

## 3.17 WATER QUALITY

### 3.17.1 Existing Conditions

#### Surface/Receiving Waters

The major receiving waters within the City of San Diego include the Pacific Ocean, San Diego Bay, Mission Bay, the San Dieguito River, Los Peñasquitos Creek, the San Diego River, the Otay River and the Tijuana River (**Figure 3.7-2**). Major reservoirs include Barrett, El Capitan, San Vicente, Hodges, Miramar, Murray, Lower Otay, Upper Otay, and Sutherland. Additionally there are minor receiving waters made up of creeks, channels, streams and lagoons.

#### Groundwater

The geography of San Diego provides limited natural local supplies in the form of groundwater, and it is not currently considered a useable potable water resource. With the close proximity to the ocean and the shallow location of the water table, groundwater and ocean water mix subsurface and become brackish. In order to become usable, much of the available groundwater would need to undergo desalination. The Water Department has studied numerous potential groundwater supply options and has an ongoing Capital Improvement Project to continue to develop potential groundwater resources including groundwater desalination, but there is not any active use of potable groundwater at this time. Potential groundwater supplies are estimated at 6,000 – 20,000 AFY, but the current cost of utilizing the supply with existing technology is infeasible.

#### City of San Diego's Water Quality

Many of the City's water bodies harbor sensitive biotic communities easily affected by added pollutant discharges; the quality of sensitive bodies of surface water varies. Certain reservoirs, particularly the Hodges Reservoir, have experienced high Total Dissolved Solids (TDS) levels due to the introduction of Colorado River water and high evaporation rates. Typical pollutants include dissolved solids, nutrients such as nitrate and phosphate, organic materials, bacteria, heavy metals, pesticides, and toxic industrial wastes. Sedimentation from unprotected construction sites is a water quality problem that is altering certain sensitive lagoons. Accumulation of trash within receiving waters is also contributing to the impairment of the City's water resources. The City's water bodies are also susceptible to eutrophication, which is characterized by an abundant accumulation of nutrients that support a dense growth of algae and other organisms, the decay of which depletes shallow waters of oxygen in summer.

Section 303(d) of the Clean Water Act requires states to periodically prepare a list of all surface waters in the state for which beneficial uses of the water – such as for drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants. These are water quality limited estuaries, lakes, streams and coastal regions that fall short of state water quality standards, and are not expected to show improvement in the next two years. Portions of water bodies within the City of San Diego which were listed as impaired in 2002 are listed on **Table 3.17-1**.

**Table 3.17-1  
Impaired Water Bodies with the City of San Diego**

<b>Water Body</b>	<b>% of Total</b>
Chollas Creek	Bacterial Indicators, Cadmium, Copper, Lead, Diazinon, Zinc
Famosa Slough and Channel	Eutrophic
Hodges Reservoir	Color, Nitrogen, Phosphorus, TDS
Los Peñasquitos Lagoon	Sedimentation
Mission Bay	Eutrophic, Bacterial Indicators, Lead
Pacific Ocean Shoreline	Bacterial Indicators
San Diego Bay	Bacterial Indicators, Chlorade, Copper, Degraded Benthic Comm., Lindade, Mercury, PAHs, PCBs, Sediment Toxicity, Zinc
San Diego River	Fecal Coliform, Dissolved Oxygen, Phosphorus, TDS
Tecolote Creek	Bacterial Indicators, Cadmium, Copper, Lead, Toxicity, Zinc
Tijuana River	Bacterial Indicators, Low Dissolved Oxygen, Eutrophic, Pesticides, Solids, Synthetics Organics, Trace Elements, Trash
Tijuana River Estuary	Bacterial Indicators, Eutrophic, Lead, Nickel, Pesticides, Thallium, Trash, Dissolved Oxygen

Source: RWQCB, 2002

### Water Pollutant Sources

Sources of pollutants can be classified as two types: point and nonpoint sources. Point sources of water pollutants are defined as sources from which wastewater is transmitted in some type of conveyance (pipe and channel) to a water body, and are classified as municipal or industrial sources. Municipal point sources consist primarily of domestic treated sewage and processed water. Industrial point sources are primarily from such operations as sand and gravel extraction; livestock and dairy operations; trailer park, park, and camp development; electrical power generation; metal plating and printed circuitry etching; operations associated with shipbuilding and repair; and wastes from federal, commercial, and recreational vessels.

Nonpoint sources are those sources of water pollutants which do not discharge to a watercourse from a pipe. This pollution arises from many everyday activities that take place in residential, commercial, and rural areas and is carried by storm water runoff to streams. Nonpoint sources, however, have been suspected of causing significant water quality problems. In urban areas, the storm water runoff from streets likely carries considerable quantities of harmful materials, such as oil, rubber, metals (including lead), pathogens, trash, and other solids. In addition, increased peak flows from roadway runoff can also alter the hydraulics of an area by scouring and transporting and depositing sediments in areas lower than the runoff source.

## Regulatory Setting

Water resources are protected under the mandates of numerous federal, state and local jurisdictional laws, regulations, plans and ordinances and these must be considered in the early planning stages of any project. Future projects implemented under the General Plan will be required to adhere to the requirements of these regulations.

### *Federal*

**Clean Water Act.** This act is the principle law governing pollution control and water quality of the nation's waterways. The objective of this act is to restore and maintain the chemical, physical and biological integrity of the nation's waters (33 U.S.C. 1251). Section 402 of the Clean Water Act controls water pollution through the National Pollutant Discharge Elimination System (NPDES), by regulating point sources that discharge pollutants into waters of the U.S. Implementation of the act is the responsibility of the Environmental Protection Agency (EPA), which has delegated much of that authority to state and regional agencies.

### *State of California*

**The Dickey Act.** Enacted by the State of California in 1949, this Act created the nine Regional Water Pollution Control Boards (now referred to as the Regional Water Quality Control Boards) and sought to establish statewide water quality objectives. Initially these boards only established narrative objectives for discharges, but in 1952 they were further charged with establishing numerical limits for discharges and adopting water quality objectives for receiving waters.

**Porter-Cologne Water Quality Act of 1969.** This Act gave the power to the Regional Water Quality Control Boards (RWQCB) to establish water quality plans for each region. In 1975, a Comprehensive Water Quality Control Plan Report for each region was established (commonly referred to as the Basin Plan). These plans compiled all of the existing beneficial uses, water quality objectives, and policies into one document and rescinded all individually adopted objectives and policies. Also included were the control of point source discharges and the development of new programs to address nonpoint source pollution issues in the regions.

Since 1975, the individual Basin Plans have been amended on numerous occasions. Components of the Basin Plan are reviewed as new data and information become available or as specific needs arise. Many new issues and areas of concern have risen as health scientists have identified increasingly lower concentrations of toxic substances as health risks. Because of this, water quality objectives have to be constantly reexamined to maintain levels that are safe for the public. In addition all plans that can affect water quality are incorporated into the planning process. A comprehensive update of each Basin Plan occurs tri-annually in response to state and federal legislative requirements, and as funding becomes available.

**State Water Resources Control Board (SWRCB) Construction General Permit, 99-08-DWQ.** Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of this permit. To be in compliance, the applicant for a construction permit must file a complete and accurate Notice of Intent with the SWRCB.

Compliance requires conformance with applicable Best Management Practices (BMPs) and development of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project.

### *Local*

**San Diego Regional Water Quality Control Board (RWQCB or Water Quality Board) Order No. R9-2007-0001.** In January of 2007, under the authority of the Clean Water Act amendments and federal NPDES Permit regulations, the Water Quality Board re-issued the order to the 18 cities within San Diego County, the county of San Diego, the Port of San Diego, and the San Diego Regional Airport Authority (Copermittees). Commonly referred to as the “Municipal Permit,” this order requires that all Copermittees within the San Diego region prepare Jurisdictional Urban Runoff Management Plans (JURMPs). Each JURMP must contain a component addressing land use planning for new development and redevelopment, construction, existing development, education, illicit discharge detection and elimination, public participation, effectiveness assessment and fiscal analysis. In addition, the Municipal Permit requires that Copermittees collaborate on the development of a Watershed Urban Runoff Management Plan (WURMP) for each watershed, which addresses high priority storm water quality issues found within the various watersheds.

**City of San Diego Jurisdictional Urban Runoff Management Program (JURMP).** This document is a total account of how the City of San Diego plans to protect and improve the water quality of rivers, bays and the ocean in the region in compliance with the RWQCB Order No. R9-2007-01. The document describes how the City incorporates storm water BMPs into land use planning, development review and permitting, City capital improvement program project planning and design, and the execution of construction contracts.

**Watershed Urban Runoff Management Programs (WURMPs)** The City of San Diego participated in the drafting of five WURMPs that document high priority storm water quality issues found within the following watersheds: San Dieguito, Los Peñasquitos, San Diego River, San Diego Bay (comprised of Pueblo, Sweetwater and Otay) and Tijuana. The City was the lead agency on the San Dieguito, Los Peñasquitos, and San Diego River documents. These WURMPs identify and prioritize water quality-related issues within each watershed that can be potentially attributed to discharges from the municipal storm drain systems. The reports describe the watershed in detail, characterize the water quality impairments (provide a baseline of data for future analysis), and set up an action plan explaining how the municipalities will collaborate to improve water quality.

**City of San Diego Storm Water Standards Manual.** This manual requires that urban runoff pollution issues be specifically addressed in development planning for public and private projects. In addition to considering alternative site design approaches and instituting source controls (i.e. methods to keep pollutants out of contact with storm water), structural treatment devices or storm water BMPs are required.

### 3.17.2 Thresholds of Significance

A significant impact could occur if implementation of the General Plan:

- Results in a substantial increase in pollutant discharge to receiving waters and increase discharge of identified pollutants to an already impaired water body;
- Impacts local and regional water quality or supply, including groundwater.

### 3.17.3 Impact Analysis

***Could implementation of the Draft General Plan result in a substantial increase in pollutant discharge to receiving waters and increase discharge of identified pollutants to an already impaired water body?***

The Draft General Plan calls for most future growth to be focused into mixed-use activity centers. Implementation of the Plan would result in infill and redevelopment occurring in selected built areas, which would be identified through the community plan update/amendment process. The Draft General Plan would also guide the development of remaining developable vacant land. Almost all the pollutants found in the impaired water bodies with the City have anthropogenic (man-made) origins; therefore increasing the population could increase the amount of pollution entering the aquatic ecosystem. Redevelopment and infill activities in urbanized areas could result in an increased amount of impervious surfaces. In addition, most development of vacant land could also decrease permeability.

These impervious surfaces would result in increased runoff, adding to local non-point source pollution. Chemical pollutants contained in runoff would be primarily attributable to motor vehicles, which contribute particulate materials from fuel combustion, petroleum products, metals, rubber, and asbestos to roadway pollutants. In addition, a potential would exist for biologically active chemicals such as herbicides and fertilizers and fecal matter from pets and wildlife to contribute pollutants. These pollutants accumulate on paved surfaces and adjacent areas; rain flushes the pollutants into storm drains and into natural drainages, and they are eventually deposited into the aquatic environment (i.e., lagoons, rivers, and lakes). Therefore, additional anthropologic sources and impervious surfaces created by future development as anticipated in the Draft General Plan could create additional sources of polluted runoff and constitute a significant impact.

Although no physical changes or development is proposed with the Draft General Plan, as the plan would be implemented in association with community plans and regulations, development could also cause erosion due to exposed graded surfaces, excavation, stock piling, or boring, and would potentially contribute to the sediment load in surface waters. Deposition of sediments downstream may be significant if they are introduced into a potable water supply (reservoirs), flood control channels, or wetlands. Increased deposition of sediments into water bodies can result in increased turbidity, clog streambeds, degrade aquatic habitat, and interfere with flow.

The General Plan Village Propensity Map identifies areas that already exhibit village characteristics, and areas that may have a propensity to develop as villages due to existing or community plan designated multifamily housing, parks, schools, fire stations, and higher frequency transit routes. Although actual village locations will be determined by forthcoming community plan updates and have not been determined at this time, the Propensity Map identifies areas where village designations are more likely to occur. Certain impaired water bodies are in close proximity to areas identified in the Village Propensity map as high propensity. These water bodies include Los Peñasquitos Lagoon, Pacific Ocean Shoreline, Mission Bay, Tecolote Creek, San Diego River, San Diego Bay Shoreline, Chollas Creek, and the Tijuana River. Future land use proposals near these areas with impairments will require strict compliance with all existing regulations pertaining to pollutant discharges to ensure that impairments will not be worsened. As the Draft General Plan is implemented, all future developments will also be required to comply with all existing regulations pertaining to pollutant discharges to avoid the creation of new water quality impairments within the receiving waters throughout the City.

Within the Draft General Plan, specific policies have been put in place in order to limit pollutant discharge to receiving waters and the discharge of identified pollutants to an already impaired water body. Specific policies that address potential water quality impacts include the following:

1. Continue to develop and implement public education programs;
2. Apply water quality protection measures to land development projects early in the process (during project design and operations) in order to minimize the quantity of runoff generated on-site, the disruption of natural water flows and the contamination of storm water runoff;
3. Require contractors to comply with accepted storm water pollution prevention planning practices for all projects;
4. Continue to participate in the development and implementation of Watershed Management Plans for water quality and habitat protection;
5. Assure that City departments continue to use “Best Practice” procedures so that water quality objectives are routinely implemented;
6. Continue to encourage “Pollution Control” measures to promote the proper collection and disposal of pollutants at the source, rather than allowing them to enter the storm drain system;
7. Ensure that all storm water conveyance systems, structures, and maintenance practices are consistent with federal Clean Water Act and California Regional Water Quality Control Board NPDES Permit standards;
8. Install infrastructure that, where feasible, includes components to capture, minimize, and prevent pollutants in urban runoff from reaching receiving waters and our potable water supplies;
9. Meet or exceed regulatory mandates in a cost-effective manner monitored through performance measures;
10. Develop and employ a strategic plan for the City’s watersheds to foster a comprehensive approach to storm water infrastructure improvements; and
11. Identify and implement BMPs for projects that repair, replace, extend or otherwise affect the storm water conveyance system. These projects should also

include design considerations for maintenance, inspection, and, as applicable, water quality monitoring.

The above policies, along with adherence to federal, state, and local water quality regulations, serve to preclude or reduce significant impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Therefore, impacts associated with pollutant discharge may be significant at the program level. The Mitigation Framework has been identified to reduce these program level impacts.

New pollutants of concern may be identified for which a suitable treatment BMP may not be identified in the applicable regulations. In which case, their impacts may not be precluded or mitigating to a level less than significant.

The Mitigation Framework requires future development projects to be sited and designed to minimize impacts to receiving waters, in particular the discharge of identified pollutants to an already impaired water body. Prior to approval of any permit for a future project, the City must ensure that any impacts to receiving waters are precluded or, where necessary, mitigated in accordance with the requirements of the City of San Diego and other appropriate agencies (e.g., SDRWQCB). In accordance with the City of San Diego Stormwater Standards Manual, development must be designed to incorporate stormwater improvements, both off- and on-site. Because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project at this program level of analysis, the program level impact related to pollutant discharge may remain significant and unavoidable.

***Could implementation of the Draft General Plan otherwise impact local and regional water quality, including groundwater?***

As mentioned above, the implementation of the Draft General Plan anticipates that future growth will likely occur in existing urbanized areas and that community plan amendments and updates will identify areas to focus this growth. Increased pollution discharge, resulting from the growth in population around transit corridors, has the potential to otherwise create a significant impact to local and regional water quality. Because most of the water bodies in San Diego are part of a hydrologic system, rather than stand alone entities, water pollution anywhere in the system has the potential to affect the entire system. The local hydrologic system does not follow jurisdictional boundaries, thus all jurisdictions cooperatively work to reduce impacts to the water quality of the region. This cooperation is established under the NPDES Municipal Permit, which requires Copermittees to collaborate on the development of a WURMP for each watershed. The WURMP documents address high priority storm water quality issues found within the various watersheds. Under the Draft General Plan, policies have been established to ensure that the City complies with the WURMP documents. Those policies include: Continue to participate in the development and implementation of Watershed Management Plans for water quality and habitat protection; and Identify partnerships and collaborative efforts to sponsor and coordinate pollution prevention BMPs that benefit storm water infrastructure maintenance and improvements. The above policies serve to reduce impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant.

Compliance of the WURMP documents by the City of San Diego and other jurisdictions within the region's watersheds will also help prevent or reduce significant water quality impacts from individual jurisdictions as well as collective impacts from all jurisdictions within the watershed. Although a small project within a single community may not impact regional water quality, when considered collectively with all projects within the watershed, there is the potential for significant environmental impact from the amalgamation of other closely related projects. Any pollution caused by growth within the City of San Diego would be combined with pollution from growth from other cities, which collectively could impact local and regional water quality. Therefore, strict compliance with the WURMP documents is essential to prevent or reduce significant impacts to regional water quality. Although every measure will be taken to limit individual and collective water quality impacts through the WURMP process, strict compliance by all project proponents in all jurisdictions cannot be guaranteed. Therefore, there is the potential for significant impacts to regional water quality at the program level.

Future growth and development also has the potential to create impacts to groundwater quality. Groundwater degradation takes three forms: stock depletion, contamination, and secondary problems such as land subsidence and saline intrusion. Historically and presently, groundwater is not considered a source of potable water for the City, although small amounts have been used for irrigation purposes. There are several groundwater sources throughout San Diego County; however, there are challenges associated with their development. The San Diego Formation appears to be the major aquifer in the vicinity of the City, and due to its confined characteristics, it does not appear to recharge naturally at a useful rate. In addition, San Diego's four main alluvial basins contain brackish groundwater, which may require desalination before the supply could be used for potable use. Additionally, there could also be potential inter-jurisdictional and water rights issues regarding the City's use of the basins because they extend beyond the boundaries of the City's overlaying land. Since groundwater is not considered a source of potable water, there are no significant impacts from stock depletion as well as land subsidence or new saline intrusion anticipated.

As with urban runoff, groundwater contamination can often be traced to anthropogenic sources. Illegal dumping can lead to groundwater impacts. If a site is subject to illegal dumping, contaminants from the surface have the potential to percolate through soils into the groundwater, thus contaminating it. As more people are introduced to a community and more development occurs, there is greater potential for groundwater degradation from these anthropogenic sources. Although groundwater is not considered a water resource within the plan area, there is potential for utilization in the future. As such, protecting groundwater quality will be necessary for future use. Although compliance with all water quality standards and guidelines will be instituted by the City, strict observance of all regulations cannot be guaranteed communitywide.

Implementation of the above policies and compliance with the WURMP would serve to avoid or reduce impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Because the degree of impact and applicability, feasibility, and success of water quality protection these measures cannot be accurately predicted for each specific project at this time, the program-level impact related to local and regional water quality is considered significant and unavoidable.



### 3.17.4 Mitigation Framework

Goals, policies, and recommendations enacted by the City combined with the federal, state and local regulations described above provide a framework for developing project-level water quality protection measures for future discretionary projects. The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA as well as an analysis of those projects for consistency with the goals, policies and recommendations of the General Plan. In general, implementation of the above policies and compliance with the WURMP would preclude water quality impacts. Compliance with the standards is required of all projects and is not considered to be mitigation. However, it is possible that for certain projects, adherence to the regulations may not adequately protect water quality, and such future projects would require additional measures to avoid or reduce significant water quality impacts. These additional measures would be considered mitigation.

For each future discretionary project requiring, mitigation (i.e., measures that go beyond what is required by existing regulations), site-specific measures will be identified that reduce significant project-level impacts to less than significant or the project-level impact may remain significant and unavoidable where no feasible mitigation exists. Where mitigation is determined to be necessary and feasible, these measures will be included in a Mitigation Monitoring and Reporting Program (MMRP) for the project. Below is a summary of general measures that may be implemented to preclude impacts. These measure may be updated, expanded and refined when applied to specific future projects based on project-specific design and changes in existing conditions, and local, state and federal laws. The Mitigation Framework is as follows:

- Future projects must be sited and designed to minimize impacts to receiving waters, in particular the discharge of identified pollutants to an already impaired water body. Prior to approval of any entitlement for a future project, the City must ensure that any impacts to receiving waters will be precluded and, if necessary, mitigated in accordance with the requirements of the City of San Diego and other appropriate agencies (e.g., RWQCB). To prevent erosion, siltation, and transport of urban pollutants, future development must be designed to incorporate any applicable stormwater improvements, both off- and on-site in accordance with the City of San Diego Stormwater Standards Manual. Stormwater improvements and water quality protection measures that may be required of future developments, include:
  - Increasing on-site filtration.
  - Preserving, restoring or incorporating natural drainage systems into site design.
  - Directing concentrated flows away from MHPA and open space areas. If not possible, drainage must be directed into sedimentation basins, grassy swales or mechanical trapping devices prior to draining into the MHPA or open space areas.
  - Reducing the amount of impervious surfaces through selection of materials, site planning, and the narrowing of street widths, where possible.
  - Increasing the use of vegetation in drainage design.

- Maintaining landscape design standards that minimize the use of pesticides and herbicides.
- To the extent feasible, avoiding development of areas particularly susceptible to erosion and sediment loss.

### 3.17.5 Significance of Impact with Mitigation Measures

Because the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program level of analysis, the program-level impacts related to water quality remains significant and unavoidable.

#### Notes and References

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