

**ADMINISTRATIVE UPDATE OF THE WATER QUALITY
CONTROL PLAN FOR THE LOS ANGELES REGION:**

**CHAPTER 4
“STRATEGIC PLANNING AND IMPLEMENTATION”**

DRAFT STAFF REPORT

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,
LOS ANGELES REGION**

MARCH 22, 2016

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EXECUTIVE SUMMARY

The *Water Quality Control Plan for the Los Angeles Region* (Basin Plan) is the Los Angeles Water Board's water quality control plan for the coastal watersheds of Los Angeles and Ventura Counties. The Basin Plan contains the region's water quality standards, which consist of beneficial uses, water quality objectives to protect those uses, and an anti-degradation policy, along with a program of implementation, and non-regulatory descriptions of the region covered by the Basin Plan. The current Basin Plan was adopted by the Los Angeles Water Board on June 13, 1994, and approved by the State Water Resources Control Board (State Water Board) on November 17, 1994 and by the State Office of Administrative Law (OAL) on February 23, 1995.

In 2010, the Los Angeles Water Board recognized the need for an overall administrative update to the Basin Plan as several amendments to the Basin Plan, which had been adopted since 1994 and were in effect, had not been physically integrated into the Basin Plan. Also, the Basin Plan did not reflect current information on Los Angeles Water Board programs, plans and policies, or more recently available geographical and background information for the Los Angeles Region. As a result, an administrative update of the Basin Plan was identified as a priority project to be addressed during the 2008-2010 triennial review (Resolution No. R10-001).

The administrative update to the Basin Plan has been conducted in phases, four of which have been completed to date. The update to Chapter 2 "Beneficial Uses" (Resolution No. R11-011) was completed in November 2011, and was followed by the addition of Chapter 7 "TMDLs" (Resolution No. R11-013) to the Basin Plan in December 2011. The update to Chapter 3 "Water Quality Objectives" (Resolution No. R13-003) was conducted in May 2013, and the administrative update of Chapters 1 "Introduction", 5 "Plans and Policies", and 6 "Monitoring and Assessment" (Resolution No. R14-009) of the Basin Plan was completed in September 2014.

This final phase involves the administrative update of Chapter 4 of the Basin Plan.¹ Chapter 4 "Strategic Planning and Implementation" contains descriptions of all the Los Angeles Water Board's programs. These programs are the vehicle through which the goal of protecting, enhancing and restoring the quality of the region's surface and ground water is accomplished and through which the region's water quality standards are implemented and enforced. The proposed administrative update to Chapter 4 of the Basin Plan specifically includes:

- (i) Incorporation of previously adopted Basin Plan amendment language,
- (ii) Updates to descriptions of Los Angeles Water Board programs,
- (iii) Addition of new sections discussing "Funding for Water Quality Improvement Projects" and "Climate Change Considerations," and
- (iv) Updates to tables, maps, and figures to reflect current Los Angeles Water Board program information, as well as background and geographical information.

This update to Chapter 4 of the Basin Plan is non-regulatory in nature and does not involve any changes to water quality standards for the surface and ground waters of the Los Angeles Region. Neither does it modify the application of these standards or their implementation provisions. It is

¹ In addition, administrative updates to specific geographic information in Chapter 2 are being made at this time to incorporate recent changes to geographic information, which occurred after the November 2011 administrative update to Chapter 2. Those proposed updates are discussed in a separate staff report.

the final phase of a multi-step plan to comprehensively administratively update the entire Basin Plan. Any regulatory updates to the Basin Plan will be addressed in the future as separate Board actions.

I. PREVIOUSLY ADOPTED AMENDMENTS TO CHAPTER 4 OF THE BASIN PLAN

Since 1994, four amendments to Chapter 4 have been adopted by the Los Angeles Water Board - two of which incorporated site-specific septic system prohibitions, one that incorporated a statewide policy for compliance schedules, and another that incorporated a statewide policy for onsite wastewater treatment systems. While these amendments have been in effect for some time, they had not been physically integrated into Chapter 4 of the Basin Plan.

Incorporating a Septic System Prohibition in the Oxnard Forebay

In August 1999, the Los Angeles Water Board amended the Basin Plan to include a prohibition on septic system discharges in the Oxnard Forebay, pursuant to section 13280 of the California Water Code. The prohibition applies to discharges from both existing and future septic systems. As of August 12, 1999, discharges from new septic systems were prohibited. Discharges from existing septic systems were to cease by January 1, 2009. This action was taken in view of the inability of septic discharges in the area to meet Basin Plan water quality objectives and the need to ensure long-term protection of the groundwater underlying both the Oxnard Forebay and the Oxnard Plain. The amendment was approved by the State Water Board in January 2001 and OAL in May 2001.

This amendment is detailed in the Basin Plan amendment language in the attachment to Los Angeles Water Board Resolution No. R99-013, which is available on the Los Angeles Water Board's website at http://63.199.216.6/bpa/docs/1999-013_RB_BPA.pdf

Incorporating a Prohibition of Onsite Wastewater Disposal Systems in the Malibu Civic Center Area

In November 2009, the Los Angeles Water Board amended the Basin Plan to include a prohibition on discharges from onsite wastewater disposal systems in the Malibu Civic Center area, pursuant to section 13280 of the California Water Code. New discharges from systems were prohibited as of the effective date of the amendment, with the exception of certain projects identified in Table 4-zz, which were deemed by the Board to be existing systems. Table 4-zz includes a list of properties that demonstrated that they had progressed through the local agency entitlement process for their systems. The amendment prohibits all discharges from existing systems, including those projects identified on Table 4-zz, in accordance with a phased schedule: (i) Phase One (commercial areas) existing systems must cease discharges by November 5, 2015, and (ii) Phase Two (residential areas) existing systems must cease discharges by November 5, 2019. The amendment does not prevent repairs, maintenance, and upgrades to existing systems prior to November 5, 2019, provided that such repairs, maintenance, and upgrades do not expand the capacity of the systems or increase flows of wastewaters. This action was taken in view of the failure of septic systems' discharges to meet Basin Plan water quality objectives, and the resulting impairment of both existing and potential beneficial uses. The amendment was approved by the State Water Board in September 2010 and OAL in December 2010.

In February 2014, the Los Angeles Water Board reconsidered and revised Table 4-zz of Resolution No. R4-2009-007 to make corrections and add additional properties to Table 4-zz. The Board also clarified its intent regarding the criteria for including properties identified on Table 4-zz by specifying the meaning of the phrase "progressed through the entitlement process." The amendment was approved by the State Water Board in October 2014 and OAL in January 2015.

These amendments are detailed in the Basin Plan amendment language in the attachment to Los Angeles Water Board Resolution No. R09-007 and Resolution No. R14-003, which are available on the Los Angeles Water Board's website at http://63.199.216.6/bpa/docs/R09-007_RB_BPA.pdf and http://63.199.216.6/bpa/docs/R14-003_RB_RSL.pdf, respectively.

Incorporating the Statewide Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits

In January 2003, the Los Angeles Water Board adopted Resolution No. 2003-001, amending its Basin Plan to incorporate language authorizing compliance schedules in NPDES permits. Resolution No. 2003-001 was subsequently approved by the State Water Board, OAL, and the U.S. Environmental Protection Agency (US EPA). On April 15, 2008, the State Water Board adopted Resolution No. 2008-0025, which established a statewide *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*. State Water Board Resolution No. 2008-0025 superseded all existing provisions authorizing compliance schedules in Basin Plans, including Los Angeles Water Board Resolution No. 2003-001, except for existing compliance schedule provisions in TMDL implementation plans that were in effect as of the effective date of Resolution No. 2008-0025. This statewide policy was approved by OAL in June 2008.

These compliance schedule provisions are detailed in State Water Board Resolution No. 2008-0025, which is available on State Water Board's website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2008/rs2008_0025.pdf

Incorporating the Statewide Policy for the Design, Siting, Maintenance of Onsite Wastewater Treatment Systems

In May 2014, the Los Angeles Water Board amended the Basin Plan to incorporate the State Water Board's *Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Policy). The amendment was approved by the State Water Board in October 2014 and OAL in November 2015. The statewide OWTS Policy, adopted by the State Water Board on June 19, 2012, provides criteria for siting, design, operation, and maintenance of onsite wastewater treatment systems (also referred to as septic systems and onsite wastewater discharge systems) and provides a conditional waiver of waste discharge requirements for onsite wastewater treatment systems that comply with the OWTS Policy. The State Water Board's OWTS Policy implements water quality protection measures in a manner that allows for the protection of beneficial uses of waters and the prevention and correction of conditions of pollution and nuisance. The OWTS Policy conditionally waives requirements to submit a report of waste discharge and associated application fees, and to obtain waste discharge requirements for onsite wastewater treatment systems that comply with the Policy (OWTS Policy section 12). The conditional waiver allows for use of onsite wastewater treatment systems in a manner protective of water quality without the administrative burden of applying for and issuing waste discharge requirements. The State Water Board directed the Regional Boards to adopt the OWTS Policy into their Basin Plans by May 2014.

While the OWTS Policy provides for regulation of onsite wastewater treatment systems under a conditional waiver, the Policy does not limit the Los Angeles Water Board's authority to regulate onsite wastewater treatment systems in an alternate manner, including requiring a report of waste discharge and issuing waste discharge requirements, when it may be necessary to protect water quality. Additionally, the OWTS Policy upholds and does not supersede or modify any discharge prohibitions imposed on onsite wastewater treatment systems, such as the prohibitions discussed above.

This amendment is detailed in the Basin Plan amendment language in the attachment to Los Angeles Water Board Resolution R2014-007, which is available on the Los Angeles Water Board's website at http://63.199.216.6/bpa/docs/R14-007_RB_BPA.pdf.

II. UPDATES AND ADDITIONS TO CHAPTER 4 OF THE BASIN PLAN

The administrative update of Chapter 4 includes a re-structuring of how the Los Angeles Water Board programs are presented, as well as updates to the program descriptions. In the existing version of Chapter 4 of the Basin Plan, the programs are discussed under three major sections – (i) Control of Point Sources, (ii) Control of Non-Point Sources, and (iii) Remediation of Pollution. However, this update to Chapter 4 discusses the programs under (i) Surface Water Programs, (ii) Groundwater Programs, and (iii) Remediation of Pollution. In addition, where previously it had been discussed under the Control of Point Sources section, Enforcement is now discussed under its own section. This re-structuring is more reflective of how the Board programs are managed. Two more sections have also been added to Chapter 4 – “Funding for Water Quality Improvement Projects” and “Climate Change Considerations”. Table 4-1 below provides a side-by-side comparison of Chapter 4’s current and proposed Table of Contents to illustrate this change. Table 4-2 highlights notable changes to the structure and content of Chapter 4.

TABLE 4-1: COMPARISON OF CHAPTER 4 TABLE OF CONTENTS FOR 1994 BASIN PLAN AND THE PROPOSED 2016 UPDATE

1994 BASIN PLAN	PROPOSED 2016 UPDATE
<p>Introduction</p> <p>Control of Point Source Pollutants Introduction - General Information about Regional Board Permitting Programs Waste Discharge Requirements (WDRs) Land Disposal Landfills Sludge Use and Disposal Soil and Hazardous Waste Disposal Dredging Requirements Septic Systems Waivers from WDRs Water Reclamation Requirements (WRRs) National Pollutant Discharge Elimination System Program (NPDES) Pretreatment Storm Water Permits Criteria for WDRs, WRRs, and NPDES Permit Limit and Provisions Municipal Effluent Limits (NPDES) Specific Criteria for Site-specific Determination of Effluent Limits Standard Provisions in WDRs and NPDES Permits Self-Monitoring, Compliance Monitoring and Inspections Enforcement</p> <p>Control of Nonpoint Source Pollutants Introduction Early Nonpoint Source Pollution Planning Efforts Development of the State Nonpoint Source Program Nonpoint Source Funding Nonpoint Source Categories Agriculture Confined Animal Operations Urban Runoff Comprehensive Control Program Highway Runoff Control Program Industrial Activity Control Program</p>	<p>Introduction</p> <p>Overview of Discharge Permitting Program Surface Water Programs Control of Point Source Pollutants Surface Water Permitting Programs National Pollutant Discharge Elimination System Permitting General WDRs and NPDES Permits Compliance Schedules Monitoring, Reporting and Inspections Discharger Self Monitoring Municipal Separate Storm Sewer System Permitting Introduction Municipal Separate Storm Sewer System Permits Phase I Statewide Phase II Storm Water Permit Statewide General Storm Water Permits Waste Discharge Requirements for Dredging Projects Waste Discharge Requirements for Concentrated Animal Feeding Operations Control of Nonpoint Source Pollutants 401 Water Quality Certification & Waste Discharge Requirements for Dredge and Fill Activities Recreational Impacts Restoration of Impaired Surface Waters Total Maximum Daily Loads Drought/Salinity Loading Issues</p> <p>Groundwater Programs Groundwater Permitting and Land Disposal Programs Waste Discharge Requirements Land Disposal Onsite Wastewater Treatment Systems (Septic Systems) Onsite Wastewater Treatment Systems Regulation Discharge Prohibitions Oxnard Forebay Septic Systems Prohibition Malibu Civic Center Area Septic Systems Prohibition General WDRs for Additional Types of Regulated Discharges Conditional Waivers from WDRs Water Reclamation and Water Recycling Requirements Resource Extraction</p>

1994 BASIN PLAN	PROPOSED 2016 UPDATE
<p>Construction Activity Control Program Hydrologic Modification 401 Certification Program Streambed Alteration Agreements Recreational Impacts Septic Systems Seawater Intrusion Resource Extraction Mines Oil and Gas Extraction Silviculture Coastal Nonpoint Source Pollution Program Future Direction: Watershed-Based Water Quality Control</p> <p>Remediation of Pollution Underground Storage Tanks Well Investigations Spills, Leaks, Investigation and Cleanup (SLIC) Department of Defense and Department of Energy Aboveground Petroleum Storage Tanks Resource Conservation and Recovery Act Toxic Pits Cleanup Act Bay Protection and Toxic Cleanup Program The Santa Monica Bay Restoration Project Introduction Assessment of Problems in Santa Monica Bay Environmental Issues Management Issues Recommended Actions</p>	<p>Protection of Ground Water Salt and Nutrient Management Plans Seawater Intrusion</p> <p>Remediation of Pollution Site Cleanup Program Underground Storage Tank Program UST and Site Cleanup Programs, General WDRs</p> <p>Enforcement Informal Enforcement Actions Formal Enforcement Actions Spill Response Hazardous Releases Petroleum Releases Complaints</p> <p>Funding for Water Quality Improvement Projects Funding Considerations Additional Information on Grant Programs Additional Information on Loan Programs Websites and Other Resources for Grants and Loans</p> <p>Climate Change Considerations</p>

TABLE 4-2: SPECIFIC CHANGES TO CHAPTER 4 “STRATEGIC PLANNING AND IMPLEMENTATION” OF THE BASIN PLAN

1994 BASIN PLAN	PROPOSED 2016 UPDATE	COMMENTS/ JUSTIFICATION
Introduction	Revised to reflect new structure of chapter – including additions	For clarity
Waste Discharge Requirements – Land Disposal	Moved to the Groundwater Programs section. All topics updated.	For clarity and to provide more current information
Waste Discharge Requirements – Septic Systems	Moved to the Groundwater Programs section. Updated and expanded to include the Oxnard Forebay Septic Prohibition, the Malibu Civic Center Area Septic Prohibition, and the statewide OWTS Policy	For clarity and to provide more current information
Waste Discharge Requirements – Waivers from WDRs	Main discussion moved to the Groundwater Programs section and updated. Waivers also discussed under the Control of Non Point Sources in the Surface Water Programs	For clarity and to provide more current information
Water Reclamation Requirements (WRRs)	Moved to the Groundwater Programs section and updated	For clarity and to provide more current information
National Pollutant Discharge Elimination System (NPDES) Program	Moved to the Surface Water Programs section and updated. Also expanded to include discussion on compliance schedules.	For clarity and to provide more current information
NPDES Program – Storm Water	Moved to the Surface Water Programs section. Significantly revised and updated.	For clarity and to provide more current information
Not included	New sub-section under Surface Water Programs – “Restoration of Impaired Waters”	To include TMDLs as one of the Board Programs
Not included	New sub-section under Surface Water Programs – Drought and Salinity issues	To fully capture all Los Angeles Water Board Program considerations
Enforcement	Moved to a self-titled section with updated and expanded discussions	For clarity
Control of Non-Point Sources	Moved to the Surface Water Programs section and revised and updated	For clarity and to provide more current information
Control of Non-Point Sources – Septic Systems	Removed from non-point source discussion. All discussion on septic systems contained in Groundwater Programs section.	For clarity
Control of Non-Point Sources – Future Direction: Watershed-	Deleted from Basin Plan – discussion of watershed based approaches is	To reflect current conditions

1994 BASIN PLAN	PROPOSED 2016 UPDATE	COMMENTS/ JUSTIFICATION
Based Water Quality Control	integrated into other program discussions	
Control of Non-Point Sources – Resource Extraction	Moved to the Groundwater Programs section and updated	For clarity and to provide more current information
Not included	New sub-section – “Groundwater Protection” - which includes a discussion of Salt and Nutrient Management Plans	To fully capture all Los Angeles Water Board Program considerations
Control of Non-Point Sources – Seawater Intrusion	Moved to new sub-section under Groundwater Programs – “Groundwater Protection”, and updated	For clarity
Remediation of Pollution	Maintains its own separate section – streamlined and updated discussions.	To provide more current information
Remediation of Pollution- Spills, Leaks, Investigation and Cleanup (SLIC)	Reflects program name change to Site Clean Up Program. Updated discussions.	To reflect current conditions
Remediation of Pollution - Above Ground Tanks	Discussion removed from Basin Plan. Program no longer administered by the Los Angeles Water Board	To reflect current conditions
Remediation of Pollution – Resource Conservation and Recovery Act	Discussion removed from the Basin Plan. Program administered by the Department of Toxic Substances Control.	To reflect current conditions
Remediation of Pollution – Toxic Pits Clean up Act	Discussion removed from the Basin Plan. Program no longer in operation.	To reflect current conditions
Remediation of Pollution - Bay Protection and Toxic Cleanup Program	Discussion removed from the Basin Plan. Bay Protection and Cleanup currently being addressed through other programs such as TMDLs and permitting.	To reflect current conditions
Remediation of Pollution- The Santa Monica Bay Restoration Project	Deleted from the Basin Plan. Administration of the SMBRP is the purview of the Santa Monica Bay Restoration Commission, a separate State agency	To reflect current conditions
Not included	New section titled “Funding for Water Quality Improvement Projects”	To provide useful information on funding opportunities
Not included	New section titled “Climate Change Considerations”	To fully capture all Los Angeles Water Board Program considerations

III. UPDATES TO TABLES, MAPS, AND FIGURES

As a result of the structural changes to Chapter 4, tables had their numbers reassigned to reflect the order of discussion topics in the revised sections. In addition, information within all tables was updated, some tables were added, and others were eliminated where they were no longer useful or relevant. These changes are detailed in Table 4-3 below. Also, changes to Chapter 4’s maps and figures are detailed in Table 4-4 below.

TABLE 4-3: SPECIFIC CHANGES TO THE TABLES IN CHAPTER 4 OF THE BASIN PLAN

TABLE NO. 1994 BASIN PLAN	TITLE – 1994 BASIN PLAN	TABLE NO. 2016 UPDATE	TITLE – 2016 PROPOSED UPDATE
4-1	Threat to Water Quality” and “Complexity” Definitions”	4-1	Same
4-2	Summary of <u>General WDRs and NPDES Permits</u> issued by the State Board and the Los Angeles Water Board	4-5	Summary of <u>General NPDES Permits</u> for Discharges to Surface Water issued by the State or Regional Water Board
4-2	Summary of <u>General WDRs and NPDES Permits</u> issued by the State Board and the Los Angeles Water Board	4-16	Summary of <u>General WDRs</u> for Discharges of Waste to Land issued by the State and Regional Water Boards
4-3	Examples of Industrial and Municipal Point Source Discharges to Surface Waters	4-2	Examples of Industrial and Municipal Point Source Discharges
4-4	Sewage Treatment Facilities with Design Flow greater than 100,000 gallons per day	4-3	Wastewater Treatment Facilities with Design Flow greater than 100,000 gallons per day
4-5	Major or Significant NPDES and WDR Discharge Categories, Number of Permits, and Total Design Flow	4-4	Major and Minor NPDES and WDR Discharge Categories, Number of Permits, and Total Design Flow
4-6	Cooperating Agencies for Land Disposal Programs	4-9	Same
4-7	Landfill Classifications	4-10	Same
4-8	Status of Landfills (active and inactive) in Region that have Ongoing Groundwater Monitoring Programs	4-11	Status of Landfills in the Region with Ongoing Groundwater Monitoring Programs
4-9	Active Regional Class III Landfills	4-13	Same
4-10	Procedures for Siting Inert Landfills	4-14	Same
4-11	Waiver Conditions from WDRs	Removed	-
4-12	Reclaimed Water: Uses and California Title 22 Health	4-17	Same

TABLE NO. 1994 BASIN PLAN	TITLE – 1994 BASIN PLAN	TABLE NO. 2016 UPDATE	TITLE – 2016 PROPOSED UPDATE
	Requirements		
4-13	Storm Water General NPDES Categories	4-6	Industrial and Construction Stormwater Categories
4-14	Drainage Areas and Associated Co-permittees of Los Angeles County Municipal Stormwater NPDES Permit	Removed	-
4-15	Drainage Areas and Associated Co-permittee Cities and Agencies for the Ventura County Municipal Stormwater NPDES Permit	Removed -	-
4-16	Four-Tier Priority Strategy for Permitting Industrial Stormwater Dischargers	Removed	-
4-17	Selected Point Source Categories Subject to Storm Water Effluent Limitation Guidelines	Removed	-
4-18	Non-point Source-Related Memorandum of Understanding (MOUs) and Management Agency Agreements (MAAs) between the State Water Board and Other Agencies	Removed	-
4-19	Los Angeles County Municipal Stormwater Permit: Minimum Required Best Management Practices (BMPs) to be Implemented County-wide	Removed	-
4-20	Selected Reservoirs in the Region: Ownership, Capacity and Function	4-8	Same
4-21	Best Management Practices in Forest Management – Angeles and Padre National Forests	Removed	-
4-22	Management Measures in the Guidance Specifying Management Measures for Sources of Non-point Pollution in Coastal Waters [“(g) Guidance”]	Removed	-
-	-	4-7 (New)	Size Thresholds for Confined Animal Feeding Operations
-	-	4-12 (New)	Status of Inert Landfills in the Region with Ongoing

TABLE NO. 1994 BASIN PLAN	TITLE – 1994 BASIN PLAN	TABLE NO. 2016 UPDATE	TITLE – 2016 PROPOSED UPDATE
			Groundwater Monitoring Programs
-	-	4-15 (New)	Malibu Civic Center Area OWTS Prohibition
-	-	4-18 (New)	DoD Sites in the Los Angeles Region

TABLE 4-4: REVISIONS TO FIGURES IN CHAPTER 4 OF BASIN PLAN

Figure	Caption	Update	
		Note	Data Source and Web Link
4-1	Publicly Owned Treatment Works (POTWs)	This figure shows the locations of the Publicly Owned Treatment Works (POTWs) with design flow > 100,000 gallons per day within the region. The locations of these POTWs were visually identified based on the Environmental Systems Research Institute (ESRI) basemap, digitized and verified with each of the relevant 2015 NPDES permits that contain the addresses for each of the POTWs. The addresses of these POTWs were entered into an attribute table. The receiving waters were selected from the regional stream feature to indicate the proximity of these POTWs to water. The POTWs were re-classified based on their status of operation (active or inactive) and mapped accordingly in the figure.	Regional Board Adopted NPDES permits and ESRI basemap http://www.waterboards.ca.gov/rwqcb4/board_decisions/adopted_orders/by_permits_tools.shtml
4-2	Regional Phase I MS4 Permitting Areas and Phase II MS4 Permittees	This figure shows the regional municipal separate storm sewer system (MS4) Phase I permitting areas as well as Phase II MS4 permittees within the region. The MS4 areas are defined by the Los Angeles Water Board. The Phase II MS4 permittees are based on the Phase II Small MS4 General Permit (Order No. 2013-0001-DWQ)	Regional Board Stormwater Program http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/
4-3	Los Angeles County and Ventura County Agriculture Land Use	This figure illustrates the areas of agriculture land use within Los Angeles County and Ventura County. The land use data (2005) were obtained from the Southern California Association of Governments (SCAG), reclassified based on the original land use types in the 1994 edition of the Basin Plan.	Southern California Association of Governments (SCAG) http://gisdata.scag.ca.gov/Pages/GIS-Library.aspx
4-4	Major Landfills	The figure of major landfills shows the locations of the active and closed municipal solid waste landfill sites. The site locations were mapped based on the longitudes and latitudes of those sites, which were derived from the California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (SWIS) database in 2015. The site information was also cross-checked against Table 4-8 of the current (1994) Basin Plan t.	California Department of Resources Recycling and Recovery http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx
4-5	Septic System	This figure shows a septic system that is not properly located or maintained. It is a re-creation of the original Figure 4-5 in the 1994 edition of the Basin Plan.	Current (1994) Basin Plan http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/electronics_documents/bp4_strategic_planning_and_implementation.pdf
4-6	Oxnard Forebay Septic Prohibition	This figure shows the locations of the Oxnard Forebay Septic Prohibition as well as the locations of the wells within the prohibition area. The figure was re-created based on the	Regional Board Basin Plan Amendment (Resolution No. 99-13)

		same figure in the Septic System Prohibition in the Oxnard Forebay, Resolution No. 99-13.	http://63.199.216.6/bpa/docs/1999-013_RB_BPA.pdf
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Figure	Caption	Updates	
		Notes	Data Sources and Web Links
4-7	Malibu Civil Center Area Septic Prohibition	This figure illustrates the prohibition of on-site wastewater disposal systems (OWDSs) in the Malibu Civic Center Area, pursuant to section 13280 of the California Water Code. The figure was re-created based on the original figure in Exhibit 1 of Resolution No. R4-2009-007.	Regional Board Basin Plan Amendment (Resolution No. R4-2009-007) http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan
4-8	Regional Active Mines and Sand & Gravel Operations	This figure shows the locations of the active mines and sand and gravel operations within our region. The sites were mapped based on the longitude and latitude of the site locations derived from the California Department of Conservation Office of Mine Reclamation (2015). Regional stream and lake features were added to indicate the proximities of these sites to water.	California Department of Conservation http://maps.conservation.ca.gov/mol/mol-app.html
4-9	Regional Oil Field Boundaries	This figure shows the locations of oil fields within the region. The oil fields GIS layer was obtained from the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (2015) and was clipped to only contain locations that pertain to the Los Angeles Region. The city layer (point) within Los Angeles County was generated based on the centroids (x, y) of the city (polygons) within Los Angeles and Ventura Counties described above.	California Department of Conservation http://www.conservation.ca.gov/dog/maps/Pages/GISMapping2.aspx
4-10	Artificial Recharge through Spreading Grounds and Injection Wells	This figure illustrates the artificial recharge in the coastal aquifer through spreading grounds and injection wells. It is a re-creation of the original Figure 4-6 in the 1994 edition of the Basin Plan.	Current (1994) Basin Plan http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan
4-11	Locations of Injection Wells	The figure shows the locations of the injection wells. It also shows the areas of no municipal beneficial use, spreading ground, and the groundwater basin/subbasin boundaries. It is a re-creation of the original Figure 2-15 in the 1994 edition of the Basin Plan.	Current (1994) Basin Plan http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Beneficial_Uses/ch2/Revised%20Maps.pdf
4-12	San Fernando Valley Groundwater Basin Contamination Plumes	The figure shows the distribution of nitrates and volatile organic compounds (VOCs) in shallow and deep groundwater within the San Fernando Valley. The nitrates and VOCs plume data (2010) was derived from the US EPA.	US EPA Personal communication (E-mail)
4-13	San Gabriel Valley Groundwater Basin Contamination Plumes	The figure shows the distributions of nitrates and VOCs in shallow and deep groundwater within the San Gabriel Valley. The VOCs plume GIS layer (2008) was derived from the US EPA while the nitrate plume GIS layer was not available. The nitrates well data (2013) was derived from GeoTracker. All the nitrates records (with the exceedance of maximum	US EPA Personal communication (E-mail)

		contaminant level (MCL) at 45 mg/l) were extracted, clipped and mapped based on their latitude and longitude. The nitrates plume near the eastern border of the groundwater basin has decreased over time and diminished in 2007.	
4-14	Leaking Underground Storage Tank	This figure illustrates leaking of gasoline from an underground storage tank. It is a re-creation of the original Figure 4-9 in the 1994 edition of the Basin Plan.	Regional Basin Plan http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan

IV REFERENCES

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