

## 4.6 Hydrology and Water Quality

The information and analysis provided in this section are based on the Public Services and Public Facilities Element and the Environmental Hazards Element of the Huntington Beach General Plan, and the City of Huntington Beach Citywide Urban Runoff Management Plan dated January, 2005. The proposed DTSP Update was also consulted.

### 4.6.1 Environmental Setting

The City receives water through three primary agencies – the Metropolitan Water District of Southern California (Metropolitan), the Municipal Water District of Orange County (MWDOC) and the Orange County Water District (OCWD). Metropolitan acquires water from the Colorado River and the State Water Project (which draws water from the San Francisco-San Joaquin Bay Delta). The water travels hundreds of miles through an intricate, largely open air delivery system operated by the Metropolitan Water District of Southern California. MWDOC purchases this water from Metropolitan on behalf of the City and other municipal purveyors and distributes it to the City. Huntington Beach’s water resources are enhanced by the Lower Santa Ana River Groundwater Basin, which is managed by the Orange County Water District. The OCWD-managed groundwater basin provides about 64% of the City’s water needs.

The DTSP covers an area of approximately 336 acres within the City’s downtown. The plan establishes new development maximum potential for a range of land uses over a 20-year period. The plan envisions maximum development potential of 213,467 square feet of retail, 92,332 square feet of restaurant, 92,784 square feet of office, 30,000 square feet of cultural facilities, 648 residential units, and 235 hotel rooms. The DTSP area covers the City’s downtown with the Municipal Pier as the focal point. The project area is developed with a range of uses including large-scale visitor-serving commercial uses, hotels, office, mixed-use and neighborhood-serving commercial uses, residential, as well as streets, beach, and pier.

The project consists of revisions to the existing 11 DTSP districts, consolidating them into 7 districts, modified development and design standards, street improvements and public amenities requirements (or plans), modified circulation and mobility improvement requirements, and infrastructure and public facilities improvements as well as amended design guidelines.

#### 1. Hydrology

The majority of the Specific Plan Area is already covered by impervious area. Runoff from the Specific Plan Area currently drains to the beach or to the Huntington Beach Channel in a system of storm drain pipes. The Orange County Flood Control District (OCFCD) is responsible for design and maintenance of regional drainage facilities. When the majority of the facilities were constructed in the area, the established design criteria required the ability to accommodate 65% of a 25-year storm event. More recently, the County has modified the design criteria to require that all facilities accommodate 100% of a 100-year storm event. All new facilities have since been constructed with

an increased capacity, and many existing areas have been upgraded. The City operates 15 pump stations that lift storm water into various County of Orange channels, which convey the storm water into the Pacific Ocean. The three drainage facilities located within the DTSP Area are the Atlanta Storm Water Pump Station (ASWPS), the First Street Storm Drain System (FSSDS), and the pipe system that reaches the beach at 7<sup>th</sup> Street. The Citywide Urban Runoff Management Plan (CURMP) provides a broad framework for managing the quantity and quality of all urban runoff that reaches receiving water from the land surfaces and through the storm drain system within the City. The Master Plan of Drainage (within the CURMP) is a comprehensive drainage study of the watershed within the City of Huntington Beach which identifies and creates an inventory of existing storm drain facilities.

The City owns, operates, and maintains a storm drainage system for the purpose of conveying storm runoff so as to reduce or eliminate flooding under peak storm flow conditions. While the primary purpose of the storm drain system is to reduce or eliminate flood hazards, the system carries both dry and wet weather urban runoff and the pollutants associated with runoff from urban land use and activities.

The Environmental Hazards Element of the City's General Plan identifies flood zone areas based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps. Portions of the Specific Plan Area lie within the FEMA 100-year flood boundary. According to Flood Insurance Rate Maps (FIRM), during a 1% chance storm, the area east of Huntington Street to Beach Boulevard would become inundated up to nine feet deep in some areas.

### **2. Water Quality**

The project area is located within the Santa Ana Region (Region 8) and is under the jurisdiction of the California Regional Water Quality Control Board (RWQCB) Santa Ana Region for issues related to water quality. Each of the nine Regional Boards within California is required to adopt a Water Quality Control Plan, or a Basin Plan, designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Each project shall comply with the current adopted Waste Discharge Requirements for the County of Orange, the Orange County Flood Control District, and the incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff, Orange County and the National Pollutant Discharge Elimination System (NPDES) General Permit for storm water Discharges Associated with Construction and Land Disturbance activities. Each project shall also comply with programs included in the current City of Huntington Beach Citywide Urban Runoff Management Plan.

The project site is located in an area that is subject to compliance with the current Drainage Area Management Plan (DAMP), which is implemented by the Orange County Flood Control District. The DAMP was prepared in compliance with specific requirements of the National Pollutant Discharge Elimination System (NPDES) storm water permit to reduce pollutant discharges for protection of receiving water-body water quality and support of beneficial uses. The objective of the DAMP is to fulfill the commitment and to present a plan that satisfies NPDES permit requirements and to evaluate the impacts of urban storm water quality on beneficial uses. The DAMP is a foundation for

developing the Local Implementation Plan (LIP). The LIP and the DAMP serve as the basis for City compliance for the Third Term NPDES permit.

To obtain authorization for proposed storm water discharges pursuant to the general construction permit, the landowner (discharger) is required to submit a Notice of Intent to the State Water Resources Control Board (SWRCB) and implement best management practices (BMPs) during construction activities. Dischargers are required to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution. The purpose of implementing BMPs is to prevent all construction pollutants from contacting storm water and to keep all polluted storm water runoff products from moving off site into receiving waters. Many of the proposed projects within the DTSP will be subject to the General Construction Permit because they will disturb one acre or more of soil during the construction phases.

Post-development activities have the potential to discharge contaminants into the storm water and urban runoff and into the City's municipal storm drain system. To address this, individual project applicants within the DTSP will be required to submit and obtain approval of a Water Quality Management Plan as required by the current RWQCB waste discharge requirements.

In order to comply with NPDES permit requirements, the City has codified requirements in their Municipal Code. The following are the applicable sections: Storm Water and Urban Runoff (14.25), Drainage (14.48), Water Efficient Landscape Requirements (14.52) and Grading and Excavation Code (17.02).

#### **4.6.2 Significance Criteria**

Impacts resulting from the implementation of the project would be considered significant if the project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete ground water supplies or interfere substantially with ground water recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; otherwise substantially degrade water quality;

- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- Inundation by seiche, tsunami, or mudflow;
- Potentially impact storm water runoff from construction activities;
- Potentially impact storm water runoff from post-construction activities;
- Result in a potential for discharge of storm water pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas;
- Result in the potential for discharge of storm water to affect the beneficial uses of the receiving waters;
- Create or contribute significant increases in the flow velocity or volume of storm water runoff to cause environmental harm;
- Create or contribute significant increases in erosion of the project site or surrounding areas.

### 4.6.3 Impacts

The following discussion addresses potential impacts of the project.

- *Will the proposed project violate water quality standards or waste discharge requirements?*

In accordance with National Pollutant Discharge Elimination System (NPDES) regulations, the State of California requires that any construction activity disturbing one acre or more of soil comply with the current State General Construction Activity Storm Water Permit and any subsequent updates or adoptions. To obtain authorization for proposed storm water discharges pursuant to this permit, the landowner (discharger) is required to prepare a Storm Water Pollution Prevention Plan (SWPPP), submit a Notice of Intent to the State Water Resources Control Board (SWRCB), receive a Waste Discharge Identification (WDID) number and implement best management practices (BMPs) during construction activities.

This Program EIR analyzes the overall impacts of the DTSP Update, but each individual project that moves forward within the 336 acres of the Plan will need to be analyzed individually for the impacts it carries. The proposed project would be required to demonstrate accomplishment of the following NPDES objectives:

- Use of structural and non-structural Best Management Practices (BMPs) to mitigate projected increases in pollutant loads and flows.
- Minimized pollutant loading flow velocity during and after construction.
- Minimized amounts of impervious surfaces and directly connected impervious surfaces.
- Low impact development to control pollutants in urban runoff from new development/significant redevelopment.
- Maximized on-site infiltration evapotranspirate and harvest/re-use.
- Impact of the project's hydrologic conditions of concerns.
- Pollution prevention methods, source controls and treatment using small collection strategies located at, or as close as possible to, the source.

There are two primary types of source pollution: single-point source and non-point source pollution. Single-point sources are water pollutants that originate from a single-point source such as factories. Potential impacts to water quality associated with the proposal (commercial, office, residential and parking area) are non-point source pollution. Non-point source pollution includes materials and/or chemicals (e.g., motor oils/grease, paint, pet wastes, garden chemicals, trash) that may be washed into the storm drain system from various sources.

Non-point source pollutants are typically washed into the storm drain system by rainwater and other means from streets, parking areas, residential neighborhoods, commercial/retail centers and construction sites. Since storm drains flow directly into the ocean without treatment, potential pollution can have an impact on water quality and wildlife.

The City has been following the procedures that protect the quality of storm water runoff, such as: site construction erosion and sediment control programs, sweeping streets, managing solid waste, recycling programs, storm drain and catch basin maintenance, enforcing prohibitions on illegal discharges, controlling spills, supervising industrial waste discharges through permitting, and enforcing ordinances prohibiting certain discharges. Recognized effective BMPs for pollutant control include activities such as litter control, solid waste collection/recycling, drainage facility maintenance, catch basin stenciling, street sweeping, hazardous materials management/environmental performance reporting, household hazardous waste collection, emergency spill response and fertilizer, pesticide management and public information and education program.

#### 4 - Environmental Setting, Impacts, and Mitigation Measures

The DTSP project will result in short-term and long-term impacts to water quality. Short-term impacts will occur as a result of construction and project grading activities that will occur as individual projects move forward within the DTSP. Erosion and sediment control measures would be implemented during construction and would be developed as part of the Storm Water Pollution Prevention Plan (SWPPP) for the individual projects.

For each proposed project, a project Water Quality Management Plan shall be prepared for new development/significant redevelopment projects (priority development projects). The WQMP shall be developed in accordance with the approved Model WQMP and shall incorporate LID principles in the WQMP. WQMPs shall include BMPs for source control, pollution prevention, site design, LID implementation and structural treatment control BMPs.

Table 4.6.1 and Table 4.6.2 show examples of source control BMPs (routine non-structural and routine structural), site design BMPs (Table 4.6.3), and treatment control BMPs (Table 4.6.4) that are typically included in proposed projects that may occur as a result of adoption of the DTSP Update.

**Table 4.6.1  
Routine Non-Structural BMPs**

Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
N1	Education for Property Owners, Tenants and Occupants			
N2	Activity Restrictions			
N3	Common Area Landscape Management			
N4	BMP Maintenance			
N5	Title 22 CCR Compliance (How development will comply)			
N6	Local Industrial Permit Compliance			
N7	Spill Contingency Plan			
N8	Underground Storage Tank Compliance			
N9	Hazardous Materials Compliance Disclosure			
N10	Uniform Fire Code Implementation			
N11	Common Area Litter			
N12	Employee Training			
N13	Housekeeping of Loading Docks			
N14	Common Area Catch Basins			
N15	Street Sweeping Private Streets and Parking Lots			
N16	Commercial Vehicle Washing			

**Table 4.6.2  
Routine Structural BMPs**

Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Provide storm drain system stenciling and signage			
Design and construct outdoor material storage areas to reduce pollution introduction			
Design and construct trash and waste storage areas to reduce pollution introduction			
Use efficient irrigation systems and landscape design, water conversation, smart controllers and source control			
Protect slopes and channels and provide energy dissipation			
Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)			
a. Dock areas			
b. Maintenance bays			
c. Vehicle wash areas			
d. Outdoor processing areas			
e. Equipment wash areas			
f. Fueling areas			
g. Hillside landscaping			
h. Wash water control for food preparation areas			
i. Community car wash racks			

**Table 4.6.3  
Site Design BMPs**

Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Minimize impervious area/maximize permeability (C-factor reduction)			
Minimize directly connected impervious areas (DCIAs) (C-factor reduction)			
Create reduced or "zero discharge" areas (runoff volume reduction)			
Conserve natural areas (C-factor reduction)			

#### 4 - Environmental Setting, Impacts, and Mitigation Measures

**Table 4.6.4  
Treatment BMPs**

Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Vegetated (grass) Stripes			
Vegetated (grass) Swales			
Proprietary Control Measures (Modular Wetlands and Green Roofs)			
Dry Detention Basin			
Water Detention Basin			
Constructed Wetland			
Detention Basin/Sand Filter			
Porous Pavement Detention			
Porous Landscape Detention			
Infiltration Basin			
Infiltration Trench			
Media Filter			

Long-term impacts will occur as a result of increased usage of the site by land use, vehicles, and people. These impacts can be reduced by procedures that protect the quality of storm water runoff, such as sweeping streets, managing solid waste, recycling programs, storm drain and catch basin maintenance, enforcing prohibitions on illegal discharges, controlling spills, supervising waste discharges through permitting, and enforcing the prohibition on illicit discharges. All potential significant impacts to water quality can be reduced to a less than significant level.

- *Will the project substantially deplete ground water supplies or interfere substantially with ground water recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level?*

The City does not have any water production wells within the DTSP area. The proposed project does not include any water wells and no on-site groundwater would be used. The project site is located on 336 acres within the City's downtown. As such, historic high groundwater elevations are within 3 to 30 feet of the surface in some areas of the DTSP. Exhibit 4.6-1 shows near surface groundwater areas within the City.

Although water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, climatic conditions, it is not anticipated that the proposed DTSP Update will alter the direction of near-surface groundwater and the general flow of the groundwater will not be impacted. Therefore, the proposed project does not have any significant impacts to groundwater.

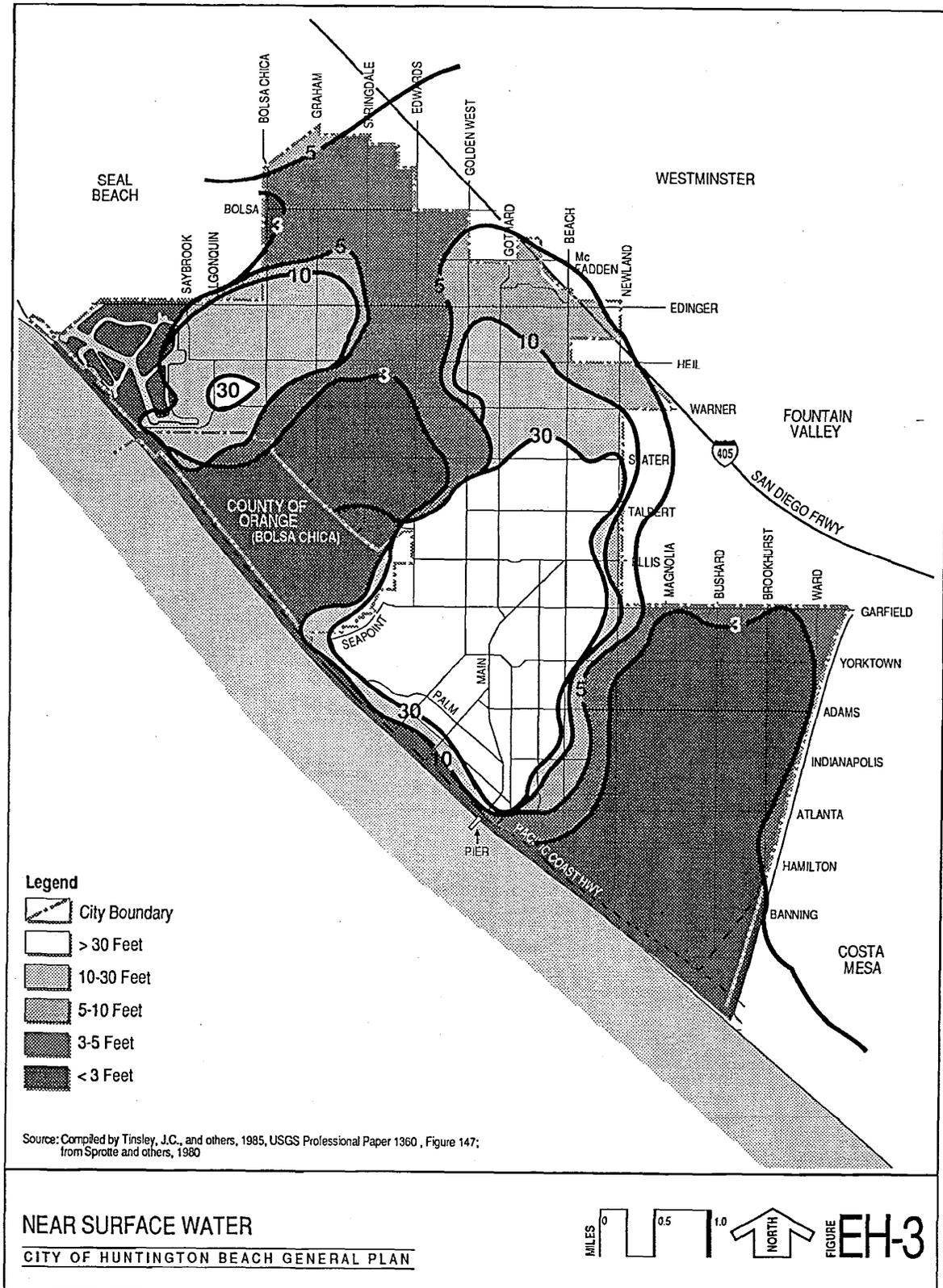


Exhibit 4.6-1 - Near Surface Water

- *Will the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

The DTSP project area has already been developed and will undergo further development through projects that will be proposed individually within the 336 acres. Each of the proposed projects will be evaluated to determine if it will alter the existing drainage pattern of the site and immediate area. However, the project site does not contain any stream. Therefore, no impacts relative to this topic will occur as a result of the proposed DTSP project.

With compliance with General Construction Permit, the Drainage Area Management Plan, and City regulations and procedures, the DTSP Update project will not result in any significant substantial erosion or siltation on- or off-site.

- *Will the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

The project area currently drains by a local area drain system or by street flows. Each individual project within the DTSP area will be analyzed to determine impacts to the existing area drainage or a potential increase in the amount of surface runoff. The DTSP Update project itself will not cause significant impacts to surface drainage, increase the area surface runoff or alter a stream or river.

- *Will the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?*

Refer to previous discussion for water quality. The project area currently drains by a local area storm drain system or by street flows. Each individual project within the DTSP area will be analyzed to determine specific impacts to the capacity of the existing or planned storm drainage system. Each individual project will be required to comply with mitigation measure MM 4.6-2. The DTSP Update project itself will not cause significant impacts to the drainage system or provide substantial additional sources of polluted runoff.

- *Will the project otherwise substantially degrade water quality?*

The DTSP Update will not substantially degrade water quality. As discussed in the first significance criteria discussion, each project proposed in the future as a result of the DTSP Update adoption will be required to develop a Water Quality Management Plan and secure associated permits that will protect and preserve water quality in the downtown area. Also, the DTSP Update proposes a Water Quality Section that would be added to requirements under water quality management plans, including BMPs and water quality regulations. With implementation of these requirements, impacts would be less than significant.

- *Will the proposed project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

The FEMA Flood Insurance Rate Maps (FIRMs) delineate flood zones. The Environmental Hazards Element of the City's General Plan identifies flood zone areas based on the FEMA Flood Insurance Rate Maps. Portions of the Specific Plan Area lie within the FEMA 100-year flood boundary. According to Flood Insurance Rate Maps (Map Panel 0263H, February 18, 2004), during a 1% chance storm, the area east of Huntington Street to Beach Boulevard would become inundated up to nine feet deep in some areas. The maps indicate that a majority of the project site is situated outside most flood hazard zones, with the exception of the area east of Huntington Street to Beach Boulevard and the beach areas, located seaward of Pacific Coast Highway. The area east of Huntington Street to Beach Boulevard is located within proposed DTSP Districts 3 and 5. No changes to the development regulations for this area are proposed by the DTSP Update. Therefore, the implementation of the proposed DTSP Update is not anticipated to result in any significant impacts relative to placing housing within a 100-year flood hazard area.

- *Will the proposed project place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

As previously indicated the proposed DTSP Update will not result in any significant impacts relative to structures being placed within a 100-year flood hazard.

- *Will the proposed project directly expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

The Environmental Hazard Element of the City's General Plan identifies flood zone areas and is included as Exhibit 4.6-2. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) more specifically delineates flood zones. The FIRM maps indicate that the project site is situated outside most flood hazard zones. The DTSP Update project site does not contain any streams (intermittent/blueline). Additionally, the City's Environmental Hazard Element also portrays tsunami run-up zones that impact the project area only along Pacific Coast Highway, which would require mitigation as individual projects are proposed. The project itself does not expose people or structures to a significant risk involving flooding, or flooding as a result of the failure of a levee or dam. The City has emergency procedures in the event of a major event (e.g., flooding, earthquake, evacuation plans).

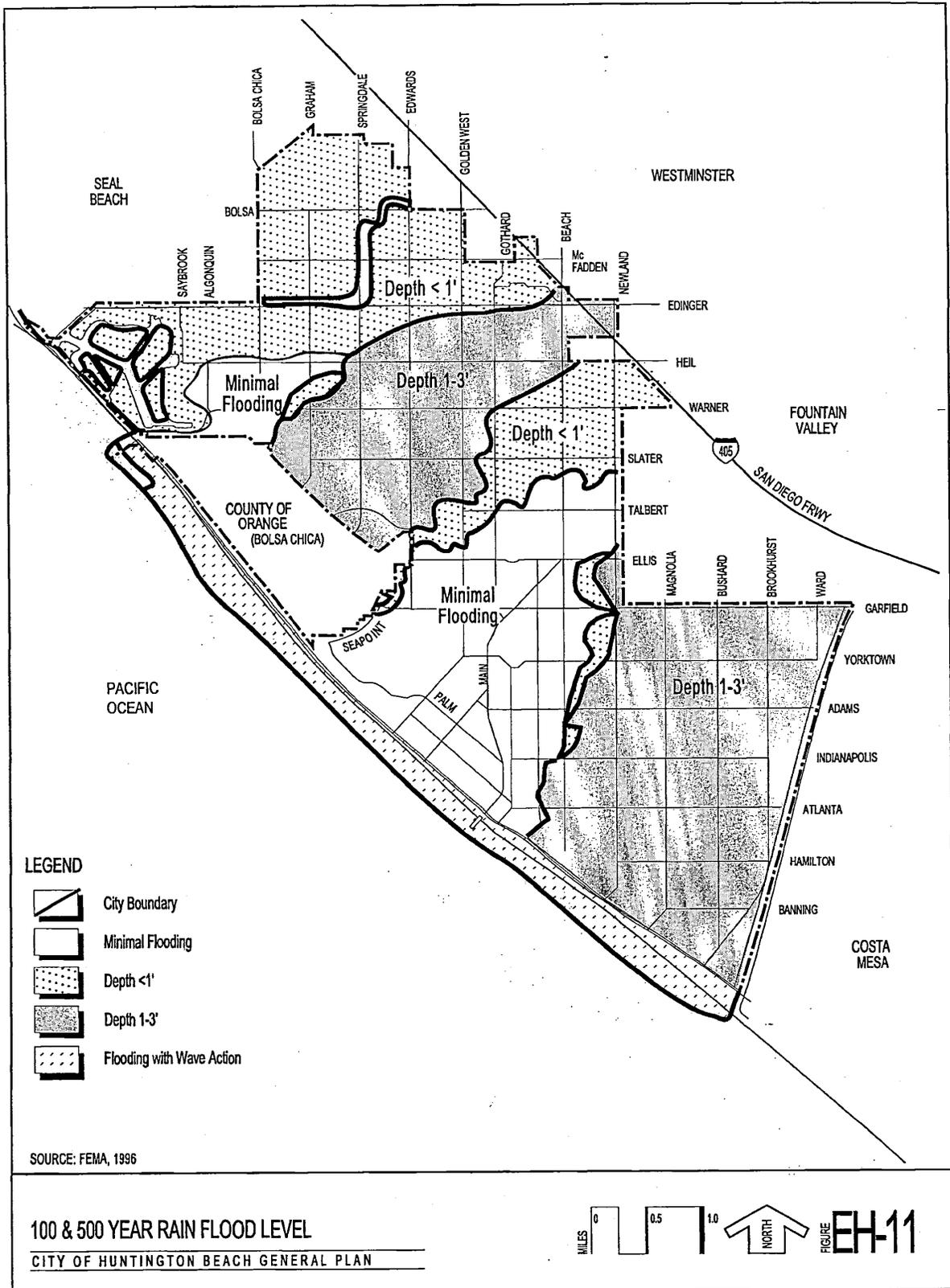


Exhibit 4.6-2 - 100-Year and 500-Year Rain Flood Level

- *Will the proposed project directly expose people or structures to inundation by seiche, tsunami, or mudflow?*

The City's General Plan (Figure EH-8) identifies that previous evaluations put the potential for tsunami hazards potential for the City at "very low". The elevation of the run-up beyond the initial tidal elevation can be generally estimated from "maximum" past occurrence in California (estimated at 4 to 19 feet) from distant (South Pacific-South America-Alaska) or local (Santa Barbara Channel) earthquakes. The General Plan notes that studies done for the Bolsa Chica Project indicate 100-year and 500-year run-up elevations of 5 to 6 feet and 7 to 9.5 feet, respectively. Figure EH-8 of the General Plan identifies moderate run-up west of Beach Boulevard to just east of Huntington Street. A majority of the DTSP area is not within tsunami run-up areas except the area near Pacific Coast Highway and Beach Boulevard. In areas of potential risk, the City requires that individual projects do a tsunami warning plan. Therefore, no significant impacts are anticipated relative to tsunamis or mudflows.

The potential for seiches (i.e., the oscillation or sloshing of water in an enclosed body of water caused by seismic activity or land sliding) to occur in the vicinity of the project area is due to the location of the site near the Pacific Ocean. Any project proposed in a location within the DTSP area that has potentially significant impacts related to tsunami would be required to implement mitigation measure MM 4.6-5 to reduce potential impacts to less than significant levels.

- *Will the project potentially impact storm water runoff from construction activities?*

In accordance with National Pollutant Discharge Elimination System (NPDES) regulations, the State of California requires that any construction activity disturbing one acre or more of soil comply with the current State General Construction Activity Storm Water Permit. For projects under one acre, which could be a significant number of future projects within the DTSP area, the City will need to condition projects with water quality requirements and BMPs to reduce or eliminate storm water pollution. To obtain authorization for proposed storm water discharges pursuant to this permit, the landowner (discharger) is required to submit a Notice of Intent to the State Water Resources Control Board (SWRCB), prepare a SWPPP and receive a WDID number, and implement best management practices (BMPs) during construction activities.

- *Will the project potentially impact storm water runoff from post-construction activities?*

New development/significant redevelopment projects could result in potential impacts to water quality from storm water runoff. New development/significant redevelopment projects will be subject to compliance with the current adopted general construction permit, NPDES Stormwater Permit, *De Minimus* Threat General Permit and all applicable Federal, State and local regulations. With these conditions, projects will have a less than significant impact from post-construction storm water runoff.

#### 4 - Environmental Setting, Impacts, and Mitigation Measures

---

- *Will the project result in a potential for discharge of storm water pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?*

See discussion above on requirements for compliance with the adopted Waste Discharge Requirements (WDR), General Construction Permit, Drainage Area Management Plan, and adoption of Best Management Practices pursuant to the City-approved Water Quality Management Plan. Compliance with these plans should eliminate the potential for significant impacts from development proposed as a result of DTSP Update.

- *Will the project result in the potential for discharge of storm water to affect the beneficial uses of the receiving waters?*

See discussion above on requirements for compliance with the adopted Waste Discharge Requirements (WDR), General Construction Permit, Drainage Area Management Plan, and adoption of Best Management Practices pursuant to the City-approved Water Quality Management Plan. Compliance with these plans should eliminate the potential for significant impacts from development proposed as a result of DTSP Update. Requirements imposed should preclude a project's potential for discharge of storm water to affect the beneficial uses of the receiving waters.

- *Will the project create or contribute significant increases in the flow velocity or volume of storm water runoff to cause environmental harm?*

See initial discussion in this section on National Pollutant Discharge Elimination System regulations and Drainage Area Management Plan requirements. The DTSP Update itself will not create or contribute significant increases in the flow velocity or volume of storm water runoff.

- *Will the project create or contribute significant increases in erosion of the project site or surrounding areas?*

Soil erosion in Huntington Beach ranges from minimal to high hazard. Proper ground cover and drainage can minimize erosion. Potential erosion hazards are evaluated by standard soils and foundation engineering and testing required by the City grading and building codes. Because the DTSP area is developed with existing uses and impervious surfaces (e.g., paved surfaces, structures), it is not anticipated that the proposed DTSP Update would result in significant impacts relative to erosion. Future construction projects will be evaluated on an individual basis and required to comply with the General Construction Permit and local and regional regulations on erosion and runoff.

#### 4.6.4 Mitigation Measures

The following measures will reduce potentially significant hydrology and water quality impacts associated with the proposed project to a less than significant level:

- MM 4.6-1 Prior to issuance of any grading or building permits and/or prior to recordation of any subdivision maps, the applicant of any new development or significant redevelopment projects shall submit to the Department of Public Works a Water Quality Management Plan (WQMP) emphasizing implementation of LID principles and addressing hydrologic conditions of concern. WQMPs shall be in compliance with the current California Regional Water Quality Control Board (RWQCB) Santa Ana Region, Waste Discharge Requirements permit, and all Federal, State and local regulations.
- MM 4.6-2 Prior to issuance of any grading or building permits, a hydrology and hydraulic analysis shall be submitted to the Department of Public Works for review and approval (10-, 25-, and 100-year storms and back-to-back storms shall be analyzed). In addition, this study shall include 24-hour peak back-to-back 100-year storms for onsite detention analysis. The drainage improvements shall be designed and constructed as required by the Department of Public Works to mitigate impact of increased runoff due to development, or deficient, downstream systems. Design of all necessary drainage improvements shall provide mitigation for all rainfall event frequencies up to a 100-year frequency.
- MM 4.6-3 Prior to the issuance of any grading or building permits for projects that will result in soil disturbance of one or more acres of land, the applicant shall demonstrate that coverage has been obtained under California's General Permit for Stormwater Discharges associated with construction activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number. Projects subject to this requirement shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) conforming to the current National Pollution Discharge Elimination System (NPDES) requirements, which shall be submitted to the Department of Public Works for review and acceptance. SWPPPs shall be in compliance with the current NPDES General Permit for Storm Water Discharges associated with construction activity.
- MM 4.6-4 Prior to the issuance of a building permit, the developer or applicant shall submit detailed Landscape Architectural plans by a State Licensed Landscape Architect that shall include a designed irrigation system that eliminates surface runoff and meets the City's Water Efficient Landscape Ordinance (MC-14.52) requirements and a detailed planting plan that specifies appropriate California Native and other water conserving plants materials. In addition, there shall be a maintenance program submitted that addresses the use of fertilizers and pesticides to meet the requirements of the City Integrated Pest Management, Pesticide and Fertilizer

Management Guidelines, the Water Quality Management Plan, and the County Drainage Area Master Plan. These plans shall be reviewed and approved by the City of Huntington Beach Public Works and Planning Departments. The landscaping shall be installed and maintained in conformance with the approved plan, the maintenance program and the City Zoning and Subdivision Ordinance requirements.

MM 4.6-5 Prior to the issuance of a building permit, the developer shall submit to the City Department of Planning for approval a plan outlining specific planning measures to be taken to minimize or reduce risks to property and human safety from tsunami during operation. Planning measures could include but would not be limited to the following:

- Provision of tsunami safety information to all project residents and businesses, in addition to posting in public locations on site;
- Identification of the method for transmission of tsunami watch and warnings to residents, business owners and people on site in the event a watch or warning is issued;
- Identification of an evacuation site for persons on-site in the event of a tsunami warning.

### **4.6.5 Level of Significance after Mitigation**

With implementation of the recommended mitigation measures, potentially significant, adverse impacts to hydrology, flood hazards, and water quality will be reduced to a less than significant level.

### **4.6.6 Significant and Unavoidable Impacts**

With implementation of the mitigation measures proposed for hydrology and water quality, no unavoidable and significant impacts in the area of hydrology and water quality are associated with the DTSP Update.

### **4.6.7 Cumulative Impacts**

The cumulative impact analysis considers development of the proposed DTSP update in conjunction with full implementation of the City of Huntington Beach General Plan. All development is required to comply with applicable federal, state, and local regulations on water quality standards or waste water discharge requirements. With implementation of the mitigation measures proposed for hydrology and water quality, no cumulative impacts in the area of hydrology and water quality are associated with the DTSP Update. For projects less than one acre, application of City and the Drainage Area Management Plan requirements should reduce impacts to hydrology and water quality to a less than significant level.