The San Diego Bay Watershed is comprised of the 444-square-mile area that extends westward from the Laguna Mountains more than 50 miles to San Diego Bay. Stormwater and non-stormwater flows from 11 jurisdictions or “Watershed Agencies” enter the watershed via storm drains and sheet flow. In 2016, the Watershed Agencies of the San Diego Bay Watershed developed a Water Quality Improvement Plan (Plan) in accordance with regional stormwater discharge permit (Permit). The Plan is focused on improving water quality within the watershed by employing various strategies that prevent pollution from entering the storm drain system. The plan identifies priority water conditions, water quality goals, and strategies to meet the goals.

The Fiscal Year 2017 Annual Report describes the progress of the Plan’s second year of implementation. This Executive Summary is a snapshot view of the outcomes and achievements, strategy implementation, and monitoring results of the Watershed Agencies for FY 2017. Appendix 1 of the Annual Report provides a detailed crosswalk describing how each of the applicable Permit requirements has been met.

<table>
<thead>
<tr>
<th>WATERSHED AGENCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Chula Vista</td>
</tr>
<tr>
<td>City of Coronado</td>
</tr>
<tr>
<td>City of Imperial Beach</td>
</tr>
<tr>
<td>City of National City</td>
</tr>
<tr>
<td>City of San Diego</td>
</tr>
<tr>
<td>City of La Mesa</td>
</tr>
<tr>
<td>City of Lemon Grove</td>
</tr>
<tr>
<td>County of San Diego</td>
</tr>
<tr>
<td>San Diego Unified Port District (Port of San Diego)</td>
</tr>
<tr>
<td>San Diego County Regional Airport Authority</td>
</tr>
<tr>
<td>Caltrans (voluntary participant)</td>
</tr>
</tbody>
</table>
The Chollas Creek Watershed is located in a highly urbanized portion of central San Diego. Bacteria and dissolved copper, lead, and zinc in the Chollas Creek hydrologic subarea have been identified as Priority Conditions, consistent with numeric standards established by Total Maximum Daily Loads (TMDLs). The Watershed Agencies that are also responsible agencies for the Chollas Creek TMDLs are the cities of La Mesa, Lemon Grove, and San Diego; the Port; the County of San Diego; and Caltrans.

2018 PERMIT TERM GOALS PROGRESS:
PERCENT ACHIEVED

City of La Mesa

Bioretention Retrofits Installed

Achieved Goal

30,000 Square Feet

City of Lemon Grove

Drain Parking Area Runoff to Landscape

On Track To Goal

2 Areas Identified

Achieved Goal

2 Municipal Facilities

Drain Roof Runoff to Landscape

Surpassed Goal

23 Controllers

Smart Irrigation Controllers Installed

City of San Diego

Green Infrastructure Retrofits

On Track To Goal

25.14 Acres Treated

HIGHLIGHTS OF FY 2017 OUTCOMES

- La Mesa installed 30,000 square feet of biofiltration that treats 52 acres of urban area.
- Lemon Grove completed two retrofit projects to direct runoff from paved streets and parking areas to landscaping.
- Lemon Grove reduced irrigation runoff by installing 16 new smart irrigation controllers at City facilities.
- Lemon Grove identified two municipal facilities where it will divert roof runoff to landscape.
- The City of San Diego eliminated 604 prohibited discharges or connections, a substantial increase from FY16, and has issued 735 enforcement actions (e.g., warnings) and 478 escalated enforcement actions (e.g., fines) in the watershed.
- The City of San Diego inspected 12,584 storm drains and cleaned 3,139. These cleanings removed 29.8 tons of trash, 36.7 tons of sediment, and 37.5 tons of other debris (leaves, branches, etc.) in the watershed.
- The City of San Diego sponsored cleanup events at five sites with I Love a Clean San Diego, removing 14,099 pounds of debris.
- The Port provided environmental education to 4,428 students in the Chollas Creek area.
- The Port sponsored a regional seminar on integrated pest management for 134 landscape professionals.
- The County of San Diego removed 308 cubic yards of trash and debris from various homeless encampment areas with the watershed.

Reduce Dry Weather Flow from Storm Drains by 10%

The dry weather flow rate at City of San Diego outfalls in the watershed was above the 10% baseline in FY17. The FY17 results are believed to be due in part to a higher than average amount of rain than in previous years.
Final TMDL goals for metals are to have no exceedances in the creek. The FY17 results for the South Fork meet the FY29 final TMDL goals (100%) in copper, lead, and zinc. The FY17 results for the North Fork meet the FY29 final TMDL goal (100%) for copper, and results for lead and zinc are close to meeting the FY29 goals. FY17 bacteria results for the North Fork and South Fork meet all the FY29 interim TMDL goals (50%) and FY31 final TMDL goals (0%) for dry weather. The tidal site meets all the interim TMDL goals (50%) during the summer, but not during the winter.

The above copper and zinc calculations incorporate site-specific Water Effect Ratios that were approved by the San Diego Water Board in February 2017.

DIAZINON

Diazinon was below acute and chronic water quality objectives for all six samples collected in 2016-17.

All diazinon samples have met water quality standards every year since 2006.

2016-2017 CHOLLAS CREEK TMDL MONITORING RESULTS

DISSOLVED METALS

<table>
<thead>
<tr>
<th>2016-2017 Data: Percent of Samples Meeting Water Quality Standards</th>
<th>Copper</th>
<th>Lead</th>
<th>Zinc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring Location</td>
<td>Acute</td>
<td>Chronic</td>
<td>Acute</td>
</tr>
<tr>
<td>North Fork: SD8(1)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>South Fork: Z Street</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The above copper and zinc calculations incorporate site-specific Water Effect Ratios that were approved by the San Diego Water Board in February 2017.

BACTERIA

<table>
<thead>
<tr>
<th>2016-2017 Data: Percent of Samples Meeting Water Quality Standards</th>
<th>Enterococcus</th>
<th>Fecal Coliform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring Location</td>
<td>Dry Season (May - September) 30-Day Geometric Mean</td>
<td>Wet Season (October - April) 5-Sample Geometric Mean</td>
</tr>
<tr>
<td>North Fork: SD8(1)</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>South Fork: Z Street</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Tidal: CTL(1)</td>
<td>86%</td>
<td>50%</td>
</tr>
</tbody>
</table>

LONGER-TERM TMDL GOALS  | Progress and Next Steps

- Final TMDL goals are due to be achieved by FY29. Receiving water final TMDL goals for metals are to have no exceedances in the creek.
- The FY17 results for the South Fork meet the FY29 final TMDL goals (100%) in copper, lead, and zinc. The FY17 results for the North Fork meet the FY29 final TMDL goal (100%) for copper, and results for lead and zinc are close to meeting the FY29 goals.
- FY17 bacteria results for the North Fork and South Fork meet all the FY19 interim TMDL goals (50%) and FY21 final TMDL goals (0%) for dry weather. The tidal site meets all the interim TMDL goals (50%) during the summer, but not during the winter.
- The final wet weather bacteria TMDL goals are due by FY31. The regional Co-permittees have completed special studies on bacteria, such as how bacteria levels occur naturally in the environment and may relate to surfer health. These studies are being presented to the San Diego Water Board in the Report of Waste Discharge (submitted in December 2017) as part of the TMDL reopener process, in which TMDL standards will be reevaluated in light of the most recent science.
- The Chollas Creek responsible agencies will continue to take actions to reduce metals and bacteria levels, such as building green infrastructure to capture and treat runoff in the Chollas Creek watershed from urban areas.
PRIORITY CONDITION:
Dissolved Metals and Bacteria in Chollas Creek

STRATEGIES

Top Left: Curb cuts are created to direct runoff from the parking lot and lot entrance driveway to landscaped areas.

Top Right: Watershed Agencies sponsor, host, and participate in cleanup events to reduce trash, metals, and bacteria in Chollas Creek. Photo credit: San Diego Port Tenants Association.

Bottom Right: Pavement replaced with landscaped islands; water enters landscape through curb cuts to reduce runoff and remove pollutants.

Bottom Left: Workers remove pavement in medians and install landscaped bioretention areas to filter pollutants out of runoff.
Copper and zinc at the Airport Authority was identified as a Priority Condition based on a history of sampling results that show that concentrations consistently exceeded benchmark values in the 2008 USEPA NPDES Multi-Sector General Permit. Subsequently, airport operations, industrial land use, and ground transportation were identified as sources most closely associated with the potential for copper and zinc pollution. The Airport Authority’s approach focuses on areas that generate metals, such as runways, taxiways, and parking lots.

**PERMIT TERM GOALS PROGRESS:**
**COPPER AND ZINC: PERCENT MEETING WATER QUALITY STANDARDS**

- **Copper**
  - FY17 Goal: 30%
  - FY 16 Results: 11%
  - FY 17 Results: 24%
  - Surpassed Goal: 67%

- **Zinc**
  - FY17 Goal: 35%
  - FY 16 Results: 21%
  - FY 17 Results: 21%
  - Surpassed Goal: 79%

**HIGHLIGHTS OF FY 2017 OUTCOMES**
- Reduced dissolved copper and zinc below the baseline.
- Exceeded street sweeping interim goal of 7 acres/week by 3 acres/week.
- Implementing enhanced source control BMPs.
- Continuing active street sweeping program on the airside and sweeping passenger parking lots.
- Continuing the monthly facility and operations storm water BMP inspections.

**LONGER-TERM GOALS | Progress and Next Steps**
- FY17 results for zinc meet the upcoming goals for FY18 (65%) and FY21 (75%).
- FY17 results for copper are very close to meeting the upcoming FY18 goal (70%). The next interim goal is due in FY21 (80%).
- The final goals for copper and zinc are to meet water quality standards 100% of the time by FY26.
- The Airport Authority will continue to implement and improve day to day actions to control metals, such as street sweeping, and install treatment systems to capture and treat metals.
While most of the other water bodies within National City are channelized and fenced off to prevent public access, several segments of Paradise Creek are directly accessible to the public in National City parks. Impacts to habitat along the creek included a concrete channel bottom and non-native bank vegetation in the Kimball Park area. The creek is also on the Clean Water Act list of impaired water bodies for selenium. Habitat restoration in the creek and projects to treat runoff that goes to the creek are being completed to improve water quality, enhance habitat, and provide recreational opportunities for the community.

**HIGHLIGHTS OF FY 2017 OUTCOMES**

- Removed concrete bottom from 1,050 linear feet of Paradise Creek in Kimball Park.
- Restored 8,000 square feet of wetland.
- Removed invasives and planted 68,300 square feet of native vegetation along the creek.
- Have built projects to capture and treat runoff from 154 acres of urban area that drains to Paradise Creek.
- New bioretention basin significantly reduces wet weather flow into Paradise Creek in Kimball Park. Monitoring demonstrated it captured 98% of the runoff from a 1.35 inch storm.
- No exceedances of selenium water quality standard in Paradise Creek since 2010.
Physical aesthetics impairment due to trash is a Priority Condition for the cities of Chula Vista and Imperial Beach and the Port. Trash assessment data, including historical data, public input, area management plans, and future development plans along the San Diego Bayfront, were motivating factors in focusing on this condition. Trash affects the physical aesthetics of an area and can pose a health risk to humans and wildlife.

Chula Vista, Imperial Beach, and the Port are primarily targeting source reduction and removal of trash within certain areas in each jurisdiction. Efforts to reduce trash in surface water areas are also expected to reduce other pollutants that impact water quality, such as bacteria, sediment, and metals.

**HIGHLIGHTS OF FY 2017 OUTCOMES**

- Over 1,000 pounds of trash per week have been removed from homeless encampments in the Sweetwater and Otay areas.
- The Port sponsored education programs in these areas reaching approximately 6,378 students during the reporting year.
- Sponsored 14 cleanup events to remove trash.
- Of the 93 dry weather monitoring visits to major outfalls, 67% had optimal trash level ratings, which exceeds the Permit term goal of 65%.

**LONGER-TERM GOALS**

**Progress and Next Steps**

- Final goals are 95% optimal trash ratings at outfalls or 100% of high trash generating areas treated by structural devices. Final goals are due to be achieved by FY28.
- Chula Vista, Imperial Beach, and the Port are performing detailed studies of locations where additional trash treatment is needed and plan to increase installation of trash treatment devices in the coming years.
The City of Coronado and the Port identified Swimmable Waters at beaches as a Priority Condition, focusing on Tidelands Park and North Beach. Bacteria is the primary pollutant monitored as an indicator of water quality conditions at the beaches. While origins of bacteria are often difficult to pinpoint, sources may include wildlife areas, intertidal habitats, recreational parks, and, during and after large storms or spills, the Tijuana River. The Port and Coronado are focusing on reducing bacteria and trash from sources such as sewage infrastructure, pet waste, special events, and eating and drinking establishments.

HIGHLIGHTS OF FY 2017 OUTCOMES

• Tidelands Park received an A grade for the summer dry season on the Heal the Bay report card.
• Dry weather receiving water results show Tidelands park continues to be below allowable exceedance frequencies.
• Coronado and the Port coordinated business inspections, sending a consistent message.
• Educated the public on pollution prevention at outreach events, including over 500 people at a movie showing at Tidelands Park (photo below).
• Completed joint inspections to identify and eliminate sources of dry weather flows.

LONGER-TERM GOALS | Progress and Next Steps

• Reduce bacteria exceedance rates to below 15% in dry weather and below 22% in wet weather by FY21.
• Achieve “A” beach report card grades for both wet and dry weather by FY23.
• Continuing to identify and eliminate sources of bacteria and collect water quality data to evaluate progress.
WATERSHED MONITORING PROGRAMS AND RESULTS

TYPES OF MONITORING

- **Receiving Water** – includes wet and dry weather water quality monitoring, trash assessments, hydromodification monitoring, and bioassessment
- **Storm Drain System Outfall (Dry & Wet Weather)** – includes runoff sampling, trash counts, and flow investigations
- **Special Studies and TMDL** – address priority conditions

WET WEATHER MS4 OUTCOME

94% of Wet Weather Outfall Samples met Storm Water Action Levels

DRY WEATHER MS4 OUTCOMES

- 48% of visual observation visits were dry
- 903 identified discharges were eliminated as part of the Watershed Agencies’ Investigation and Elimination programs

RECEIVING WATER OUTCOME

Two bioassessment stations received assessment scores better or equivalent to reference conditions.

MAP:

- Priority Conditions
  - Water Quality in Chollas
  - Water Quality at Airport
  - Riparian Habitat
  - Physical Aesthetics
  - Swimmable Waters
- Monitoring Location

SAN DIEGO BAY WATERSHED MANAGEMENT AREA EXECUTIVE SUMMARY 2017
ADDITIONAL MONITORING OUTCOMES

- 93% of the constituents measured in the Chollas Creek Jurisdictional Boundary Monitoring study were below water quality objectives in FY17.
- The Shelter Island Yacht Basin Dissolved Copper MS4 load continues to be below the TMDL waste load allocation (WLA).
- 100% of total coliform, 98% of fecal coliform, and 90% of Enterococcus dry weather bacteria results from Shelter Island Shoreline Park met water quality standards.

ADAPTIVE MANAGEMENT & CONCLUSIONS

The adaptive management process evaluates collected data to assess whether modifications to numeric goals, schedules, and/or strategies are necessary.

Toward the end of FY17, the County’s jurisdiction in the Chollas Creek area was transferred to the City of San Diego. The County is accordingly proposing a new Priority Condition: physical aesthetics in the Spring Valley Special Drainage Area, which will have numeric goals and defined strategies to meet those goals. No other changes to pollutant sources, goals, strategies, schedules, or monitoring activities were identified as a result of the adaptive management process.

Water Quality Improvement Plan Timeline For Final Goals