

## Section 5 SMMP Program and Project Descriptions

### 5.1 Approach to Project Development

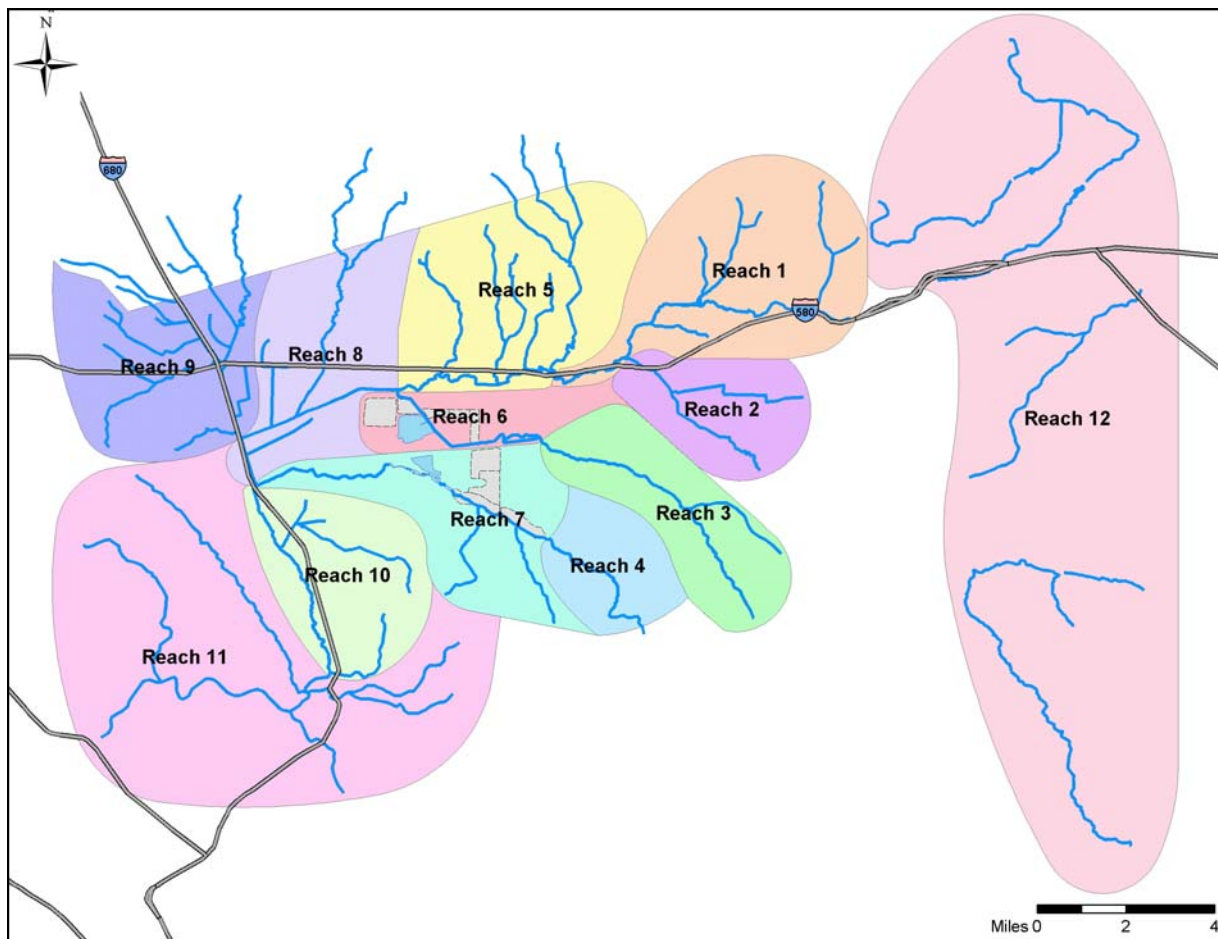
#### 5.1.1 Multidisciplinary Approach

The projects included in this report make up the recommended capital component of the SMMP program. The SMMP goals and objectives discussed in Section 2, and the needs and opportunities identified for each reach and discussed in Section 3, were the basis for development of SMMP project concepts. Project concepts were developed to help fulfill identified needs and opportunities, while meeting as many of the SMMP goals and objectives as possible. In essence, projects developed for the SMMP are intended to be multidisciplinary, that is, they are intended to meet as many resource area objectives as possible in order to provide multiple benefits. Developing multidisciplinary project alternatives to meet the needs of a given reach allows the SMMP program to address all resource areas affected by management of the streams and arroyos in an integrated fashion.

#### 5.1.2 Reach Delineation

Projects were identified on a reach-by-reach basis for each of the 12 study reaches delineated in the SMMP study area. The SMMP reaches are shown in Figure 5-1. Streams included in each reach are defined in Table 3-1.

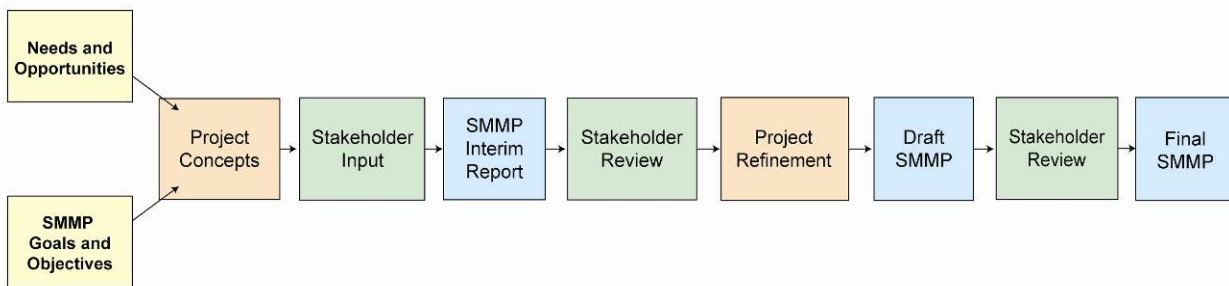
Figure 5-1: SMMP Study Reaches



### 5.1.3 Project Development

Initial project concepts were originally presented on a reach-by-reach basis to SMMP stakeholders through a series of workshops held in 2003. Comments from stakeholders received at the workshops were incorporated in the project descriptions developed for the SMMP Interim Report. Stakeholders provided additional input with the release of the Interim Report in March 2004. Comments on the Interim Report were collected throughout 2004, addressed, and when relevant, incorporated in the updated project tables presented in the Draft SMMP, released in March 2006. Comments on the Draft were then incorporated into this final document as appropriate. A stakeholder workshop highlighting projects on a reach-by-reach basis was held in April 2006. This refinement process, which resulted in the development of the SMMP projects included in this section of the SMMP, is illustrated in Figure 5-2.

**Figure 5-2: SMMP Project Development**



## 5.2 SMMP Estimated Cost

The total estimated cost of the SMMP Program is approximately \$727M. This includes approximately \$479M in flood protection and sediment/erosion management, \$127M in habitat improvements, \$85M in recreation improvements, and \$35M in water supply and water quality improvements. Operations and maintenance costs are estimated to be \$12M annually. Maintenance costs include annual replacement costs (\$5M), annual mitigation costs (\$4M), and annual Operations and Maintenance (O&M) costs (\$3M). Project component cost and other design details were developed to an appropriate level for planning purposes and will be refined closer to project implementation. A summary of SMMP capital maintenance costs by reach is summarized in Table 5-1. The list of resource areas addressed by each of the SMMP projects is presented in Table 5-2. Also, a breakdown of SMMP capital and maintenance costs by resource area for each of the SMMP projects is presented in Table 5-3. Additional information on the development of SMMP cost estimates, including the SMMP capital and maintenance unit cost databases and individual project cost spreadsheets, is provided in Appendix G.

**Table 5-1: Summary of SMMP Cost Estimates by Reach (December 2005 dollars)**

| Reach | Total Improvements | Annual Maintenance Cost |
|-------|--------------------|-------------------------|
| 1     | \$55,465,000       | \$1,120,000             |
| 2     | \$24,360,000       | \$244,000               |
| 3     | \$69,590,000       | \$1,062,000             |
| 4     | \$3,460,000        | \$62,000                |
| 5     | \$196,220,000      | \$3,064,000             |
| 6     | \$140,430,000      | \$1,339,000             |
| 7     | \$32,460,000       | \$678,000               |
| 8     | \$107,680,000      | \$1,545,000             |
| 9     | \$38,620,000       | \$588,000               |
| 10    | \$54,350,000       | \$1,588,000             |
| 11    | \$3,410,000        | \$115,000               |
| 12    | \$1,020,000        | \$220,000               |
| Total | \$727,065,000      | \$11,630,000            |

Table 5-2: Resource Area Addressed by Project

| Reach | #  | Project Name                                                                              | Project # | SMMP Resource Areas                                      |              |               |                         |                                   |
|-------|----|-------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------|--------------|---------------|-------------------------|-----------------------------------|
|       |    |                                                                                           |           | Flood Protection and Drainage, Erosion and Sedimentation | Water Supply | Water Quality | Habitat and Environment | Trails, Recreation, and Education |
| 1     | 1  | Altamont Creek Improvements                                                               | R.1-1     | X                                                        |              | X             | X                       | X                                 |
|       | 2  | Alkali Sink Management                                                                    | R.1-2     | X                                                        |              |               | X                       | X                                 |
|       | 3  | Springtown Improvements                                                                   | R.1-3     | X                                                        |              | X             | X                       |                                   |
|       | 4  | Springtown Golf Course Improvements                                                       | R.1-4     | X                                                        |              |               | X                       |                                   |
|       | 5  | Arroyo las Positas Habitat Enhancement and Recreation Project                             | R.1-5     | X                                                        |              | X             | X                       | X                                 |
|       | 6  | Arroyo las Positas Multi-Purpose Project                                                  | R.1-6     | X                                                        |              | X             | X                       | X                                 |
|       | 7  | Capacity Improvement at Arroyo las Positas                                                | R.1-7     | X                                                        |              |               |                         | X                                 |
| 2     | 8  | Velocity Control Project                                                                  | R.2-1     | X                                                        |              | X             | X                       | X                                 |
|       | 9  | Arroyo Seco Improvements                                                                  | R.2-2     | X                                                        |              |               | X                       |                                   |
|       | 10 | Arroyo Seco Trail Project                                                                 | R.2-3     |                                                          |              |               |                         | X                                 |
| 3     | 11 | South Bay Aqueduct Turnout Construction and Low-Flow Crossings                            | R.3-1     |                                                          | X            |               | X                       |                                   |
|       | 12 | Robertson Park Enhancement Project and Levee Construction                                 | R.3-2     | X                                                        |              | X             | X                       | X                                 |
|       | 13 | Parks Floodplain Dedication and Levee Construction                                        | R.3-3     | X                                                        |              |               | X                       | X                                 |
|       | 14 | Holmes Street Sedimentation Basin and Granada/Murrieta Protection and Enhancement Project | R.3-4     | X                                                        |              | X             | X                       | X                                 |
|       | 15 | Fish Barrier Removal at Stanley Boulevard and Railroad Overcrossing                       | R.3-5     |                                                          |              |               | X                       | X                                 |
| 4     | 16 | Sycamore Grove Recharge Bypass Project                                                    | R.4-1     |                                                          | X            |               | X                       |                                   |
|       | 17 | Sycamore Grove Park Trail Connections                                                     | R.4-2     |                                                          |              |               |                         | X                                 |
| 5     | 18 | North of I-580 Trail System                                                               | R.5-1     |                                                          |              |               |                         | X                                 |
|       | 19 | Airway Improvement Project                                                                | R.5-2     | X                                                        |              | X             | X                       | X                                 |
|       | 20 | Arroyo Las Positas Diversion Project                                                      | R.5-3     | X                                                        | X            | X             |                         |                                   |
| 6     | 21 | Arroyo Mocho Management Plan                                                              | R.6-1     |                                                          |              | X             | X                       | X                                 |
|       | 22 | Arroyo Mocho Bypass and Regional Storage at Chain of Lakes                                | R.6-2     | X                                                        | X            | X             |                         | X                                 |
| 7     | 23 | Upper Chain of Lakes Trail Network and Bypass                                             | R.7-1     |                                                          |              |               |                         | X                                 |
|       | 24 | EBRPD Trail Connections                                                                   | R.7-2     |                                                          |              |               |                         | X                                 |
|       | 25 | Lower Arroyo del Valle Restoration and Enhancement Project                                | R.7-3     | X                                                        |              |               | X                       | X                                 |
| 8     | 26 | Tassajara Creek Improvement Project                                                       | R.8-1     | X                                                        |              | X             |                         | X                                 |
|       | 27 | Chabot Canal Improvement Project                                                          | R.8-2     | X                                                        |              |               |                         | X                                 |
|       | 28 | Lower Arroyo Mocho Improvement Project                                                    | R.8-3     | X                                                        |              | X             | X                       | X                                 |
|       | 29 | Upper Arroyo de la Laguna (ADLL) Improvement Project                                      | R.8-4     | X                                                        |              | X             | X                       | X                                 |

| Reach | #  | Project Name                                      | Project # | SMMP Resource Areas                                      |              |               |                         |                                   |
|-------|----|---------------------------------------------------|-----------|----------------------------------------------------------|--------------|---------------|-------------------------|-----------------------------------|
|       |    |                                                   |           | Flood Protection and Drainage, Erosion and Sedimentation | Water Supply | Water Quality | Habitat and Environment | Trails, Recreation, and Education |
| 9     | 30 | Alamo Canal/South San Ramon Creek Erosion Control | R.9-1     | X                                                        |              | X             | X                       |                                   |
|       | 31 | Line F-4 Concrete Lining                          | R.9-2     | X                                                        |              |               |                         |                                   |
|       | 32 | Line J-1, J-3, and J-5 Improvements               | R.9-3     | X                                                        |              |               |                         |                                   |
|       | 33 | Line T Crossing Retrofit                          | R.9-4     | X                                                        |              |               |                         |                                   |
|       | 34 | I-580 Trail Gap Elimination                       | R.9-5     |                                                          |              |               |                         | X                                 |
|       | 35 | Line G-1-1 Maintenance Plan                       | R.9-6     | X                                                        |              | X             | X                       |                                   |
|       | 36 | Alamo Canal Flood Control Program                 | R.9-7     | X                                                        |              | X             | X                       |                                   |
| 10    | 37 | ADLL Improvement Project 1                        | R.10-1    | X                                                        |              | X             | X                       | X                                 |
|       | 38 | ADLL Improvement Project 2                        | R.10-2    | X                                                        |              | X             | X                       | X                                 |
|       | 39 | ADLL Improvement Project 3                        | R.10-3    | X                                                        |              | X             | X                       | X                                 |
|       | 40 | ADLL Improvement Project 4                        | R.10-4    | X                                                        |              | X             | X                       | X                                 |
|       | 41 | ADLL Improvement Project 5                        | R.10-5    | X                                                        |              | X             | X                       | X                                 |
| 11    | 42 | Alameda Creek Trail                               | R.11-1    |                                                          |              |               |                         | X                                 |
|       | 43 | Sinbad Creek Project                              | R.11-2    | X                                                        |              | X             |                         | X                                 |
| 12    | 44 | Patterson Run Enhancement Program                 | R.12-1    | X                                                        |              | X             |                         | X                                 |
|       | 45 | Corral Hollow Creek Landowner Grant Program       | R.12-2    | X                                                        |              | X             |                         | X                                 |

Table 5-3: Summary of SMMP Projects Capital and Maintenance Cost estimates by Resource Area<sup>1, 4, 5</sup>

| Reach    | Project Name                                                                              | Project # | Stream Name                  | Total Capital Cost | Total Flood Protection and Erosion/Sediment Cost | Total Habitat Cost | SMMP Flood and Habitat Costs<br>(December 2005, \$) | Total Recreation Cost | Total Water Supply Cost | Total Water Quality Cost | Capital Cost<br>(December 2005, \$) | Environmental Mitigation<br>(December 2005, \$) | Total Annual Cost | Annual O&M Cost | Annual Mitigation Cost | Annual Replacement Cos<br>(Sinking Fund) <sup>3</sup> |
|----------|-------------------------------------------------------------------------------------------|-----------|------------------------------|--------------------|--------------------------------------------------|--------------------|-----------------------------------------------------|-----------------------|-------------------------|--------------------------|-------------------------------------|-------------------------------------------------|-------------------|-----------------|------------------------|-------------------------------------------------------|
| Reach 1  | Altamont Creek Improvements                                                               | R.1-1     | Altamont Creek               | \$3,360,000        | \$1,020,000                                      | \$90,000           | \$1,110,000                                         | \$2,250,000           | \$0                     | \$0                      | \$3,360,000                         | \$379,313                                       | \$96,000          | \$36,000        | \$18,000               | \$42,000                                              |
|          | Alkali Sink Management                                                                    | R.1-2     | Altamont Creek               | \$4,745,000        | \$0                                              | \$4,740,000        | \$4,740,000                                         | \$5,000               | \$0                     | \$0                      | \$4,745,000                         | \$0                                             | \$119,000         | \$30,000        | \$89,000               | \$0                                                   |
|          | Springtown Improvements                                                                   | R.1-3     | Altamont Creek               | \$2,710,000        | \$2,510,000                                      | \$200,000          | \$2,710,000                                         | \$0                   | \$0                     | \$0                      | \$2,710,000                         | \$535,500                                       | \$240,000         | \$112,000       | \$128,000              | \$0                                                   |
|          | Springtown Golf Course Improvements                                                       | R.1-4     | Altamont Creek               | \$2,170,000        | \$560,000                                        | \$1,610,000        | \$2,170,000                                         | \$0                   | \$0                     | \$0                      | \$2,170,000                         | \$38,171                                        | \$137,000         | \$17,000        | \$120,000              | \$0                                                   |
|          | Arroyo las Positas Habitat Enhancement and Recreation Project                             | R.1-5     | Arroyo las Positas           | \$9,120,000        | \$2,190,000                                      | \$4,340,000        | \$6,530,000                                         | \$2,590,000           | \$0                     | \$0                      | \$9,120,000                         | \$110,500                                       | \$158,000         | \$42,000        | \$47,000               | \$69,000                                              |
|          | Arroyo las Positas Multi-Purpose Project                                                  | R.1-6     | Arroyo las Positas           | \$32,110,000       | \$4,200,000                                      | \$50,000           | \$4,620,000                                         | \$4,250,000           | \$0                     | \$23,240,000             | \$32,110,000                        | \$232,863                                       | \$358,000         | \$70,000        | \$90,000               | \$198,000                                             |
|          | Capacity Improvement at Arroyo las Positas                                                | R.1-7     | Arroyo las Positas           | \$1,250,000        | \$400,000                                        | \$620,000          | \$1,020,000                                         | \$230,000             | \$0                     | \$0                      | \$1,250,000                         | \$49,325                                        | \$12,000          | \$3,000         | \$2,000                | \$7,000                                               |
|          |                                                                                           |           | REACH 1 TOTAL:               | \$55,465,000       | \$10,880,000                                     | \$11,650,000       | \$22,530,000                                        | \$9,695,000           | \$0                     | \$23,240,000             | \$55,465,000                        | \$1,345,671                                     | \$1,120,000       | \$310,000       | \$494,000              | \$316,000                                             |
| Reach 2  | Velocity Control Project                                                                  | R.2-1     | Realigned Arroyo las Positas | \$19,390,000       | \$4,510,000                                      | \$14,390,000       | \$18,900,000                                        | \$490,000             | \$0                     | \$0                      | \$19,390,000                        | \$315,575                                       | \$95,000          | \$82,000        | \$0                    | \$13,000                                              |
|          | Arroyo Seco Improvements                                                                  | R.2-2     | Arroyo Seco                  | \$3,320,000        | \$2,540,000                                      | \$780,000          | \$3,320,000                                         | \$0                   | \$0                     | \$0                      | \$3,320,000                         | \$177,613                                       | \$119,000         | \$21,000        | \$50,000               | \$48,000                                              |
|          | Arroyo Seco Trail Project                                                                 | R.2-3     | Arroyo Seco                  | \$1,650,000        | \$0                                              | \$0                | \$0                                                 | \$1,650,000           | \$0                     | \$0                      | \$1,650,000                         | \$0                                             | \$30,000          | \$15,000        | \$0                    | \$15,000                                              |
|          |                                                                                           |           | REACH 2 TOTAL:               | \$24,360,000       | \$7,050,000                                      | \$15,170,000       | \$22,220,000                                        | \$2,140,000           | \$0                     | \$0                      | \$24,360,000                        | \$493,188                                       | \$244,000         | \$118,000       | \$50,000               | \$76,000                                              |
| Reach 3  | South Bay Aqueduct Turnout Construction and Low-Flow Crossings                            | R.3-1     | Arroyo Mocho                 | \$1,230,000        | \$0                                              | \$0                | \$0                                                 | \$0                   | \$1,230,000             | \$0                      | \$1,230,000                         | \$0                                             | \$35,000          | \$1,000         | \$0                    | \$34,000                                              |
|          | Robertson Park Enhancement Project and Levee Construction                                 | R.3-2     | Arroyo Mocho                 | \$29,040,000       | \$14,770,000                                     | \$1,990,000        | \$16,760,000                                        | \$2,200,000           | \$0                     | \$9,080,000              | \$29,040,000                        | \$308,750                                       | \$511,000         | \$48,000        | \$320,000              | \$143,000                                             |
|          | Parks Floodplain Dedication and Levee Construction                                        | R.3-3     | Arroyo Mocho                 | \$18,860,000       | \$14,850,000                                     | \$4,010,000        | \$18,860,000                                        | \$0                   | \$0                     | \$0                      | \$18,860,000                        | \$290,875                                       | \$223,000         | \$95,000        | \$65,000               | \$63,000                                              |
|          | Holmes Street Sedimentation Basin and Granada/Murrieta Protection and Enhancement Project | R.3-4     | Arroyo Mocho                 | \$13,590,000       | \$9,780,000                                      | \$3,690,000        | \$13,470,000                                        | \$120,000             | \$0                     | \$0                      | \$13,590,000                        | \$419,000                                       | \$213,000         | \$146,000       | \$64,000               | \$3,000                                               |
|          | Fish Barrier Removal at Stanley Blvd. and Railroad Overcrossing                           | R.3-5     | Arroyo Mocho                 | \$7,870,000        | \$0                                              | \$7,380,000        | \$7,380,000                                         | \$490,000             | \$0                     | \$0                      | \$7,870,000                         | \$0                                             | \$80,000          | \$80,000        | \$0                    | \$0                                                   |
|          |                                                                                           |           | REACH 3 TOTAL:               | \$69,590,000       | \$39,400,000                                     | \$17,070,000       | \$56,470,000                                        | \$2,810,000           | \$1,230,000             | \$9,080,000              | \$69,590,000                        | \$1,018,625                                     | \$1,062,000       | \$370,000       | \$449,000              | \$243,000                                             |
| Reach 4  | Sycamore Grove Recharge Bypass Project                                                    | R.4-1     | Arroyo del Valle             | \$1,200,000        | \$0                                              | \$0                | \$0                                                 | \$0                   | \$1,200,000             | \$0                      | \$1,200,000                         | \$0                                             | \$33,000          | \$0             | \$0                    | \$33,000                                              |
|          | Sycamore Grove Park Trail Connections                                                     | R.4-2     | Arroyo del Valle             | \$2,260,000        | \$0                                              | \$0                | \$0                                                 | \$2,260,000           | \$0                     | \$0                      | \$2,260,000                         | \$0                                             | \$29,000          | \$8,000         | \$0                    | \$21,000                                              |
|          |                                                                                           |           | REACH 4 TOTAL:               | \$3,460,000        | \$0                                              | \$0                | \$0                                                 | \$2,260,000           | \$1,200,000             | \$0                      | \$3,460,000                         | \$0                                             | \$62,000          | \$8,000         | \$0                    | \$54,000                                              |
| Reach 5  | North of I-580 Trail System                                                               | R.5-1     |                              | \$22,390,000       | \$0                                              | \$0                | \$0                                                 | \$22,390,000          | \$0                     | \$0                      | \$22,390,000                        | \$0                                             | \$569,000         | \$159,000       | \$0                    | \$410,000                                             |
|          | Airway Improvement Project                                                                | R.5-2     | Arroyo las Positas           | \$24,960,000       | \$20,290,000                                     | \$4,670,000        | \$24,960,000                                        | \$0                   | \$0                     | \$0                      | \$24,960,000                        | \$3,418,250                                     | \$169,000         | \$169,000       | \$110,000              | \$0                                                   |
|          | Arroyo las Positas Diversion Project                                                      | R.5-3     | Arroyo las Positas           | \$148,870,000      | \$148,870,000                                    | \$0                | \$148,870,000                                       | \$0                   | \$0                     | \$0                      | \$148,870,000                       | \$9,808,669                                     | \$2,216,000       | \$559,000       | \$747,000              | \$910,000                                             |
|          |                                                                                           |           | REACH 5 TOTAL:               | \$196,220,000      | \$169,160,000                                    | \$4,670,000        | \$173,830,000                                       | \$22,390,000          | \$0                     | \$0                      | \$196,220,000                       | \$13,226,919                                    | \$3,064,000       | \$887,000       | \$857,000              | \$1,320,000                                           |
| Reach 6  | Arroyo Mocho Management Plan                                                              | R.6-1     | Arroyo Mocho                 | \$11,030,000       | \$0                                              | \$9,970,000        | \$9,970,000                                         | \$1,060,000           | \$0                     | \$0                      | \$11,030,000                        | \$0                                             | \$290,000         | \$94,000        | \$180,000              | \$16,000                                              |
|          | Arroyo Mocho Bypass and Regional Storage at Chain of Lakes                                | R.6-2     | Arroyo Mocho                 | \$129,400,000      | \$120,800,000                                    | \$0                | \$120,800,000                                       | \$8,600,000           | \$0                     | \$0                      | \$129,400,000                       | \$7,203,625                                     | \$1,049,000       | \$199,000       | \$0                    | \$850,000                                             |
|          |                                                                                           |           | REACH 6 TOTAL:               | \$140,430,000      | \$120,800,000                                    | \$9,970,000        | \$130,770,000                                       | \$9,660,000           | \$0                     | \$0                      | \$140,430,000                       | \$7,203,625                                     | \$1,339,000       | \$293,000       | \$180,000              | \$866,000                                             |
| Reach 7  | Upper Chain of Lakes Trail Network and Bypass                                             | R.7-1     | Arroyo del Valle             | \$6,790,000        | \$0                                              | \$0                | \$0                                                 | \$6,790,000           | \$0                     | \$0                      | \$6,790,000                         | \$0                                             | \$154,000         | \$44,000        | \$0                    | \$110,000                                             |
|          | EBRPD Trail Connections                                                                   | R.7-2     | Arroyo del Valle             | \$1,920,000        | \$0                                              | \$0                | \$0                                                 | \$1,920,000           | \$0                     | \$0                      | \$1,920,000                         | \$0                                             | \$68,000          | \$19,000        | \$0                    | \$49,000                                              |
|          | Lower del Valle Restoration and Enhancement Project                                       | R.7-3     | Arroyo del Valle             | \$23,750,000       | \$80,000                                         | \$16,910,000       | \$16,990,000                                        | \$6,760,000           | \$0                     | \$0                      | \$23,750,000                        | \$5,363                                         | \$456,000         | \$124,000       | \$330,000              | \$2,000                                               |
|          |                                                                                           |           | REACH 7 TOTAL:               | \$32,460,000       | \$80,000                                         | \$16,910,000       | \$16,990,000                                        | \$15,470,000          | \$0                     | \$0                      | \$32,460,000                        | \$5,363                                         | \$678,000         | \$187,000       | \$330,000              | \$161,000                                             |
| Reach 8  | Tassajara Creek Improvement Project                                                       | R.8-1     | Tassajara Creek              | \$8,830,000        | \$3,390,000                                      | \$50,000           | \$3,440,000                                         | \$5,390,000           | \$0                     | \$0                      | \$8,830,000                         | \$477,250                                       | \$327,000         | \$93,000        | \$133,000              | \$101,000                                             |
|          | Chabot Canal Improvement Project                                                          | R.8-2     | Chabot Canal                 | \$18,420,000       | \$18,150,000                                     | \$270,000          | \$18,420,000                                        | \$0                   | \$0                     | \$0                      | \$18,420,000                        | \$2,669,125                                     | \$58,000          | \$16,000        | \$10,000               | \$32,000                                              |
|          | Lower Arroyo Mocho Improvement Project                                                    | R.8-3     | Arroyo Mocho                 | \$29,830,000       | \$12,780,000                                     | \$17,050,000       | \$29,830,000                                        | \$0                   | \$0                     | \$0                      | \$29,830,000                        | \$2,993,750                                     | \$288,000         | \$154,000       | \$76,000               | \$58,000                                              |
|          | Upper ADLL Improvement Project                                                            | R.8-4     | Arroyo de la Laguna          | \$50,600,000       | \$44,220,000                                     | \$5,890,000        | \$50,110,000                                        | \$490,000             | \$0                     | \$0                      | \$50,600,000                        | \$5,492,375                                     | \$872,000         | \$109,000       | \$197,000              | \$566,000                                             |
|          |                                                                                           |           | REACH 8 TOTAL:               | \$107,680,000      | \$78,540,000                                     | \$23,260,000       | \$101,800,000                                       | \$5,880,000           | \$0                     | \$0                      | \$107,680,000                       | \$11,632,500                                    | \$1,545,000       | \$372,000       | \$416,000              | \$757,000                                             |
| Reach 9  | Alamo Canal/S. San Ramon Creek Erosion Control                                            | R.9-1     | Alamo Creek                  | \$11,760,000       | \$6,270,000                                      | \$5,490,000        | \$11,760,000                                        | \$0                   | \$0                     | \$0                      | \$11,760,000                        | \$438,750                                       | \$436,000         | \$86,000        | \$180,000              | \$170,000                                             |
|          | Line F-4 Concrete Lining                                                                  | R.9-2     | Line F-4                     | \$1,250,000        | \$1,250,000                                      | \$0                | \$1,250,000                                         | \$0                   | \$0                     | \$0                      | \$1,250,000                         | \$87,750                                        | \$74,000          | \$4,000         | \$36,000               | \$34,000                                              |
|          | Line J-1, J-3, and J-5 Improvements                                                       | R.9-3     | Line J-1                     | \$8,700,000        | \$8,470,000                                      | \$230,000          | \$8,700,000                                         | \$0                   | \$0                     | \$0                      | \$8,700,000                         | \$1,089,875                                     | \$4,000           | \$0             | \$4,000                | \$0                                                   |
|          | Line T Crossing Retrofit                                                                  | R.9-4     | Line T-1                     | \$3,040,000        | \$2,950,000                                      | \$90,000           | \$3,040,000                                         | \$0                   | \$0                     | \$0                      | \$3,040,000                         | \$199,875                                       | \$0               | \$0             | \$0                    | \$0                                                   |
|          | I-580 Trail Gap Elimination                                                               | R.9-5     | Alamo Canal                  | \$860,000          | \$0                                              | \$0                | \$0                                                 | \$860,000             | \$0                     | \$0                      | \$860,000                           | \$0                                             | \$3,000           | \$1,000         | \$0                    | \$2,000                                               |
|          | Line G-1-1 Maintenance Plan                                                               | R.9-6     | Line G11                     | \$2,150,000        | \$290,000                                        | \$1,860,000        | \$2,150,000                                         | \$0                   | \$0                     | \$0                      | \$2,150,000                         | \$94,150                                        | \$5,000           | \$0             | \$3,000                | \$2,000                                               |
|          | Alamo Canal Flood Control Program                                                         | R.9-7     | Alamo Creek                  | \$10,860,000       | \$8,710,000                                      | \$2,150,000        | \$10,860,000                                        | \$0                   | \$0                     | \$0                      | \$10,860,000                        | \$2,609,375                                     | \$67,000          | \$22,000        | \$23,000               | \$22,000                                              |
|          |                                                                                           |           | REACH 9 TOTAL:               | \$38,620,000       | \$27,940,000                                     | \$9,820,000        | \$37,760,000                                        | \$860,000             | \$0                     | \$0                      | \$38,620,000                        | \$4,519,775                                     | \$589,000         | \$113,000       | \$246,000              | \$230,000                                             |
| Reach 10 | ADLL Improvement Project 1                                                                | R.10-1    | Arroyo de la Laguna          | \$7,490,000        | \$1,720,000                                      | \$5,540,000        | \$7,260,000                                         | \$230,000             | \$0                     | \$0                      | \$7,490,000                         | \$120,413                                       | \$118,000         | \$70,000        | \$15,000               | \$33,000                                              |
|          | ADLL Improvement Project 2                                                                | R.10-2    | Arroyo de la Laguna          | \$4,400,000        | \$970,000                                        | \$910,000          | \$1,880,000                                         | \$2,520,000           | \$0                     | \$0                      | \$4,400,000                         | \$64,773                                        | \$57,000          | \$13,000        | \$6,000                | \$38,000                                              |
|          | ADLL Improvement Project 3                                                                | R.10-3    | Arroyo de la Laguna          | \$7,950,000        | \$6,360,000                                      | \$1,000,000        | \$7,360,000                                         | \$590,000             | \$0                     | \$0                      | \$7,950,000                         | \$316,063                                       | \$258,000         | \$15,000        | \$140,000              | \$103,000                                             |
|          | ADLL Improvement Project 4                                                                | R.10-4    | Arroyo de la Laguna          | \$5,280,000        | \$2,420,000                                      | \$1,110,000        | \$3,530,000                                         | \$1,750,000           | \$0                     | \$0                      | \$5,280,000                         | \$139,750                                       | \$106,000         | \$24,000        | \$30,000               | \$52,000                                              |
|          | ADLL Improvement Project 5                                                                | R.10-5    | Arroyo de la Laguna          | \$29,230,000       | \$12,630,000                                     | \$10,170,000       | \$22,800,000                                        | \$6,430,000           | \$0                     | \$0                      | \$29,230,000                        | \$714,204                                       | \$1,049,000       | \$109,000       | \$720,000              | \$220,000                                             |
|          |                                                                                           |           | REACH 10 TOTAL:              | \$54,350,000       | \$24,100,000                                     | \$18,730,000       | \$42,830,000                                        | \$11,520,000          | \$0                     | \$0                      | \$54,350,000                        | \$1,355,201                                     | \$1,588,000       | \$231,000       | \$911,000              | \$446,000                                             |
| Reach 11 | Alameda Creek Trail                                                                       | R.11-1    | Alameda Creek                | \$3,100,000        | \$0                                              | \$0                | \$0                                                 | \$3,100,000           | \$0                     | \$0                      | \$3,100,000                         | \$0                                             | \$111,000         | \$31,000        | \$0                    | \$80,000                                              |
|          | Sinbad Creek Project                                                                      | R.11-2    | Sinbad Creek                 | \$310,000          | \$270,000                                        | \$40,000           | \$310,000                                           | \$0                   | \$0                     | \$0                      | \$310,000                           | \$14,999                                        | \$4,000           | \$2,000         | \$1,000                | \$1,000                                               |
|          |                                                                                           |           | REACH 11 TOTAL:              | \$3,410,000        | \$270,000                                        | \$40,000           | \$310,000                                           | \$3,100,000           | \$0                     | \$0                      | \$3,410,000                         | \$14,999                                        | \$115,000         | \$33,000        | \$1,000                | \$81,000                                              |
| Reach 12 | Patterson Run Enhancement Program                                                         | R.12-1    | Patterson Run                | \$820,000          | \$820,000                                        | \$0                | \$820,000                                           | \$0                   | \$0                     | \$0                      | \$820,000                           | \$53,024                                        | \$175,000         | \$15,000        | \$140,000              | \$20,000                                              |
|          | Corral Hollow Creek Landowner Grant Program                                               | R.12-2    | Corral Hollow Creek          | \$200,000          | \$200,000                                        | \$0                | \$200,000                                           | \$0                   | \$0                     | \$0                      | \$200,000                           | \$13,000                                        | \$45,000          | \$4,000         | \$36,000               | \$5,000                                               |
|          |                                                                                           |           | REACH 12 TOTAL:              | \$1,020,000        | \$1,020,000                                      | \$0                | \$1,020,000                                         | \$0                   | \$0                     | \$0                      | \$1,020,000                         | \$66,024                                        | \$220,000         | \$19,000        | \$176,000              | \$25,000                                              |
|          |                                                                                           |           | TOTAL SMMP:                  | \$727,065,000      | \$479,240,000                                    | \$127,290,000      | \$606,530,000                                       | \$85,785,000          | \$2,430,000             | \$32,320,000             | \$727,065,000                       | \$40,881,889                                    | \$11,630,000      | \$2,940,000     | \$4,110,000            | \$4,580,000                                           |

Notes:

<sup>1</sup> Costs reflect December 2005 dollars. The San Francisco CCI ENR for December 2005 was 8462.

<sup>2</sup> Unless otherwise specified, sinking fund factor taken at a 6% interest rate for a 20-year period.

<sup>3</sup> Mechanical equipment (i.e. pumps, gates, etc.) assumed to have a 20-year lifespan (i=6%). Trapezoidal channels assumed to have a 40-year lifespan (i=6%).

<sup>4</sup> Capital costs are rounded to the nearest \$10,000.

<sup>5</sup> Maintenance costs are rounded to the nearest \$1,000.

### 5.3 SMMP Project Descriptions

Section 5 is organized into twelve sub-sections, one for each SMMP study reach. Each subsection includes the following components:

- Summary reach map showing the names, numbers, and locations of projects located in the reach
- Project summary table for each of the projects located in the reach
- Project maps and schematics for each project

The project descriptions are provided in the project summary tables. Project component location, sizing, and other design details were developed to an appropriate level for planning purposes and will be finalized closer to project implementation. The project summary tables provide the details of the recommended SMMP projects including location, project description, capital and maintenance cost estimate, implementation issues, project precursors, project benefits and a summary of maintenance activities. Table 5-4 provides a template of the project summary tables and a description of the information included in the table.

**Table 5-4: Project Table Template and Description**

| Template                         | Description                                                                                                                                                                                                        |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Number                   | R#-#<br>The first number is the reach number. The second number is the project number within the reach.                                                                                                            |
| Project Name                     | Project Title                                                                                                                                                                                                      |
| Project Location                 | Provides location of the project including stream, station number if available, and nearby street/crossing or other landmarks.                                                                                     |
| Purpose                          | Purpose of the project                                                                                                                                                                                             |
| Project Components               | Provides a description of the project; project components included in the description form the basis of the cost estimate.                                                                                         |
| Capital Cost Estimate            | Project capital cost estimate.                                                                                                                                                                                     |
| Implementation Issues            | Potential implementation issues including permitting and coordination issues. The environmental analysis to be conducted in Phase 2 will likely identify additional implementation issues that must be considered. |
| Project Precursors               | Project precursors are activities that should be conducted prior to implementation of the project components described above, such as modeling, development of O&M plans, etc.                                     |
| Project Benefits                 | Summary of project benefits.                                                                                                                                                                                       |
| Goals/Objectives Addressed       | Lists goals and objectives for each resource area that are met by the project. The reader will need to refer to the goals and objectives tables included in Section 2.                                             |
| Maintenance Activities           | Provides a summary of identified maintenance activities based on the project components.                                                                                                                           |
| Annual Maintenance Cost Estimate | Project annual maintenance costs.                                                                                                                                                                                  |
| Notes                            | Miscellaneous information related to the project.                                                                                                                                                                  |
| References                       | References used or cited in project development.                                                                                                                                                                   |

## 5.4 Implementation Planning

Project priorities and sequencing has not yet been established. These issues along with other implementation strategies will be addressed in the next phase of activities which includes an Implementation Plan and development of CIPs.