

**4.4.6 Etiwanda Spreading Basins**

The SBCFCD are currently planning improvements for the Etiwanda Spreading Basins. These improvements include restoring the northern section of the basins above 24th Street to its natural environment, and creating a basin south of 24th Street. Total construction costs for the Etiwanda Spreading Basins improvements are approximately \$523,000. Table 4-9 provides a breakdown of the cost for improvements. It should be noted that depending on the final improvements made to the basin by SBCFCD, the costs presented here could change significantly. Specifically, if excavation of the basin for conservation storage becomes necessary. Figure 4-7 illustrates displays the proposed facility improvements to Etiwanda Spreading Basins.

<p><b>Owner</b> SBCFCD</p> <p><b>Location</b> Rancho Cucamonga, California</p> <p><b>Recharge Area</b> 20.0 acres</p> <p><b>Percolation Rate</b> 3.0 ft./day</p> <p><b>Potential Recharge Capacity</b></p> <table border="0"> <tr> <td>Storm Water</td> <td>1,200-1,700 ac-ft/yr</td> </tr> <tr> <td>Recycled Water</td> <td>1,200-1,700 ac-ft/yr</td> </tr> <tr> <td>Imported Water</td> <td>5,800-8,600 ac-ft/yr</td> </tr> <tr> <td><b>Total</b></td> <td><b>8,200-12,000 ac-ft/yr</b></td> </tr> </table>	Storm Water	1,200-1,700 ac-ft/yr	Recycled Water	1,200-1,700 ac-ft/yr	Imported Water	5,800-8,600 ac-ft/yr	<b>Total</b>	<b>8,200-12,000 ac-ft/yr</b>	<p><b>PROPOSED IMPROVEMENTS</b></p> <p><b>Storm Water</b></p> <ul style="list-style-type: none"> <li>▪ None</li> </ul> <p><b>Recycled Water</b></p> <ul style="list-style-type: none"> <li>▪ 1,300-ft. pipeline connecting with Wilson Recycled Reservoir</li> <li>▪ Inlet Structure to Basin</li> </ul> <p><b>Imported Water</b></p> <ul style="list-style-type: none"> <li>▪ Expand CB-14T turnout on the Rialto Pipeline (Share Costs with Etiwanda Conservation Basins and Victoria Basin)</li> </ul>
Storm Water	1,200-1,700 ac-ft/yr								
Recycled Water	1,200-1,700 ac-ft/yr								
Imported Water	5,800-8,600 ac-ft/yr								
<b>Total</b>	<b>8,200-12,000 ac-ft/yr</b>								

**Table 4-9  
Improvement Costs for Etiwanda Spreading Basins**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
None				
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ea.	58,000	58,000
Pipeline from Wilson Recycled Water Reservoir <sup>(2)</sup>	1,300	lf	96	125,000
Subtotal Recycled Water Recharge				183,000
<b>Imported Water Recharge</b>				
Expand CB-14T (split w/ Etiwanda Conserv. & Victoria) <sup>(2)</sup>	0.33	ls	500,000	167,000
Subtotal Imported Water Recharge				167,000
<b>Total Construction Cost</b>				350,000
Direct Construction Cost (+ 30% Contingency)	1	ls	455,000	455,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	68,250	68,000
<b>Total Capital Cost</b>				<b>523,000</b>

## Notes:

- (1) CBWCD
- (2) B&V
- (3) Includes administration, design, and construction management
- (4) Values does not include environmental licensing estimate

**4.4.7 Hickory Basin**

Hickory Basin is located east of the San Sevaine Channel and along the Santa Fe Railroad tracks.

Hickory Basin would not only operate as a spreading basin for groundwater recharge, but also as a supply reservoir for Banana Basin. Banana Basin is located in a remote location approximately 500 feet to the east of Hickory Basin. Only local storm water currently flows to Banana Basin. In order to increase the recharge capacity of Banana Basin, a pump station is planned at Hickory Basin to pump water east through a conveyance pipeline to Banana Basin. Total construction costs for Hickory Basin improvements are approximately \$2,340,000. Table 4-10 provides a breakdown of the costs for improvements. Figure 4-8 displays the proposed facility improvements to Hickory Basin.

**Owner**

SBCFCD

**Location**

Fontana, California

**Recharge Area**

8.0 acres

**Percolation Rate**

2.0 ft./day

**Potential Recharge Capacity**

Storm Water	600-900 ac-ft/yr
Recycled Water	600-900 ac-ft/yr
Imported Water	3,100-4,600 ac-ft/yr
<u>Total</u>	<u>4,300-6,400 ac-ft/yr</u>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Drop Inlet Structure in San Sevaine Channel (Share Costs with Banana Basin)
- Modify Outlet Works for Conservation Storage
- Deepen and Optimize Basin for Recharge
- Monitoring Wells

**Recycled Water**

- 700-ft. pipeline connecting the Whittram Ave. Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- New turnout at Etiwanda Forebay (Share Costs with Banana, Declez, Jurupa, and RP-3 Basins)
- 5,000-ft. pipeline to connect new turnout with Hickory Basin (Share Costs with Banana, Declez, Jurupa, and RP-3 Basins)

**Table 4-10  
Improvement Costs for Hickory Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Modify outlet works for conservation storage <sup>(2)</sup>	1	ls	\$150,000	\$150,000
Deepen and optimize basin for recharge <sup>(2)</sup>	65,000	cy	5	325,000
Monitoring Wells	1	ea.	300,000	300,000
Drop inlet structure @ San Sevaine Creek <sup>(2)</sup> (split w/ Banana)	0.5	ea.	450,000	225,000
Subtotal Storm Water Recharge				\$1,000,000
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1.000	ea.	\$58,000	\$58,000
Pipeline from proposed Whittram Ave. Regional Pipeline <sup>(2)</sup>	700	ft.	96	67,000
Subtotal Recycled Water Recharge				\$125,000
<b>Imported Water Recharge</b>				
New Turnout (split cost) <sup>(2)</sup>	0.20	ls	\$1,000,000	\$200,000
Pipeline from New Turnout (split cost) <sup>(2)</sup>	1000	ls	240	240,000
Subtotal Imported Water Recharge				\$440,000
Total Construction Cost				\$1,565,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$2,034,500	\$2,035,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	305,175	305,000
<b>Total Capital Cost</b>				<b>\$2,340,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.8 Lower Day Creek Basin**

The Lower Day Creek Basin is comprised of an upper basin and a lower basin. The Lower Day Creek Basin receives runoff primarily from a housing development to the northeast; however, during major flood events (100 years or greater), storm runoff from the adjacent Day Creek is diverted directly into the lower spreading basin for retention. A pipeline connects the upper basin to the lower basin. Improvements to Lower Day Creek Basin include a new turnout and a new conveyance pipeline from the Metropolitan turnout at Rialto Pipeline to Lower Day Creek Basin. Due to the severity of slope in the Day Creek Channel, a conveyance pipeline is required to import water into Lower Day. Total construction costs for Lower Day Basin improvements are approximately \$2,540,000. Table 4-11 provides a breakdown of the costs for improvements. Figure 4-9 displays the proposed facility improvements to Lower Day Basin.

**Owner**

SBCFCD

**Location**

Rancho Cucamonga, California

**Recharge Area**

14.4 acres

**Percolation Rate**

1.0 ft./day

**Potential Recharge Capacity**

Storm Water	400-500 ac-ft/yr
Recycled Water	400-500 ac-ft/yr
Imported Water	2,800-4,200 ac-ft/yr
<u>Total</u>	<u>3,600-5,200 ac-ft/yr</u>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Modify Outlet Works for Conservation Storage

**Recycled Water**

- 200-ft. pipeline connecting to Wineville Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- New turnout on Rialto Pipeline (Share Costs with Wineville Basin)
- 4,000-ft. pipeline connecting turnout with Lower Day Basin (Share Costs with Wineville Basin)
- Inlet Structure
- Bore & Jack at intersection of Highland Avenue and Day Creek Channel

**Table 4-11  
Improvement Costs for Lower Day Creek Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Modify outlet works for conservation storage <sup>(2)</sup>	1	ls	\$150,000	\$150,000
Subtotal Storm Water Recharge				\$150,000
<b>Recycled Water Recharge</b>				
Lateral from proposed nonregional pipeline <sup>(2)</sup>	4,300	ft.	\$144	\$619,000
Inlet structure <sup>(2)</sup>	1	ls	58,000	58,000
Subtotal Recycled Water Recharge				\$677,000
<b>Imported Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ea.	\$30,000	\$30,000
New Turnout (split w/ Wineville Basin) <sup>(2)</sup>	0.5	ea.	1,000,000	500,000
Pipeline from Metropolitan turnout to basin inlet (split w/ Wineville Basin) <sup>(2)</sup>	2,000.0	ft.	96	192,000
Bore & Jack @ Highland Ave. & Day Creek Channel <sup>(3)</sup>	300	ft.	500	150,000
Subtotal Imported Water Recharge				\$872,000
Total Construction Cost				\$1,699,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$2,208,700	\$2,209,000
Indirect Cost (15% of Direct Construction Cost) <sup>(4) (5)</sup>	1	ls	331,305	331,000
<b>Total Capital Cost</b>				<b>\$2,540,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Unit cost based on "Facility Planning Study Chino Basin Conjunctive-Use Demonstration Project" by CH2M Hill, 1995

(4) Includes administration, design, and construction management

(5) Values does not include environmental licensing estimate

**4.4.9 San Sevaine Basin Nos. 1, 2, and 3**

San Sevaine Basin Nos. 1, 2, and 3 are located along the north side Interstate 15, and are part of the San Sevaine Channel System. The SBCFCD San Sevaine Creek Water Project proposes to operate these basins as debris basins under this project. The county’s proposal includes improvements to the inlet and outlet works and revegetation of the area. Total construction costs for San Sevaine Basin Nos. 1, 2, and 3 improvements are approximately \$783,000. Table 4-12 provides a breakdown of the costs for improvements. Figure 4-10 displays the proposed facility improvements to San Sevaine Basin Nos. 1, 2, and 3.

<p><b>Owner</b> SBCFCD</p> <p><b>Location</b> Rancho Cucamonga, California</p> <p><b>Recharge Area</b> 33.6 acres</p> <p><b>Percolation Rate</b> 0.5 ft./day</p> <p><b>Potential Recharge Capacity</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Storm Water</td> <td>1,420-1,700 ac-ft/yr</td> </tr> <tr> <td>Recycled Water</td> <td>1,420-1,700 ac-ft/yr</td> </tr> <tr> <td>Import. Water</td> <td>15,200-22,900 ac-ft/yr</td> </tr> <tr> <td><b>Total</b></td> <td><b>18,040-26,300 ac-ft/yr</b></td> </tr> </table>	Storm Water	1,420-1,700 ac-ft/yr	Recycled Water	1,420-1,700 ac-ft/yr	Import. Water	15,200-22,900 ac-ft/yr	<b>Total</b>	<b>18,040-26,300 ac-ft/yr</b>	<p><b>PROPOSED IMPROVEMENTS</b></p> <p><b>Storm Water</b></p> <ul style="list-style-type: none"> <li>▪ None</li> </ul> <p><b>Recycled Water</b></p> <ul style="list-style-type: none"> <li>▪ 1,500-ft. pipeline connecting the North Etiwanda Regional Recycled Water Pipeline</li> <li>▪ Inlet Structure to Basin</li> </ul> <p><b>Imported Water</b></p> <ul style="list-style-type: none"> <li>▪ Expand Metropolitan on Rialto Pipeline (Share Costs with San Sevaine 4 and 5)</li> </ul>
Storm Water	1,420-1,700 ac-ft/yr								
Recycled Water	1,420-1,700 ac-ft/yr								
Import. Water	15,200-22,900 ac-ft/yr								
<b>Total</b>	<b>18,040-26,300 ac-ft/yr</b>								

**Table 4-12  
Improvement Costs for San Sevaine Basin Nos. 1, 2, and 3**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
None				
<b>Recycled Water Recharge</b>				
Inlet Structure <sup>(2)</sup>	1	ls	\$58,000	\$58,000
Lateral from proposed North Etiwanda Regional Pipeline <sup>(2)</sup>	1,500	ft.	144	216,000
Subtotal Recycled Water Recharge				\$274,000
<b>Imported Water Recharge</b>				
Expand Metropolitan Turnout (Split with SS 4.5) <sup>(2)</sup>	0.5	ls	\$500,000	\$250,000
Subtotal Imported Water Recharge				\$250,000
<b>Total Construction Cost</b>				\$524,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$681,200	\$681,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	102,180	102,000
<b>Total Capital Cost</b>				<b>\$783,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.10 San Sevaine Basin Nos. 4 and 5**

San Sevaine Basin Nos. 4 and 5 are located along the north side Interstate 15, and are part of the San Sevaine Channel System. The SBCFCD San Sevaine Creek Water Project proposes to operate these basins as flood control and debris basins under this project. The county’s proposal includes improvements to the inlet and outlet works and revegetation of the area. Total construction costs for San Sevaine Basins 4 and 5 improvements are approximately \$4,123,000. Table 4-13 provides a breakdown of the cost for improvements. Figure 4-11 illustrates the proposed facility improvements to San Sevaine Basin Nos. 4 and 5.

**Owner**

SCBCFCD

**Location**

Rancho Cucamonga, California

**Recharge Area**

56.5 acres

**Percolation Rate**

0.5 ft./day

**Potential Recharge Capacity**

Storm Water	400-500 ac-ft/yr
Recycled Water	400-500 ac-ft/yr
Imported Water	5,400-8,100 ac-ft/yr
<b>Total</b>	<b>6,200-9,100 ac-ft/yr</b>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Modify Outlet Works for Conservation Storage
- Deepen and Optimize Basin for Recharge

**Recycled Water**

- 400-ft. pipeline connecting the North Etiwanda Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- Expand Metropolitan on Rialto Pipeline (Share Costs with San Sevaine 1, 2, and 3)

**Table 4-13  
Improvement Costs for San Sevaine Basin Nos. 4 and 5**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Deepen and optimize basin for recharge <sup>(1)</sup>	450,000	cy	\$5	\$2,250,000
Modify outlet works for conservation storage <sup>(2)</sup>	1	ls	150,000	150,000
Subtotal Storm Water Recharge				\$2,400,000
<b>Recycled Water Recharge</b>				
Inlet Structure <sup>(2)</sup>	1	ls	\$58,000	\$58,000
Lateral from proposed North Etiwanda Regional Pipeline <sup>(2)</sup>	400	ft.	124	50,000
Subtotal Recycled Water Recharge				\$108,000
<b>Imported Water Recharge</b>				
Expand Metropolitan Turnout (split with San Sevaine Basins Nos. 1-3) <sup>(2)</sup>	0.5	ls	\$500,000	\$250,000
Subtotal Imported Water Recharge				250,000
Total Construction Cost				\$2,758,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$3,585,400	\$3,585,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	537,810	538,000
<b>Total Capital Cost</b>				<b>\$4,123,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.11 Turner Basin No. 1**

The Turner Basins are located at the confluence between Cucamonga Creek Channel and Deer Creek Channel. Turner Basin No. 1 diverts water from the Cucamonga Creek Channel, routes the water through the basin for groundwater recharge, and delivers any overflow water back into the Cucamonga Creek Channel. Total construction costs for Turner Basin No. 1 improvements are approximately \$3,995,000. Table 4-14 provides a breakdown of the costs for improvements. Figure 4-12 displays the proposed facility improvements to Turner Basin No. 1.

**Owner**

SBCFCD

**Location**

Ontario, California

**Recharge Area**

6.2 acres

**Percolation Rate**

0.5 ft./day

**Potential Recharge Capacity**

Storm Water	700-900 ac-ft/yr
Recycled Water	700-900 ac-ft/yr
Imported Water	600-900 ac-ft/yr
<u>Total</u>	<u>2,000-2,700 ac-ft/yr</u>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Drop Inlet Structure at Deer Creek Channel (share with Turner Basin Nos. 2, 3, and 4)
- Modify Outlet Works for Conservation Storage
- Deepen and Optimize Basin for Recharge
- Low Level Control Berm for Nuisance Flows
- Monitoring Wells

**Recycled Water**

- 300-ft. pipeline connecting the 4<sup>th</sup> Street Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- New turnout on Rialto Pipeline near Deer Creek (shared with Turner Basin Nos. 2, 3, and 4)

**Table 4-14  
Improvement Costs for Turner Basin No. 1**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Modify outlet works for conservation storage	1	ls	\$100,000	\$100,000
Drop inlet structure at Deer Creek (split with Turner Basin Nos. 2, 3, and 4)	1	ea.	450,000	225,000
Deepen & optimize basin geometry for recharge <sup>(2)</sup>	200,000	cy	5	1,000,000
Monitoring Wells	1	ea.	300,000	300,000
Low level control berms to control nuisance flows <sup>(2)</sup>	1	ls	10,000	10,000
Subtotal Storm Water Recharge				\$1,635,000
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ea.	\$58,000	\$58,000
Lateral from proposed 4th. St. Regional Pipeline <sup>(2)</sup>	300	ft.	96	29,000
Subtotal Recycled Water Recharge				\$87,000
<b>Imported Water Recharge</b>				
New turnout @ Rialto Pipeline near Deer Creek <sup>(2)</sup>	0.5	ls	\$1,000,000	\$500,000
New inlet Structure	1	ls	450,000	450,000
Subtotal Imported Water Recharge				\$950,000
Total Construction Cost				\$2,672,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$3,473,600	\$3,474,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3)(4)</sup>	1	ls	521,040	521,000
<b>TOTAL CAPITAL COST</b>				<b>\$3,995,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.12 Turner Basin Nos. 2, 3, and 4**

The Turner Basin Nos. 2, 3, and 4 are located at the confluence between Cucamonga Creek Channel and Deer Creek Channel. Presently the diversion pipe from Deer Creek Channel is blocked by sediment. Through excavation of the basin, Turner Basin Nos. 2, 3, and 4 will again divert water from the Deer Creek Channel, route the water through the basins for groundwater recharge, and deliver any overflow water back into the Deer Creek Channel. Total construction costs for Turner Basin Nos. 2, 3, and 4 improvements are approximately \$3,364,000. Table 4-15 provides a breakdown of the costs for improvements. Figure 4-13 displays the proposed facility improvements to Turner Basin Nos. 2, 3, and 4.

**Owner**

SBCFCD

**Location**

Ontario, California

**Recharge Area**

23.3 acres

**Percolation Rate**

0.5 ft./day

**Potential Recharge Capacity**

Storm Water	1,300-1,800 ac-ft/yr
Recycled Water	1,300-1,800 ac-ft/yr
Imported Water	2,300-3,400 ac-ft/yr
<b>Total</b>	<b>4,900-7,000 ac-ft/yr</b>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Drop Inlet Structure at Deer Creek Channel (share with Turner Basin No. 1)
- Modify Outlet Works for Conservation Storage
- Deepen and Optimize Basin for Recharge
- Low Level Control Berm for Nuisance Flow
- Monitoring Wells

**Recycled Water**

- 800-ft. pipeline connecting the 4<sup>th</sup> Street Regional Recycled Water Pipeline
- Inlet Structure to Basin
- Bore and Jack Pipeline under Deer Creek Channel

**Imported Water**

- New turnout on Rialto Pipeline near Deer Creek (shared with Turner Basin No. 1)

**Table 4-15  
Improvement Costs for Turner Basin Nos. 2, 3, and 4**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Drop inlet structure @ Deer Creek <sup>(2)</sup>	1	ea.	\$450,000	\$225,000
Low level control berms for nuisance flows <sup>(2)</sup>	1	ea.	10,000	10,000
Monitoring Wells	1	ea.	300,000	300,000
Modify outlet works for conservation storage <sup>(2)</sup>	1	ls.	100,000	100,000
Deepen basin to create conservation pool	188,000	cy	5	940,000
Subtotal Storm Water Recharge				\$1,575,000
<b>Recycled Water Recharge</b>				
Inlet Structure <sup>(2)</sup>	1	ls	\$58,000	\$58,000
Lateral from proposed 4th St. Regional Pipeline <sup>(2)</sup>	700	ft.	96	67,000
Bore & Jack @ Deer Creek <sup>(3)</sup>	100	ft.	500	50,000
Subtotal Recycled Water Recharge				\$175,000
<b>Imported Water Recharge</b>				
New turnout @ Rialto Pipeline near Deer Creek <sup>(2)</sup>	0.5	ea.	\$1,000,000	\$500,000
Subtotal Imported Water Recharge				\$500,000
Total Construction Cost				\$2,250,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$2,925,000	\$2,925,000
Indirect Cost (15% of Direct Construction Cost) <sup>(4)(5)</sup>	1	ls	438,750	439,000
<b>Total Capital Cost</b>				<b>\$3,364,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Unit cost based on "Facility Planning Study Chino Basin Conjunctive-Use Demonstration Project" by CH2M Hill, 1995

(4) Includes administration, design, and construction management

(5) Values does not include environmental licensing estimate

**4.4.13 Victoria Basin**

Victoria Basin is located north of Interstate 15 on the western side of the Etiwanda Channel. Victoria Basin currently only receives runoff from nearby developments. The Victoria Basin has been included as part of the proposed SBCFCD San Sevaine Creek Water Project, and would be operated as a flood flow retention basin under this project. SBCFCD has plans to construct an inlet structure from Etiwanda Channel to divert additional storm water flow and imported water. Total construction costs for Victoria Basin improvements are approximately \$589,000. Table 4-16 provides a breakdown of the costs for improvements. Figure 4-14 displays the proposed facility improvements to Victoria Basin.

<p><b>Owner</b> SBCFCD</p> <p><b>Location</b> Rancho Cucamonga, California</p> <p><b>Recharge Area</b> 11.8 acres</p> <p><b>Percolation Rate</b> 1.5 ft./day</p> <p><b>Potential Recharge Capacity</b></p> <table border="0"> <tr> <td>Storm Water</td> <td>800-1,000 ac-ft/yr</td> </tr> <tr> <td>Recycled Water</td> <td>800-1,000 ac-ft/yr</td> </tr> <tr> <td>Imported Water</td> <td>3,400-5,100 ac-ft/yr</td> </tr> <tr> <td><b>Total</b></td> <td><b>5,000-7,100 ac-ft/yr</b></td> </tr> </table>	Storm Water	800-1,000 ac-ft/yr	Recycled Water	800-1,000 ac-ft/yr	Imported Water	3,400-5,100 ac-ft/yr	<b>Total</b>	<b>5,000-7,100 ac-ft/yr</b>	<p><b>PROPOSED IMPROVEMENTS</b></p> <p><b>Storm Water</b></p> <ul style="list-style-type: none"> <li>▪ Modify Outlet Works for Conservation Storage</li> </ul> <p><b>Recycled Water</b></p> <ul style="list-style-type: none"> <li>▪ 200-ft. pipeline connecting the proposed North Etiwanda Regional Recycled Water Pipeline</li> <li>▪ Inlet Structure to Basin</li> </ul> <p><b>Imported Water</b></p> <ul style="list-style-type: none"> <li>▪ Expand CB-14T turnout on the Rialto Pipeline (Share Costs with Etiwanda Spreading Basins and Etiwanda Conservation Basin)</li> </ul>
Storm Water	800-1,000 ac-ft/yr								
Recycled Water	800-1,000 ac-ft/yr								
Imported Water	3,400-5,100 ac-ft/yr								
<b>Total</b>	<b>5,000-7,100 ac-ft/yr</b>								

**Table 4-16  
Improvement Costs for Victoria Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Modify outlet works for conservation <sup>(2)</sup>	1	ls	\$150,000	\$150,000
Subtotal Storm Water Recharge				\$150,000
<b>Recycled Water Recharge</b>				
Inlet Structure <sup>(2)</sup>	1	ea.	\$58,000	\$58,000
Lateral from proposed North Etiwanda Regional Line <sup>(2)</sup>	200	ft	96	19,000
Subtotal Recycled Water Recharge				\$77,000
<b>Imported Water Recharge</b>				
Expand CB-14T (split w/ Etiwanda Spreading Basins & Conservation Ponds) <sup>(2)</sup>	0.33	ls	\$500,000	\$167,000
Subtotal Imported Water Recharge				\$167,000
<b>Total Construction Cost</b>				<b>\$394,000</b>
Direct Construction Cost (+ 30% Contingency)	1	ls	\$512,200	\$512,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	76,830	77,000
<b>Total Capital Cost</b>				<b>\$589,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.14 Banana Basin**

Banana Basin is a small basin on a natural drainage channel that collects residential storm water. The basin is located east of Hickory Basin along the Santa Fe Railroad and is currently not supplied by any major storm water channels. In order to increase the recharge capacity of Banana Basin, stored water in Hickory Basin will be pumped east through a conveyance pipeline to Banana Basin. This will require design and construction of a new pump station at Hickory Basin and a pipeline to Banana Basin. Total construction cost for Banana Basin improvements is approximately \$3,134,000. Table 4-17 provides a breakdown of the costs for improvements. Figure 4-15 displays the proposed facility improvements to Banana Basin.

<p><b>Owner</b> SBCFCD</p> <p><b>Location</b> Fontana, California</p> <p><b>Recharge Area</b> 6.2 acres</p> <p><b>Percolation Rate</b> 2.0 ft./day</p> <p><b>Potential Recharge Capacity</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Storm Water</td> <td>600-800 ac-ft/yr</td> </tr> <tr> <td>Recycled Water</td> <td>600-800 ac-ft/yr</td> </tr> <tr> <td>Imported Water</td> <td>2,400-3,600 ac-ft/yr</td> </tr> <tr> <td><b>Total</b></td> <td><b>3,600-5,200 ac-ft/yr</b></td> </tr> </table>	Storm Water	600-800 ac-ft/yr	Recycled Water	600-800 ac-ft/yr	Imported Water	2,400-3,600 ac-ft/yr	<b>Total</b>	<b>3,600-5,200 ac-ft/yr</b>	<p><b>PROPOSED IMPROVEMENTS</b></p> <p><b>Storm Water</b></p> <ul style="list-style-type: none"> <li>▪ Drop Inlet Structure in San Sevaine Channel (Share Costs with Hickory Basin)</li> <li>▪ Modify Outlet Works for Conservation Storage</li> <li>▪ Deepen and Optimize Basin for Recharge</li> <li>▪ Hickory Basin Pump Station</li> <li>▪ Pipeline from Hickory Basin to Banana Basin</li> <li>▪ Monitoring Wells</li> </ul> <p><b>Recycled Water</b></p> <ul style="list-style-type: none"> <li>▪ 100-ft. pipeline connecting the Whittram Avenue Regional Recycled Water Pipeline</li> <li>▪ Inlet Structure to Basin</li> </ul> <p><b>Imported Water</b></p> <ul style="list-style-type: none"> <li>▪ New turnout at Etiwanda Forebay (Share Costs with Hickory, Declez, Jurupa, and RP-3 Basins)</li> <li>▪ 5,000-ft. pipeline to connect new turnout with Hickory Basin (Share Costs with Hickory, Declez, Jurupa, and RP-3 Basins)</li> </ul>
Storm Water	600-800 ac-ft/yr								
Recycled Water	600-800 ac-ft/yr								
Imported Water	2,400-3,600 ac-ft/yr								
<b>Total</b>	<b>3,600-5,200 ac-ft/yr</b>								

**Table 4-17  
Improvement Costs for Banana Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Drop inlet structure (split w/ Hickory) <sup>(2)</sup>	0.5	ea.	\$450,000	\$225,000
Outlet works modification for conservation storage <sup>(2)</sup>	1	ls	150,000	150,000
Deepen and optimize basin geometry for recharge <sup>(2)</sup>	50,000	cy	5	250,000
Monitoring Wells	1	ea.	300,000	300,000
Hickory Pump Station <sup>(2)</sup>	1	ls	231,000	231,000
Pipeline from Hickory to Banana Basin <sup>(2)</sup>	4,500	ft.	96	432,000
Subtotal Storm Water Recharge				\$1,588,000
<b>Recycled Water Recharge</b>				
Inlet Structure <sup>(2)</sup>	1	ea.	\$58,000	\$58,000
Pipeline from proposed Whittram Ave. Regional Pipeline <sup>(2)</sup>	100	ft.	96	10,000
Subtotal Recycled Water Recharge				\$68,000
<b>Imported Water Recharge</b>				
New Turnout (split cost) <sup>(2)</sup>	0.20	ls	\$1,000,000	\$200,000
Pipeline from New Turnout(split cost) <sup>(2)</sup>	1,000	ls	240	240,000
Subtotal Imported Water Recharge				\$440,000
Total Construction Cost				\$2,096,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$2,724,800	\$2,725,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	408,720	409,000
<b>Total Capital Cost</b>				<b>\$3,134,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.15 Declez Basin**

Declez Basin is a flow-through basin on the Declez Conveyance Channel located southeast of the intersection between Mulberry and Philadelphia Street. The only way to deliver imported water to the Basin is via the proposed RP-3 Basin upstream. Because of this reliance on the RP-3 Basin for imported water, some of the improvements proposed for RP-3 are shared with the Declez Basin. Total construction costs for Declez Basin improvements are approximately \$2,049,000. Table 4-18 provides a breakdown of the costs for improvements. Figure 4-16 displays the proposed facility improvements to Declez Basin.

**Owner**

SBCFCD

**Location**

Jurupa, California

**Recharge Area**

6.0 acres

**Percolation Rate**

1.0 ft./day

**Potential Recharge Capacity**

Storm Water	200-300 ac-ft/yr
Recycled Water	200-300 ac-ft/yr
Imported Water	1,200-1,800 ac-ft/yr
<b>Total</b>	<b>1,600-2,400 ac-ft/yr</b>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Internal Check Dams
- Outlet Structures for Check Dams

**Recycled Water**

- 1,800 ft. pipeline connecting proposed Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- New turnout at Etiwanda Forebay (share costs with Hickory, Banana, Jurupa, and RP-3 Basins)
- 5,000-ft. pipeline to connect new turnout with Hickory Basin (Share costs with Hickory, Banana, Jurupa, and RP-3 Basins)
- Jurupa Pump Station (share costs with RP-3 Basin)
- Pipeline from Jurupa Basin to RP-3 Basin (share costs with RP-3 Basin)

**Table 4-18  
Improvement Costs for Declez Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Internal check dam <sup>(2)</sup>	3	ea.	\$5,000	\$15,000
Outlet structure for check dam <sup>(2)</sup>	3	ea.	30,000	90,000
Subtotal Storm Water Recharge				\$105,000
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ea.	\$58,000	\$58,000
Pipeline from proposed regional pipeline <sup>(2)</sup>	1800	ft	96	173,000
Subtotal Recycled Water Recharge				\$231,000
<b>Imported Water Recharge</b>				
New Turnout (split cost) <sup>(2)</sup>	0.20	ls	\$1,000,000	\$200,000
Pipeline from New Turnout (split cost) <sup>(2)</sup>	1000	ls	240	240,000
Pipeline from Jurupa Basin to RP-3 <sup>(2)</sup> (split w/ RP-3)	5,000	ft.	96	480,000
Jurupa pump station <sup>(2)</sup> (split w/ RP-3)	1	ls	230,000	115,000
Subtotal Imported Water Recharge				\$1,035,000
Total Construction Cost				\$1,371,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$1,782,300	\$1,782,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	267,345	267,000
<b>Total Capital Cost</b>				<b>\$2,049,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.16 Etiwanda Conservation Ponds**

A series of ten percolation ponds exist along Etiwanda Avenue between San Bernardino Road and the I-10 Freeway. The Etiwanda Conservation Ponds were designed to divert a portion of the flow out of Etiwanda Creek and route these flows through the series of basins. Presently, the facility is not working properly and the majority if not all of the potential recharge is being lost downstream. A development has been proposed west of Etiwanda Avenue that will convert these basins to flow-through facilities. As a flow-through facility all of the flow in Etiwanda Creek will be routed through the Basins. However, recent reports are the proposed development has been abandoned. Total construction costs for the Etiwanda Conservation Ponds improvements are approximately \$3,118,000. Table 4-19 provides a breakdown of the costs for improvements. Figure 4-17 displays the proposed facility improvements to Etiwanda Conservation Ponds.

**Owner**

SBCFCD

**Location**

Fontana, California

**Recharge Area**

20.0 acres

**Percolation Rate**

1.0 ft./day

**Potential Recharge Capacity**

Storm Water	800-1,100 ac-ft/yr
Recycled Water	800-1,100 ac-ft/yr
Imported Water	3,900-5,800 ac-ft/yr
<u>Total</u>	<u>5,500-8,000 ac-ft/yr</u>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Interim Storm Drains to handle increased flows as a flow-through facility
- Abandoning the existing culvert on 4<sup>th</sup> and Etiwanda Ave.
- Deepen and Optimize Basin for Recharge
- Improve Basin Outlets and Overflow Spillways
- Modify Existing System Outlet Structure
- Monitoring Wells

**Recycled Water**

- 50-ft. pipeline connecting with proposed 4<sup>th</sup> Street Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- Expand CB-14T turnout on the Rialto Pipeline (share costs with Etiwanda Spreading Basins and Victoria Basin)

**Table 4-19  
Improvement Costs for Etiwanda Conservation Ponds**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Interim quad 48-inch storm drain <sup>(2)</sup>	100	ft.	\$400	\$40,000
Abandon existing culvert on 4th & Etiwanda Ave. <sup>(2)</sup>	1	ls	20,000	20,000
Deepen and optimize basins for recharge <sup>(2)</sup>	161,000	ls	5	805,000
Interm double 54-inch storm drain <sup>(2)</sup>	100	ft.	450	45,000
Overflow Spillways <sup>(2)</sup>	9	ea.	15,000	135,000
Monitoring Wells	1	ea.	300,000	300,000
Improve basin outlets <sup>(2)</sup>	9	ea.	40,000	360,000
Extend and modify existing outlet structure <sup>(2)</sup>	1	ls	150,000	150,000
Subtotal Storm Water Recharge				\$1,855,000
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ls	\$58,000	\$58,000
Lateral from proposed 4th St. regional pipeline <sup>(2)</sup>	50	ft.	96	5,000
Subtotal Recycled Water Recharge				\$63,000
<b>Imported Water Recharge</b>				
Expand CB-14T (split w/ Victoria & Etiwanda Spreading Basins) <sup>(2)</sup>	0.33	ls	\$500,000	\$167,000
Subtotal Imported Water Recharge				\$167,000
Total Construction Cost				\$2,085,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$2,710,500	\$2,711,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	406,575	407,000
<b>Total Capital Cost</b>				<b>\$3,118,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.17 Jurupa Basin**

Jurupa Basin is located on about 60 acres east of the existing unlined channel at Jurupa Avenue. This basin is designed as a bypass basin to receive peak flows from San Sevaine Conveyance Channel. SBCFCD currently plans to construct an inlet that would divert storm, imported and recycled water into Jurupa Basin for conservation. Water stored in Jurupa Basin could be pumped to the proposed RP-3 spreading basin site. Total construction costs for Jurupa Basin improvements is approximately \$1,700,000. Table 4-20 provides a breakdown of the costs for improvements. Figure 4-18 displays the proposed facility improvements to Jurupa Basin.

**Owner**

SBCFCD

**Location**

Jurupa, California

**Recharge Area**

39.0 acres

**Percolation Rate**

0.1 ft./day

**Potential Recharge Capacity**

Storm Water	500-700 ac-ft/yr
Recycled Water	500-700 ac-ft/yr
Imported Water	800-1,200 ac-ft/yr
<b>Total</b>	<b>1,800-2,600 ac-ft/yr</b>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Modify Outlet Works for Conservation Storage
- Provide Internal Levee
- Monitoring Wells

**Recycled Water**

- 200-ft. pipeline connecting with the Regional Jurupa Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- New turnout at Etiwanda Forebay (Share Costs with Hickory, Banana, Declez, and RP-3 Basins)
- 5,000-ft. pipeline to connect new turnout with Hickory Basin (Share Costs with Hickory, Banana, Declez, and RP-3 Basins)

**Table 4-20  
Improvements Costs for Jurupa Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Provide internal levee or dam <sup>(2)</sup>	1	ls	\$170,000	\$170,000
Monitoring Wells	1	ea.	300,000	300,000
Modify outlet works for conservation storage <sup>(2)</sup>	1	ea.	150,000	150,000
Subtotal Storm Water Recharge				\$620,000
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ls	\$58,000	\$58,000
Lateral from proposed regional pipeline <sup>(2)</sup>	200	ft.	96	19,000
Subtotal Recycled Water Recharge				\$77,000
<b>Imported Water Recharge</b>				
New Turnout (split cost) <sup>(2)</sup>	0.20	ls	\$1,000,000	\$200,000
Pipeline from New Turnout (split cost) <sup>(2)</sup>	1,000	ls	240	240,000
Subtotal Imported Water Recharge				\$440,000
Total Construction Cost				\$1,137,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$1,478,100	\$1,478,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3) (4)</sup>	1	ls	221,715	222,000
<b>Total Capital Cost</b>				<b>\$1,700,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

**4.4.18 Wineville Basin**

The Wineville Basin receives water from Day Creek and the Etiwanda Channel. At the northeast corner, flows from Day Creek enter the basin through a concrete ramp inlet. Flows from Etiwanda Channel enter the basin through a concrete ramp inlet on the east side of the basin. There are two outlets to the basin, and both deliver water to the Lower Day Creek Channel. Total construction costs for the Wineville Basin improvements are approximately \$2,884,000. Table 4-21 provides a breakdown of the costs for improvements. Figure 4-19 illustrates the proposed facility improvements to Wineville Basin.

**Owner**

SBCFCD

**Location**

Ontario, California

**Recharge Area**

36.0 acres

**Percolation Rate**

0.5 ft./day

**Potential Recharge Capacity**

Storm Water	500-700 ac-ft/yr
Recycled Water	500-700 ac-ft/yr
Imported Water	700-1,100 ac-ft/yr
<b>Total</b>	<b>1,700-2,500 ac-ft/yr</b>

**PROPOSED IMPROVEMENTS**

**Storm Water**

- Geotechnical investigation of basin sides to determine stability
- Modify Outlet Works for Conservation Storage
- Deepen and Optimize Basin for Recharge
- Monitoring Wells

**Recycled Water**

- 200-ft. pipeline connecting to Wineville Regional Recycled Water Pipeline
- Inlet Structure to Basin

**Imported Water**

- New turnout on Rialto Pipeline (Share Costs with Lower Day Basin)
- 4,000-ft. pipeline connecting to turnout to Lower Day Basin (Share Costs with Lower Day Basin)

**Table 4-21  
Improvement Costs for Wineville Basin**

Description of Work	Quantity	Unit	Unit Cost	Total
<b>Storm Water Recharge</b>				
Geotechnical investigation <sup>(2)</sup>	1	ls	\$150,000	\$150,000
Modify outlet works for conservation storage <sup>(2)</sup>	1	ea.	150,000	150,000
Monitoring Wells	1	ea.	300,000	300,000
Deepen and Optimize Basin for Recharge <sup>(2)</sup>	112,000	cy	5	560,000
Subtotal Storm Water Recharge				\$1,160,000
<b>Recycled Water Recharge</b>				
Inlet structure <sup>(2)</sup>	1	ea.	\$58,000	\$58,000
Lateral from Wineville Regional Pipeline <sup>(2)</sup>	200	ft.	96	19,000
Subtotal Recycled Water Recharge				\$77,000
<b>Imported Water Recharge</b>				
New Turnout (split w/ Lower Day) <sup>(2)</sup>	0.5	ea.	\$1,000,000	\$500,000
Pipeline from Metropolitan turnout to basin inlet (split w/ Lower Day Basin) <sup>(2)</sup>	2,000	ft.	96	192,000
Subtotal Imported Water Recharge				\$692,000
Total Construction Cost				\$1,929,000
Direct Construction Cost (+ 30% Contingency)	1	ls	\$2,507,700	\$2,508,000
Indirect Cost (15% of Direct Construction Cost) <sup>(3)(4)</sup>	1	ls	376,155	376,000
<b>Total Capital Cost</b>				<b>\$2,884,000</b>

## Notes:

(1) CBWCD

(2) B&amp;V

(3) Includes administration, design, and construction management

(4) Values does not include environmental licensing estimate

INSERT FIGURES 4-1 THROUGH 4-19