Task 4: Develop Implementation Plan

Task 4 Scope and Objectives

- **Tasks 4.1:** Identify Potential Habitat and Environmental Opportunities for the Project Alternatives
- **Task 4.2:** Develop Phasing and Monitoring Plan
- **Task 4.3:** Revise Cost Options

Task 4 Key Findings

**Task 4.1: Potential Habitat and Environmental Benefits / Impacts**

- Increased standing water / vegetated channel banks for habitat
- Creation of Pacific flyway migration habitat
- No impediment to fish migration
- Potential impacts to Arroyo Toad and Coastal California Gnatcatcher habitats
- Permanent structure installation and heavy equipment use in the soft bottom channel
- Local, State, Federal agency permitting will be required

**Task 4.2: Develop Phasing and Monitoring Plan**

Based on the analysis performed, four Surface Water Recharge (SWR) concept strategies were selected for project consideration. The selected SWR conceptual strategies are summarized in the following table:

<table>
<thead>
<tr>
<th>Conceptual Strategy</th>
<th>New Project Yield (afy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWR-1</td>
<td>Storm Water Via Rubber Dams on San Juan Creek</td>
</tr>
<tr>
<td>SWR-2</td>
<td>Storm Water And Recycled Water Via Rubber Dams On San Juan Creek</td>
</tr>
<tr>
<td>SWR-3</td>
<td>Recycled Water Via Incidental Recharge On San Juan Creek</td>
</tr>
<tr>
<td>SWR-4</td>
<td>Storm Water And Recycled Water Via Rubber Dams And Incidental Recharge On San Juan Creek And Arroyo Trabuco</td>
</tr>
</tbody>
</table>

Recycled water recharge via injection and the vertical extraction seawater barrier concepts were determined to be not cost effective at this time and were not included in further analysis.

SJBGFMP Implementation Plan: A Phased Approach

The San Juan Basin Groundwater Facilities Management Plan (SJBGFMP) includes adaptive management of the basin and Task 4 introduces construction of rubber dams along San Juan Creek and Arroyo Trabuco for stormwater capture and future recycled water recharge.

A phasing strategy (SJBGFMP Implementation Plan) was developed in such a way that each phase can be an endpoint or off-ramp from further expansion. The recommended phasing strategy for the SJBGFMP Implementation Plan includes:

**PHASE 1**

- **SWR-1:** Stormwater Capture via Rubber Dams on San Juan Creek
  - Program CEQA/NEPA
  - Planning/permitting for rubber dams
  - Design/construct rubber dams

- **SWR-2:** Stormwater Capture and Recycled Water Capture via Rubber Dams on San Juan Creek
  - Complete Title 22 Engineering studies
  - Acquire Indirect Potable Reuse Permit

**PHASE 2**

- **SWR-2:** Stormwater Capture and Recycled Water Capture via Rubber Dams on San Juan Creek
  - Project-specific CEQA/NEPA
  - Design/construct in-stream recycled water recharge facilities

- **SWR-3:** Recycled Water Capture via Incidental Recharge on San Juan Creek

- **SWR-4:** Stormwater Capture and Recycled Water Capture via Rubber Dams + Incidental Recharge on San Juan Creek

☆ Denotes project checkpoints where program costs are reevaluated before proceeding with next phase
The following diagram summarizes the projected ten-year schedule for implementation of Phases 1 and 2 (detailed in Figure 4-2.1 in the Task 4 Technical Memorandum):

In addition to Phases 1 and 2, the plan also includes basin management tasks and process to periodically update the SJBGFMP and the surface and groundwater models used to support the implementation process. Per this schedule, recycled water recharge and recovery would begin in the late summer 2014.

**Task 4.3 Revise Cost Estimates: Phasing Plan Costs**

Task 4.3 included estimating the annual costs for the major implementation steps for Phases 1 and 2 (excluding contingency) per the implementation schedule (Table 4.2-1 in the Task 4 Technical Memorandum). The following table, taken from the Task 4 Technical Memorandum, summarizes the total program costs and unit capital costs, by phase; and provides a breakdown of the construction and implementation costs.

<table>
<thead>
<tr>
<th>Implementation Phase</th>
<th>Cost Breakdown by Phase ($1,000) Excluding Contingency</th>
<th>Cumulative Yield (AFY)</th>
<th>Potential Unit Capital Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Program $a = b + c</td>
<td>Construction $b$</td>
<td>Implementation $c$</td>
</tr>
<tr>
<td>SJBGFMP Basin Operations and Adaptive Management</td>
<td>$7,350</td>
<td>$0</td>
<td>$7,350</td>
</tr>
<tr>
<td>Phase 1</td>
<td>$33,560</td>
<td>$26,300</td>
<td>$7,260</td>
</tr>
<tr>
<td>Phase 2</td>
<td>$119,140</td>
<td>$89,600</td>
<td>$29,540</td>
</tr>
<tr>
<td>Subsequent Phases</td>
<td>$160,900</td>
<td>$123,700</td>
<td>$37,200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$320,950</strong></td>
<td><strong>$239,600</strong></td>
<td><strong>$81,350</strong></td>
</tr>
</tbody>
</table>

**Notes**

1. Unit capital cost estimates for Phase 2 include Phase 1 costs and yield.
2. Unit capital cost estimates for subsequent phases include Phase 2 costs and yield.