

amount of MWD's Colorado River water. The District and DWA currently have a combined entitlement of 194,100 acre-feet per year (ac-ft/year).

The exchanged water is delivered to the Whitewater River Spreading Area and the Mission Creek Spreading Area. The areas directly benefited by the recharge of SWP water are the upper portion of the Whitewater River Subbasin and the Mission Creek Subbasin or more commonly referred to as the Upper Valley. The Upper Valley consists of the area from Palm Springs to approximately Washington Street.

The District receives Colorado River water via the Coachella Canal. The District currently has an increasing incremental right to Colorado River Water. By 2026, the District's full delivery will be 459,000 acre-feet per year. The use of 424,000 acre-feet per year of Colorado River water is restricted to an area called Improvement District No. 1 (ID 1), which includes most of the area known as the Lower Valley. The Lower Valley begins at approximately Washington Street and extends to approximately the Salton Sea.

4.2 Annual Consumption

New development within the Coachella Valley increases the demand on the existing water supply. To quantify this demand, the District has reviewed historical data to identify water consumption trends and to develop factors to predict future consumption. These demand studies indicate that annual water consumption rates are:

- Correlated to the type of development
- Proportionate to gross development area
- Correlated to the type of landscaping used at the development

The future water consumption for a particular development can be predicted if the development type and gross area are known. Water consumption can be further refined if the landscape regime of the development is known.

The District studied the total annual water consumption of different development types throughout the service area. For the 2012 Study, the District reviewed the 2011 total consumption data for only newer development within the District's domestic water service area. New development for this study is defined as projects constructed after the 2003 implementation of CVWD Ordinance No. 1302, which established a valley-wide efficient landscape ordinance. All known water sources within a particular development were combined to determine the total water consumption of that development. These sources included domestic water, canal water, recycled water and private well water. The total water consumption was divided by the gross acreage of the development to find an Annual Consumption Factor (ACF) expressed as acre-feet per acre per year (ac-ft/ac/yr). These results were then sorted by development type.

In addition, the ACF was reduced by 35 percent to account for return flows. Table 11 shows the average ACF with and without return flows arranged by development type. Return flows are the amount of water applied for irrigation (agricultural and golf course) not utilized by plants to satisfy their evapotranspiration requirement and water returned to the groundwater basin through urban usage (domestic irrigation, septic tank flow and sewage flow). Return flows are estimated at 35 percent.

Table 11 – Annual Consumption Factor by Development Type

Development Type	Annual Consumption Factor (ac-ft/ac/yr)	Annual Consumption Factor with Return Flows ¹ (ac-ft/ac/yr)
Gas Stations with Carwash	5.99	3.89
Hotels and Motels	5.24	3.41
Golf Course Development	3.79	2.46
Residential	3.56	2.31
Apartments and Condominiums	3.42	2.22
Supermarket Centers	3.41	2.22
Mobile Home Parks	3.05	1.98
Gas Stations with Convenience Store	2.85	1.85
Schools	2.57	1.67
Retail Shopping Centers	2.04	1.33
Industrial and Commercial Parks	1.11	0.72
Offices/Businesses	0.82	0.53
Self Storage Facilities	0.46	0.30

Notes:

1- A return flow of 35% was used

With the use of newer developments in the 2012 Study, the Annual Consumption Factor decreased for all development types, except Hotels and Motels, Gas Stations with Convenience Store and Gas Stations with Carwash. The decreases in consumption ranged from approximately 1% to 69% depending on the development type. The decreasing trend in water consumption demonstrates successful implementation of programs outlined in the Coachella Valley Water Management Plan and the District's Urban Water Management Plan.

4.3 Unit Cost for Supplemental Water Supplies

The District can purchase and import water from either the SWP or the Colorado River. It is assumed that costs associated with recent purchases of SWP entitlements are representative of permanent transfers of all types. The Consumer Price Index adjusted weighted average unit cost to purchase water rights for imported water is \$ 3,225 per acre-foot. Table 12 below lists recent transfers of SWP Table A water entitlements.

Table 12 – SWP Entitlements of Table A Water

From	To	Year	Amount (ac-ft/yr)	Cost (\$/ac-ft)	CPI Factor	Adjusted Unit Cost	Total Adjusted Cost
Tulare Lake Basin Water Storage District	CVWD and DWA	May-07	7,000	\$3,000	7.97%	\$3,239	\$22,673,700
Berrenda Mesa Water District	CVWD and DWA	Nov-07	16,000	\$3,000	7.31%	\$3,219	\$51,508,800
	Totals		23,000				\$74,182,500
Weighted Average/Acre Foot = \$3,225.33							

The costs shown above may not be representative of the current and future situations due to the State's water crisis. The opportunity to purchase water rights is limited and the rights available for purchase are at a much higher price than shown in the above table.

Historically, the SWP can deliver only a portion of their entitlements; therefore, the reliability of the SWP is factored into the unit cost for imported sources. The current reliability of SWP is 61 percent as reported in *The State Water Project Final Delivery Reliability Report, June 2012* by the California Department of Water Resources. The District must purchase 64 percent more entitlement than it expects to receive in order to ensure adequate supplemental supplies. Therefore, the actual unit cost to purchase rights for imported water is \$5,289 per acre-foot ($\$3,225 \times 1.64$).

4.4 Supplemental Water Supply Charge (SWSC) Calculation

By combining the average unit cost to purchase SWP entitlements with the ACF found in Table 11, the SWSC can be calculated as shown in Table 13.

Table 13 – Supplemental Water Supply Charge by Development Type

Development Type	Annual Consumption Factor with Return Flows ¹ (ac- ft/ac/yr)	SWSC ² (\$/acre)
Gas Stations with Carwash	3.89	\$20,574
Hotels and Motels	3.41	\$18,035
Golf Course Development	2.46	\$13,011
Residential	2.31	\$12,218
Apartment and Condominiums	2.22	\$11,742
Supermarket Centers	2.22	\$11,742
Mobile Home Parks	1.98	\$10,472
Gas Stations with Convenience Store	1.85	\$9,785
Schools	1.67	\$8,833
Retail Shopping Centers	1.33	\$7,034
Industrial and Commercial Parks	0.72	\$3,808
Offices/Businesses	0.53	\$2,803
Self Storage Facilities	0.30	\$1,587

Notes:

¹ - From Table 11² - Unit Cost to Purchase Supplemental Water

5.0 SUMMARY OF CHARGES AND CREDITS

5.1 Charges

The new DUC of the WSBFC is \$ 3,707. The new SWSC are listed in Table 13.