7.
- (E) Stormwater Pollution Control Requirements.** The Site for every Planning Priority Project shall be designed to control pollutants, pollutant loads, and runoff volume to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapotranspiration, bioretention and/or rainfall harvest and use.
- (1) A new single-family hillside home development shall include mitigation measures to:**

- a. Conserve natural areas;
 - b. Protect slopes and channels;
 - c. Provide storm drain system stenciling and signage;
 - d. Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability; and
 - e. Direct surface flow to vegetated areas before discharge, unless the diversion would result in slope instability.
- (2) Street and road construction of 10,000 square feet or more of impervious surface shall follow USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets (December 2008 EPA-833-F-08-009) to the maximum extent practicable.
- (3) The remainder of Planning Priority Projects shall prepare a LID Plan to comply with the following:
- a. Retain stormwater runoff onsite for the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:
 - i. The 85th percentile 24-hour runoff event as determined from the Los Angeles County 85th percentile precipitation isohyetal map; or
 - ii. The volume of runoff produced from a 0.75 inch, 24-hour rain event, whichever is greater.
 - b. Minimize hydromodification impacts to natural drainage systems as defined in the Municipal NPDES Permit. Hydromodification requirements are further specified in [NAME OF POST-CONSTRUCTION BMP HANDBOOK].
 - c. When, as determined by the City of Walnut, 100 percent onsite retention of the SWQDv is technically infeasible, partially or fully, the infeasibility shall be demonstrated in the submitted LID Plan. The technical infeasibility may result from conditions that may include, but are not limited to:
 - i. The infiltration rate of saturated in-situ soils is less than 0.3 inch per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv onsite.
 - ii. Locations where seasonal high groundwater is within five to ten feet of surface grade;

- iii. Locations within 100 feet of a groundwater well used for drinking water;
 - iv. Brownfield development sites or other locations where pollutant mobilization is a documented concern;
 - v. Locations with potential geotechnical hazards;
 - vi. Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- d. If partial or complete onsite retention is technically infeasible, the project Site may biofiltrate 1.5 times the portion of the remaining SWQDv that is not reliably retained onsite. Biofiltration BMPs must adhere to the design specifications provided in the Municipal NPDES Permit.
- i. Additional alternative compliance options such as offsite infiltration may be available to the project Site. The project Site should contact the City of Walnut to determine eligibility. Alternative compliance options are further specified in [NAME OF POST-CONSTRUCTION BMP HANDBOOK].
- e. The remaining SWQDv that cannot be retained or biofiltered onsite must be treated onsite to reduce pollutant loading. BMPs must be selected and designed to meet pollutant-specific benchmarks as required per the Municipal NPDES Permit. Flow-through BMPs may be used to treat the remaining SWQDv and must be sized based on a rainfall intensity of:
- i. 0.2 inches per hour, or
 - ii. The one year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, whichever is greater.
- f. A Multi-Phased Project may comply with the standards and requirements of this section for all of its phases by: (a) designing a system acceptable to the City of Walnut to satisfy these standards and requirements for the entire Site during the first phase, and (b) implementing these standards and requirements for each phase of Development or Redevelopment of the Site during the first phase or prior to commencement of construction of a later phase, to the extent necessary to treat the stormwater from such later phase. For purposes of this section, "Multi-Phased Project" shall mean any Planning Priority Project implemented over more than one phase and the Site of a Multi-Phased Project shall include any land and water area designed and used to store, treat or manage stormwater runoff in connection with the Development or Redevelopment, including any tracts, lots, or parcels of real property, whether Developed or not, associated with, functionally connected to, or under common ownership or control with such Development or Redevelopment.

(F) **Validity.** If any provision of this Ordinance is found to be unconstitutional or otherwise invalid by any court of competent jurisdiction, such invalidity shall not affect remaining provisions of this Ordinance are declared to be severable.

(G) **Certification.** The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy.

APPROVED AND ADOPTED this ___th day of _____, 20__.

Mayor

ATTEST:

Teresa De Dios, City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.
CITY OF WALNUT)

I, Teresa De Dios, City Clerk of the City of Walnut, do hereby certify that the foregoing Ordinance _____ being:

AN ORDINANCE AMENDING [MUNICIPAL CODE SECTION REFERENCE(S)] OF THE CITY OF WALNUT MUNICIPAL CODE TO EXPAND THE APPLICABILITY OF THE EXISTING [NAME OF POST-CONSTRUCTION REQUIREMENTS - LIKELY "SUSMP" FOR MOST MUNICIPALITIES] REQUIREMENTS BY IMPOSING LOW IMPACT DEVELOPMENT (LID) STRATEGIES ON PROJECTS THAT REQUIRE BUILDING PERMITS.

Said Ordinance was duly introduced at a regular meeting held on the ___th day of _____, 20__, and was adopted and passed at a regular meeting of the City Council on the _____ day of _____, 20__ by the following vote, to wit:

AYES: COUNCILMEMBER(S):
NOES: COUNCILMEMBER(S):
ABSENT: COUNCILMEMBER(S):
ABSTAIN: COUNCILMEMBER(S):

ATTEST:

Teresa De Dios, City Clerk

DRAFT

Attachment B

City of Walnut

LID Ordinance

ORDINANCE NO. 13-13

AN ORDINANCE AMENDING TITLE V, CHAPTER 21, OF THE CITY OF WALNUT MUNICIPAL CODE TO EXPAND THE APPLICABILITY OF THE EXISTING STANDARD URBAN STORM WATER MITIGATION PLAN REQUIREMENTS BY IMPOSING LOW IMPACT DEVELOPMENT (LID) STRATEGIES ON PROJECTS THAT REQUIRE BUILDING PERMITS.

CITY COUNCIL OF THE CITY OF WALNUT HEREBY ORDAINS THE FOLLOWING:

- (A) The City of Walnut is authorized by Article XI, §5 and §7 of the State Constitution to exercise the police power of the State by adopting regulations to promote public health, public safety and general prosperity.
- (B) The City of Walnut has authority under the California Water Code to adopt and enforce ordinances imposing conditions, restrictions and limitations with respect to any activity which might degrade the quality of waters of the State.
- (C) The city is a permittee under the "Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4," issued by the California Regional Water Quality Control Board--Los Angeles Region," (Order No. R4-2012-0175) which also serves as an NPDES Permit under the Federal Clean Water Act (NPDES No. CAS004001), as well as Waste Discharge Requirements under California law (the "Municipal NPDES permit"). In order to participate in a Watershed Management Program and/or Enhanced Watershed Management Program, the Municipal NPDES permit requires permittees to develop and implement a LID Ordinance.
- (D) The City of Walnut has applied an integrated approach to incorporate wastewater, stormwater and runoff, and recycled water management into a single strategy through its Integrated Resources Plan.
- (E) The City of Walnut is committed to a stormwater management program that protects water quality and water supply by employing watershed-based approaches that balance environmental, social, and economic considerations.
- (F) It is the intent of the City of Walnut to expand the applicability of the existing Standard Urban Stormwater Mitigation Plan (SUSMP) requirements by providing stormwater and rainwater LID strategies for Development and Redevelopment projects as defined under "Applicability."

TITLE V PUBLIC WORKS, CHAPTER 21, ARTICLE III STORM WATER AND URBAN RUNOFF POLLUTION CONTROL, SECTION 21-61 PARAGRAPH C IS AMENDED IN ITS ENTIRETY TO READ AS FOLLOWS:

The City of Walnut is a permittee under the "Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4," issued by the California Regional Water Quality Control Board--Los Angeles Region," (Order No. R4-2012-0175) which also serves as an NPDES Permit under the Federal Clean Water Act (NPDES No. CAS004001), as well as Waste Discharge Requirements under California law (the "Municipal NPDES permit").

TITLE V PUBLIC WORKS, CHAPTER 21, ARTICLE III STORM WATER AND URBAN RUNOFF POLLUTION CONTROL, SECTION 21-63 DEFINITIONS OF THE CITY OF WALNUT MUNICIPAL CODE IS AMENDED IN ITS ENTIRETY TO READ AS FOLLOWS:

Definitions.

Except as specifically provided herein, any term used in this Section 21-63 shall be defined as that term in the current Municipal NPDES permit, or if it is not specifically defined in either the Municipal NPDES permit, then as such term is defined in the Federal Clean Water Act, as amended, and/or the regulations promulgated thereunder. If the definition of any term contained in this chapter conflicts with the definition of the same term in the current Municipal NPDES permit, then the definition contained in the Municipal NPDES permit shall govern. The following words and phrases shall have the following meanings when used in this chapter:

Automotive Service Facility means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) codes. For inspection purposes, Permittees need not inspect facilities with SIC codes 5013, 5014, 5541, 5511, provided that these facilities have no outside activities or materials that may be exposed to stormwater (Source: Order No. R4-2012-0175).

Basin Plan means the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Water Board on June 13, 1994 and subsequent amendments (Source: Order No. R4-2012-0175).

Best Management Practice (BMP) means practices or physical devices or systems designed to prevent or reduce pollutant loading from stormwater or non-stormwater discharges to receiving waters, or designed to reduce the volume of stormwater or non-stormwater discharged to the receiving water (Source: Order No. R4-2012-0175).

Biofiltration means a LID BMP that reduces stormwater pollutant discharges by intercepting rainfall on vegetative canopy, and through incidental infiltration and/or evapotranspiration, and filtration. Incidental infiltration is an important factor in achieving the required pollutant load reduction. Therefore, the term "biofiltration" as used in this Ordinance is defined to include only systems designed to facilitate incidental infiltration or achieve the equivalent pollutant reduction as biofiltration BMPs with an underdrain (subject to approval by the Regional Board's Executive

Officer). Biofiltration BMPs include bioretention systems with an underdrain and bioswales (Modified from: Order No. R4-2012-0175).

Bioretention means a LID BMP that reduces stormwater runoff by intercepting rainfall on vegetative canopy, and through evapotranspiration and infiltration. The bioretention system typically includes a minimum 2-foot top layer of a specified soil and compost mixture underlain by a gravel-filled temporary storage pit dug into the in-situ soil. As defined in the Municipal NPDES permit, a bioretention BMP may be designed with an overflow drain, but may not include an underdrain. When a bioretention BMP is designed or constructed with an underdrain it is regulated by the Municipal NPDES permit as biofiltration (Modified from: Order No. R4-2012-0175).

Bioswale means a LID BMP consisting of a shallow channel lined with grass or other dense, low-growing vegetation. Bioswales are designed to collect stormwater runoff and to achieve a uniform sheet flow through the dense vegetation for a period of several minutes (Source: Order No. R4-2012-0175).

City means the City of Walnut.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted in 1972, by Public Law 92-500, and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to Waters of the United States unless the discharge is in accordance with an NPDES permit.

Commercial Malls means any development on private land comprised of one or more buildings forming a complex of stores which sells various merchandise, with interconnecting walkways enabling visitors to easily walk from store to store, along with parking area(s). A commercial mall includes, but is not limited to: mini-malls, strip malls, other retail complexes, and enclosed shopping malls or shopping centers (Source: Order No. R4-2012-0175).

Construction Activity means any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that result in land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance activities required to maintain the integrity of structures by performing minor repair and restoration work, maintain the original line and grade, hydraulic capacity, or original purposes of the facility. See "Routine Maintenance" definition for further explanation. Where clearing, grading or excavating of underlying soil takes place during a repaving operation, State General Construction Permit coverage by the State of California General Permit for Storm Water Discharges Associated with Industrial Activities or for Stormwater Discharges Associated with Construction Activities is required if more than one acre is disturbed or the activities are part of a larger plan (Source: Order No. R4-2012-0175).

Control means to minimize, reduce or eliminate by technological, legal, contractual, or other means, the discharge of pollutants from an activity or activities (Source: Order No. R4-2012-0175).

Development means construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail, and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety (Source: Order No. R4-2012-0175).

Directly Adjacent means situated within 200 feet of the contiguous zone required for the continued maintenance, function, and structural stability of the environmentally sensitive area (Source: Order No. R4-2012-0175).

Discharge means any release, spill, leak, pump, flow, escape, dumping, or disposal of any liquid, semi-solid, or solid substance.

Disturbed Area means an area that is altered as a result of clearing, grading, and/or excavation (Source: Order No. R4-2012-0175).

Flow-through BMPs means modular, vault type "high flow biotreatment" devices contained within an impervious vault with an underdrain or designed with an impervious liner and an underdrain (Modified from: Order No. R4-2012-0175).

General Construction Activities Storm Water Permit (GCASP) means the general NPDES permit adopted by the State Board which authorizes the discharge of stormwater from construction activities under certain conditions.

General Industrial Activities Storm Water Permit (GIASP) means the general NPDES permit adopted by the State Board which authorizes the discharge of stormwater from certain industrial activities under certain conditions.

Green Roof means a LID BMP using planter boxes and vegetation to intercept rainfall on the roof surface. Rainfall is intercepted by vegetation leaves and through evapotranspiration. Green roofs may be designed as either a bioretention BMP or as a biofiltration BMP. To receive credit as a bioretention BMP, the green roof system planting medium shall be of sufficient depth to provide capacity within the pore space volume to contain the design storm depth and may not be designed or constructed with an underdrain (Source: Order No. R4-2012-0175).

Hazardous Material(s) means any material(s) defined as hazardous by Division 20, Chapter 6.95 of the California Health and Safety Code.

Hillside means a property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater and where grading contemplates cut or fill slopes (Source: Order No. R4-2012-0175).

Impervious Surface means any man-made or modified surface that prevents or significantly reduces the entry of water into the underlying soil, resulting in runoff from the surface in greater quantities and/or at an increased rate, when compared to natural conditions prior to development. Examples of places that commonly exhibit impervious surfaces include parking lots, driveways, roadways, storage areas, and rooftops. The imperviousness of these areas commonly results from paving, compacted gravel, compacted earth, and oiled earth.

Industrial Park means land development that is set aside for industrial development. Industrial parks are usually located close to transport facilities, especially where more than one transport modalities coincide: highways, railroads, airports, and navigable rivers. It includes office parks, which have offices and light industry (Source: Order No. R4-2012-0175).

Infiltration BMP means a LID BMP that reduces stormwater runoff by capturing and infiltrating the runoff into in-situ soils or amended onsite soils. Examples of infiltration BMPs include infiltration basins, dry wells, and pervious pavement (Source: Order No. R4-2012-0175).

LID means Low Impact Development. LID consists of building and landscape features designed to retain or filter stormwater runoff (Source: Order No. R4-2012-0175).

MS4 means Municipal Separate Storm Sewer System (MS4). The MS4 is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a combined sewer; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

(40 CFR § 122.26(b)(8)) (Source: Order No. R4-2012-0175)

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA §307, 402, 318, and 405. The term includes an “approved program” (Source: Order No. R4-2012-0175).

Natural Drainage System means a drainage system that has not been improved (e.g., channelized or armored). The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system (Source: Order No. R4-2012-0175).

New Development means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision (Source: Order No. R4-2012-0175).

Non-Stormwater Discharge means any discharge to a municipal storm drain system that is not composed entirely of stormwater (Source: Order No. R4-2012-0175).

Parking Lot means land area or facility for the parking or storage of motor vehicles used for businesses, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces (Source: Order No. R4-2012-0175).

Person means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, state, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine and the singular shall include the plural where indicated by the context.

Planning Priority Projects means development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, prior to completion of the project(s) (Modified from: Order No. R4-2012-0175).

Pollutant means any "pollutant" defined in Section 502(6) of the Federal Clean Water Act or incorporated into the California Water Code Sec. 13373. Pollutants may include, but are not limited to the following:

- (1) Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge).
- (2) Metals (such as cadmium, lead, zinc, copper, silver, nickel, chromium, and non- metals such as phosphorus and arsenic).
- (3) Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease).
- (4) Excessive eroded soil, sediment, and particulate materials in amounts that may adversely affect the beneficial use of the receiving waters, flora, or fauna of the State.
- (5) Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities).
- (6) Substances having characteristics such as pH less than 6 or greater than 9, or unusual coloration or turbidity, or excessive levels of fecal coliform, or fecal streptococcus, or enterococcus.

Project means all development, redevelopment, and land disturbing activities. The term is not limited to "Project" as defined under CEQA (Pub. Resources Code §21065) (Source: Order No. R4-2012-0175).

Rainfall Harvest and Use means a LID BMP system designed to capture runoff, typically from a roof but can also include runoff capture from elsewhere within the site, and to provide for temporary storage until the harvested water can be used for irrigation or non-potable uses. The harvested water may also be used for potable water uses if the system includes disinfection treatment and is approved for such use by the local building department (Source: Order No. R4-2012-0175).

Receiving Water means "water of the United States" into which waste and/or pollutants are or may be discharged (Source: Order No. R4-2012-0175).

Redevelopment means land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of routine maintenance activity; and land disturbing activity related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety (Source: Order No. R4-2012-0175).

Regional Board means the California Regional Water Quality Control Board, Los Angeles Region.

Restaurant means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812) (Source: Order No. R4-2012-0175).

Retail Gasoline Outlet means any facility engaged in selling gasoline and lubricating oils (Source: Order No. R4-2012-0175).

Routine Maintenance

Routine maintenance projects include, but are not limited to projects conducted to:

1. Maintain the original line and grade, hydraulic capacity, or original purpose of the facility.
2. Perform as needed restoration work to preserve the original design grade, integrity and hydraulic capacity of flood control facilities.
3. Includes road shoulder work, regrading dirt or gravel roadways and shoulders and performing ditch cleanouts.
4. Update existing lines* and facilities to comply with applicable codes, standards, and regulations regardless if such projects result in increased capacity.
5. Repair leaks

Routine maintenance does not include construction of new** lines or facilities resulting from compliance with applicable codes, standards and regulations.

* Update existing lines includes replacing existing lines with new materials or pipes.

** New lines are those that are not associated with existing facilities and are not part of a project to update or replace existing lines (Source: Order No. R4-2012-0175).

Significant Ecological Areas (SEAs) means an area that is determined to possess an example of biotic resources that cumulatively represent biological diversity, for the purposes of protecting biotic diversity, as part of the Los Angeles County General Plan. Areas are designated as SEAs, if they possess one or more of the following criteria:

1. The habitat of rare, endangered, and threatened plant and animal species.
2. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution on a regional basis.
3. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind or are restricted in distribution in Los Angeles County.
4. Habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or within Los Angeles County.
5. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent an unusual variation in a population or community.
6. Areas important as game species habitat or as fisheries.
7. Areas that would provide for the preservation of relatively undisturbed examples of natural biotic communities in Los Angeles County.
8. Special areas (Source: Order No. R4-2012-0175).

Site means land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity (Source: Order No. R4-2012-0175).

Storm Drain System means any facilities or any part of those facilities, including streets, gutters, conduits, natural or artificial drains, channels, and watercourses that are used for the purpose of collecting, storing, transporting or disposing of stormwater and are located within the City of Walnut.

Storm Water or Stormwater means water that originates from atmospheric moisture (rain or snow) and that falls onto land, water, or other surfaces. Without any change in its meaning, this term may be spelled or written as one word or two separate words.

Stormwater Runoff means that part of precipitation (rainfall or snowmelt) which travels across a surface to the storm drain system or receiving waters.

SUSMP means the Los Angeles Countywide Standard Urban Stormwater Mitigation Plan. The SUSMP was required as part of the previous Municipal NPDES Permit (Order No. 01-182,

NPDES No. CAS004001) and required plans that designate best management practices (BMPs) that must be used in specified categories of development projects.

Urban Runoff means surface water flow produced by storm and non-storm events. Non-storm events include flow from residential, commercial, or industrial activities involving the use of potable and non-potable water.

**CHAPTER 21 ARTICLE IV SECTION 21-80 IS AMENDED TO READ AS FOLLOWS:
TITLE V PUBLIC WORKS, CHAPTER 21, ARTICLE IV SECTION 21-80 IS
AMENDED IN ITS ENTIRETY TO READ AS FOLLOWS:**

**SEC. 21-80 STORMWATER POLLUTION CONTROL MEASURES FOR
DEVELOPMENT PLANNING AND CONSTRUCTION ACTIVITIES**

- (A) **Objective.** The provisions of this section contain requirements for construction activities and facility operations of Development and Redevelopment projects to comply with the current "Municipal NPDES permit," lessen the water quality impacts of development by using smart growth practices, and integrate LID design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use. LID shall be inclusive of SUSMP requirements.
- (B) **Scope.** This Section contains requirements for stormwater pollution control measures in Development and Redevelopment projects and authorizes the City of Walnut to further define and adopt stormwater pollution control measures, develop LID principles and requirements, including but not limited to the objectives and specifications for integration of LID strategies, grant waivers from the requirements of the Standard Urban Stormwater Mitigation Plan, and collect funds for projects that are granted waivers. Except as otherwise provided herein, the City of Walnut shall administer, implement and enforce the provisions of this Section.
- (C) **Applicability.** The following Development and Redevelopment projects, termed "Planning Priority Projects," shall comply with the requirements of Chapter 21 Article IV Section 21-80.
- (1) All development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area.
 - (2) Industrial parks 10,000 square feet or more of surface area.
 - (3) Commercial malls 10,000 square feet or more of surface area.
 - (4) Retail gasoline outlets with 5,000 square feet or more of surface area.
 - (5) Restaurants (Standard Industrial Classification (SIC) of 5812) with 5,000 square feet or more of surface area.

- (6) Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces.
- (7) Streets and roads construction of 10,000 square feet or more of impervious surface area.
- (8) Automotive service facilities (Standard Industrial Classification (SIC) of 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area.
- (9) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will:
 - a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and
 - b. Create 2,500 square feet or more of impervious surface area
- (10) Single-family hillside homes.

(11) Redevelopment Projects

- a. Land disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site on Planning Priority Project categories.
- b. Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, the entire project must be mitigated.
- c. Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, only the alteration must be mitigated, and not the entire development.
- d. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

- e. Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.
- (D) **Effective Date.** The Planning and Land Development requirements contained in Section 7 of Order No. R4-2012-0175 shall become effective 90 days from the adoption of the Order (February 6, 2013). This includes Planning Priority Projects that are discretionary permit projects or project phases that have not been deemed complete for processing, or discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals within 90 days of adoption of the Order. Projects that have been deemed complete within 90 days of adoption of the Order are not subject to the requirements Section 7.
- (E) **Stormwater Pollution Control Requirements.** The Site for every Planning Priority Project shall be designed to control pollutants, pollutant loads, and runoff volume to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapotranspiration, bioretention and/or rainfall harvest and use.
- (1) A new single-family hillside home development shall include mitigation measures to:
- a. Conserve natural areas;
 - b. Protect slopes and channels;
 - c. Provide storm drain system stenciling and signage;
 - d. Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability; and
 - e. Direct surface flow to vegetated areas before discharge, unless the diversion would result in slope instability.
- (2) Street and road construction of 10,000 square feet or more of impervious surface shall follow USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets (December 2008 EPA-833-F-08-009) to the maximum extent practicable.
- (3) The remainder of Planning Priority Projects shall prepare a LID Plan to comply with the following:
- a. Retain stormwater runoff onsite for the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:

- i. The 85th percentile 24-hour runoff event as determined from the Los Angeles County 85th percentile precipitation isohyetal map; or
 - ii. The volume of runoff produced from a 0.75 inch, 24-hour rain event, whichever is greater.
- b. Minimize hydromodification impacts to natural drainage systems as defined in the Municipal NPDES Permit. Hydromodification requirements are further specified in County of Los Angeles Department of Public Work Storm Water Best Management Practices Design and Maintenance Manual.
- c. When, as determined by the City of Walnut, 100 percent onsite retention of the SWQDv is technically infeasible, partially or fully, the infeasibility shall be demonstrated in the submitted LID Plan. The technical infeasibility may result from conditions that may include, but are not limited to:
 - i. The infiltration rate of saturated in-situ soils is less than 0.3 inch per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv onsite.
 - ii. Locations where seasonal high groundwater is within five to ten feet of surface grade;
 - iii. Locations within 100 feet of a groundwater well used for drinking water;
 - iv. Brownfield development sites or other locations where pollutant mobilization is a documented concern;
 - v. Locations with potential geotechnical hazards;
 - vi. Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- d. If partial or complete onsite retention is technically infeasible, the project Site may biofiltrate 1.5 times the portion of the remaining SWQDv that is not reliably retained onsite. Biofiltration BMPs must adhere to the design specifications provided in the Municipal NPDES Permit.
 - i. Additional alternative compliance options such as offsite infiltration may be available to the project Site. The project Site should contact the City of Walnut to determine eligibility. Alternative compliance options are further specified in County of Los Angeles Department of Public Work Storm Water Best Management Practices Design and Maintenance Manual.

- e. The remaining SWQDv that cannot be retained or biofiltered onsite must be treated onsite to reduce pollutant loading. BMPs must be selected and designed to meet pollutant-specific benchmarks as required per the Municipal NPDES Permit. Flow-through BMPs may be used to treat the remaining SWQDv and must be sized based on a rainfall intensity of:
 - i. 0.2 inches per hour, or
 - ii. The one year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, whichever is greater.
 - f. A Multi-Phased Project may comply with the standards and requirements of this section for all of its phases by: (a) designing a system acceptable to the City of Walnut to satisfy these standards and requirements for the entire Site during the first phase, and (b) implementing these standards and requirements for each phase of Development or Redevelopment of the Site during the first phase or prior to commencement of construction of a later phase, to the extent necessary to treat the stormwater from such later phase. For purposes of this section, "Multi-Phased Project" shall mean any Planning Priority Project implemented over more than one phase and the Site of a Multi-Phased Project shall include any land and water area designed and used to store, treat or manage stormwater runoff in connection with the Development or Redevelopment, including any tracts, lots, or parcels of real property, whether Developed or not, associated with, functionally connected to, or under common ownership or control with such Development or Redevelopment.
- (F) **Validity.** If any provision of this Ordinance is found to be unconstitutional or otherwise invalid by any court of competent jurisdiction, such invalidity shall not affect remaining provisions of this Ordinance are declared to be severable.
- (G) **Certification.** The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy.

APPROVED AND ADOPTED this 13th day of November, 2013.



Antonio Cartagena, Mayor

ATTEST:



Teresa De Dios, City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.
CITY OF WALNUT)

I, Teresa De Dios, City Clerk of the City of Walnut, do hereby certify that the foregoing Ordinance No. 13-13 being:

AN ORDINANCE AMENDING TITLE V, CHAPTER 21, OF THE CITY OF WALNUT MUNICIPAL CODE TO EXPAND THE APPLICABILITY OF THE EXISTING STANDARD URBAN STORM WATER MITIGATION PLAN REQUIREMENTS BY IMPOSING LOW IMPACT DEVELOPMENT (LID) STRATEGIES ON PROJECTS THAT REQUIRE BUILDING PERMITS

Said Ordinance was duly introduced at a regular meeting held on the 23rd day of October, 2013, and was adopted and passed at a regular meeting of the City Council on the 13th day of November 13, 2013 by the following vote, to wit:

AYES: COUNCILMEMBER(S): Cartagena, Ching, Pacheco, Su, Tragarz
NOES: COUNCILMEMBER(S): None
ABSENT: COUNCILMEMBER(S): None
ABSTAIN: COUNCILMEMBER(S): None



Teresa De Dios, City Clerk

Attachment C

City of Walnut

Public Education Materials

Storm Water Pollution Prevention

Construction

Sediment, vehicle fluids, dust and debris from construction sites can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



Preventing Erosion

Avoid excavation or grading during wet weather. Plant temporary vegetation or add hydromulch on slopes where construction is not immediately planned, and permanent vegetation once excavation and grading are complete. Construct diversion dikes to channel runoff into a detention basin and around the construction site. Channels can be lined with grass or roughened pavement to reduce runoff velocity.



Maintaining Vehicles & Equipment

Maintain and refuel vehicles and equipment at a single location on-site, away from the street, gutter and storm drains. Perform major equipment repairs and washings off-site. Inspect vehicles and equipment frequently for leaks, and prevent leaks from stored vehicles by draining gas, hydraulic oil, transmission, brake and radiator fluids.



Ordering Materials & Recycling Waste

Reduce waste by ordering only the amounts of materials needed for the job. Use recycled or recyclable materials whenever possible. You can recycle broken asphalt, concrete, wood, and cleared vegetation. Non-recyclable materials should be taken to a landfill or disposed of as hazardous waste. For recycling and disposal information, call the City's exclusive franchise waste hauler, Valley Vista Services (800) 442-6454.



Cleaning & Preventing Spills

Use a drip pan and funnel when draining or pouring fluids. Sweep up dry spills, instead of hosing. Be ready for spills by preparing and using spill containment and cleanup kits that include safety equipment and dry cleanup materials such as kitty

litter or sawdust. To report serious spills, call 911.

Store Materials Safely

Keep construction materials and debris away from the street, gutter and storm drains. Cover exposed excavated or stockpiled materials (such as soil, sand or gravel) with plastic sheeting to protect them from rain, wind and runoff.

Recycle Household Hazardous Waste

Household cleaners, paint and other home improvement products like wallpaper and tile adhesives are too toxic to trash. Recycle them instead, at a convenient household hazardous waste collection facility. Call (888) CLEANLA for the facility in your area.



For specific questions on storm water pollution prevention, contact: The City of Walnut
21201 La Puente Rd.
Walnut, CA 9189
909-595-7543

To report illegal dumping or for general storm water pollution prevention information, contact: 1 (888) CLEANLA
www.888cleanla.com

Storm Water Pollution Prevention

Home Repair

Toxic dust and debris from home repair and remodeling can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



Construction Projects

Keep construction debris away from the street, gutter and storm drains. Schedule grading and excavation projects for dry weather. Cover excavated material and stockpiles of material such as soil, sand or gravel, to protect from rain, wind and runoff. Prevent

erosion by planting fast-growing annual and perennial grass, which can shield and bind soil.

Landscaping & Gardening

Avoid applying fertilizers or pesticide near curbs and driveways, and store covered, protected from rain, wind and runoff. Try using organic or nontoxic alternatives. Reduce runoff and lower your water bill by using drip irrigation, soaker hoses or micro-spray systems. Recycle leaves instead of blowing, sweeping or raking them into the street, gutter or storm drain.



Concrete and Masonry

Store bags of cement and plaster away from gutters and storm drains, and cover them to protect against rain, wind and runoff. Sweep or scoop up cement washout or concrete dust instead of hosing into driveways, streets, gutters or storm drains.

Paint Removal & Cleanup

Paint stripping residue (such as chips and dust) from paints containing lead or tributyl tin are hazardous wastes. Sweep them up instead of hosing into the street and dispose of them safely at a household hazardous waste collection facility. Avoid cleaning brushes or rinsing paint containers in the street, gutter or near a storm drain. Clean water-based paints in the sink.

Oil-based paints may be cleaned with thinner, which you can filter and reuse. Recycle leftover paint at a household hazardous waste collection facility, save it for touch ups or give it to someone who can use it, like a theatre group, school, or community organization.



Recycle Household Hazardous Waste

Household cleaners, paint and other home improvement products like wallpaper and tile adhesives are too toxic to trash. Recycle them instead, at a convenient household hazardous waste collection facility. Call (888) CLEANLA for the facility in your area.

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Storm Water Pollution Prevention

PAINTING

Improper post-painting cleanup or disposal can lead to chemicals being picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect your health.



Water-Based Paints

When considering paint, use water-based paints whenever possible. They are less toxic than oil-based paints and easier to clean up. Look for products labeled "latex" or "cleans with water."



Paint Removal

Sweep up paint stripping residue (such as chips and dust) instead of hosing into the street. Dispose of them safely at a household hazardous waste collection facility. Call (800) CLEANUP for the facility in your area.



Painting Cleanup

Never clean brushes or rinse paint containers in the street, gutter or near a storm drain. Clean water-based paints in the sink. Clean oil-based paints with thinner, which can be reused by putting it in a jar to settle out the paint particles and then pouring off the clear liquid for future use. Wrap dried paint residue in newspaper and dispose of it in the trash.



Exterior Paint Removal

When stripping or cleaning building exteriors with high pressure water, block nearby storm drains and divert wash-water onto a designated dirt area. Ask your local wastewater treatment authority if you can collect building cleaning wastewater and discharge it to the sewer.

Recycling Paint

Recycle leftover paint at a household hazardous waste collection facility, save it for touch ups or give it to someone who can use it, like a theatre group, school, or community organization. Call (800) CLEANUP for the facility in your area.



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Storm Water Pollution Prevention

Auto Maintenance

Oil, grease, anti-freeze and other toxic automotive fluids can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



Cleaning Auto Parts

Scrape parts with a wire brush or use a bake oven rather than liquid cleaners. Arrange drip

pans, drying racks and drain boards so that fluids are directed back into the parts washer or the fluid holding tank. Do not wash parts or equipment in a shop sink, parking lot, driveway or street.

Metal Grinding and Polishing

Keep a bin under your lathe or grinder to capture metal filings. Send uncontaminated filings to a scrap metal recycler for reclamation. Store metal filings in a covered container or indoors.



Cleaning Spills

Use dry methods for spill cleanup (sweeping, absorbent materials). Follow your hazardous materials response plan, as filed with your local fire department or other hazardous materials authority. Be sure that all employees are aware of the plan and are capable of implementing each phase. To report serious toxic spills, call 911.



Storing Hazardous Waste

Keep your liquid waste segregated. Many fluids can be recycled via hazardous waste disposal companies if they are not mixed. Store all materials under cover with spill containment or inside to prevent contamination of rainwater runoff.

Preventing Leaks and Spills

Place drip pans underneath vehicles to capture any leaking fluids. Use absorbent cleaning agents instead of water to clean work areas.



Proper Disposal of Hazardous Waste

Recycle used motor oil and oil filters, anti-freeze and other hazardous automotive fluids, batteries, tires and metal filings collected from grinding or polishing auto parts. Contact a licensed hazardous waste hauler. For more recycling information, call (888) CLEANLA. Use non-toxic cleaning products whenever possible.

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Storm Water Pollution Prevention

Kitchen: Fats, Oil & Grease

Fats, oil and grease (FOG) from cooking poured into kitchen sinks can build up in sewer pipes causing a sewage spill into the storm drain system which flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



Pipes Are For Water Only:

FOG that enters the sewer system from kitchen sinks and drains eventually hardens and coats the inside of sewer pipes. Over a short period of time FOG residues build up in the sewer pipes and begin to restrict flows until the FOG build-up completely blocks the normal flow of sewage.

The blockage causes the flow of sewage to exit from the sanitary sewer system at the nearest outlet that is most commonly a manhole, cleanout, or broken pipe, and flow into the storm drainage system.

A sewage spill due to blocked pipe from a build-up of FOG is costly to both you and the environment. However, with the proper care and attention, it may be avoidable. So do your part for yourself and your community.



To Protect Your Pipes:

1. Do not put oil, grease or greasy foods down the sink, drain or toilet.
2. Solidify cooking oil with an absorbent material such as cat litter or coffee grounds; place it in a sealed container and dispose of it in a trash receptacle.
3. Grease must be hardened in a can or container with a lid before disposing in the trash. If you soak a greasy pan, place a paper towel over the drain basket to catch grease and food particles as you pour the water down the drain.



For large amounts of household oil and grease, place in a sealed container and take it to a local Household Hazardous Waste Collection Center for proper disposal. Call (888) CLEANLA for a collection facility or mobile collection event near your area.

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Storm Water Pollution Prevention

Food and Restaurant

Restaurant food waste, grease, cleaning fluids, and trash can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



Recycle Oil & Grease

Oil and grease wastes can be recycled. Look in the yellow pages for rendering companies, or call (888) CLEANLA for disposal information. Don't pour oil or grease into sinks, floor drains, or onto a parking lot or street. Keep grease bins covered and stored securely. Keep your grease interceptor well maintained to prevent sewer overflows or backups and keep records of grease waste hauling.



Cleaning & Maintenance

Clean your equipment, floor mats, filters and garbage cans in a mop sink, wash rack or floor drain that is connected to the sewer through a grease trap. Don't wash them, or pour wash water, on a parking lot, alley, sidewalk or street. Sweep outside areas and put the debris into a garbage bin, instead of sweeping or hosing them into the parking lot or street.



Managing Spills

Clean food spills in loading and trash areas by first using absorbent materials, followed by sweeping and then mopping (discharge mop water into the sewer through a grease interceptor). Have spill containment and cleanup kits available. To report serious toxic spills, call 911.



Dumpster Areas

Keep dumpster lids closed and the areas around them clean. Do not fill with liquid waste or hose them out. Call your trash hauler to replace any dumpsters that are damaged or leak.



Handling Toxic Chemicals

Dispose of all unwanted toxic materials like cleaners, solvents and detergents through a hazardous waste hauler. These items are not trash. For information on hazardous waste pickup, call (888) CLEANLA. Use non-toxic cleaning products

For specific questions on storm water pollution prevention, contact:



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909-595-7543

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Storm Water Pollution Prevention

Garden

Yard waste, fertilizers and garden toxics (pesticides) can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



Yard Waste Disposal

Don't blow, sweep, or hose leaves, grass clippings and other yard waste into the street or gutter. Place all yard waste in your green waste refuse barrel or try grasscycling (leaving grass clippings on

your lawn). Grass clippings can act as a natural fertilizer, and because grass is mostly water, it also irrigates your lawn, conserving water.



Use Fertilizers & Pesticides Safely

Fertilizers and pesticides are often carried into the storm drain system by sprinkler runoff.

Try using organic or non-toxic alternatives. If you use chemical fertilizers or pesticides, avoid applying near curbs and driveways and never apply just before it rains.



Use Water Wisely

Cut your water costs and prevent runoff by controlling the amount of water and direction of sprinklers. The average lawn needs about an inch of water a week, including rainfall, or 10 to 20 minutes of watering. A half-inch per week is enough for fall and spring. Sprinklers should be on long enough to allow water to soak into the ground but not so long as to cause runoff.

There are three water providers serving the residents of Walnut. For links to these water providers and updates on water conservation requirements, visit the City of Walnut's "Go Green With Walnut" webpage at www.ci.walnut.ca.us (Keyword: "Go Green").



Planting in the Yard

Produce less yard waste and save water by planting low maintenance, drought-tolerant trees and shrubs. Use drip irrigation, soaker hoses or micro-spray systems for your landscaping to help reduce your water bill and prevent runoff.



Recycle Household Hazardous Waste

Household products like paint, pesticides, solvents & cleaners are too dangerous to dump and too toxic to trash. Take them to a convenient household hazardous waste collection facility. Call (800) CLEANUP for the facility in your area.

For specific questions on storm water pollution prevention, contact:

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909-595-7543



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Storm Water Pollution Prevention

Pet Waste

Pet waste left on lawns, sidewalks and parks can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



What is Wrong With Pet Waste?

Pet waste, especially dog waste, is a major pollutant and contaminant of water supplies. The Federal Environmental Protection Agency views pet waste a serious source pollution and has placed it in the same category of "nonpoint source pollution" as oil and toxic chemicals.

Pet waste left on the streets, lawns and parks is a serious community health concern. A single gram of dog waste can contain 23 million fecal coliform bacteria, which are known to cause a variety of illnesses and disorders in humans.

Some sources estimate that 1/3 of all water contamination is a result of dog waste entering streams and leaching into underground well water. The average dog can produce 274 pounds of waste each year. Disease from dog waste may spread to other dogs, children, and adults.



Walking Your Dog: Pet Waste Pick Up Ordinance

The City would like remind pet owners to be courteous and pick up after your pet while walking your dog or animal on City sidewalks, trails, parks or other open spaces. There is an Animal Nuisance Ordinance in Los Angeles County Code (Title 10 Animals, Chapter 10.40.060, B.) which requires that owners pick up and properly dispose of their pet's waste from all public spaces and walking areas for sanitary and health reasons.

To help promote clean up, the City has installed pet waste stations at City parks. These stations provide not only Zero-Waste biodegradable bags with which to pick up your pet's waste, they also provide a sealed container in which to dispose of the waste.



Disposing of Pet Waste

All pet waste should be placed in your regular trash/refuse container, preferable in a bag.

Never put dog or animal waste into the green waste container. This will contaminate the entire container, and possibly the entire truck load of green waste, which then cannot be reused and must go into a landfill.



Help Keep Our Parks Clean

It is for your health as well as for entire community.



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Storm Water Pollution Prevention

Used Motor Oil

Used motor oil dripped onto driveways and lawns can be picked up by rain and irrigation water and swept into the Los Angeles County storm drain system. This polluted water flows untreated into the San Gabriel River and eventually into the ocean, contaminating our waterways and making them unsafe for people and wildlife. Follow these simple tips to help prevent pollution and protect the health of your family and community.



RECYCLE
USED OIL

Why Recycle Used Motor Oil and Oil Filters?

Did you know that used motor oil never wears out? It just gets dirty and can be recycled, cleaned, and used again. Recycling used motor oil conserves a natural resource (oil) and is good for the environment too! Motor oil poured onto the ground or into storm drains, or tossed into trash cans (even in a sealed container) can contaminate and pollute the soil, groundwater, streams, and rivers. Recycling your used motor oil reduces this pollution threat.

Where Can I Recycle My Used Motor Oil and Oil Filters?

Walnut residents can take up to five gallons of uncontaminated used oil and oil filters in secured, non-leaking containers to one of the following five certified Used Oil Collection Centers in Walnut (*Please call ahead for hours of operation. Used oil can only be dropped off during working hours*):

- MasterLube, 308 N. Lemon Avenue, 909.598.3881
- Firestone Tires 860 N. Nogales Street, 626.965.2224
- The Oilmen, 856 N. Nogales Street, 626.965.4798
- Kraken Auto Parts, 18724 Amir Road, 626.965.6012
- Mobil Xpress Lube, 762 N. Nogales St., 626.965.6032



How to Store/Transport Used Oil: Used motor oil must be stored, transported and delivered to the Collection Centers in secured, non-leaking containers. Used oil may only be dropped off during normal hours of operation. It is not permitted to leave used oil at any Collection Center if the facility is closed. Do not risk contaminating the oil by storing it in a container formerly used for other products such as anti-freeze or paint. Walnut residents may pick up free used oil containers and used oil filter containers at the City's Maintenance and Recreation Facility at 21701 E. Valley Blvd. (proof of residency required).

Illegal Oil Dumping:

Please do not dispose of your used oil by pouring it into the gutter or onto the ground. It is not only illegal; it is a major source of water contamination. Street gutters drain directly into our local rivers and ocean; and fluid dumped on the ground can seep into rivers and ground water. So if you wouldn't want you or your children to drink it, eat it or swim in it; don't pour it out!

What About Contaminated Oil? Certified Collection Centers will not accept used motor oil that has been contaminated with other fluids such as antifreeze, solvents, gasoline, or water. So please, don't mix your used oil with anything. Contaminated oil must be taken to a household hazardous waste collection facility. Call (888) CLEANLA for a collection facility or mobile collection event near your area.

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Attachment D

City of Walnut

Legal Authority



December 11, 2013

Mr. Samuel Unger
Executive Officer
Los Angeles Regional Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013
sunger@waterboards.ca.gov

Re: Legal Authority of the City of Walnut to Implement and Enforce the Requirements of 40 CFR 122.26(d)(2)(i)(A-F) and RWQCB Order R4-2012-0175, NPDES Permit CAS004001

Dear Mr. Unger:

The City of Walnut (the "City"), by and through its City Attorney, hereby submits the following certification ("Statement"), pursuant to Section VI.A.2.b of Order R4-2012-0175 (NPDES Permit CAS004001), issued by the California Regional Water Quality Control Board, Los Angeles Region ("RWQCB") on November 8, 2012 and entitled "Waste Discharge Requirements for Municipal Separate Storm Sewer System ("MS4") Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4" (the "Permit").

The City is one of the Permittees under the Permit. Section VI.A.2.b of the Permit requires the City to provide the RWQCB with a statement by its chief legal counsel, certifying that the City has the legal authority to implement and enforce each of the current requirements set forth in 40 C.F.R. § 122.26(d)(2)(i)(A-F) and the Permit. The purpose of this Statement is to describe the City's compliance with Section VI.A.2.b of the Permit. As discussed in further detail herein, it is our opinion that the City has the necessary legal authority to implement the Permit and to control and prohibit discharges of pollutants into the Municipal Separate Storm Sewer System ("MS4"). However, this Statement is not, nor should it be construed as, a waiver of any rights that the City may have relating to the Permit.

1. Legal Authority Statement

In our opinion, the City has the necessary legal authority to comply with the legal requirements imposed upon it under the Permit, consistent with the requirements set forth in the U.S. Environmental Protection Agency's regulations promulgated under the Clean Water Act, and, specifically, 40 C.F.R. § 122.26(d)(2)(i)(A-F), and to the extent permitted by state and federal law and subject to the limitations on municipal action under the California and United States Constitutions, except as noted herein.

The City, as a general law city, has broad general police powers under the California Constitution to enact legislation for health and public welfare of the community to the extent not preempted by federal or state law. In addition, the City adopted ordinances for the purpose of ensuring that it has adequate legal authority to implement and enforce its storm water control program. The City has the authority under the California Constitution and state law to enact and enforce these ordinances, and these ordinances were duly enacted.

2. Ordinances

The City has adopted ordinances related to the regulation of urban runoff to control and prohibit discharges of pollutants into the MS4 and to comply with the requirements of the Permit applicable to it, as well as, to the extent applicable, 40 C.F.R. § 122.26

(d)(2)(i)(A)-(F). The City's Storm Water Management and Discharge Control Ordinance (Ord. No. 593) is the principal City ordinance addressing the control of urban runoff.

Under this ordinance and Walnut Municipal Code (WMC) Title V, Chapter 21, Article III, the City has the necessary legal authority to do the following:

- i. Control the contribution of pollutants to its MS4 from storm water discharges associated with industrial and construction activity and control the quality of storm water discharged from industrial and construction sites. This requirement applies both to industrial and construction sites with coverage under an NPDES permit, as well as to those sites that do not have coverage under an NPDES permit (WMC Title V, Chapter 21, Article III, 21-68: Requirements for Industrial/Commercial and Construction Activities);
- ii. Prohibit all non-storm water discharges through the MS4 to receiving waters not otherwise authorized or conditionally exempt pursuant to Part III.A (WMC Title V, Chapter 21, Article III, 21-65: Prohibited Activities);
- iii. Prohibit and eliminate illicit discharges and illicit connections to the MS4 (WMC Title V, Chapter 21, Article III, 21-65: Prohibited Activities);
- iv. Control the discharge of spills, dumping, or disposal of materials other than storm water to its MS4 (WMC Title V, Chapter 21, Article III, 21-65: Prohibited Activities);
- v. Require compliance with conditions in Permittee ordinances, permits, contracts or orders (*i.e.*, hold dischargers to its MS4 accountable for their contributions of pollutants and flows) (WMC Title V, Chapter 21, Article III, 21-69: Enforcement);
- vi. Utilize enforcement mechanisms to require compliance with applicable ordinances, permits, contracts, or orders (WMC Title V, Chapter 21, Article III, 21-69: Enforcement);
- vii. Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with applicable municipal ordinances,

permits, contracts and orders, and with the provisions of this Order, including the prohibition of non-storm water discharges into the MS4 and receiving waters. This means the Permittee must have authority to enter, monitor, inspect, take measurements, review and copy records, and require regular reports from entities discharging into its MS4 (WMC Title V, Chapter 21, Article IV, 21-80: Adoption of Standard Urban Stormwater Mitigation Plan (SUSMP); WMC Title V, Chapter 21, Article III, 21-68: Requirements for Industrial/Commercial and Construction Activities);

- viii. Require the use of control measures to prevent or reduce the discharge of pollutants to achieve water quality standards/receiving water limitations (WMC Title V, Chapter 21, Article IV, 21-80: Adoption of Standard Urban Stormwater Mitigation Plan (SUSMP); WMC Chapter 21-68: Requirements for Industrial/Commercial and Construction Activities; WMC Title V, Chapter 21, Article III, 21-69: Enforcement; WMC Title V, Chapter 21, Article IV, 21-82: SUSMP Enforcement);
- ix. Require that structural BMPs are properly operated and maintained (WMC Title V, Chapter 21, Article IV, 21-80: Adoption of Standard Urban Stormwater Mitigation Plan (SUSMP); WMC Title V, Chapter 21, Article III, 21-68: Requirements for Industrial/Commercial and Construction Activities); and
- x. Require documentation on the operation and maintenance of structural BMPs and their effectiveness in reducing the discharge of pollutants to the MS4 (WMC Title V, Chapter 21, Article IV, 21-80: Adoption of Standard Urban Stormwater Mitigation Plan (SUSMP); WMC Title V, Chapter 21, Article III, 21-68: Requirements for Industrial/Commercial and Construction Activities).

3. Implementation

Some of the City's ordinances are implemented through permit programs and others are implemented as regulatory programs. Under each ordinance, one or more City departments or department directors are authorized and directed in each ordinance to take the actions contemplated by the ordinance (*e.g.*, to consider evidence and make findings, to issue or deny permits, to impose conditions on projects, to inspect, to take enforcement action, etc.).

The City's Storm Water Management and Discharge Control Ordinance (WMC Title V, Chapter 21, Article III) is the principal City ordinance addressing the control of urban runoff. This ordinance is regulatory, and applies to specified new and existing residential and business communities and associated facilities and activities, as well as new development and redevelopment, and all other specified new and existing facilities and activities that threaten to discharge pollutants within the boundaries of the City and within its regulatory jurisdiction, whether or not a City permit or approval is required. The City's Storm Water Management and Discharge Control Ordinance also contains discharge prohibitions and requirements for the implementation of BMPs and other requirements necessary to implement the Permit.

Other City departments require compliance with the City's Storm Water Management and Discharge Control Ordinance as a condition for issuance of relevant City permits. City departments may also impose specific conditions of approval consistent with the City's Storm Water Management and Discharge Control Ordinance. All City environmental ordinances are also implemented, in part, through the application of the CEQA process to proposed projects.

4. Administrative and Judicial/Legal Procedures

In addition to the above authority, the City has in place various legal and administrative procedures to assist in enforcing the various urban runoff related Ordinances, including Administrative, Nuisance, Criminal, Equitable and Other Civil Remedies.

- a. Title V, Chapter 21, Article III, 21-69 (Enforcement)
- b. Title I, Chapter 3, Article I, 3-2 (General Penalties; Continuing Violations)
- c. Title III, Chapter 16A, Article III, 16A-6.17 (Collection of costs - Special assessment)
- d. Title III, Chapter 16A, Article II, 16A-6.19 (Cumulative Remedies)
- e. Injunctive relief under State law and the Municipal Code (WMC Title V, Chapter 21, Article III, 21-69 (Enforcement)).
- f. Declaratory relief under State law.
- g. Federal law claims (*e.g.*, Clean Water Act and Resource Conservation and Recovery Act Citizen Suits).
- h. Remedies under the California Government Code.

Violations of the City's Storm Water Ordinance are deemed a "public nuisance", in which case enforcement actions can be completed administratively, or judicially when necessary.

Please contact me if you have any questions or if you need any additional information regarding the City's legal authority to enforce the Permit.

Very truly yours,


Michael Montgomery
City Attorney

Attachment E

City of Walnut

Exceedance Summary 2004-2014




Los Angeles County Mass Emission Station S14

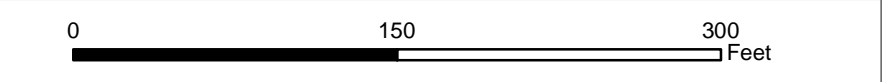
Attachment F

Regional BMP Exhibits



Legend

-  Stormdrain
-  Approximate BMP Footprint
-  BMP Drainage Area

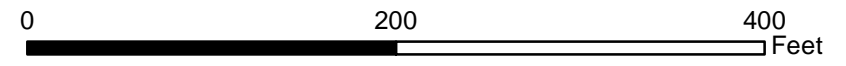


Butterfield Park
Approximate Footprint Area: 93,000 sq. ft.
Design storm intensity: 0.06 in/hr
Treatment Flow Rate: 1.57 cfs
Equalization Volume: 270,000 cu. ft.
Hydraulic Residence Time: 24 hrs
Depth: 8 ft.

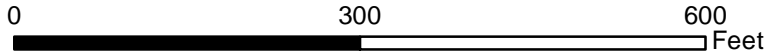
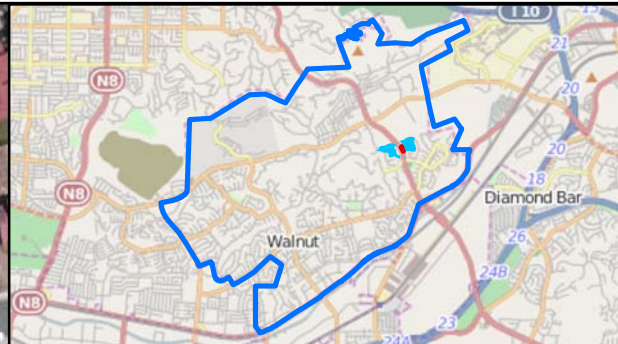


Legend




- Stormdrain
- Approximate BMP Footprint
- BMP Drainage Area



Lemon Creek
Approximate Footprint Area: 48,000 sq. ft.
Water Quality Design Volume: 53,000 cu. ft.
Design Storm: 0.3 in.
Infiltration Rate: 0.30 in/hr
Depth: 1.3 ft.



Legend

-  Stormdrain
-  Approximate BMP Footprint
-  BMP Drainage Area

Snow Creek 1




Approximate Footprint Area: 110,000 sq. ft.
Design storm intensity: 0.11 in/hr
Treatment Flow Rate: 1.80 cfs
Equalization Volume: 310,000 cu. ft.
Hydraulic Residence Time: 24 hrs
Depth: 8 ft.

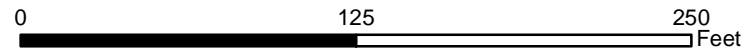


Snow
Creek
Park



Legend

-  Stormdrain
-  Approximate BMP Footprint
-  BMP Drainage Area



Snow Creek 2

Approximate Footprint Area: 130,000 sq. ft
Water Quality Design Volume: 190,000 cu. ft.
Design Storm: 0.9 in.
Infiltration Rate: 0.77 in/hr
Depth: 2 ft.

Snow
Creek