

Colorado Water Conservation Board: Water Plan Grant

Denver Parks and Recreation Central Control Build-out



Denver Parks and Recreation (DPR) Water Conservation Team has completed all work associated with the CWCB Water Plan Grant received in 2018. This included installing 26 Toro Sentinel central control irrigation controllers and flow sensing equipment in the East Operations District of DPR which irrigate 79 acres of parks with potable water. The parks converted to Central Control with this Grant will be added to the existing DPR system which contains over 560 units and a weather system which automates yearly programming, trouble-shooting, and rain shut-downs resulting in massive water savings.

The project was completed entirely using DPR crews and no outside contractor assistance. There weren't any extraordinary obstacles encountered besides the normal issues encountered in parks daily, such as securing sites from public, old infrastructure, and underground obstacles such as tree roots, trash, and buried concrete.

Water Savings

All units were installed before the 2020 irrigation season which enabled us to track water consumption at these converted sites to compare with past years average water use. The results are amazing as DPR has used over 23 million gallons (70.5 AF) less than 2019. This exceeds our projected water savings and saved DPR around \$55K in water costs in one year! Especially impressive with the incredibly high ET rates and less than 50% of normal precipitation received in 2020.

2019

Name	YTD Cons	IrrigAc	Inches Used	Shop	LOC	CC/w Flow
6th & Josephine	221	0.1	64.84	Congress	344	NO
Alamo Placita	3703	5.2	26.36	Congress	301	Yes
City of Karmiel	3740	3.0	45.43	Congress	341	No flow
City of Takayama	15227	6.1	92.59	Congress	331	No flow
Congress Park (potable)	367	0.6	24.55	Congress	314a	NO
Downing St (Speer to 3rd)	266	0.8	11.96	Congress	352	NO
E 1st Ave (Lafayette to University)	2349	1.5	58.87	Congress	325	NO
E 7th Ave	4340	6.4	25.02	Congress	306	No flow
E Alameda Ave (Colorado to Jackson)	82	0.1	38.49	Congress	334	No flow
Franklin St	652	0.6	38.48	Congress	304	NO
Gilpin St	924	0.6	59.14	Congress	383	NO
High St	364	0.5	26.83	Congress	384	NO
Manley	1322	1.4	35.52	Congress	337	No flow
Pulaski	4340	7.7	20.71	Congress	319	No flow
Speer Blvd (1st to 6th)	5043	7.7	24.19	Congress	307a	NO
Steele St	428	0.4	38.36	Congress	336	NO
University Blvd (1st to 2nd)	918	0.4	79.11	Congress	328	NO
Williams St Island	40	0.1	21.74	Congress	381	NO
Rosamond	22529	36.0	23.04	Yale	621	NO
	66855	79.1	31.14			

2020

Name	YTD Cons	IrrigAc	Inches Used	Shop	LOC	CC/w Flow
6th & Josephine	171.72	0.1	50.38	Congress	344	Yes
Alamo Placita	3127.68	5.2	22.26	Congress	301	Yes
City of Takayama&Karmiel	4108.32	9.1	16.64	Congress	331	Yes
Congress Park (potable)	474.12	0.6	31.72	Congress	314a	Yes
Downing St (Speer to 3rd)	556.2	0.8	25.00	Congress	352	Yes
E 1st Ave (Lafayette to University)	3173.04	1.5	79.52	Congress	325	Yes

E 7th Ave	3666.6	6.4	21.14	Congress	306	Yes
E Alameda Ave (Colorado to Jackson)	69.12	0.1	32.44	Congress	334	Yes
Franklin St	821.88	0.6	48.50	Congress	304	Yes
Gilpin St	768.96	0.6	49.22	Congress	383	Yes
High St	420.12	0.5	30.96	Congress	384	Yes
Manley	909.36	1.4	24.43	Congress	337	Yes
Pulaski	3542.4	7.7	16.90	Congress	319	Yes
Speer Blvd (1st to 6th)	4294.08	7.7	20.60	Congress	307a	Yes
Steele St	284.04	0.4	25.46	Congress	336	Yes
University Blvd (1st to 2nd)	735.48	0.4	63.38	Congress	328	Yes
Williams St Island	52.92	0.1	28.76	Congress	381	Yes
Rosamond	16792	36.0	17.17	Yale	621	Yes
	43967.88	79.1	20.48			

Project Costs

The projected project costs came in very similar to actual costs. All equipment costs were exactly as quoted in the fair and reasonable estimate. The CWCB \$120,000 along with the matching Denver Water \$120K was used to directly purchase the Toro Sentinel Central Control units. DPR matching funds were used to purchase flow sensing equipment including Hydrometers, electronic interface (CST) pathways, backflow cages, and assorted supplies. DPR also tracks all labor hours through a task tracking program. The project took a total of 2088 hours spread across 2019 and early 2020 including 1498 crew hours and 590 supervisor hours. This equaled \$67,268 of “in-kind” labor costs and is detailed at the end of the report.

DPR also purchased Hydrometer, Pathways, & Backflow cages: \$63,750.61

Plumbing Supplies: \$9,786.60

Central Control & Antenna Supplies: \$16,329.48

Electrical Supplies: \$261.52

Concrete: \$719.44

Overall a total of \$158,115.65 was spent by DPR along with the \$120K from CWCB & \$120K for the project. This was \$6,321.35 less than projected. One projected cost which was not needed was rental equipment. We were able to borrow all needed equipment from various City and County of Denver departments.

Project Photos

Steele St. Controller Demo & Install steps. All installations completed to DPR standards which are included at the end of the report

Existing controller



Controller Demo



Central Control Irrigation Install



Finished Product!



Various Hydrometer Installations



Rosamond Park in-ground Hydrometer Install

