**California Aqueduct**



The California Aqueduct passing through central California near [Interstate 5](http://en.wikipedia.org/wiki/Interstate_5)



An aerial view of the California Aqueduct at the crossing of [Interstate 205](http://en.wikipedia.org/wiki/Interstate_205_%28California%29) near [Tracy](http://en.wikipedia.org/wiki/Tracy%2C_California)

The **California Aqueduct** is a 444 [mile](http://en.wikipedia.org/wiki/Mile) (715 [km](http://en.wikipedia.org/wiki/Kilometre))-long[[1]](http://www.publicaffairs.water.ca.gov/swp/swptoday.cfm) aqueduct in the [United States](http://en.wikipedia.org/wiki/United_States) that carries water from [Northern California](http://en.wikipedia.org/wiki/Northern_California) to [Southern California](http://en.wikipedia.org/wiki/Southern_California). A typical section has a [concrete](http://en.wikipedia.org/wiki/Concrete)-lined channel 40 [feet](http://en.wikipedia.org/wiki/Foot_%28unit_of_length%29) (12 [m](http://en.wikipedia.org/wiki/Metre)) wide at the base and an average water depth of about 30 feet (9 m). The widest section of the aqueduct is 110 feet (33.5 m) and the deepest is 32.8 feet (10 m). The size of the channel varies according to how much capacity that section of the aqueduct was projected to need.



The Dos Amigos Pumping Plant lifts water coming from the north (top of photo) 118 feet (36 m), to flow by gravity to the next [pumping](http://en.wikipedia.org/wiki/Pump) station 164 miles (264 km) south.

The channel and pumping capacities at the start of the aqueduct are 10,300 and 10,670 cubic feet per second (292 and 302 m³/s), respectively. The largest channel capacity is 13,100 ft³/s (371 m³/s) and the largest pumping plant capacity (Dos Amigos) is 15,450 ft³/s (437 m³/s).

The aqueduct begins at the [San Joaquin-Sacramento River Delta](http://en.wikipedia.org/wiki/San_Joaquin-Sacramento_River_Delta) at the [Banks Pumping Plant](http://en.wikipedia.org/wiki/Banks_Pumping_Plant) which pumps from the Clifton Court Forebay. Water is pumped by the Banks Pumping Plant to the [Bethany Reservoir](http://en.wikipedia.org/wiki/Bethany_Reservoir). The [Bethany Reservoir](http://en.wikipedia.org/wiki/Bethany_Reservoir) serves as a forebay for the [South Bay Aqueduct](http://en.wikipedia.org/wiki/South_Bay_Aqueduct) via the [South Bay Pumping Plant](http://en.wikipedia.org/wiki/South_Bay_Pumping_Plant). From the [Bethany Reservoir](http://en.wikipedia.org/wiki/Bethany_Reservoir) the aqueduct flows by gravity approximately 60 miles (97 km) to the O'Neil Forebay at the [San Luis Reservoir](http://en.wikipedia.org/wiki/San_Luis_Reservoir). From the O'Neil Forebay it flows approximately 15 miles (24 km) to the Dos Amigos Pumping Plant. After the Dos Amigos the aqueduct flows about 95 miles (153 km) to where the [Coastal Branch](http://en.wikipedia.org/wiki/Coastal_Branch%2C_California_Aqueduct) splits from the "main line". The split is approximately 10 miles (16 km) south-southeast of [Kettleman City](http://en.wikipedia.org/wiki/Kettleman_City%2C_California). After the coastal branch, the line continues by gravity another 66 miles (106 km) to the Buena Vista Pumping Plant. From the Buena Vista it flows approximately 27 miles (43 km) to the Teerink Pumping Plant. After Teerlink it flows about 2.5 miles (4 km) to the Chrisman Pumping Plant. Chrisman is the last pumping plant before [Edmonston Pumping Plant](http://en.wikipedia.org/wiki/Edmonston_Pumping_Plant), which is 13 miles (21 km) from Chrisman. South of the plant the coastal branch splits off in a southwesterly direction to serve the central coast. At [Edmonston Pumping Plant](http://en.wikipedia.org/wiki/Edmonston_Pumping_Plant), it is pumped 1,926 feet (600 m) over the [Tehachapi Mountains](http://en.wikipedia.org/wiki/Tehachapi_Mountains).

Once it has crossed the [Tehachapi Mountains](http://en.wikipedia.org/wiki/Tehachapi_Mountains) the aqueduct divides into two branches; the West and the East Branch. The East Branch feeds [Lake Perris](http://en.wikipedia.org/wiki/Lake_Perris) and the [San Gorgonio Pass](http://en.wikipedia.org/wiki/San_Gorgonio_Pass) area, while the West Branch heads towards [Pyramid Lake](http://en.wikipedia.org/wiki/Pyramid_Lake_%28California%29) and [Castaic Lake](http://en.wikipedia.org/wiki/Castaic_Lake) in the [Angeles National Forest](http://en.wikipedia.org/wiki/Angeles_National_Forest) to supply the western Los Angeles basin.

Water flows through the aqueduct in a series of abrupt rises and gradual falls. The water flows down a long segment, built at a slight grade, and arrives at a pumping station powered by [Path 66](http://en.wikipedia.org/wiki/Path_66) or [Path 15](http://en.wikipedia.org/wiki/Path_15). The pumping station raises the water, where it again gradually flows downhill to the next station. However, where there are substantial drops, the water's [potential energy](http://en.wikipedia.org/wiki/Potential_energy) is recaptured by [hydroelectric](http://en.wikipedia.org/wiki/Hydroelectric) plants. The initial pumping station fed by the Sacramento River Delta raises the water 240 feet (73 m), while a series of pumps culminating at the [Edmonston Pumping Plant](http://en.wikipedia.org/wiki/Edmonston_Pumping_Plant) raises the water 1,926 feet (600 m) to cross the Tehachapi Mountains. The Edmonston Pumping station requires so much power that several [power lines](http://en.wikipedia.org/wiki/Electric_power_transmission) off of Path 15 and [Path 26](http://en.wikipedia.org/wiki/Path_26) are needed to ensure proper operation of the pumps.

The [Department of Water Resources (DWR)](http://en.wikipedia.org/wiki/California_Department_of_Water_Resources) operates and maintains the California Aqueduct, including two [pumped-storage hydroelectric](http://en.wikipedia.org/wiki/Pumped_storage_hydroelectricity) plants, Castaic and Gianelli. Gianelli is located at the base of [San Luis Dam](http://en.wikipedia.org/wiki/San_Luis_Dam), which forms [San Luis Reservoir](http://en.wikipedia.org/wiki/San_Luis_Reservoir), the largest offstream [reservoir](http://en.wikipedia.org/wiki/Reservoir_%28water%29) in the United States. The [Castaic Dam](http://en.wikipedia.org/wiki/Castaic_Dam) and Castaic Power Plant are located on the northern end of Castaic Lake.