Fact Sheet: San Diego Creek and Newport Bay Toxic Pollutants TMDLs

<table>
<tr><td>Waterbody/ Watershed</td><td>The San Diego Creek watershed (105 square miles) is divided into two main tributaries: Peters Canyon Wash and San Diego Creek itself.

Important freshwater drainages to Upper Newport Bay, together covering 49 square miles, include the San Diego Creek, Santa Ana-Delhi Channel, Big Canyon Wash, Costa Mesa Channel, and other local drainages.

San Diego Creek is the largest contributor (95%) of freshwater flow into Upper Newport Bay, followed by Santa Ana-Delhi Channel (5%).

Total # of PCB TMDLs: 4</td></tr>
<tr><td>Date TMDL Approved</td><td>Established 6/14/2002; Lead Agencies: US Environmental Protection Agency (EPA), California Environmental Protection Agency</td></tr>
<tr><td>Basis for 303(d) Listing</td><td>The 1996 Clean Water Act (CWA) section 303(d) list identified Newport Bay and San Diego Creek as impaired due to metals, pesticides and priority organics. The 1998 CWA section 303 (d) list added “unknown toxicity” to one part of San Diego Creek.</td></tr>
<tr><td>Water Quality Standards Target & TMDL Target</td><td>EPA evaluated the applicable water quality criteria and sediment and tissue screening levels to determine the appropriate numeric targets for these organochlorine TMDLs, prioritizing sediment quality guidelines over tissue screening values and water column criteria.

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<tr><td colspan="4">Numeric PCB Targets</td></tr>
<tr><td></td><td>Sediment (µg/dry kg)</td><td>Fish Tissue (µg/wet kg)</td><td>Freshwater Column (µg/L)</td></tr>
<tr><td>San Diego Creek and tributaries</td><td>34.1</td><td>20</td><td>0.014</td></tr>
<tr><td>Upper and Lower Newport Bay, and Rhine Channel</td><td>21.5</td><td>30</td><td>0.014</td></tr>
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Existing Source Loadings	Based on review of limited information about PCB spills and waste sites containing PCBs, the TMDLs hypothesize that accidental PCB spills, most likely to have occurred at the El Toro and Tustin Air Stations as well as other hazardous waste sites, are the most likely historical loading source of PCBs. The major source of the organochlorine compounds into Newport Bay is upstream loadings from San Diego Creek (88%), local drainages, and redistribution of historically deposited sediments within the Bay system.
Method for Characterizing Existing Loadings	Recent fish tissue results were used to help estimate water and (indirectly) sediment loads in San Diego Creek. Water column associated loads were back calculated by using pollutant- and fish species- specific bioconcentration factors. The particulate load was estimated from these water column derived values using partition coefficients. The sum of the particulate and water column associated loads yields the estimated existing loads for San Diego Creek based on the most reliable and current data for these hydrophobic compounds. For Newport Bay, sediment data were maximized to give more representative or current conditions in each portion of the bay. These monitoring results were used with a sediment deposition budget to yield the existing pollutant loads. Resuspension and recirculation of sediments, along with the water-associated load was implicitly included.

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<td>Method for Determining Allowable Load (Loading Capacity)</td>
<td>The approach to developing loading capacity in San Diego Creek and Newport Bay rely on the following key information:

<u>San Diego Creek</u>
▪ Flow data from gaging station
▪ Suspended sediment concentrations from modeling study regression analysis
▪ Sediment targets
▪ Partition coefficients
▪ Acute and chronic criteria from the California Toxics Rule
▪ Fish tissue concentrations (for calculating existing loads)
▪ Pollutant-specific bioconcentration factors

<u>Newport Bay</u>
▪ Sediment deposition rates
▪ Sediment deposition patterns
▪ Sediment pollutant targets
▪ Sediment organochlorine concentrations from observation data

<table>
<tr><td>PCB</td><td>Existing Load (g/year)</td><td>Loading Capacity (g/year)</td></tr>
<tr><td>San Diego Creek</td><td>282.1</td><td>2,226.3</td></tr>
<tr><td>Upper Newport Bay</td><td>858.7</td><td>1528</td></tr>
<tr><td>Lower Newport Bay</td><td>409.8</td><td>563.0</td></tr>
<tr><td>Rhine Channel</td><td>70.02</td><td>16.16</td></tr>
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<td>Reductions Needed to Reach Target</td>
<td>In situations where existing loadings were less than the loading capacity (i.e., San Diego Creek, Upper and Lower Newport Bay, above), the TMDLs and allocations are set at the existing loading levels in order to ensure that the TMDL targets are eventually met, and to ensure that pollutant levels in the sediments do not increase in the future. In situations where existing loads are greater than the loading capacity, the TMDLs and allocations are set equal to the loading capacity (after subtracting the explicit margin of safety).</td>
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Allocations	Waste load allocations (WLAs) for the PCBs TMDLs include the following categories: ▪ Urban runoff, ▪ CalTrans, and ▪ Other National Pollutant Discharge Elimination System (NPDES) permittees Load allocations (LAs) for the PCBs TMDLs include the following categories: ▪ Ag runoff and ▪ "Undefined" (existing sediments and air deposition)
Margin of Safety	EPA has applied an explicit 10% margin of safety to the loading capacity.
Reasonable Assurance	It is expected to take several years for toxic pollutant levels in the watershed to decline to the point where all applicable water quality standards are fully attained. EPA supports the past state practice of identifying interim targets or benchmarks in terms of pollutant control actions, pollutant loadings and/or receiving water responses to help ensure that control actions are taken and progress is being made toward attaining water quality standards. Specification of clear interim targets also assists in the evaluation of whether the TMDLs or implementation actions need to be adjusted in the future. The direct effect of EPA's TMDLs is that when NPDES permits for point source discharges are issued or revised for discharges to waters in the watershed, the state is required to ensure that the permits contain effluent limitations necessary to be consistent with the WLAs contained in the TMDLs. Permit modification may occur when existing permits are reopened or reissued, or when a new discharge source seeks a permit. In addition to addressing WLA implementation through the NPDES permitting process, the state should work with local stakeholders to identify specific actions necessary to carry out load allocations identified in the TMDLs (i.e., voluntary or regulatory approaches).

Implementation	The state—not EPA—is responsible for developing implementation plans necessary to attain TMDLs; however, the TMDLs include some recommendations on implementation: ▪ conduct more thorough investigations of potential spill sites (e.g., El Toro and Tustin Air Stations in order to determine whether there are any significant hot spot sites in the watershed warranting further remedial action. ▪ continue implementation of this sediment reduction plan and monitor to determine whether levels of organochlorine compounds continue to decline. ▪ continue to test for organochlorine pollutants via Newport Bay sediment and tissue monitoring programs. ▪ continue to consider whether any specific locations warrant remedial action to remove, cap, or otherwise immobilize Bay sediments.
Monitoring	Monitoring recommendations made by EPA to the state include the following: ▪ work with the other state and federal agencies, the county, permitted cities, local industries, and perhaps local academic institutions to develop a coordinated monitoring program for Newport Bay and its tributary streams. ▪ the scope of the monitoring needs to more fully characterize toxic pollutant trends in the watershed and the effectiveness of pollutant control strategies that goes beyond the scope of traditional monitoring required under NPDES stormwater permits. Substantial monitoring has conducted in the past but it was (with the exception of the county's monitoring) usually relatively narrow in scope in terms of pollutant coverage, geographical extent, and temporal scope.

Sources:
Total Maximum Daily Loads For Toxic Pollutants San Diego Creek and Newport Bay, California, June 14, 2002, available at http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/docs/sd_crk_nb_toxics_tmdl/summary0602.pdf.

Newport Bay Toxics TMDLs Technical Support Document: *Part F. Organochlorine Compounds*, available at http://www.epa.gov/region09/water/tmdl/nbay/tsdf0602.pdf.

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