

Appendix A

San Dieguito Watershed Activity Sheets

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San Dieguito Watershed Water Quality Activity Sheets

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TITLE: Santa Maria Creek Protection and Restoration Project
ID #: SD-WQA1

ACTIVITY DESCRIPTION

The purpose of the Santa Maria Creek Protection and Restoration Project is to reduce the transport of urban and agricultural pollutants, bacteria, and sediment to downstream receiving waters by restoring, enhancing, and protecting the Santa Maria Creek corridor, which flows through the grasslands of Santa Maria Valley, downstream and west of the community of Ramona. As the creek flows westward, it leaves the urban matrix and enters an extensive area of currently unprotected grasslands and vernal pools, used primarily for cattle grazing. For over a century, cattle have had unrestricted access to most of the stream channel which has resulted in incised banks, impaired recruitment of riparian vegetation, and significant adverse effects on water quality.

This project was partially funded through a Proposition 13 grant from the State Water Resources Control Board (SWRCB). The term of the project agreement was from June 1, 2004 – March 31, 2007, and included a \$1.5 million grant and a match amount of \$990,750 for a sum of \$2,490,750. The match amount of \$905,614 was from the San Diego County Department of Parks and Recreation (Parks and Open Space General Fund), a contribution from The Nature Conservancy, and in-kind contributions from the City of San Diego Water Department and the Wildlife Research Institute.

Water quality monitoring and assessment of project effectiveness will continue during this Permit cycle.

TMDL APPLICABILITY

This activity is not specifically implemented in compliance with a TMDL at this time.

TIME SCHEDULE FOR IMPLEMENTATION

This restoration project was completed in March 2007. Monitoring and assessment are ongoing.

PARTICIPATING WATERSHED COPERMITTEES

- County of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Sediment
- Sulfate
- Phosphorous
- Low Dissolved Oxygen
- Total Dissolved Solids (TDS)

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed including the Santa Maria Valley (905.4). Urban and agricultural land uses have been identified as potential discharges of bacteria. This activity addresses a high priority water quality problem and

potential source of the problem within the watershed, therefore the activity is consistent with the San Dieguito WMA strategy.

EXPECTED BENEFITS

The water quality monitoring program for the Preserve will be utilized for assessment of the combined effectiveness of stream restoration, grazing management, and re-vegetation for reducing pollutants in Santa Maria Creek.

EFFECTIVENESS MEASUREMENTS

Activity effectiveness will be measured by confirming completion of all project elements (Level 1 Outcome). Implementation effectiveness will be measured by monitoring Santa Maria Creek for temperature, dissolved oxygen, pH, stream flow, total suspended solids, conductivity, total dissolved solids, total nitrogen, total phosphorus, total coliform bacteria, chloride, and sulfate. Improvements to water quality in Santa Maria Creek will be assessed once prescribed land management actions are implemented from the Area Specific Management Directives and data collected during this period are compared to the baseline data (Level 6 Outcome). The effectiveness of removing non-native invasive plant species in the upland habitat and adjacent to Santa Maria Creek during the on-going management of the Preserve will also be assessed regarding improved water quality within the creek (Level 6 Outcome).

TITLE: Land Acquisitions
ID #: SD-WQA2

ACTIVITY DESCRIPTION

The San Diego County Board of Supervisors approved the Multiple Species Conservation Program (MSCP) in 1997 as an integral part of the County's efforts to protect parks and open space. The goal of the MSCP (a 50-year program) is to maintain and enhance biological diversity in the region and maintain viable populations of endangered, threatened, and key sensitive species and their habitats. Land acquisition also provides a significant water quality benefit for the watersheds in which it occurs. MSCP acquisition precludes development from occurring and allows land to retain its natural perviousness.

The MSCP is a cooperative effort among the County and other local jurisdictions and the U.S. Fish and Wildlife Service and the California Department of Fish and Game (the Wildlife Agencies). These public partners work with various private landowners, conservation groups, and community planning groups, developers, and other stakeholders. An MSCP exists for the County of San Diego currently, and the County is planning for extending the MSCP into both the northern and eastern portion of the County. The northern subarea plan should be approved during the lifetime of the current stormwater permit. While this plan has yet to be approved by the County of San Diego, lands have been and will continue to be acquired from willing sellers.

TMDL APPLICABILITY

While it may be supportive of TMDL goals, this activity is not specifically implemented as part of a TMDL compliance program.

TIME SCHEDULE FOR IMPLEMENTATION

The County of San Diego acquires land on an ongoing basis from willing sellers.

PARTICIPATING WATERSHED COPERMITTEES

- County of San Diego

OTHER PARTICIPATING ENTITIES

- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- Private land owners
- Conservation groups
- Community planning groups
- Developers

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a

high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). Land acquisition is consistent with the collective watershed strategy in that it averts development, thereby eliminating the possibility of future sources in need of abatement or future pollutant loads (bacteria, nutrients, etc.) in need of reduction. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Acquisition preserves the land's perviousness and natural filtering capabilities. In this sense, it is preferable to either source abatement or pollutant load reduction because it avoids entirely the introduction of pollutant-generating activities to the watershed.

EFFECTIVENESS MEASUREMENTS

Activity effectiveness will be measured by tracking the number and total acreage of land acquisitions within the watershed on an annual basis. It may also be possible to estimate pollutant loadings avoided as a result of these acquisitions. The County will consider presenting load reduction estimations in WURMP Annual Reports if it determines that they are helpful for the purposes of assessing overall program effectiveness.

TITLE: Municipal Rain Barrel Installation and Downspout Disconnects
ID #: SD-WQA3

ACTIVITY DESCRIPTION

This activity will involve the installation of rain barrels and/or the disconnection of downspouts to direct runoff from municipal facility roofs into pervious areas (such as landscaping) for infiltration. Rain barrels, downspout disconnects, and rainwater harvesting/reuse systems help to capture, store, and divert urban runoff to reduce the volume thereof, thus contributing to reduced flooding, erosion, and the contamination of surface water with sediment, fertilizer, metals, and pesticides. In addition, this activity has the added benefit of water conservation; runoff collected and diverted to landscaping would help reduce the amount of potable water needed for irrigation. Roof runoff solutions can be used both in large-scale landscapes, such as municipal buildings, community centers, schools, and commercial sites, as well as in small residential landscapes.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Project planning began in July 2007 and is anticipated to continue until the end of calendar year 2007. Procurement of rain barrels and other items and installation are anticipated to occur from beginning in March 2008.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper – project supporter

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Dissolved Minerals
- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality pollutants. Implementation of this activity will address both high priority water quality problems by reducing runoff volume via capture, retention, and infiltration. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Implementation of this activity will reduce pollutant loading by reducing runoff volume via capture, retention, and eventual infiltration.

In addition, implementation of this activity is in accordance with the City's *Strategic Plan for Watershed Activity Implementation* (November 2007), which calls for the piloting of rain barrels, downspout disconnects, and rainwater harvesting/reuse systems to reduce urban runoff volume and pollution. Knowledge and experience gained through this activity will help the City document the benefits, limitations, and challenges of rain barrels and downspout disconnects as urban runoff pollution controls before implementation on a broader scale throughout its jurisdiction in meeting Municipal Permit and TMDL requirements.

EFFECTIVENESS MEASUREMENTS

| | |
|---|---|
| Management Questions | <ul style="list-style-type: none"> • What is the effectiveness/efficiency of rain barrel/rain-harvesting systems in reducing stormwater runoff volume? • What is the loading reduction of different systems? • Which system is most efficient in collecting and/or diverting rainwater? • Which system results in the largest load reductions? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Reduction in pollutant loads due to rain barrel installation |
| Assessment Method(s) | <ul style="list-style-type: none"> • Monitoring (e.g., load reduction estimation) • Quantification (e.g., calculation of load reductions, or estimates of change) • Tabulation (e.g., number of rain barrel systems installed, amount of money spent) • Reporting (e.g., 3rd party data to estimate load reductions) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Cost of rain barrel systems (Outcome Level 1 and 2) • Cost of maintenance/upkeep (Outcome Level 1 and 2) • Cost of implementation (Outcome Level 1 and 2) • Volume of stormwater captured/diverted (Outcome Level 4) • Concentrations of COCs in rainwater or runoff (measured in rain barrel systems) (Outcome Level 4) • Compare 3rd party data to measured data for load reduction comparisons (Outcome Level 3) • What is the percent capture of the different systems (acres drained) (Outcome Level 4) |

TITLE: San Diego Coastkeeper Trash Cleanup Sponsorship
ID #: SD-WQA4

ACTIVITY DESCRIPTION

Each fall, San Diego Coastkeeper conducts the Coastal Cleanup Day event to target various inland and coastal sites in San Diego County in need of trash and debris removal. Coastkeeper recruits and organizes site captains and groups of volunteers for each site. A media center is also designated, which promotes environmental stewardship, including the importance of keeping litter and debris from spoiling the region's watersheds. The whole event is marketed throughout San Diego County through a variety of media, including television, radio public service announcements, newspapers, newsletters, electronic mail, bulletin boards, community outreach activities, calendar listings, and word of mouth.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Coastal Cleanup Day has historically been held in September of each year. Prior to that month, the City will coordinate with Coastkeeper staff to ensure that sites within the San Dieguito River WMA are included in the list for cleanups and that proper sponsorship arrangements are made.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper
- I Love A Clean San Diego
- Volunteers from general public

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Trash

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for the San Dieguito River WMA identifies bacteria as a high priority water quality problem throughout the WMA and recommends implementing load reduction/source abatement activities to address it. Sponsorship of Coastal Cleanup Day will result in load reduction of trash and debris directly and of bacteria indirectly. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Although Coastal Cleanup Day is focused on debris removal, it also addresses bacteria indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website¹ states that debris may be contaminated by pathogens that have adverse effects on humans. By reducing the amount of trash and debris in the San Dieguito River WMA through cleanup events, bacteria loading are reduced.

¹ <http://www.epa.gov/owow/oceans/debris/>

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none">• What is the load reduction associated with sponsorship?• What is the efficiency of trash cleanup? (\$/person or \$/ton collected) |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none">• Achieve load reduction of trash (any amount) due to trash cleanup sponsorship |
| Assessment Method(s) | <ul style="list-style-type: none">• Tabulation (e.g., number of participants)• Quantification (e.g., pounds of trash collected) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none">• Money spent (USD) (Outcome Level 1 and 2)• Tons of trash (Outcome Level 4)• Number of participants (Outcome Level 1)• Compliance (yes/no) (Outcome Level 1) |

TITLE: Sediment and Peak Flow Controls #1
ID #: SD-WQA5

ACTIVITY DESCRIPTION

This activity will involve the installation of BMPs to reduce runoff flow velocity and associated erosion and sedimentation. The project may consist of a treatment train composed of, for example, inlet devices to trap gross solids, followed by a storage system to collect runoff and allow for pollutant settlement and slow release, and then a device to treat bacteria. Exact locations and BMPs will be based on monitoring and geotechnical considerations, proximity to other BMPs being implemented, site availability, land use, etc. The pollutant load reduction resulting from this activity will contribute to meeting requirements under the Municipal Permit and current and anticipated TMDLs in the receiving waters of the WMA.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Project planning began in July 2007, and project design is anticipated to continue through FY 2009. Construction is anticipated to occur in FY 2010. Water quality monitoring will be conducted before and after construction to assess the effectiveness in reducing runoff velocity and pollutant loading.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper – project supporter

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Gross Pollutants
- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality pollutants. Implementation of this activity will address the high priority water quality problems by managing runoff volume—the transport mechanism for pollutants—and treating runoff of pollutants before discharge into receiving waters. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Implementation of this activity will reduce pollutant loading by managing runoff volume and treating runoff of pollutants before discharge into receiving waters.

In addition, implementation of this activity is in accordance with the City's *Strategic Plan for Watershed Activity Implementation* (November 2007), which calls for the piloting of sediment and peak flow controls to reduce urban runoff pollution. Knowledge and experience gained through this activity will help the City document the benefits, limitations, and challenges of sediment and peak flow controls as urban runoff pollution controls before implementation on a broader scale throughout its jurisdiction in meeting Municipal Permit and TMDL requirements.

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none"> • What is the load reduction efficiency of sediment controls? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Reduction in TSS at outflow of constructed BMP • Detect water quality improvement in receiving waters downstream of diversion |
| Assessment Method(s) | <ul style="list-style-type: none"> • Inspections (e.g., ensure the constructed treatment BMP is working as designed) • Quantification (e.g., use drainage area information to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of inspections (Outcome Level 1) • Change (%) in load reduction pre and post-implementation (Outcome Level 4) • How much money spent on inspections and maintenance (Outcome Level 1) • How much money spent on implementation? (Outcome Level 1) • Receiving water quality improvement downstream (Outcome Level 6) |

TITLE: Sediment and Peak Flow Controls #2
ID #: SD-WQA6

ACTIVITY DESCRIPTION

This activity will involve the installation of BMPs to reduce runoff flow velocity and associated erosion and sedimentation. The project may consist of a treatment train composed of, for example, inlet devices to trap gross solids, followed by a storage system to collect runoff and allow for pollutant settlement and slow release, and then a device to treat bacteria. Exact locations and BMPs will be based on monitoring and geotechnical considerations, proximity to other BMPs being implemented, site availability, land use, etc. The pollutant load reduction resulting from this activity will contribute to meeting requirements under the Municipal Permit and current and anticipated TMDLs in the receiving waters of the WMA.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Project planning began in July 2007, and project design is anticipated to continue through FY 2010. Construction is anticipated to occur in FY 2011. Water quality monitoring will be conducted before and after construction to assess the effectiveness in reducing runoff velocity and pollutant loading.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper – project supporter

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Gross Pollutants
- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality pollutants. Implementation of this activity will address the high priority water quality problems by managing runoff volume—the transport mechanism for pollutants—and treating runoff of pollutants before discharge into receiving waters. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Implementation of this activity will reduce pollutant loading by managing runoff volume and treating runoff of pollutants before discharge into receiving waters.

In addition, implementation of this activity is in accordance with the City's *Strategic Plan for Watershed Activity Implementation* (November 2007), which calls for the piloting of sediment and peak flow controls to reduce urban runoff pollution. Knowledge and experience gained through this activity will help the City document the benefits, limitations, and challenges of sediment and peak flow controls as urban runoff pollution controls before implementation on a broader scale throughout its jurisdiction in meeting Municipal Permit and TMDL requirements.

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none"> • What is the load reduction efficiency of sediment controls? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Reduction in TSS at outflow of constructed BMP • Detect water quality improvement in receiving waters downstream of diversion |
| Assessment Method(s) | <ul style="list-style-type: none"> • Inspections (e.g., ensure the constructed treatment BMP is working as designed) • Quantification (e.g., use drainage area information to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of inspections (Outcome Level 1) • Change (%) in load reduction pre and post-implementation (Outcome Level 4) • How much money spent on inspections and maintenance (Outcome Level 1) • How much money spent on implementation? (Outcome Level 1) • Receiving water quality improvement downstream (Outcome Level 6) |

TITLE: Targeted Animal-Related Facility Inspections
ID #: SD-WQA7

ACTIVITY DESCRIPTION

The Storm Water Pollution Prevention Division (Storm Water Division) is developing a focused inspection activity to target animal-related facilities within the San Dieguito River WMA. The purpose of the activity is to:

- Determine the most efficient frequency of inspections to ensure proper BMP implementation and reduce pollutant loading (e.g., once vs. twice per fiscal year)
- Determine the most efficient type of inspection to ensure proper BMP implementation and reduce pollutant loading (e.g., random inspections vs. scheduled inspections)
- Determine the most efficient combination of enforcement action to ensure proper BMP implementation and reduce pollutant loading (e.g., education/flyers vs. monetary fines vs. onsite direct interactions)
- Characterize activities at animal-related facilities to determine which activities cause the greatest pollutant discharges to better direct focused education/outreach and enforcement efforts
- Track and analyze inspection and enforcement actions to estimate load reductions resulting from inspections

The Storm Water Division will delineate a specific area within the San Dieguito River WMA to conduct the targeted inspections based on factors, such as monitoring data, facility clustering, and proximity to other watershed activities being conducted. Discharges cleaned up, behaviors corrected, and sources abated will also be reported. The Storm Water Division anticipates using the knowledge and experience gained through this activity to optimize the City's jurisdictional industrial and commercial facility inspection program to meet Municipal Permit and TMDL requirements.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Activity planning began in July 2007. The Storm Water Division anticipates selecting and hiring a consultant on board by the end of calendar year 2007 to help develop and implement the activity within FY 2008 through FY 2012.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality pollutants. Implementation of this focused inspection activity will contribute

to addressing discharges, correct behaviors, and abate sources associated with bacteria and nutrients. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This focused inspection activity will contribute to reducing discharges, characterizing activities, correcting behaviors, and abating sources associated with bacteria at animal-related facilities. Knowledge and experience gained through this activity would help the City optimize its jurisdictional industrial and commercial facility inspection program.

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none"> • Do inspections increase rate of BMP implementation? • Does increased rate of BMP implementation effect load reduction? • What is the optimal frequency of inspection (point of diminishing returns)? • Are spot inspections more effective than scheduled inspections? • Does enforcement alter future behavior (implementing BMPs)? • Does education increase rate of BMP implementation? • How can an estimate of load reduction be made from inspection data? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Achieve load reduction from optimized inspection rate • Achieve greater BMP implementation from optimized inspection rate (over time) |
| Assessment Method(s) | <ul style="list-style-type: none"> • Inspections (e.g., track number of BMPs implemented, increased number of BMPs, number of follow-up inspections) • Quantification (e.g., use frequency of BMP implementation to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on inspections, amount of money spent on educational materials) • Reporting (e.g., estimates of load reduction for BMPs from 3rd party data) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of inspections (spot and scheduled) (Outcome Level 1) • Number of BMPs implemented (Outcome Level 1) • Change (%) in BMP implementation pre and post-education (Outcome Level 3) • Number of missing BMPs (Outcome Level 1) • Number of follow-up inspections (Outcome Level 1) • Number of enforcement follow-ups (Outcome Level 1) • Number of educational information items passed out (Outcome Level 1) • How much money spent on inspections (follow ups, initial inspections, enforcement actions)? (Outcome Level 1) • Literature review or other information to provide data to estimate load reductions (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 4) |

TITLE: Targeted Landscaping-Related Facility Inspections
ID #: SD-WQA8

ACTIVITY DESCRIPTION

The Storm Water Pollution Prevention Division (Storm Water Division) is developing a focused inspection activity to target landscaping-related facilities within the San Dieguito River WMA. The purpose of the activity is to:

- Determine the most efficient frequency of inspections to ensure proper BMP implementation and reduce pollutant loading (e.g., once vs. twice per fiscal year)
- Determine the most efficient type of inspection to ensure proper BMP implementation and reduce pollutant loading (e.g., random inspections vs. scheduled inspections)
- Determine the most efficient combination of enforcement action to ensure proper BMP implementation and reduce pollutant loading (e.g., education/flyers vs. monetary fines vs. onsite direct interactions)
- Characterize activities at landscaping-related facilities to determine which activities cause the greatest pollutant discharges to better direct focused education/outreach and enforcement efforts
- Track and analyze inspection and enforcement actions to estimate load reductions resulting from inspections

The Storm Water Division will delineate a specific area within the San Dieguito River WMA to conduct the targeted inspections based on factors, such as monitoring data, facility clustering, and proximity to other watershed activities being conducted. Discharges cleaned up, behaviors corrected, and sources abated will also be reported. The Storm Water Division anticipates using the knowledge and experience gained through this activity to optimize the City's jurisdictional industrial and commercial facility inspection program to meet Municipal Permit and TMDL requirements.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Activity planning began in July 2007. The Storm Water Division anticipates selecting and hiring a consultant on board by the end of calendar year 2007 to help develop and implement the activity within FY 2008 through FY 2009.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality pollutants. Implementation of this focused inspection activity will contribute

to addressing discharges, correct behaviors, and abate sources associated with bacteria and nutrients. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This focused inspection activity will contribute to reducing discharges, characterizing activities, correcting behaviors, and abating sources associated with bacteria at landscaping-related facilities. Knowledge and experience gained through this activity would help the City optimize its jurisdictional industrial and commercial facility inspection program.

EFFECTIVENESS MEASUREMENTS

| | |
|--|--|
| <p>Management Questions</p> | <ul style="list-style-type: none"> • Do inspections increase rate of BMP implementation? • Does increased rate of BMP implementation effect load reduction? • What is the optimal frequency of inspection (point of diminishing returns)? • Are spot inspections more effective than scheduled inspections? • Does enforcement alter future behavior (implementing BMPs)? • Does education increase rate of BMP implementation? • How can an estimate of load reduction be made from inspection data? |
| <p>Targeted Measurable Outcome(s)</p> | <ul style="list-style-type: none"> • Achieve load reduction from optimized inspection rate • Achieve greater BMP implementation from optimized inspection rate (over time) |
| <p>Assessment Method(s)</p> | <ul style="list-style-type: none"> • Inspections (e.g., track number of BMPs implemented, increased number of BMPs, number of follow-up inspections) • Quantification (e.g., use frequency of BMP implementation to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on inspections, amount of money spent on educational materials) • Reporting (e.g., estimates of load reduction for BMPs from 3rd party data) |
| <p>Assessment Measures, Assessment Outcome Levels & Data</p> | <ul style="list-style-type: none"> • Number of inspections (spot and scheduled) (Outcome Level 1) • Number of BMPs implemented (Outcome Level 1) • Change (%) in BMP implementation pre and post-education (Outcome Level 3) • Number of missing BMPs (Outcome Level 1) • Number of follow-up inspections (Outcome Level 1) • Number of enforcement follow-ups (Outcome Level 1) • Number of educational information items passed out (Outcome Level 1) • How much money spent on inspections (follow ups, initial inspections, enforcement actions)? (Outcome Level 1) • Literature review or other information to provide data to estimate load reductions (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 4) |

TITLE: Targeted Municipal Facility Inspections
ID #: SD-WQA9

ACTIVITY DESCRIPTION

The Storm Water Pollution Prevention Division (Storm Water Division) is developing a focused inspection activity to target municipal facilities within the San Dieguito River WMA. The purpose of the activity is to:

- Determine the most efficient frequency of inspections to ensure proper BMP implementation and reduce pollutant loading (e.g., once vs. twice per fiscal year)
- Determine the most efficient type of inspection to ensure proper BMP implementation and reduce pollutant loading (e.g., random inspections vs. scheduled inspections)
- Determine the most efficient combination of enforcement action to ensure proper BMP implementation and reduce pollutant loading (e.g., education/flyers vs. monetary fines vs. onsite direct interactions)
- Characterize activities at municipal facilities to determine which activities cause the greatest pollutant discharges to better direct focused education/outreach and enforcement efforts
- Track and analyze inspection and enforcement actions to estimate load reductions resulting from inspections

The Storm Water Division will delineate a specific area within the San Dieguito River WMA to conduct the targeted inspections based on factors, such as monitoring data, facility clustering, and proximity to other watershed activities being conducted. Discharges cleaned up, behaviors corrected, and sources abated will also be reported. The Storm Water Division anticipates using the knowledge and experienced gained through this activity to optimize the City’s municipal facility inspection program to meet Municipal Permit and TMDL requirements.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Activity planning began in July 2007. The Storm Water Division anticipates selecting and hiring a consultant in FY 2008 to help develop and implement the activity beginning in FY 2009.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Dissolved Minerals
- Gross Pollutants

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed. The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality pollutants. Implementation of this focused inspection activity will contribute

to addressing discharges, correct behaviors, and abate sources associated with bacteria, dissolved minerals, and gross pollutants at municipal facilities. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This focused inspection activity will contribute to reducing discharges, characterizing activities, correcting behaviors, and abating sources associated with bacteria at municipal facilities. Knowledge and experience gained through this activity would help the City optimize its municipal facility inspection program.

EFFECTIVENESS MEASUREMENTS

| | |
|--|--|
| <p>Management Questions</p> | <ul style="list-style-type: none"> • Do inspections increase rate of BMP implementation? • Does increased rate of BMP implementation effect load reduction? • What is the optimal frequency of inspection (point of diminishing returns)? • Are spot inspections more effective than scheduled inspections? • Does enforcement alter future behavior (implementing BMPs)? • Does education increase rate of BMP implementation? • How can an estimate of load reduction be made from inspection data? |
| <p>Targeted Measurable Outcome(s)</p> | <ul style="list-style-type: none"> • Achieve load reduction from optimized inspection rate • Achieve greater BMP implementation from optimized inspection rate (over time) |
| <p>Assessment Method(s)</p> | <ul style="list-style-type: none"> • Inspections (e.g., track number of BMPs implemented, increased number of BMPs, number of follow-up inspections) • Quantification (e.g., use frequency of BMP implementation to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on inspections, amount of money spent on educational materials) • Reporting (e.g., estimates of load reduction for BMPs from 3rd party data) |
| <p>Assessment Measures, Assessment Outcome Levels & Data</p> | <ul style="list-style-type: none"> • Number of inspections (spot and scheduled) (Outcome Level 1) • Number of BMPs implemented (Outcome Level 1) • Change (%) in BMP implementation pre and post-education (Outcome Level 3) • Number of missing BMPs (Outcome Level 1) • Number of follow-up inspections (Outcome Level 1) • Number of enforcement follow-ups (Outcome Level 1) • Number of educational information items passed out (Outcome Level 1) • How much money spent on inspections (follow ups, initial inspections, enforcement actions)? (Outcome Level 1) • Literature review or other information to provide data to estimate load reductions (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 4) |

TITLE: Targeted Restaurant Facility Inspections
ID #: SD-WQA10

ACTIVITY DESCRIPTION

The Storm Water Pollution Prevention Division (Storm Water Division) is developing a focused inspection activity to target restaurant facilities within the San Dieguito River WMA. The purpose of the activity is to:

- Determine the most efficient frequency of inspections to ensure proper BMP implementation and reduce pollutant loading (e.g., once vs. twice per fiscal year)
- Determine the most efficient type of inspection to ensure proper BMP implementation and reduce pollutant loading (e.g., random inspections vs. scheduled inspections)
- Determine the most efficient combination of enforcement action to ensure proper BMP implementation and reduce pollutant loading (e.g., education/flyers vs. monetary fines vs. onsite direct interactions)
- Characterize activities at restaurant facilities to determine which activities cause the greatest pollutant discharges to better direct focused education/outreach and enforcement efforts
- Track and analyze inspection and enforcement actions to estimate load reductions resulting from inspections

The Storm Water Division will delineate a specific area within the San Dieguito River WMA to conduct the targeted inspections based on factors, such as monitoring data, facility clustering, and proximity to other watershed activities being conducted. Discharges cleaned up, behaviors corrected, and sources abated will also be reported. The Storm Water Division anticipates using the knowledge and experience gained through this activity to optimize the City's jurisdictional industrial and commercial facility inspection program to meet Municipal Permit and TMDL requirements.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Activity planning began in July 2007. The Storm Water Division anticipates selecting and hiring a consultant on board by the end of calendar year 2007 to help develop and implement the activity within FY 2008 through FY 2011.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for the San Dieguito River WMA identifies bacteria as a high priority water quality problem throughout the WMA and recommends implementing load reduction/source abatement activities to address it. Implementation of this focused inspection activity will contribute to addressing discharges, correct behaviors, and abate sources associated with bacteria. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This focused inspection activity will contribute to reducing discharges, characterizing activities, correcting behaviors, and abating sources associated with bacteria at restaurant facilities. Knowledge and experience gained through this activity would help the City optimize its jurisdictional industrial and commercial facility inspection program.

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none"> • Do inspections increase rate of BMP implementation? • Does increased rate of BMP implementation effect load reduction? • What is the optimal frequency of inspection (point of diminishing returns)? • Are spot inspections more effective than scheduled inspections? • Does enforcement alter future behavior (implementing BMPs)? • Does education increase rate of BMP implementation? • How can an estimate of load reduction be made from inspection data? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Achieve load reduction from optimized inspection rate • Achieve greater BMP implementation from optimized inspection rate (over time) |
| Assessment Method(s) | <ul style="list-style-type: none"> • Inspections (e.g., track number of BMPs implemented, increased number of BMPs, number of follow-up inspections) • Quantification (e.g., use frequency of BMP implementation to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on inspections, amount of money spent on educational materials) • Reporting (e.g., estimates of load reduction for BMPs from 3rd party data) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of inspections (spot and scheduled) (Outcome Level 1) • Number of BMPs implemented (Outcome Level 1) • Change (%) in BMP implementation pre and post-education (Outcome Level 3) • Number of missing BMPs (Outcome Level 1) • Number of follow-up inspections (Outcome Level 1) • Number of enforcement follow-ups (Outcome Level 1) • Number of educational information items passed out (Outcome Level 1) • How much money spent on inspections (follow ups, initial inspections, enforcement actions)? (Outcome Level 1) • Literature review or other information to provide data to estimate load reductions (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 4) |

TITLE: Trash Segregation Device Installation
ID #: SD-WQA11

ACTIVITY DESCRIPTION

This project will involve the installation of devices along certain right-of-ways in the San Dieguito River WMA to prevent trash and debris from entering the MS4. Runoff entering an inlet with such a device will be cleaned of large trash and debris. It is anticipated that accumulation of such pollutants at the mouth of inlets will facilitate their collection by City crews using street sweepers. The City will study the effectiveness (in terms of load reduction) and the efficiency (in terms of load reduction divided by cost) of such devices in improving discharge and water quality impaired by bacteria, both in absolute terms and relative to other potential activities.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacterial TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Project planning began in July 2007, and project design is anticipated to continue through FY 2009. Installation is anticipated to occur in FY 2010. Water quality monitoring will be conducted before and after installation to assess the effectiveness in bacteria and trash loading.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper – project supporter

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Trash

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for the San Dieguito River WMA identifies bacteria as a high priority water quality problem in the watershed and recommends implementing load reduction/source abatement activities to address it. Implementation of this activity will address bacteria via the facilitation of trash and debris removal. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Implementation of this activity will reduce bacteria loading via facilitation of trash and debris removal. Literature published by the United States Environmental Protection Agency on its website² states that debris may be contaminated by pathogens that have adverse effects on humans. By reducing the amount of trash and debris in the San Dieguito River WMA, bacteria loading are reduced.

In addition, implementation of this activity is in accordance with the City's *Strategic Plan for Watershed Activity Implementation* (November 2007), which calls for the piloting of trash

² <http://www.epa.gov/owow/oceans/debris/>

segregation devices to reduce bacteria loading via facilitation of trash and debris removal. In addition, knowledge and experience gained through this activity will help the City document the benefits, limitations, and challenges of trash segregation devices as an urban runoff pollution control before implementation on a broader scale throughout its jurisdiction in meeting Municipal Permit and potential TMDL requirements.

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none"> • Which type of trash segregation device facilitates the most efficient removal of trash and debris? • What is the load reduction efficiency of trash segregation devices in facilitating removal of trash? • How effective are trash segregation devices at facilitating reduction of loads of trash? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Determination of most efficient and effective trash segregation device • Reduction in trash based on amount removed from areas with devices • Receiving water quality improvement (less observed trash in receiving water downstream) |
| Assessment Method(s) | <ul style="list-style-type: none"> • Inspections (e.g., ensure the retrofit is working as designed) • Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of inspections (Outcome Level 1) • Change (%) in load reduction pre and post-implementation (Outcome Level 4) • How much money spent on inspections and maintenance (Outcome Level 1) • Dataset of load contributions for specific activities (Outcome Level 4) |

TITLE: Alpha Project for the Homeless, Inc. Trash Cleanups
ID #: SD-WQA12

ACTIVITY DESCRIPTION

The City's Storm Water Pollution Prevention Division has partnered with Alpha Project for the Homeless, Inc., through a Memorandum of Understanding to conduct trash and debris cleanups and potentially homeless encampment removals throughout the City's jurisdiction in various watersheds in FY 2007 and FY 2008.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

The City will coordinate with Alpha Project to ensure that sites within the San Dieguito River WMA are included in the list of sites to target for cleanups in FY 2008.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- Alpha Project for the Homeless, Inc.

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Trash

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for San Dieguito River WMA identifies bacteria as a high priority water quality problem throughout the WMA and recommends implementing load reduction/source abatement activities to address it. Cleanups by Alpha Project will result in load reduction of trash and debris directly and of bacteria indirectly. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Although the cleanups conducted by Alpha Project focus on debris removal, it also addresses bacteria indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website³ states that debris may be contaminated by pathogens that have adverse effects on humans. By reducing the amount of trash and debris in the San Dieguito River WMA through cleanup events, bacteria loading are reduced.

EFFECTIVENESS MEASUREMENTS

| | |
|----------------------|--|
| Management Questions | <ul style="list-style-type: none">• What is the load reduction associated with sponsorship?• What is the efficiency of trash cleanup? (\$/person or \$/ton collected) |
|----------------------|--|

³ <http://www.epa.gov/owow/oceans/debris/>

| | |
|---|--|
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none">• Achieve load reduction of trash (any amount) due to trash cleanup sponsorship |
| Assessment Method(s) | <ul style="list-style-type: none">• Tabulation (e.g., number of participants)• Quantification (e.g., pounds of trash collected) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none">• Money spent (USD) (Outcome Level 1 and 2)• Tons of trash (Outcome Level 4)• Number of participants (Outcome Level 1)• Compliance (yes/no) (Outcome Level 1) |

TITLE: I Love A Clean San Diego Trash Cleanup Sponsorship
ID #: SD-WQA13

ACTIVITY DESCRIPTION

Each spring, I Love A Clean San Diego (ILACSD) conducts its Creek to Bay Cleanup event to target various inland and coastal sites in San Diego County in need of trash and debris removal. ILACSD recruits and organizes site captains and groups of volunteers for each site. A media center is also designated, which promotes environmental stewardship, including the importance of keeping litter and debris from spoiling the region's watersheds. The whole event is marketed throughout San Diego County through a variety of media, including television, radio public service announcements, newspapers, newsletters, electronic mail, bulletin boards, community outreach activities, calendar listings, and word of mouth.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Creek to Bay Cleanup has historically been held in April of each year. Prior to that month, the City will coordinate with ILACSD staff to ensure that sites within the San Dieguito River WMA are included in the list for cleanups and that proper sponsorship arrangements are made.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- ILACSD
- Volunteers from general public

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Trash

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for the San Dieguito River WMA identifies bacteria as a high priority water quality problem throughout the WMA and recommends implementing load reduction/source abatement activities to address it. Sponsorship of Creek to Bay will result in load reduction of trash and debris directly and of bacteria indirectly. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Although Creek to Bay Cleanup is focused on debris removal, it also addresses bacteria indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website⁴ states that debris may be contaminated by pathogens that have adverse effects on humans. By reducing the amount of trash and debris in the San Dieguito River WMA through cleanup events, bacteria loading are reduced.

⁴ <http://www.epa.gov/owow/oceans/debris/>

EFFECTIVENESS MEASUREMENTS

| | |
|---|---|
| Management Questions | <ul style="list-style-type: none"> • What is the load reduction associated with sponsorship? • What is the efficiency of trash cleanup? (\$/person or \$/ton collected) |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Achieve load reduction of trash (any amount) due to trash cleanup sponsorship |
| Assessment Method(s) | <ul style="list-style-type: none"> • Tabulation (e.g., number of participants) • Quantification (e.g., pounds of trash collected) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Money spent (USD) (Outcome Level 1 and 2) • Tons of trash (Outcome Level 4) • Number of participants (Outcome Level 1) • Compliance (yes/no) (Outcome Level 1) |

TITLE: Park and Open Space Irrigation and Controllers
ID #: SD-WQA14

ACTIVITY DESCRIPTION

The Water Conservation in Landscaping Act of 2006 requires the State Department of Water Resources to update a model Water Efficient Landscape ordinance for adoption by local agencies. While the new ordinance is not yet adopted, one key element has been identified, and that key element is to replace timed irrigation controllers with “smart” controllers which adjust the amount of water used based on weather conditions. This activity provides for the use of these irrigation controllers in City parks and open space areas. The City of Del Mar has allocated \$60,000.00 of grant and general fund monies for the implementation of this program. These controllers are beneficial from an NPDES perspective as they operate more efficiently, conserve water, and reduce the potential for runoff from over irrigation.

TMDL APPLICABILITY

None presently identified.

TIME SCHEDULE FOR IMPLEMENTATION

This project is budgeted for FY 2007/2008 and FY 2008/2009.

PARTICIPATING WATERSHED COPERMITTEES

- City of Del Mar

OTHER PARTICIPATING ENTITIES

This project involves monies and support from the State Department of Water Resources.

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- TDS
- Nutrients
- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collaborative watershed strategy identified bacteria as a high priority water quality pollutant in all areas of the watershed, including the Solana Beach Hydrologic Area (905.1). Landscaping for parks and open space areas has been identified as potential discharges of bacteria from over-irrigation. In addition, other non-priority pollutants have been identified including TDS, nutrients, and sediment as potential discharges from over-irrigation. This activity addresses a high priority water quality problem and potential source of the problems within the watershed, therefore the activity is found to be consistent with the San Dieguito WMA strategy.

EXPECTED BENEFITS

Primary Activity Goal – Dry Weather Load Reductions: A reduction in runoff from over-irrigation will reduce the pollutant loads in urban runoff.

EFFECTIVENESS MEASUREMENTS

Once implemented, the City of Del Mar can track water consumption through the use of flow metering and other use management techniques which demonstrates a Level 4 Outcome (Quantifiable Load Reduction).

TITLE: Median Irrigation System Replacement
ID #: SD-WQA15

ACTIVITY DESCRIPTION

The Water Conservation in Landscaping Act of 2006 requires the State Department of Water Resources to update a model Water Efficient Landscape ordinance for adoption by local agencies. While the new ordinance is not yet adopted, one key element has been identified, and that key element is to replace timed irrigation controllers with “smart” controllers which adjust the amount of water used based on weather conditions. This activity provides for automated irrigation controllers and irrigation system repairs and retrofits of manual valves and drip systems in the City of Del Mar rights-of-way. The City of Del Mar has allocated \$60,000.00 of grant and general fund monies for the implementation of this program. These controllers are beneficial from an NPDES perspective as they operate more efficiently, conserve water, and reduce the potential for runoff from over irrigation.

TMDL APPLICABILITY

None presently identified.

TIME SCHEDULE FOR IMPLEMENTATION

This project is budgeted for FY 2007/2008 and FY 2008/2009.

PARTICIPATING WATERSHED COPERMITTEES

- City of Del Mar

OTHER PARTICIPATING ENTITIES

This project involves monies and support from the State Department of Water Resources.

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Nutrients
- TDS
- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collaborative watershed strategy identified bacteria as a high priority water quality pollutant in all areas of the watershed, including the Solana Beach Hydrologic Area (905.1). Landscaping for parks and open space areas has been identified as potential discharges of bacteria and nutrients from over-irrigation. In addition, other non-priority pollutants have been identified including TDS, nutrients, and sediment as potential discharges from over-irrigation. This activity addresses a high priority water quality problem and potential source of the problems within the watershed, therefore the activity is found to be consistent with the San Dieguito WMA strategy.

EXPECTED BENEFITS

Primary Activity Goal – Dry Weather Load Reductions: A reduction in runoff from over-irrigation will reduce the pollutant loads in urban runoff.

EFFECTIVENESS MEASUREMENTS

Once implemented, the City of Del Mar can track water consumption through the use of flow metering and other use management techniques which demonstrates a Level 4 Outcome (Quantifiable Load Reduction).

TITLE: Increase Trash Receptacles and Dogi-Pot Stations
ID #: SD-WQA16

ACTIVITY DESCRIPTION

This activity will increase the number of pet waste and trash receptacles within the San Dieguito watershed. Pet waste and trash receptacles provide pet owners with litter bags and trash receptacles for easy disposal of pet waste, reducing the amount of pollutants entering receiving waters. Participating jurisdictions will determine locations to increase the number of pet waste bag receptacles, Dogi-Pot stations, and trash receptacles by identifying areas of high pet activity such as parks and trails and areas where trash and animal waste typically accumulate. Increasing the number of stations or bags will further reduce the amount of pet waste present in these areas.

City of
Poway: The City of Poway plans to increase the number of trash cans and Dogi-Pot stations around popular trails in the watershed. The City intends to focus these efforts on popular trails utilized by hikers with dogs; and trails where trash or animal waste is found frequently by City staff.

City of
Escondido: This activity will increase the number of Dogi-Pot stations in areas of high pet activity throughout parks and other areas located in the San Dieguito watershed such as Kit Carson Park.

TMDL APPLICABILITY

While it may be supportive of TMDL goals, this activity is not specifically implemented as part of a TMDL compliance program.

TIME SCHEDULE FOR IMPLEMENTATION

Escondido: Installation of additional Dogi-Pot stations is expected to occur at sites such as Kit Carson Park in FY 2010.

Poway: Plan development will occur in FY 2010 and implementation will occur in FY 2011

PARTICIPATING WATERSHED COPERMITTEES

- City of Escondido
- City of Poway

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the entire watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). Pet waste has been identified as a potential source of bacteria and nutrients. This activity addresses high priority water quality problems and potential source of the problems within the watershed. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This proposed activity is designed to provide pet owners with a convenient means to dispose of pet waste, thereby reducing pollutants in runoff to receiving waters. As a result, Copermittees hope to see a reduction in concentrations of pollutants associated with pet waste in receiving waters.

EFFECTIVENESS MEASUREMENTS

This activity is designed to raise awareness of the potential water quality impacts associated with pet waste and change pet owner behavior by providing a means for pet waste disposal (Levels 2 and 3). Proper disposal of pet waste will reduce pollutant loads in runoff (Level 4).

TITLE: Focused Restaurant Inspections
ID #: SD-WQA17

ACTIVITY DESCRIPTION

The Cities of Escondido and Solana Beach will conduct focused inspections of restaurants within the San Dieguito watershed to target the pollutants generated by food service facilities. Activities and areas at restaurants such as grease handling and disposal, spills, dumpster and loading docks, parking lots, landscaping and ground maintenance and cleaning of equipment can generate pollutants that have the potential to enter the receiving waters. Pollutants that may be generated by restaurant areas and activities include bacteria from organic materials (i.e., food wastes), oil and grease, trash, and chemicals.

TMDL APPLICABILITY

This activity is not planned for implementation in compliance with a TMDL. However, this activity may be applicable to the recently adopted bacteria TMDL in the future.

TIME SCHEDULE FOR IMPLEMENTATION

City of Escondido - The focused inspections will be conducted during FY 2010.
City of Solana Beach – The focused inspections will be conducted during FY 2009.

PARTICIPATING WATERSHED COPERMITTEES

- City of Escondido
- City of Solana Beach

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed. Restaurants have been identified as a potential discharge of bacteria. This activity addresses a high priority water quality problems and potential source of the problem within the watershed. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This focused inspection activity will contribute to reducing discharges, characterizing activities, correcting behaviors, and abating sources associated with bacteria at restaurant facilities.

EFFECTIVENESS MEASUREMENTS

The results of focused inspections will be compared with traditional approaches and used to enhance routine inspections and improve outreach communications. Measures will be primarily at Levels 1 through 4, with marginal measurement capability at Level 5 (discharge quality improvements).

Monitoring data from previous inspections throughout the watershed would be compiled and restaurant NOV status analyzed through GIS. Clusters of problem areas would be targeted for focused inspections and corrective action(s) if necessary.

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TITLE: Stormwater Quality Master Plans for Special Drainage Fee Areas
ID #: SD-WQA18

ACTIVITY DESCRIPTION

The County of San Diego is in the process of preparing Storm Water Quality Master Plans (SWQMPs) for ten Special Drainage Fee Areas (SDAs). The SWQMPs address water quality impacts within each area, and are being prepared concurrently with a GIS-based Drainage Facilities Master Plan (DFMP). The County has identified a need to replace or upgrade portions of the drainage systems within its SDAs to meet current drainage design standards. In the process of planning for the proposed drainage facility improvements, the County is seizing the opportunity to identify potential regional BMPs that would assist in improving watershed water quality and minimize associated drainage facility maintenance costs.

Ultimately, the SWQMPs will identify and prioritize for implementation a list of potential regional BMPs. BMPs could include extended detention basins, hydrodynamic separators, or other BMP types. Prioritization criteria will include considerations of cost, BMP type, location, land use, and funding. Construction of recommended BMPs is contingent upon the approval of SDA fee increases by the County Board of Supervisors.

SWQMPs with the potential to propose BMPs in the San Dieguito River Watershed include:

- SDA 8 (Ramona)
- SDA 9 (San Dieguito)
- SDA 10 (North County Metro)

TMDL APPLICABILITY

This activity is not specifically implemented in compliance with a TMDL.

TIME SCHEDULE FOR IMPLEMENTATION

SWQMPs are in various stages of completion. Construction of recommended BMPs is contingent upon approval of SDA fee increases by the County Board of Supervisors. The Board is likely to consider fee increases in 2009. Construction is therefore unlikely to occur anytime before FY 2010.

PARTICIPATING WATERSHED COPERMITTEES

- County of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- To be determined

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

To be determined

EXPECTED BENEFITS

The SWQMPs will recommend regional structures or devices intended to improve watershed water quality. Regional BMPs address large mixed-use watershed areas, rather than smaller watersheds from individual development projects.

EFFECTIVENESS MEASUREMENTS

To be determined

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TITLE: Pet Waste Bag Dispenser Program in County Parks
ID #: SD-WQA19

ACTIVITY DESCRIPTION

The County of San Diego maintains an inventory of pet waste bag dispensers in its parks. Two important goals of this program are to reduce the amount of pet waste found in parks and to educate the public on the need to cleanup after their pets. Realization of these goals will result in the reduction of pollutant loads, particularly bacteria and nutrients. In the San Dieguito River Watershed, there are currently three dispensers located in two County parks:

- San Dieguito Park (2 dispensers)
- Holly Oaks Park (1 dispenser)

The County's jurisdictional goal for this five-year permit cycle is to increase the total number of parks with pet waste dispensers by 100% (i.e., from 26 parks to 52 parks).

TMDL APPLICABILITY

This activity is not specifically implemented in compliance with a TMDL.

TIME SCHEDULE FOR IMPLEMENTATION

- Maintenance of existing pet waste bag dispensers – Ongoing
- Addition of new dispensers in County parks – To be determined

PARTICIPATING WATERSHED COPERMITTEES

- County of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). Parks and pet waste have been identified as potential discharges of bacteria and nutrients. This activity addresses high priority water quality problems and potential source of the problems within the watershed. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

This activity will result in reductions of bacteria and nutrients from County parks.

EFFECTIVENESS MEASUREMENTS

As described in the table below, activity effectiveness will be measured by tracking the number of pet waste bags distributed at each County park on an annual basis (Level 1 Outcome). Bacteria load reductions (Level 4 Outcome) will be estimated based on the number of bags distributed and the following assumptions obtained from a 2004 study completed by the County at the San Elijo Lagoon Ecological Reserve:

- Assumption 1: The average weight of pet waste per bag is approximately 0.2 lbs
- Assumption 2: In addition to the bags taken from the County's dispensers, an additional 30% of pet waste bags are brought to the parks by the pet owners themselves.

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TITLE: Irrigation Controller and Xeriscaping Incentive Program
ID #: SD-WQA20

ACTIVITY DESCRIPTION

This activity will involve launching a pilot incentive program to encourage the use of weather-based irrigation devices and xeriscaping to reduce over-irrigation and the overall need for landscaping irrigation. Specific residential and commercial areas will be targeted and monitored to assess the efficiency of the incentive program in reducing runoff volume and pollutant loads. It is also anticipated that the program will include a component to investigate the challenges to getting residents and businesses to participate in this incentive program to better focus subsequent education and outreach efforts and determine whether broad-scale implementation should be pursued.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

Project planning and coordination is anticipated to begin in July 2010. Program launch is anticipated to occur in FY 2012.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper – project supporter
- City of San Diego Water Department (to be invited to participate)
- San Diego County Water Authority (to be invited to participate)

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Gross Pollutants
- Dissolved Minerals

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the entire watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). The Strategy also recommends implementing load reduction/source abatement activities to address the high priority water quality problems. Implementation of this activity will address the high priority water quality problems by reducing dry weather flows resulting from over-irrigation. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Implementation of this activity will reduce pollutant loading by reducing dry weather flows resulting from over-irrigation. Reduction of runoff means less pollutants conveyed into the storm drain system and out into receiving waters. Water conservation will also be an added benefit as program participants waste less water on irrigation.

In addition, implementation of this activity is in accordance with the City’s *Strategic Plan for Watershed Activity Implementation* (November 2007), which calls for the piloting and monitoring of an irrigation runoff reduction program to combat urban pollution. Knowledge and experience gained through this activity will help the City document the benefits, limitations, and challenges of irrigation runoff reduction programs as an urban runoff pollution control before implementation on a broader scale throughout its jurisdiction in meeting Municipal Permit and TMDL requirements.

EFFECTIVENESS MEASUREMENTS

| | |
|---|---|
| Management Questions | <ul style="list-style-type: none"> • Does increased education help reduce dry weather runoff? • Do incentives and/or rebates increase the rate of low-runoff irrigation device installation? • Do neighborhoods targeted for outreach or incentives exhibit fewer incidence of dry weather runoff? • How does the incidence of dry weather runoff relate to load reduction? |
| Targeted Measurable Outcome(s): | <ul style="list-style-type: none"> • Achieve zero dry weather runoff in target neighborhoods |
| Assessment Method(s): | <ul style="list-style-type: none"> • Inspections (e.g., track number of target behaviors observed, decrease in observed behavior, number of follow-up inspections) • Quantification (e.g., use frequency of observed behavior to calculate estimated load reduction) • Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction) • Tabulation (e.g., amount of money spent on inspections, amount of money spent on educational materials) • Reporting (e.g., estimates of load reduction for BMPs from 3rd party data) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of incentives or rebates distributed (Outcome Level 1) • Change (%) in target behavior pre and post-outreach (Outcome Level 3) • Number of follow-up inspections (Outcome Level 1) • How much money spent on inspections (follow ups, initial inspections)? (Outcome Level 1) • Literature review or other information to provide data to estimate load reductions (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 4) |

TITLE: Residential Irrigation Runoff Reduction
ID #: SD-WQA21

ACTIVITY DESCRIPTION

The San Dieguito watershed has seen exceedances for various high priority pollutants during the Dry Weather Monitoring Program. A pilot single family residential area in a sub-watershed will be selected to evaluate the load reduction potential related to reducing irrigation runoff. The expected results include reduction of any existing leaks or overspray at applicable residences, one-on-one education of residents in pilot area, and reduction in irrigation runoff flow in the pilot area. Planned activities include:

- Use Dry Weather Monitoring Program results, BLTEA info, and field knowledge to select pilot area
- Collect pre-pilot flow data in pilot drainage area, and calculate estimated pollutant loads
- Work with volunteer residences and sites with irrigation runoff to review water usage, conduct water assessment and leak detection as necessary.
- Field reconnaissance to check for corrective action completion
- Collect post-pilot flow measurements in pilot drainage area, and calculate estimated pollutant loads
- Measure effectiveness of overall program by calculating any reduction in pollutant loading through reduction in over-irrigation.

TMDL APPLICABILITY

This activity is not related to an existing TMDL.

TIME SCHEDULE FOR IMPLEMENTATION

Activity planning will occur in FY 2009 and the implementation and assessment is estimated for FY 2010.

PARTICIPATING WATERSHED COPERMITTEES

- City of Solana Beach

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Sediment
- Nutrients

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the watershed. Bacteria have been identified as a potential discharge from over-irrigation. This activity addresses a high priority water quality problem and potential source of the problem within the watershed. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

Expected benefits include a reduction in dry weather urban runoff and therefore load reduction/source abatement of high priority pollutants. Another expected benefit is a reduction in water usage.

EFFECTIVENESS MEASUREMENTS

To be determined once the pilot activity planning is completed.

San Dieguito Watershed Education Activity Sheets

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for reproduction purposes.*

TITLE: Residential Water Conservation Outreach
ID #: SD-WQEA1

ACTIVITY DESCRIPTION

The Water Conservation in Landscaping Act of 2006 requires the State Department of Water Resources to update a model Water Efficient Landscape ordinance for adoption by local agencies.

While the new ordinance is not yet adopted, one key element has been identified: the replacement timed irrigation controllers with “smart” controllers which adjust the amount of water used based on weather conditions. While this planned activity does not directly replace controllers in the residential zones of the City, it provides for outreach through direct mail and utility bill enclosures to encourage water-wise approaches to landscaping, including the use of native plants, smart controllers and drip irrigation systems. This is beneficial from an NPDES perspective since any reduction in water usage, including the use of efficient irrigation systems, reduces the potential for runoff from over irrigation.

TMDL APPLICABILITY

None presently identified.

TIME SCHEDULE FOR IMPLEMENTATION

This project proposed for FY 2008/2009 and FY 2009/2010.

PARTICIPATING WATERSHED COPERMITTEES

- City of Del Mar

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- TDS
- Nutrients

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collaborative watershed strategy identified bacteria as a high priority water quality pollutant in all areas of the watershed, including the Solana Beach Hydrologic Area (905.1). Landscaping for parks and open space areas has been identified as potential discharges of bacteria from over-irrigation. In addition, other pollutants have been identified including TDS and nutrients as potential discharges from over-irrigation. This activity addresses a high priority water quality problem and potential source of the problem within the watershed, therefore the activity is found to be consistent with the San Dieguito WMA strategy.

EXPECTED BENEFITS

Primary Activity Goal – Dry Weather Load Reductions: Education and outreach to the community regarding water quality benefits that couple with water conservation activities should result in an overall reduction in runoff from over-irrigation and will reduce the pollutant loads in urban runoff.

EFFECTIVENESS MEASUREMENTS

Quantification of contacts with the residents regarding water conservation water quality activities can be tracked demonstrating a Level 2 outcome (Change in Knowledge).

TITLE: LID and Watershed Planning Education
ID #: SD-WQEA2

ACTIVITY DESCRIPTION

This activity involves educating local planning and sponsor groups for the unincorporated County and the development community in the City of Del Mar on low impact development (LID) and watershed planning principles, practices, and requirements.

In the unincorporated County, local planning and sponsor groups act in an advisory capacity to local decision makers on a variety of issues, primarily discretionary planning projects. Because their input is valuable to the discretionary process, it is important that they have a strong understanding of regulations and guidelines that may affect the way watersheds are developed. Ultimately, the recommendations of local planning and sponsor groups have some influence over whether, and under what conditions, development projects are approved. LID and watershed planning education will aid local planning and sponsor groups in making informed recommendations on aspects of development projects that would affect watershed water quality.

Local planning and sponsor groups within the San Dieguito River Watershed include:

- Palomar Mountain
- Ramona
- Hidden Meadows (North County Metro)
- Twin Oaks (North County Metro)
- San Dieguito
- Pala-Pauma
- Julian
- Valley Center

TMDL APPLICABILITY

This activity is not specifically implemented in compliance with a TMDL.

TIME SCHEDULE FOR IMPLEMENTATION

County of San Diego:

- Develop Education Program – FY 2007-08
- Begin Education Efforts – FY 2007-08
- Complete Education Efforts – FY 2008-09

City of Del Mar:

- Community Outreach Workshops will be implemented in FY 2008

PARTICIPATING WATERSHED COPERMITTEES

- County of San Diego
- City of Del Mar

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria
- Nutrients

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Sediment

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant throughout the entire watershed and nutrients as a high priority water quality pollutant in the San Pasqual Hydrologic Area (905.3). New development has been identified as having potentially significant impacts on watershed health. As such, this activity is consistent with the collective watershed strategy.

EXPECTED BENEFITS

This activity is expected to result in better decision-making through increased understanding of watershed planning and LID principles, practices, and requirements.

EFFECTIVENESS MEASUREMENTS

Activity effectiveness will be assessed by tracking the number of presentations conducted, the number of participants in attendance, and the number and type of materials distributed (Level 1 Outcome). The County and City of Del Mar will also consider distributing post-presentation evaluation forms that ask attendees to assess whether they learned something valuable (Level 2 Outcome).

TITLE: Public Service Announcements: *Karma* and *Karma Second Chance*
ID #: SD-WQEA3

ACTIVITY DESCRIPTION

The City's Storm Water Pollution Prevention Division has retained a contract with a film production company to produce two Public Service Announcements (PSAs) specifically focused on bacteria, with gross pollutants (trash) profiled as a vector. The PSAs are entitled, *Karma* and *Karma Second Chance*, and the goal of the PSAs is to educate the public about causes of pollution and to encourage positive behavioral change. These PSAs were developed in FY 2007 and FY 2008, and will be broadcast on several television and radio stations throughout the San Dieguito River WMA in FY 2008. The PSAs will be broadcast in both English and Spanish.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

The City will coordinate with a film production company to complete production in FY 2008, and then will work with various broadcast media outlets to distribute and air the PSAs in FY 2008 and FY 2009.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- Various Television and Radio Stations in San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Gross Pollutants (Trash)

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for the San Dieguito River WMA identifies bacteria as a high priority water quality problem in the WMA. The *Karma* and *Karma Second Chance* PSAs will result in increased knowledge and awareness regarding bacteria, and trash as a vector, and result in future load reduction of trash and debris directly and of bacteria indirectly. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

The PSAs address bacteria directly by focusing on pet waste, food waste and organic matter, and indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website⁵ states that *pathogens* are microscopic organisms like bacteria and viruses. They come from untreated or poorly treated sewage, pet and farm animal waste, and improperly handled medical waste. Pathogens in the water in unsafe amounts result in beach closures; shellfish bed closures, fish kills, and human health problems.

⁵ <http://www.epa.gov/owow/oceans/debris/>

EFFECTIVENESS MEASUREMENTS

| | |
|---|--|
| Management Questions | <ul style="list-style-type: none">• What changes in awareness/attitude regarding trash and bacteria was achieved after implementation?• How efficient is this education activity based on total cost versus number of people (targeted audience) reached? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none">• Reach goal of number of listeners (radio) and homes (television) reached, based on survey results• Increased level of knowledge/attitude based on post-activity surveys |
| Assessment Method(s) | <ul style="list-style-type: none">• Survey (e.g., administer survey to assess knowledge and attitude of participants)• Quantification (e.g., number of residents reached by PSA) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none">• Number of listeners (radio) or homes (television) reached (Outcome Level 1)• Change in knowledge or awareness (Outcome Level 2) |

TITLE: Mobile Advertising
ID #: SD-WQEA4

ACTIVITY DESCRIPTION

The City’s Storm Water Pollution Prevention Division has retained a contract with a mobile advertising company to advertise *Think Blue* messages in both English and Spanish on its static billboard trucks in the San Dieguito River WMA. The City will coordinate with its Printing Services Division in the design of the advertisements and intends to create advertisements that target behaviors associated with bacteria and/or gross pollutants (trash). The trucks will drive predetermined routes in the San Dieguito WMA in an effort to reach targeted, high priority areas within the WMA to increase awareness and promote behavior change.

TMDL APPLICABILITY

None

TIME SCHEDULE FOR IMPLEMENTATION

The advertisements will be developed and displayed on the billboard trucks in FY 2008.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY

The Collective Watershed Strategy for the San Dieguito River WMA identifies bacteria as a high priority water quality problem in the WMA. Utilizing billboard trucks will result in increased knowledge and awareness regarding bacteria (and trash as a vector), promote behavior change, and result in future load reduction of trash and debris directly and of bacteria indirectly. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

The advertisements will address bacteria indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website⁶ states that debris may be contaminated by pathogens that have adverse effects on humans. By reducing the amount of trash, bacteria loads are reduced.

EFFECTIVENESS MEASUREMENTS

| | |
|--------------------------------|--|
| Management Questions | <ul style="list-style-type: none"> • What changes in awareness /attitude regarding trash and bacteria was achieved after implementation? • How efficient is this education activity based on total cost versus number of people (targeted audience) reached? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Reach pre-set percentage of residents within target watershed • Increased level of knowledge/attitude based on post-activity surveys |

⁶ <http://www.epa.gov/owow/oceans/debris/>

| | |
|---|---|
| Assessment Method(s) | <ul style="list-style-type: none">• Survey (e.g., administer survey to assess knowledge and attitude of participants)• Quantification (e.g., number of residents reached by PSA) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none">• Number of public reached (Outcome Level 1)• Change in knowledge or attitude (Outcome Level 2) |

TITLE: Restaurant Inspection Outreach
ID #: SD-WQEA5

ACTIVITY DESCRIPTION

The City of San Diego (City) proposes Restaurant Inspection Outreach in support of the planned inspection activity to target restaurant facilities within the San Dieguito River WMA. The purpose of the activity is to characterize activities at restaurant facilities to determine which activities cause the greatest pollutant discharges to better direct focused education/outreach efforts. The City's Storm Water Division will delineate a specific area within the San Dieguito River WMA to conduct the targeted inspections based on factors, such as monitoring data, facility clustering, and proximity to other watershed activities being conducted. Discharges cleaned up, behaviors corrected, and sources abated will also be reported.

Education and outreach methods, activities and materials will then be developed to supplement the inspections, with the goal of increasing awareness and compliance which will lead to load reductions. The City has retained several professional outreach consultants to assist, develop and initiate the public participation and education campaign. Activities will include recommendations for education and outreach strategies, which may include education, structural interventions, public participation, incentives and specific messaging.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

In Fiscal Year 2008, the City retained several outreach consultants, including at least one firm that specializes in Community Outreach. Specific outreach planning will occur in FY09, with implementation, outreach, and evaluation continuing through FY 2011.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Gross Pollutants (Trash)

CONSISTENCY WITH THE WATERSHED STRATEGY

The Collective Watershed Strategy identifies bacteria and trash as high priority water quality problem in the San Dieguito WMA and recommends implementing load reduction/source abatement activities to address it. Restaurants have been identified as potential discharges of bacteria. This activity addresses high priority water quality problem and potential source of the problem within the watershed. Therefore, this activity is consistent with the San Dieguito WMA Strategy.

EXPECTED BENEFITS

The Restaurant Inspection Outreach will address bacteria indirectly by removing bacterial sources observed in the WMA, which may include trash and food debris. Literature published by

the United States Environmental Protection Agency on its website⁷ states that *pathogens* are microscopic organisms like bacteria and viruses. They come from untreated or poorly treated sewage, pet and farm animal waste, and improperly handled medical waste. Pathogens in the water in unsafe amounts result in beach closures; shellfish bed closures, fish kills, and human health problems.

EFFECTIVENESS MEASUREMENTS

| | |
|---|---|
| Management Questions | <ul style="list-style-type: none"> • To what extent is there an observable difference in the level of either pollutants or polluting behaviors pre- and post- outreach? • How much change in awareness was achieved? • What changes in levels of behavior was achieved after implementation? • How does the target area compare to other areas (based on surveys, observations and self-report result comparisons) • How do the survey results change pre and post activity implementation? |
| Targeted Measurable Outcome(s) | <ul style="list-style-type: none"> • Achieve increased awareness of bacteria and TMDL issues (e.g., reach 50% of the businesses in the target watershed) • Achieve higher incidence of knowledge and attitude in target group when compared to general public • Achieve increasing rates of knowledge and attitude or change in behavior with increased outreach (based on repeated survey results) |
| Assessment Method(s) | <ul style="list-style-type: none"> • Survey (e.g., administer survey to assess knowledge and attitude of participants) • Quantification (e.g., count observable pollution and behavior of participants in program) • Monitoring (e.g., water quality monitoring at base of targeted watershed) • Tabulation (e.g., amount of money spent one education and outreach, number of residents and households reached) • Reporting (e.g., estimates of load reduction based on 3rd party data, number of individuals or households reached) |
| Assessment Measures, Assessment Outcome Levels & Data | <ul style="list-style-type: none"> • Number of number of stakeholders reached (Outcome Level 1) • Change in knowledge and attitude based on survey data (Outcome Level 2) • Change in behavior based on survey data (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 3) • Volume of pollutants removed from study area (Outcome Level 4) |

⁷ <http://www.epa.gov/owow/oceans/factsheets/fact1.html>

TITLE: Community-Based Social Marketing Outreach Pilot Project
ID #: SD-WQEA6

ACTIVITY DESCRIPTION

The City’s Storm Division found that research indicated that an emerging public education field called “Community Based Social Marketing” (CBSM) has been used successfully to increase knowledge and change behaviors in environmental sustainability programs throughout the United States. CBSM is a relatively new area of environmental social science that relies heavily on the scientific method, which includes comprehensive research, pilot programs, data gathering, and assessment measures. The City plans to implement a pilot project using this approach in a community in the San Dieguito Watershed Management Area (i.e. Carmel Valley) to attempt to achieve awareness and behavioral change. The City has retained several professional research consultants to develop and initiate the CBSM Pilot Project. Research, observations, and surveys will be conducted, with outreach interventions and assessment methods to follow. Potential results will include recommendations for education and outreach strategies, which may include education, structural interventions, public participation, incentives and specific messaging.

TMDL APPLICABILITY

San Diego Region Beaches and Creeks Bacteria TMDL

TIME SCHEDULE FOR IMPLEMENTATION

In Fiscal Year 2009, the City will retain and consult with several research consultants, including at least one firm that specializes in Community-Based Social Marketing. Research and planning will occur in FY09, with implementation, outreach, assessment and evaluation continuing through FY 2012.

PARTICIPATING WATERSHED COPERMITTEE(S)

- City of San Diego

OTHER PARTICIPATING ENTITIES

- San Diego Coastkeeper

HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED

- Bacteria

OTHER WATER QUALITY PROBLEM(S) ADDRESSED

- Gross Pollutants (Trash)

CONSISTENCY WITH THE WATERSHED STRATEGY

The San Dieguito Watershed Management Area collective watershed strategy identified bacteria as a high priority water quality pollutant and recommends implementing load reduction/source abatement activities to address it.

EXPECTED BENEFITS

The Community-Based Social Marketing (CBSM) Outreach Pilot will address bacteria indirectly by removing bacterial sources observed in the WMA, which may include trash, debris and pet waste. Literature published by the United States Environmental Protection Agency on its

website⁸ states that *pathogens* are microscopic organisms like bacteria and viruses. They come from untreated or poorly treated sewage, pet and farm animal waste, and improperly handled medical waste. Pathogens in the water in unsafe amounts result in beach closures; shellfish bed closures, fish kills, and human health problems.

EFFECTIVENESS MEASUREMENTS

| | |
|--|---|
| <p>Management Questions</p> | <ul style="list-style-type: none"> • To what extent is there an observable difference in the level of either pollutants or polluting behaviors between the pre and post intervention observations? • How much change in awareness was achieved? • What changes in levels of behavior was achieved after implementation? • How does the pilot target area compare to non-pilot areas (based on surveys, observations and self-report result comparisons) • How do the survey results change pre and post activity implementation? |
| <p>Targeted Measurable Outcome(s)</p> | <ul style="list-style-type: none"> • Achieve increased awareness of bacteria and TMDL issues (e.g., reach 50% of the businesses in the target watershed) • Achieve higher incidence of knowledge and attitude in pilot group when compared to general public • Achieve increasing rates of knowledge and attitude or change in behavior with increased outreach (based on repeated survey results) |
| <p>Assessment Method(s)</p> | <ul style="list-style-type: none"> • Survey (e.g., administer survey to assess knowledge and attitude of participants) • Quantification (e.g., count observable pollution and behavior of participants in program) • Monitoring (e.g., water quality monitoring at base of targeted watershed) • Tabulation (e.g., amount of money spent one education and outreach, number of residents and households reached) • Reporting (e.g., estimates of load reduction based on 3rd party data, number of individuals or households reached) |
| <p>Assessment Measures, Assessment Outcome Levels & Data</p> | <ul style="list-style-type: none"> • Number of number of stakeholders, residents, and business reached (Outcome Level 1) • Change in knowledge and attitude based on survey data (Outcome Level 2) • Change in behavior based on survey data (Outcome Level 3) • Dataset of load contributions for specific activities (Outcome Level 3) • Volume of trash or other pollutants removed from study area (Outcome Level 4) |

⁸ <http://www.epa.gov/owow/oceans/factsheets/fact1.html>