3.1 SANTA CLARA WATERSHED MANAGEMENT AREA (Santa Clara Basin)

The Santa Clara Basin (Figure 3-7) encompasses the extreme South Bay (south of the Dumbarton Bridge) and those areas of Santa Clara County that drain to the South Bay, including the eastern slope of the Santa Cruz Mountains, the Santa Clara ("Silicon") Valley, and the western slope of the Diablo Range. Within Santa Clara County, the Basin consists of eleven watersheds including the Coyote Creek watershed on the east side of the valley, the Guadalupe River watershed which drains the south-central portion of the valley, the southern half of the San Francisquito Creek watershed on the western boundary of the Basin, a series of small, relatively urbanized watersheds that drain the remainder of the west side of the valley, and the Baylands.

The Basin has a population of approximately 1.7 million, and is mostly urbanized, with some agricultural uses in the rural upper watershed areas. It is one of the fastest growing counties in California.

Water Quality and Aquatic Beneficial Use Issues

Wastewater discharges into San Francisco Bay from the Silicon Valley have been an ongoing issue for Board staff. The discharge from the San Jose/Santa Clara wastewater treatment plant goes into historic salt marshes in the South Bay. The discharge has caused conversion of portions of the salt marsh to brackish marsh, which is significant since two endangered species rely on the salt marsh habitat. In response to this the Board has required mitigation for converted habitat and adopted the "South Bay Action Plan" to limit flows from the treatment plant. The Action Plan includes reclamation, conservation, and environmental enhancement projects.

Santa Clara County has more than 700 miles of creeks and rivers (Figure III-7). Agricultural and urban development have encroached into the original floodplains of many reaches of most of these streams. Reduced floodplains in combination with increased runoff from development have increased erosive forces of streams, resulting in increased soil erosion in some locations and increased soil deposition in others. The various types of development have reduced riparian vegetation which historically provided increased channel stability, shading, instream habitat cover, and a food source for aquatic invertebrates. Flood management channel modifications, both concrete and earthen, have, in most instances, eliminated natural floodplains, instream habitat, and riparian vegetative canopy. Urban stormwater runoff has increased the pollutants discharged to the streams. These impacts have not been uniformly distributed throughout all streams. Some reaches of some streams, especially, though not exclusively, in the upper undeveloped areas of the watersheds, have retained sufficient value to sustain fisheries and riparian habitat.

The Basin includes the region's most significant groundwater resource, the Santa Clara Valley. The boundary of the Santa Clara Valley groundwater basin is the contact

between valley fill and the bedrock formations at the surface and beneath the fill. The aquifers of the Santa Clara Valley consist of 1) the forebay, 2) upper aquifer zone, and 3) the lower aquifer zone. The Santa Clara Basin receives its major recharge in the forebay from stream infiltration, applied irrigation water, and percolation ponds. Most of the groundwater pumped from the basin is from the lower aquifer zone. Groundwater supplies approximately 50% of the potable water supply for the residents of the Santa Clara Valley. The other 50 % comes from imported water that is stored in surface reservoirs along with local rainfall and runoff.

Groundwater is extremely important to the Santa Clara Valley and protection of this resource is therefore very important. Industrial and agricultural activities have contributed to the degradation of the groundwater in some parts of the Santa Clara Valley. Pollutants that contaminate shallow groundwater have found their way into the deeper drinking water zones through a combination of leaky aquitards and numerous improperly abandoned wells. Development in the Basin margins has removed large portions of the recharge area from the hydrogeologic regime. This has a two-fold effect on the regions groundwater. First it reduces the amount of surface area available for water to infiltrate into the aquifers and secondly it places potentially polluting activities in the recharge area.

Several water bodies in the Santa Clara Basin have been designated under Section 303(d) of the Clean Water Act as impaired due to certain pollutants. These include South San Francisco Bay for copper, nickel, mercury, selenium, diazinon, polychlorinated biphenols (PCBs), dioxins, furans, dieldrin, chlordane, and DDT. Urban creeks (Calabazas, Coyote, Guadalupe, Los Gatos, Matadero, San Francisquito, Saratoga, and Stevens) have been listed for diazinon. Water bodies in the Guadalupe River watershed (Guadalupe River, Alamitos Creek, Guadalupe Creek, Calero Reservoir, and Guadalupe Reservoir) have been listed for mercury. San Francisquito Creek has been listed for excessive siltation (sediment) These and other possible listings and progress towards their resolution and will be reviewed as part of update of the 303(d) list due April 2002. Resolution of impairment includes development of TMDLs. TMDLs are currently being developed (see Appendix A, Section 8) for copper and nickel in South San Francisco Bay, mercury, and PCBs in San Francisco Bay as a whole, diazinon in urban creeks, mercury in the Guadalupe River watershed, and sediment in San Francisquito Creek.

In response to the many water quality and aquatic beneficial use problems in the county, considerable local effort is underway in addressing a wide range of issues: wastewater disposal and reuse, urban runoff pollutant reduction, wetland fill impact avoidance and mitigation, watershed assessment and action planning, TMDL development, ecologically-sensitive flood management project design, and development of comprehensive multi-year water quality and watershed health monitoring.

Santa Clara Basin Watershed Management Initiative

We initiated our watershed management effort in the Santa Clara Basin in the summer of 1996 with a series of stakeholder focus group meetings at which we solicited

stakeholders' interests relative to watershed management in the Basin. The community embraced this opportunity to accept responsibility for local stewardship of the watershed and created the Santa Clara Basin Watershed Management Initiative (WMI). This WMI is a broad-based stakeholder group of 32 signatories from local, state and federal public agencies, business and trade associations, and civic and environmental groups and programs. The declared purpose of the WMI is " to develop and implement a comprehensive watershed management program - one that recognizes that healthy watersheds mean addressing water quality problems and quality of life issues for the people, animals and plants that live in the watershed." The WMI has established a mission statement, goals, planning objectives for development of the watershed plan, implementation objectives, and a framework for conducting a watershed assessment. Also, stakeholder forums for development of TMDLs have been established for copper and nickel in Lower South San Francisco Bay, mercury in the Guadalupe River watershed, and sediment in San Francisquito Creek.

The WMI is committed to implement a watershed management planning process for the Santa Clara Basin that integrates the following issues:

- habitat and water quality protection and enhancement;
- water rights and water supply reliability;
- flood management;
- regulatory compliance;
- land use; and
- public awareness and involvement.

The Workplan for the WMI includes preparation of 3 volumes: (1) Watershed Characteristics, (2) Watershed Assessment, and (3) Watershed Action Plan. The Watershed Characteristics Report was published in February 2001. The Watershed Assessment for 3 pilot watersheds is anticipated in draft in February 2002. The Watershed Action Plan is completing preliminary planning early in 2002 and is expected to be completed in December 2002. The Watershed Plan will be based on sound science with broad stakeholder involvement and will integrate existing programs and identify what needs to be done to reduce and prevent pollution and provide for effective land use and waterway management. The comprehensive stakeholder process will be used to reach agreement on the Plan, its priorities and long term implementation.

We are promoting the following eleven actions as desired outcomes of watershed management efforts:

1. Implementation of a comprehensive watershed assessment strategy that identifies problems or otherwise establishes steps to resolve unknowns;
2. Implementation of a comprehensive watershed assessment strategy that identifies sources of problems or otherwise establishes steps to resolve unknowns;
3. Implementation of a comprehensive watershed assessment strategy that identifies solutions of problems or otherwise establishes steps to resolve unknowns;
4. Long-term resolution of municipal wastewater permit issues;
5. Long-term resolution of San Jose/Santa Clara wastewater discharge flow cap issues;

6. Resolution of urban runoff (municipal stormwater) permit issues;
7. Establishment of basis for Basin Plan Amendments (includes consideration of site specific objectives);
8. Assessment and resolution of 303(d) impaired water body listings and development of a phased TMDL (initial priorities are copper and nickel in South San Francisco Bay, mercury in the Guadalupe River and sediment in San Francisquito Creek);
9. Establishment of a streamlined 404 permit/401 certification process for stream and wetlands fill and dredging projects;
10. Implementation of the Urban Runoff Permit stormwater treatment and hydrograph modification requirements for new development and redevelopment projects; and
11. Development/implementation of a Stream Protection Program to prevent further degradation of stream habitats and associated non-support of aquatic habitat beneficial uses.

The first ten of these outcomes were identified by Regional Board staff in 1997. The tenth outcome has been modified slightly to reflect the current status of the Urban Runoff Permit provisions. The eleventh outcome has been added to reflect the emerging focus on stream functions in relation to beneficial use protection.

To date, the most outstanding successes of the WMI have been in sustaining organizational continuity and in the conducting outreach and information dissemination. After five years, the organization still continues to meet, resolve issues and produce products. Staff and volunteers of key agencies and signatory organizations continue to provide input to the WMI coordinating body and its subgroups. The outreach products have been numerous and well implemented, e.g., the WMI Vision Brochure, the Watershed Watch Media Campaign, publication of the Watershed Characteristics Report, funding of a lecture series, Santa Clara Valley Water District Landuse Summit, and watershed grants to community organizations by the Water District and City of San Jose.

The success of its watershed assessment process has been more limited. The WMI's three watershed assessments (Guadalupe, Upper Penetencia and San Francisquito), due in draft in early to mid-2002, are being prepared with existing data (rather than a result of a substantial field data collection effort), thereby initially limiting their usefulness. Nevertheless, the assessments may be useful for identifying, and creating a plan to fill, data gaps.

An important current focus of the SCB WMI is the completion of a Watershed Action Plan, targeted for December 2002. This Plan will consist of recommended actions and implementation tasks compiled from input from the various WMI subgroups.

More significant progress is being made by individual WMI member agencies rather than directly through the WMI itself. The Santa Clara Valley Water District's $8 million 1.8 mile Guadalupe Creek Restoration project is nearing completion. Settlement of a water rights complaint in 2002 is expected to result in the Water District making commitments to significant improvements to fisheries habitat on three stream systems. The San

Francisquito Creek sediment analysis under the direction of a Joint Powers Authority is moving forward. The Water District has secured legislative approval to include stream stewardship in its mission and is reorganizing and expanding its staffing to accommodate a watershed stewardship program, including improved monitoring and further development of ecologically-sensitive flood management project design approaches. The WMI has the potential to continue to build upon these individual efforts and create a coordinated effort to implement its well articulated watershed vision.

In 2001, the WMI conducted its own self-evaluation of its performance relative to Regional Board goals and to its own internal goals and objectives and has prepared a list of its accomplishments (see its self-assessment and accomplishments contained in Appendix B). These self-evaluations reflect the depth of commitment and the seriousness of WMI participants in crafting an effective watershed management program. One aspect emphasized in these documents is the important progress in building institutional relationships which we see as laying the essential groundwork for more substantial watershed planning and improvement actions. Though these groundwork laying activities over the past five years are to be commended, it is hoped that the coming years will see a move towards the completion of more substantial watershed planning and project implementation. It is hoped that the assessments, in conjunction with current discussions shaping a five year monitoring program for the basin, will result in a data collection effort that contributes more to action planning and implementation.

The WMI is at a critical juncture in its history. It can take the assessments and lessons learned to date and step up towards the next level of commitment to robust watershed assessment and project implementation. Or it can choose to continue at groundwork laying stage and produce reports which point in the right direction but delay the hard decisions of resource commitment needed to make the WMI fully realize the purpose for which it was created. The coming two years will be pivotal in the WMI's history.

During this fiscal year, the Regional Board staff will prepare an analysis of the effectiveness of the SCB WMI process. The analysis will include "lessons learned" and the implications of these "lessons learned" for the future of the WMI and for beginning similar initiatives in other counties of the region. The analysis will also be used in dialogue with the SCB WMI and member agencies towards the end of identifying barriers to WMI effectiveness and strategies to overcome them.

Regulatory Framework

The Board's major regulatory program thrusts in the county include:

- NPDES Permits for discharges to surface water from 3 major wastewater treatment plants
- NPDES Urban Runoff Program (consolidated permit for 13 municipalities, the County and the Santa Clara Valley Water District)
- 401 Certifications and Waste Discharge Requirements for major flood management capital projects and channel maintenance projects

- 401 Certifications for other wetland/stream fill projects
- Waste Discharge Requirements for Landfills and other waste-disposal-to-land facilities
- Site Cleanup Requirements and NPDES Permits for groundwater cleanup sites
- TMDL Development, including Guadalupe River Mercury TMDL and San Francisquito Creek Sediment TMDL
- Monitoring efforts through the Regional Monitoring Program, Surface Water Ambient Monitoring Program, and Regional Monitoring and Assessment Strategy

The local Watershed Management Initiative efforts are currently without an explicit regulatory permit driver; hence, the WMI priorities tend to be driven by other programs, such as the Urban Runoff Program requirements, conditions placed on wetland fill certifications, requirements of federal and state fisheries agencies, citizen advocacy group legal actions, or internal institutional needs.

One of the major participants in watershed management activities in the basin is the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). The Regional Board first issued an NPDES municipal storm water permit to the SCVURPPP in 1990, and reissued the permit in 1995 and 2001. The permit and the SCVURPPP seek to reduce urban runoff pollution through such programs as illicit connection and illegal dumping elimination; industrial and commercial discharge control; maintenance of streets, storm drains, and water utilities; pollutant specific control activities (e.g. pesticides, mercury, PCBs); new development planning procedures; construction inspection; comprehensive monitoring, and public information and participation.

Significant Issues

<u>Urban Runoff</u>

- Lack of permanent stormwater treatment and hydrograph modification management at new development/redevelopment projects
- Operation and maintenance of new development stormwater treatment measures
- Lack of comprehensive water quality monitoring program
- Erosion during construction of new development projects
- Pollution from diazinon and other urban pesticides
- Insufficient inspection/enforcement follow-up actions for industrial and illicit discharges

<u>Channelization/Stream Maintenance/Flood Management</u>

- Identification of sources, causes and solutions to significant sediment problems
- Continued improved stream maintenance practices and associated land use practices
- Habitat loss and sedimentation from ongoing flood management projects
- Need for new pilot programs to test innovative ecologically-sensitive multi-objective flood management design approaches

<u>Stream and Wetland Habitat Protection</u>

- Wetland losses at new developments
- Protection and enhancement of riparian buffers

- Improved process for stream alteration and wetland fill permits
- Protection of endangered species
- Restoration of bayland wetlands
- Lack of comprehensive local programs, policies and implementing ordinances for protecting stream habitats from further degradation

Pollutants

- Implementation of pollution prevention action plans and site specific objectives for copper and nickel
- Hg impairment in SF Bay and upland watersheds from natural sources and abandoned mines
- Resolution of potential sediment impairment
- Lack of watershed data for Guadalupe Hg and San Francisco Bay PCBs TMDL
- Lack of watershed data for dioxins and pesticides
- Lact of watershed data for potential listings (e.g., sediment, trash) and emerging issues (e.g., polydibromated ethers, endocrine disrupting substances, pharmaceutically active substances)
- Toxicity from pesticides
- MTBE, industrial solvents, and gasoline contamination in groundwater

Wastewater Discharges and Reclamation

- Reclaimed wastewater for environmental enhancement
- Mandatory enforcement activities under SB2165

Groundwater Protection

- Protection of high quality groundwater resources and cleanup of polluted groundwater
- New development in groundwater recharge zones
- Wellhead protection plans
- Potential reclamation in recharge areas

Issues from the Santa Clara Basin Watershed Management Initiative

- Regulatory streamlining
- Efficiency of the Regional Board
- Ongoing resources and funding for the WMI
- Sustainable water supply in light of explosive growth
- Better coordination of air quality and transportation regulation

Proposed Workplan for FY 2004/05 and 2005/06

Urban Runoff

- Oversee implementation of Santa Clara Valley Urban Runoff Pollution Prevention Program Permit
- Gain stormwater program improvements through thorough review of annual reports
- Implement effective monitoring program
- Assure compliance with new development/redevelopment provisions
- Implement pollutant-specific provisions (e.g., pesticides, mercury, PCBs)
- Improve followup aspects of industrial inspection program

Stream and Wetland Habitat Protection

- Review potential significant impacts prior to taking 401 certification/WDR action for: Upper Guadalupe River, Lower Silver Creek, Adobe Creek, Matadero Creek, Lower Guadalupe, Upper Penitencia Creek
- Collaborate with eight other organizations to develop integrated solutions for flood protection, habitat restoration, and community recreation on the Upper and Lower Guadalupe River
- Track implementation of comprehensive, long-term stream maintenance plans for Alum Rock Park (Upper Penitencia Creek)
- Oversee Santa Clara Valley Water District's sediment removal projects
- Review of Santa Clara Valley Water District design details for bank stabilization, outfall, cribwall, and bank grading projects
- Develop strategy to streamline processing of both WDRs and 401/404 certifications
- Review 310 acre salt pond conversion mitigation bank project and Los Capitancillos freshwater marsh mitigation project
- Take action on 401/404 certifications

Impacts from Pollutants

- Oversee NPDES Permit including: review annual report, conduct annual audit, and assist with runoff issues associated with construction and new development
- Oversee copper/nickel amended permit compliance
- Initiate Basin Plan Amendment process for Cu/Ni
- Leadership role in WMI workgroup for Hg TMDL in Guadalupe Watershed

Program Implementation by RWQCB staff

- Continue in leadership roles in the Watershed Management Initiative
- Prepare evaluation of current effectiveness of the WMI, recommendations for improving the WMI effectiveness and lessons learned for application in other counties
- Develop strategy to implement a comprehensive Stream Protection Program
- Take enforcement actions as needed
- More effective leveraging and oversight of grants

High Priority Unfunded Activities

- Review of CEQA submittals

High Priority Projects for Grant Funding

- Watershed assessments to confirm or reject mercury and siltation/sediment listings, and determine whether there are other causes for impairment (e.g., riparian impacts, flow depletion, nutrients).
- Implement initial restoration and management actions in impaired watersheds.
- Support for the development of citizen monitoring efforts to characterize watershed health and identify pollutant sources
- Support for the development of public/private partnerships in watershed monitoring

- Pilot project for attaining beneficial uses in modified stream reaches (including Santa Clara Basin-wide identification and ranking of modified stream reaches with high potential for restoration of more physically and biologically natural channels.)

Figure 3-7. Santa Clara County Watersheds