

CITY OF REDLANDS
MUNICIPAL UTILITIES/PUBLIC WORKS COMMISSION
MEETING AGENDA
MONDAY, OCTOBER 3, 2022

ADEKUNLE OJO
Chairperson

STEVE STOCKTON
Vice Chairperson

ROBERT MEALS
Commissioner

ZACHARY TRAVIS
Commissioner

THOMAS BREITKREUZ
Commissioner

DAVID GARCIA
Commissioner

CHANDRASEKAR 'CV'
VENKATRAMAN
Commissioner

JOHN R. HARRIS
Municipal Utilities
& Engineering
Director

GOUTAM K. DOBEY
City Engineer

4:00 PM Open Public Meeting
City Council Chambers
Civic Center, 35 Cajon Street, Redlands, California

Although the meeting is open to the public, seating has been reduced to allow for social distancing.

To join via Zoom on a computer, laptop, or smart device:
Please visit www.zoom.us, click on *Join a Meeting*
Enter the **Meeting ID 898 9918 5397**, then run the Zoom launcher

To join via Zoom with audio only (cell phone or landline):
Dial **1-877-853-5247**; Enter the **Meeting ID 898 9918 5397**

Should the City lose connectivity on Zoom, we will halt the meeting until it can be restored. In the event the City cannot reestablish Zoom connectivity in a reasonable amount of time, the meeting will be adjourned to a future date.

Anyone desiring to speak on an agenda item at this meeting may do so during the consideration of that item. Due to time constraints and the number of persons wishing to give oral testimony, public comments will be limited to three (3) minutes.

- *To provide comment in person, simply raise your hand to speak*
- *To provide comment through Zoom (on a computer, laptop, or smart device), click the "Raise Hand" button and the moderator will unmute you when it is your turn to speak*
- *To provide comment via audio only (cell phone or landline), dial *9 to "Raise Hand" and the moderator will identify you by your area code and last 3 numbers of your telephone number when it is your turn to speak.*

The following comprises the agenda for the regular meeting of the Municipal Utilities/Public Works Commission of the City of Redlands.

CITY OF REDLANDS
MUNICIPAL UTILITIES/PUBLIC WORKS COMMISSION
MEETING AGENDA
MONDAY, OCTOBER 3, 2022

A. ATTENDANCE & CALL TO ORDER

B. PUBLIC COMMENT

(Any person wishing to provide public comment may do so at this time.)

C. APPROVAL OF MINUTES

- a. **August 1, 2022 Regular Meeting Minutes**

D. COMMUNICATIONS

- a. **Director's Report**
- b. **Commission Liaison Updates**
 - i. **MUPWC's Annual Report to the City Council**

E. NEW BUSINESS

- a. **Commissioner Term Renewals**
- b. **City Groves – Irrigation Sources**
- c. **Water System Master Plan – Discussion & City Council Recommendation**

F. COMMISSIONER ANNOUNCEMENTS, REPORTS ON ACTIVITIES, AND/OR REQUEST FOR FUTURE AGENDA ITEMS

G. ADJOURNMENT – Next Meeting is December 5, 2022 @ 4:00 pm

ATTACHMENTS:

- 1. Draft Minutes of August 1, 2022 Regular Meeting**
- 2. Director's Report**

DRAFT
(for MUPWC review on 10/3)

MINUTES

Regular meeting of the City of Redlands Municipal Utilities/Public Works Commission on August 1, 2022 at 4:00 PM in the Council Chambers at the Civic Center, 35 Cajon Street. The meeting was an in-person meeting with teleconferencing available via Zoom. Votes were conducted in person and by roll call.

A. ATTENDANCE & CALL TO ORDER

Present: Adekunle Ojo, Chairperson
Steve Stockton, Vice Chairperson
David Garcia, Commissioner
Chandrasekar 'CV' Venkatraman, Commissioner
Zachary Travis, Commissioner
Robert Meals, Commissioner

Absent: Thomas Breitzkreuz, Commissioner

Staff: John Harris, Municipal Utilities & Engineering Director; Johana Silva, Commission Liaison/Assistant Engineer; Kevin Watson, Utilities Operations Manager; Kyle Wagner, Construction Manager; Fernando Mata, Wastewater Operations Superintendent (joined remotely)

Chairperson Ojo called the meeting to order at 4:00 PM, thanked and welcomed everyone for attending, and offered any public present and joining virtually the opportunity to provide comment on any item on the agenda.

B. PUBLIC COMMENT

None forthcoming.

C. APPROVAL OF MINUTES

The minutes of the regular meeting of June 6, 2022, were unanimously approved.

Vote: 6 – 0 Passed

D. COMMUNICATIONS

a. Director's Report

Director Harris welcomed everyone to the meeting and provided highlights to his Director's Report.

Updates were provided on the following:

DRAFT
(for MUPWC review on 10/3)

MINUTES

Water Conservation Rebates: Converting turf grass to synthetic turf typically saves around two-thirds of the total water used based on data of individuals who were issued rebates in the last year. The Governor instituted a mandate restricting the use of potable water to nonfunctional turf. The City has been compiling a list of businesses to educate on the new mandate. Staff has been discussing internally the possibility of increasing the Rebate cap currently at \$300.

Water System Master Plans: The Water Systems Master Plans (MP) document was provided in the June agenda package for review and comments for possible action at the August commission meeting.

WWTP2 Project Update: WWTP1B is estimated to be complete by the end of this year. For WWTP2, Parsons provided a preliminary construction cost estimate of approximately \$56,000,000 in direct project costs totaling approximately \$90,000,000 for all project elements. MUED staff and Parsons are refining potential bid packages to prioritize projects within the SRF loan amount.

Sunset Reservoir Replacement - Land Lease Agreement: The City and the landowner perform land appraisals individually. The appraisal gap between the two appraisals was massive. A third appraisal will be performed by an agreed independent party.

Water Replacement Project: Phase I of the five (5) year project is wrapping up. A Notice To Proceed (NTP) was issued for the second year of this project. Unrelated to this project, a kick-off meeting is scheduled with Ferguson Waterworks to start implementing the Automated Metering Infrastructure (AMI) project.

PMP Update: The FY 21/22 PMP is complete. The FY 22/23 PMP will be designed in-house.

Capital Improvement Project (CIP) Update Q3 Update: The FY 21/22 CIPs are concluding and beginning the FY 22/23 phase of the project including the Water Replacement Project, and the Well Rehabilitation & Booster Pump Replacements.

Commission inquiries ensued regarding the AIM replacement, and meters that were bypassed. Mr. Harris clarified the record-keeping system for the water meters which consists of a combination of GIS and Sedaru asset management software. Discussion ensued regarding the long-term sustainability of citrus groves from a water savings standpoint and converting the source of the citrus groves from potable to non-potable water. Mr. Harris clarified the source of funding of CIPs not related to water. Mr. Harris gave an update on the ADA Sidewalk Replacement project.

E. NEW BUSINESS

a. Commissioner Term Renewals

DRAFT
(for MUPWC review on 10/3)

MINUTES

Commissioners Stockton and Venkatraman were informed that their first commission term is ending this year and were asked their intent for serving a second term. Commissioner Stockton and Venkatraman confirmed their interest in serving a second term on the commission. Mr. Harris stated that a chairperson and vice chairperson are selected by nominations once a year and historically occur in December. Mr. Harris stated that an election was not held in December 2021 and asked the commission how that would like to remediate the issue. A consensus was reached to wait until December to have an election and continue with the current Chairman and Vice Chairman.

b. Water System Master Plan – Discussion & City Council Recommendation

A draft copy of the plan was provided during the June commission meeting for the commission’s review. Discussion ensued regarding the treatment of the potable water system wells, restrictions to the recycled water supplied to Edison, reduction of water loss with the meter replacements, the average water facility service life, the average water pipeline service life, the year the potable water system was fully metered, the impact of water rates due to the total cost of the proposed projects and the used of blending regarding groundwater contaminate mitigation. A general consensus was reached to continue the discussion, questions, and comments on the Water System Master Plan to the next commission meeting.

F. COMMISSIONER ANNOUNCEMENTS, REPORTS ON ACTIVITIES, AND/OR REQUESTS FOR FUTURE AGENDA ITEMS

Items requested for the next regular Commission meeting agenda were as follows:

Water Master Plan, Potable and Non-Potable – Discussion of the proposed citywide master plan for the water master plan, potable and non-potable, for the commission’s review during the October commission meeting.

Water Conservation (Citrus Groves) - Discussion of replacing the source of citrus groves currently on the potable water system and the long-term sustainability of orange groves from a water savings standpoint.

Utility Bill Assistance Program – Updated on the Utility Bill Assistance Program.

Commissioner Stockton informed the commission of a potential future 700 acre-feet reservoir north of Mill Creek at an elevation of around 2,300 feet. Mr. Stockton suggested the City explore investing in the reservoir as a backup source of water for the Tate Water Treatment Plant. Mr. Harris informed the commission of a Reservoir Consolidation Study which could possibly add this subject in the scope of the study.

Commissioner Ojo announce that the draft 2023 California Water Plan, updated every five years, will be released in the Fall.

G. ADJOURNMENT – Next regular meeting is October 3, 2022 at 4:00 PM

There being no further business the meeting adjourned at 5:06 PM. The next regular meeting of the City of Redlands Municipal Utilities/Public Works Commission is scheduled for October 3, 2022.



City of
REDLANDS
Incorporated 1888
Municipal Utilities & Engineering Department

JOHN R. HARRIS
Director

MEMORANDUM

TO: Adekunle Ojo, Municipal Utilities/Public Works Commission Chair

FROM: John R. Harris, Municipal Utilities & Engineering Department Director

DATE: September 26, 2022

SUBJECT: October 3, 2022 Director's Report

Hello and thank you for serving the Redlands community as a Municipal Utilities/Public Works Commissioner (MUPWC)! City of Redlands Municipal Code Chapter 2.38 establishes the responsibilities of the MUPWC as follows:

"The commission is a resource for the City Council and City staff and buffer with the general public. In its advisory capacity, the commission shall be knowledgeable of all public works, utilities and engineering programs. The commission shall, through the individual and collective expertise of its members, provide advice to the Public Works and Municipal Utilities Departments regarding the public acceptability of proposed plans, programs and projects."

Upcoming City Council Meeting Agenda Items

1. Additional Funding Request – Treatment Chemicals (October 4)
2. Resolution No. 8385 – Water Efficient Rebate Program Revisions (October 4)
3. I-10/Alabama Improvement Project Cooperative Agreement Time Extension (October 4)
4. Ordinance No. 2946 Public Hearing – Speed Limit Adjustments (October 18)
5. Raftelis Financial Consultants Amendment No. 2 (October 18)
6. Alley Paving Project Tryco General Engineering Amendment (October 18)
7. SB City Cooperative Agreement – Mountain View Bridge (October 18)
8. Sedaru Asset Management Agreement (November 1)
9. California/Redlands Intersection Turn Lane Engineering (November 1)
10. Citywide Left Turn Lane Study (November 1)
11. TESCO Controls SCADA Amendment (November 15)
12. Parsons WWTP P2 Engineering Amendment (November 15)

City Groves Irrigation Sources



During the past few months, I have been analyzing the water sources used to irrigate City citrus groves with the goal of reducing the long-term potable water production and distribution system burden. Below is a list of City citrus groves and their irrigation water sources:

1. Mountain View Grove – Recycled
2. Ramirez Grove – Potable
3. Daniels Grove - Potable
4. West Redlands Gateway Grove - Potable
5. Beal Park Grove - Potable
6. Texas Grove – Non-Potable
7. Olive Grove - Potable
8. West Riverview Grove - Potable
9. Riverview Grove – Pioneer Mutual Well Company
10. Pioneer/Judson West Grove – Bear Valley Mutual Water Company
11. Pioneer/Judson East Grove – Bear Valley Mutual Water Company
12. Dearborn/Pioneer Grove – Bear Valley Mutual Water Company
13. Granite Grove – Bear Valley Mutual Water Company & Lugonia Water Company
14. Judson Grove – Bear Valley Mutual Water Company & Lugonia Water Company
15. Mullin Grove – Bear Valley Mutual Water Company & Lugonia Water Company
16. Lugonia Grove – Bear Valley Mutual Water Company & Lugonia Water Company
17. University Grove - Potable
18. Prospect Grove - Potable
19. Fifth Avenue Grove – Crafton Water Company
20. Wabash Grove - Potable
21. Jacinto Memorial Grove – Crafton Water Company
22. Fire Station 262 Grove - Potable

A map of City citrus groves is provided as Attachment “A”. With respect to the groves that are irrigated with potable water, I have been analyzing water use for the previous three (3) years, the location of each grove relative to non-potable water sources, and the ability to connect to non-potable water sources. Transitioning some wells to non-potable irrigation water will be relatively simple, while others will be difficult. For instance, the Daniels and Ramirez Groves (adjacent to the City landfill) are currently irrigated with potable water, although a recycled water pipeline runs directly through the Daniels Grove. Transitioning these groves to the recycled water system will increase service pressure, eliminate pumping costs, and reduce potable water system demand by approximately forty to fifty acre feet per year (40 – 50 AFY). Similarly, the Prospect Park Grove can be transitioned to a non-potable irrigation source with relative ease. Bear Valley Mutual Water Company, Redlands Water Company, and West Redlands Water Company pipelines run directly through this grove and the City owns shares in each of these companies. On the other hand, there is currently no reliable non-potable water source near the Olive Grove, so it will continue to be irrigated with potable water until a non-potable water source becomes available. I will provide updates for this project in the future.

Water System Master Plans

Tonight, the Commissioners are encouraged to discuss the WSMP and develop a City Council recommendation. Responses to Commissioner Garcia's August MUPWC meeting comments are provided as Attachment "B".

Update WWTP P2 Project Update

Parsons Engineering continues to develop and refine the WWTP Improvement Project Phase 2 design, and has made significant progress toward completion of the following design elements:

Task 1 – Conduct Facility Condition Assessment	P1 = 100%/P2 = 9%
Task 2 – Develop Multipurpose Project Report/Implementation Plan	100% Complete
Task 3 – Provide Engineering Design Services	P1 = 100%/P2 = 90%
Task 4 – PM, Communication, QC	P1 = 100%/P2 = 90%

MUED submitted a \$45M State Revolving Fund (SRF) loan application for construction of these improvements prior to the December 31 submittal deadline and received notification that the application rating exceeds the minimum scoring threshold for loan approval. The SRF Board will meet in early-October to review applications and award funds. Parsons recently provided a Preliminary Construction Cost Estimate for all project elements totaling approximately \$90M, which includes approximately \$56M in direct project costs. MUED staff and Parsons are refining potential bid packages to maximize, but not exceed, the anticipated SRF loan amount.

Sunset Reservoir Replacement – Land Lease Agreement

A new land appraisal by a mutually agreed upon consultant is currently underway. MUED is preparing a \$24M grant application to fund the Sunset Reservoir Replacement Project. If awarded, the funding may be used for land acquisition, engineering, and construction of a 10 MG concrete reservoir.

Water Meter Replacement Project

We have begun a five (5) year project to replace all potable and non-potable water meters within the Redlands service area. Ferguson Waterworks was selected to supply and install the water meters, meter box lids, and Automated Metering Infrastructure (AMI) hardware for use in the future. Ferguson recently completed Phase I of the project, which replaced all non-potable and large diameter meters.

Phase II (FY 22/23) of the project will focus on residential and small diameter commercial water meter replacements and AMI hardware retrofits.

Prior to ordering water meters, MUED staff physically audits each location to confirm the type and size of each water meter. During the Phase I audit, several large diameter water meters that are not listed in the billing system, are bypassed in some manner, or have not been read correctly in the past were identified. Each of these issues was resolved, and the non-revenue water rate will significantly decrease in the future. An updated Project Location Map is included as Attachment “C”.

PMP Update

The FY 21/22 project is complete. MUED is currently preparing construction plans for the FY 22/23 project. A preliminary project location map is provided as Attachment “D”.

Annual Citywide Sidewalk/ADA Ramp Replacement Project Update

The FY 21/22 project is complete. MUED is currently preparing construction plans for the FY 22/23 project. A preliminary project location map is provided as Attachment “E”.

2021 Q3 Capital Improvement Project Update

The MUPWC is charged with, among other things, “*annually reviewing the City CIP under the purview of the Public Works and Municipal Utilities Departments*” (Municipal Code 2.38.030). However, during the December 7, 2020 MUPWC meeting, the Commission asked the MUED staff to provide quarterly CIP updates. A summary and status of CIP projects is provided in Attachment “F”. Highlights of current projects are provided below:

1. Multi-Year Well Rehabilitation & Booster Pump Replacements – Five (5) potable water wells, two (2) non-potable water wells, and two (2) booster pumps are being rehabilitated in FY 21/22 through a single task order. Additional task orders will be issued in each of the next two (2) fiscal years through contract extensions to rehabilitate thirteen (13) more wells, although MUED may recommend accelerating this schedule. Following is a detailed summary of tasks with their progress:
 - a. Task 1.1 (Airport Well) – Complete;
 - b. Task 1.2 (Church Street Well) – This task has been moved to a future Project phase;
 - c. Task 1.3 (East Lugonia 3 Well) – Complete;
 - d. Task 1.4 (East Lugonia 6 Well) – Complete;
 - e. Task 1.5 (N Orange 1 Well) – Complete;
 - f. Task 1.6 (31A Well) – Complete;
 - g. Task 1.7 (32 Well) – Inspection identified the need for a liner, which is beyond the scope of this project and will be addressed separately;
 - h. Muni Well – Complete;
 - i. Task 1.8 (2310 Booster) – Complete;
 - j. Task 1.9 (2311Booster) – Complete.

A Notice To Proceed has been issued for Phase II of this project, which will include rehabilitation of the following wells:

- a. Task 2.1 - Madeira Well (potable)
 - b. Task 2.2 - Mentone #2 Well (potable)
 - c. Task 2.3 - Well #38 (potable)
 - d. Task 2.4 - Well #39 (potable)
 - e. Task 2.5 - New York Street Well (non-potable)
 - f. Task 2.6 - Well #11 (non-potable)
 - g. Task 2.7 - Well #36 (non-potable)
2. Recycled Water Reservoir Engineering – This project is underway and Carollo Engineers recently submitted a draft Technical Memo recommending construction of a single 2.5 MG concrete reservoir and several distribution system improvements.
 3. Citywide Sidewalk and ADA Ramp Replacements Phase 2 - Complete.
 4. Tate WTP Raw Water Influent Pipeline Engineering – This project is underway and Carollo Engineers recently submitted a draft Technical Memo analyzing three (3) alignment alternatives.
 5. Hinckley WTP Sludge Press Engineering – This project is underway and Dudek recently submitted a draft Technical Memo analyzing several press configuration alternatives. MUED is working with Dudek to identify potential construction cost reduction alternatives.
 6. Well Perchlorate Treatment Evaluation – MUED is negotiating a scope of work and fee with Dudek.
 7. University Street/Brockton Avenue Traffic Signal - Currently in construction. Materials have been ordered. Due to supply chain issues, installation is not expected for a few more months.
 8. FY 21/22 Waterline Replacement Project - Complete. A FY 22/23 Project Preliminary Location Map is provided as Attachment “G”.
 9. Phase II Water Distribution SCADA Upgrade - Design is complete, and materials have been ordered. Installation is expected to begin by October.
 10. 2022 Orange Blossom Trail Phase 3 Project – Deark, Inc. recently mobilized for construction, and the Project is approximately 25% complete.
 11. 2022 Brookside Avenue Median Island Landscape Rehabilitation Project – Urban Habitat recently mobilized for construction, and the Project is complete.
 12. FY 22/23 Alley Paving Project – A Notice To Proceed has been issued and the project will begin soon. A project location map is provided as Attachment “H”.
 13. FY 22/23 Sewerline Replacement Project – MUED staff is currently developing this project and will issue a construction bid notice soon. A project location map is provided as Attachment “I”.
 14. The 2022 HSIP Cycle 8 Ped Heads, 2022 HSIP Cycle 8 EVP, 2022 Senior Outdoor Dining, and Garden Guardrail projects and all in preconstruction.

Wastewater Treatment Plant Project Update



As you know, Phase 1A of the WWTP Rehabilitation Project was successfully completed and accepted in November 2020. GSE Construction Company, Inc. was awarded a contract to construct Phase 1B of the Project in November 2020. The project includes supplying and/or installing the following equipment, which has been plagued by significant COVID-19 related delays:

1. Fine Screens and Associated Equipment: Removes objects to prevent damage to the newly installed MBR filters.
 - a. Status: Installation completed with the exception of chain operated valve actuators on the large valves. Commissioning is on hold pending completion of the IPW system.
2. Ejector Priming System Upgrades: Removes air from the permeate vessel to prevent air locking of pumps.
 - a. Status: Installed and commissioned.
3. Scour Blowers and Associated Equipment: Creates air scouring, which provides premium efficiency and cost savings to the City. The blowers operate on a 24-hour basis, producing scour air that backwashes the filter media.
 - a. Status: Installed and commissioned. This portion of the project resulted in a total energy savings of more than 1.5 million kilowatt hours per year (\$155K energy savings/year), and earned the City a Southern California Edison incentive payment of \$290K.
4. Digester Boilers and Heat Exchangers: Maintains proper temperature for bacteria to decompose sewage sludge and produce digester gas.
 - a. Status: Boiler #3 was started on May 20 and is now maintaining a temperature of ninety-eight degrees (98°). Gas conditioning system is installed, initial startup is complete, and demonstration of compliance was submitted to AQMD. Staff received approval of the source test protocol for Boiler #3 from AQMD and the source testing was scheduled for August 10. The source test protocol involves testing the boiler with both fuel sources (natural gas and conditioned digester gas). The Source Test Report for NOx and CO was received on September 6 and met emission requirement parameters. Demolition of the boilers for Digesters #1 and #2 began the week of July 25. Staff removed Digesters #1 and #2 from service the week of July 18 and began draining them for cleaning and inspection. Startup of boilers #1 and #2 is anticipated for the first week of October 2022. Submittal of the source test protocol for Boilers #1 and #2 is anticipated in mid-October, followed by Source Test Protocol Conditional Approval from AQMD in mid-November 2022 Assuming this schedule holds, we will submit source test results in mid-December 2022.
5. Gas Conditioning System: Cleans and conditions the gas to burn cleaner in the boilers to meet air quality regulations, which protects the end use of device(s) from impurities in the gas that causes damage to equipment (i.e. H₂S, H₂O vapor, Siloxanes).
 - a. Status: System has been constructed, and the installation of the back pressure regulator installed. The system is operating properly. The globe valve was installed and is working very well and the pressure reducing valve has been delivered with installation planned at a later date. The Demonstration of Compliance for Gas

Conditioning System (SCAQMD Rule 431.1) was written and submitted on August 3.

6. Impure Water Pump (IPW) System: Pumps, controls and associated piping to provide consistent and reliable water pressure to the fine screens.
 - a. Status: GSE is finalizing all field work to complete this task.

Engineering of the WWTP P2 Project is progressing well. Parsons recently submitted the 90% PS&E package for MUED staff review.

As always, feel free to contact me anytime to discuss MUED issues, programs, projects, or concerns.

John R. Harris

jharris@cityofredlands.org

(909) 725-1963

Attachments:

- A – City Citrus Grove Map
- B – Commissioner Garcia WMP Comment Responses
- C - Phase II Water Meter Replacement Project Location Map
- D – FY 22/23 Preliminary PMP Location Map
- E – FY 22/23 Preliminary Sidewalk & ADA Ramp Replacement Project Location Map
- F – CIP Status List
- G – FY 22/23 Preliminary Waterline Replacement Project Location Map
- H – FY 22/23 Alley Paving Project Location Map
- I – FY 22/23 Preliminary Sewerline Replacement Project Location Map
- J – Water System Master Plan

City Owned Citrus Groves

 City Groves

NAME	ACRES
Beal Park	0.4
California	4.8
Daniels	4.9
Dearborn & Pioneer	8.6
Fifth Ave	10.6
Fire Station 262	0.04
Granite	2.7
Jacinto Memorial	4.2
Judson	13.1
Lugonia	18
Mountain View	13.9
Mullin	8.5
Olive	3.7
Pioneer & Judson East	2.7
Pioneer & Judson West	4.3
Prospect	25
Ramirez	4.6
Riverview	5.9
Texas	12.5
University	23.5
Wabash	1.4
West Redlands Gateway	6.4
West Riverview	4.3
Total	184.04

This map was produced by the City of Redlands, Geographic Information System. The City of Redlands assumes no warranty or legal responsibility for the information contained on this map. The data used to generate this map is dynamic in nature, therefore the information shown may or may not be the most current.

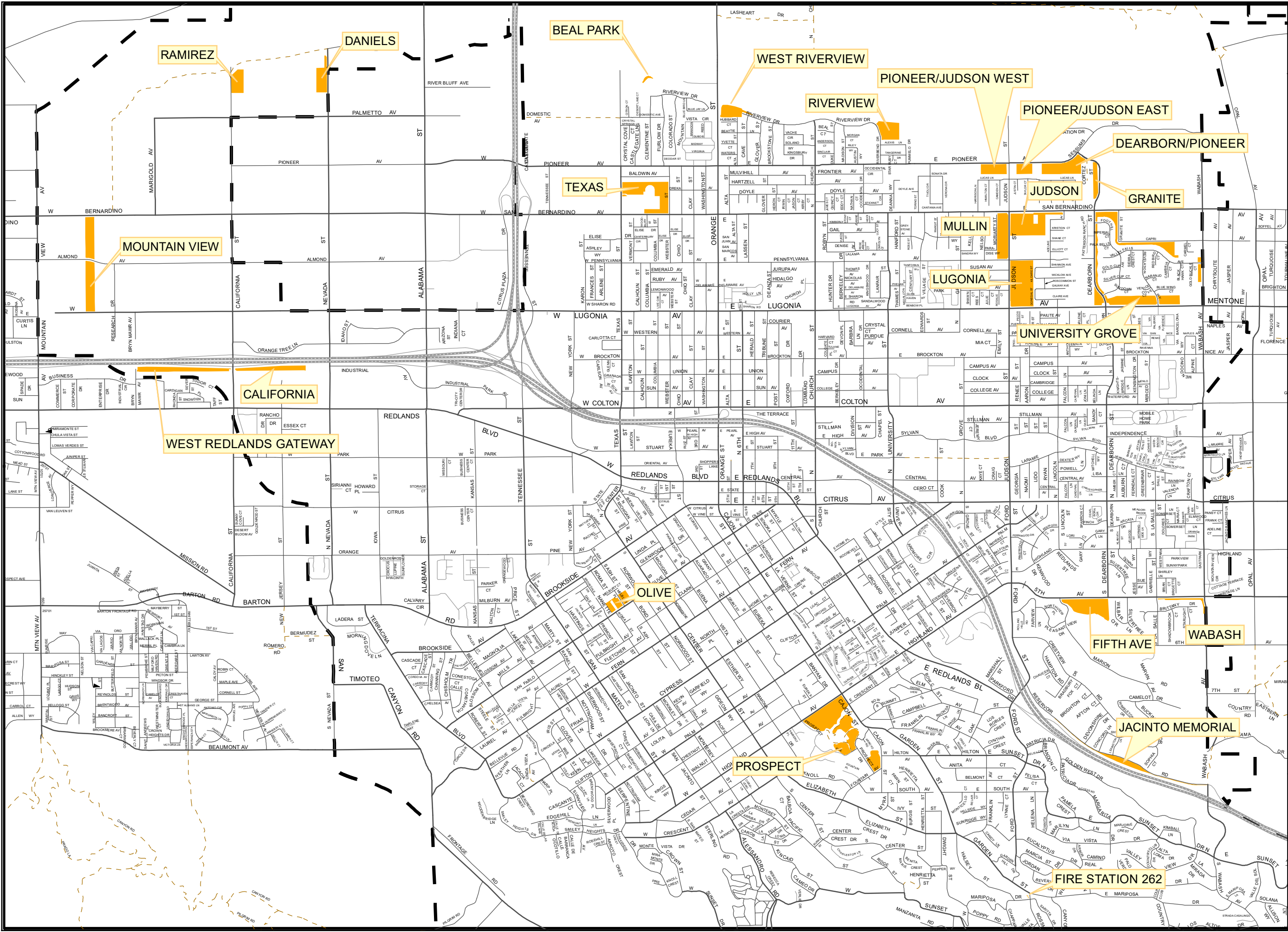


Scale
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Miles



May 7, 2020

wo1207CityOwnedCitrusGroves.mxd



August MUPWC Water Master Plan Comments – Commissioner Garcia

Comment: Emphasized the need for a comprehensive analysis of each project prior to implementation.

Response: Agreed.

Comment: Verify that some groundwater wells supply treated water to the potable water distribution system.

Response: This is accurate. Several groundwater wells disinfect pumped water with sodium hypochlorite to provide a chlorine residual and supply water directly to the potable water distribution system. Other groundwater wells are used for blending to reduce perchlorate concentrations.

Comment: Suggest adding a current groundwater well efficiency table.

Response: Agreed. This information is also provided separately for MUPWC review.

Comment: The ranges provided in the Water Facility Average Service Life table appear to be low.

Response: These ranges are conservative and are taken from the California State Water Resources Typical Equipment Life Expectancy table. The service life of mechanical equipment is assumed to be twenty (20) years. The service life of electrical equipment is assumed to be fifteen (15) years.

Comment: The report states that the potable water system has been fully metered since 2008, although the system was fully metered well before 2008.

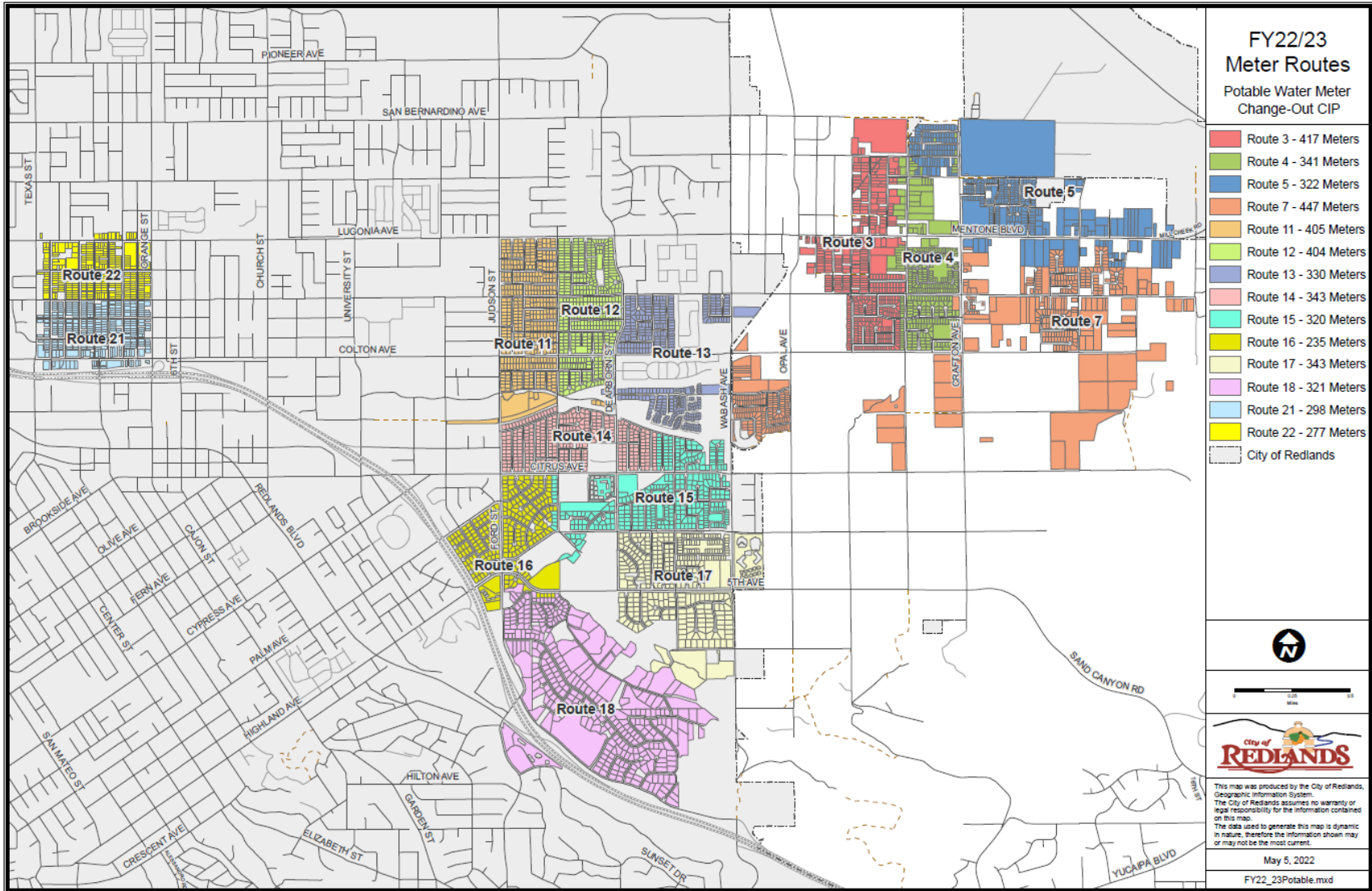
Response: Although there is no reason to doubt that, we are only able to formally document full system metering back to 2008.

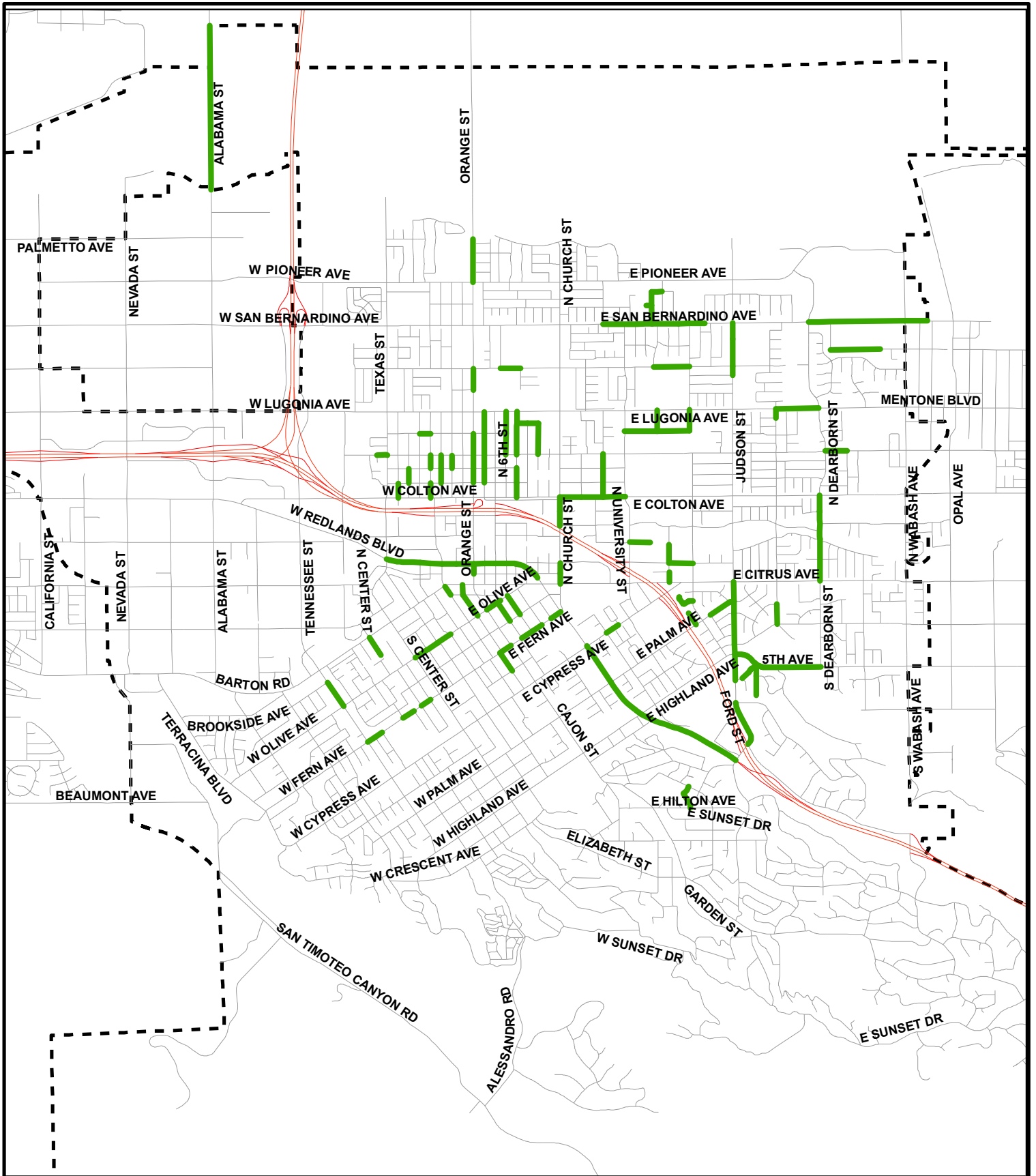
**CITY OF REDLANDS
MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT
PUMP EFFICIENCY DATA**

Pumping Plant Name	Test Date	Pump Reference Number	Pump Location	CSS Service Account #	Motor HP	kWh / Year	kWh / Acre Ft.	kW	Annual Acre Ft.	Avg \$ / Acre Ft.	Annual Cost	Test Eff. %	Impr. Eff %	kWh Annual Savings	Impr. Annual Cost	Est. \$ Annual Savings	Potential kWh Incentive
TEXAS BOOSTER 1552	5/8/2018	34652	1409 TEXAS ST, REDLANDS, CA 92374-2180	1115443	150	1256004	781.91154	143.4	1606	\$106	\$170,817	28%	70%	746,418	\$69,304	\$101,513	\$89,570
WELL 30A	5/8/2018	33928	1409 TEXAS ST, REDLANDS, CA 92374-2180	1115443	150	849336	526.32312	125.6	1614	\$72	\$115,510	57%	70%	152,838	\$94,724	\$20,786	\$18,341
MADEIRA WELL	4/30/2018	13148	MADEIRA//CRAFTON, MENTONE 92359	1376345	200	392388	605.64289	88.1	648	\$68	\$43,947	57%	70%	75,366	\$35,506	\$8,441	\$9,044
SOUTH BSTR 1928	6/19/2018	29930	415 E SUNSET DR N, REDLANDS, CA 92373-6462	1376355	150	177876	326.46121	107	545	\$59	\$32,373	51%	70%	47,687	\$23,695	\$8,679	\$5,722
REDLANDS HEIGHTS WELL	6/12/2018	33981	1641 FORD ST, REDLANDS, CA 92373-7174	17870347	75	237456	666.09143	57.4	356	\$77	\$27,545	57%	69%	40,973	\$22,792	\$4,753	\$4,917
TREATMENT BSTR "A"	4/6/2018	70156	1950 NEVADA ST	1586	40	188352	317.12285	32.7	594	\$34	\$20,154	55%	63%	25,211	\$17,456	\$2,698	\$3,025
5TH BSTR 2131	8/31/2018	29901	3410 PLANT H-4, REDLANDS, CA 92373	1376376	125	148644	384.10727	72	387	\$79	\$30,757	60%	72%	24,887	\$25,608	\$5,150	\$2,986
BSTR 1783 (WEST)	9/4/2018	15036	1705 SMILEYHEIGHTS DRIVE, REDLANDS, CA 92373-6575	1376296	40	125232	378.32888	31	331	\$43	\$14,077	51%	61%	20,881	\$11,730	\$2,347	\$2,506
HAWK BOOSTER 2177	4/13/2018	29883	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	150	106776	940.77098	119.7	113	\$148	\$16,764	58%	70%	18,102	\$13,922	\$2,842	\$2,172
BSTR 1784 (EAST)	9/4/2018	15037	1705 SMILEYHEIGHTS DRIVE, REDLANDS, CA 92373-6575	1376296	40	135612	360.74487	27.5	376	\$41	\$15,244	53%	61%	17,250	\$13,305	\$1,939	\$2,070
SOUTH BSTR 1927	6/19/2018	29931	415 E SUNSET DR N, REDLANDS, CA 92373-6462	1376355	100	57336	404.7288	82.2	142	\$74	\$10,435	51%	70%	15,837	\$7,553	\$2,882	\$1,900
DEARBORN 1761	4/25/2018	15071	318 Dearborn St.	1376292	200	130104	608.69258	167	427	\$120	\$25,630	108%	140%	29,402	\$19,838	\$5,792	\$3,528
SOUTH BSTR 2124	6/19/2018	29928	415 E SUNSET DR N, REDLANDS, CA 92373-6462	1376355	200	36540	837.90257	151.2	44	\$152	\$6,650	48%	70%	11,697	\$4,521	\$2,129	\$1,404
MAGUET WELL 2	10/2/2018	6925	HWY 38/GARNETT AVE, MENTONE 92359	1269987	25	87996	359.89513	22.2	245	\$45	\$10,956	50%	57%	11,218	\$9,560	\$1,397	\$1,346
5TH BSTR 2132	9/4/2018	15093	3410 PLANT H-4, REDLANDS, CA 92373	1376376	125	66768	386.05466	74	173	\$80	\$13,816	60%	72%	10,762	\$11,589	\$2,227	\$1,291
HAWK BOOSTER 1720	4/13/2018	29880	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	75	30120	378.60783	36.6	80	\$59	\$4,729	45%	65%	9,302	\$3,268	\$1,460	\$1,116
WELL 32	5/8/2018	15034	1409 TEXAS ST	1115443	200	37656	534.70298	153.1	70	\$73	\$5,121	55%	70%	8,258	\$3,998	\$1,123	\$991
5TH BSTR 2310	8/31/2018	33953	3410 PLANT H-4, REDLANDS, CA 92373	1376376	50	39240	402.09178	38.5	98	\$83	\$8,120	52%	65%	7,886	\$6,488	\$1,632	\$946
CRAFTON WELL	10/23/2018	15392	1261 CRAFTON AVE, MENTONE, CA 92359-1315	1376359	200	50172	435.64458	140.7	115	\$161	\$18,564	60%	70%	7,342	\$15,847	\$2,717	\$881
WELL 11	6/19/2018	29997	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	60	39792	332.14764	21.1	120	\$52	\$6,247	54%	65%	6,485	\$5,229	\$1,018	\$778
1723 BSTR 1	12/4/2018	15062	1201 ROOSEVELT RD	1376268	100	17700	139.87	81.9	127	\$48	\$6,018	53%	70%	4,418	\$4,516	\$1,502	\$530
2381 BOOSTER	9/11/2018	15078	1371 Sliger Rd / Ward Way	1121938	50	41868	604.01649	45.6	69	\$91	\$6,280	58%	65%	4,281	\$5,638	\$642	\$514
WELL 16	5/22/2018	13259	975 PARKFORD DR, REDLANDS, CA 92374-6384	1267844	150	8580	221.22727	27.7	39	\$65	\$2,540	39%	70%	3,782	\$1,420	\$1,119	\$454
AIRPORT WELL 1	4/30/2018	13147	2235 PLANT N-4, N/O AIRPORT RUNWAY	1376319	350	794040	701.35549	226	1132	\$82	\$92,903	73%					
AGATE WELL 2	4/9/2018	15052	1580 AGATE, MENTONE, CA 92359	1376342	200	177240	405.22036	135.5	437	\$63	\$27,472	78%					
DEARBORN 1931	4/25/2018	15070	318 Dearborn St, Redlands	1376292	200	108588	499.38027	139.4	217	\$98	\$21,392	77%					
AGATE BSTR 1952	5/9/2018	15091	1580 AGATE, MENTONE, CA 92359	1376342	100	171948	228.26995	78.6	753	\$35	\$26,652	70%					
WELL 38	6/12/2018	15616	90 NEVADA, REDLANDS, CA 92373	4513551	300	734460	737.9769	214.7	995	\$91	\$90,339	75%					
HAWK BOOSTER 1721	4/13/2018	29881	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	150	143640	258.28409	101.3	556	\$41	\$22,551	73%					
HAWK BOOSTER 1722	4/13/2018	29882	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	200	76368	271.67528	102.3	281	\$43	\$11,990	69%					
HAWK BOOSTER 2174	4/13/2018	29884	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	200	44088	756.28156	153.6	58	\$119	\$6,922	74%					
HAWK BOOSTER 2176	4/13/2018	29885	955 PARKFORD DR, REDLANDS, CA 92374-6384	1376269	200	35796	838.52324	135.1	43	\$132	\$5,620	66%					
REES WELL	4/30/2018	29892	1363 E PENNSYLVANIA AVE, REDLANDS, CA 92374-2761	1376317	250	779352	731.11107	160.2	1066	\$78	\$83,391	76%					
AGATE BSTR 1953	4/9/2018	33962	1580 AGATE, MENTONE, CA 92359	1376342	100	55440	221.22518	77.6	251	\$34	\$8,593	71%					
TEXAS BOOSTER 1551	5/8/2018	33964	1409 TEXAS ST, REDLANDS, CA 92374-2180	1115443	250		956.12266	104.4		\$130		23%	70%				
TEXAS BOOSTER 1550	5/8/2018	33966	1409 TEXAS ST, REDLANDS, CA 92374-2180	1115443	250		806.69282	183		\$110		28%	70%				
N ORANGE ST 2	4/24/2018	33972	2412 ORANGE ST, REDLANDS, CA 92373	22715292	350	347016	395.13799	215	878	\$40	\$35,396	68%					
N ORANGE ST 1(NORTH)	4/24/2018	34581	2412 ORANGE ST, REDLANDS, CA 92373	22715292	350	1631016	424.37279	227	3843	\$43	\$166,364	72%					
ORANGE ST WELL (@ Gun Ran	4/24/2018	4268	Orange St @ Gun Range	1376275	300	623988	713.72542	187.8	874	\$86	\$75,503	68%					
AGATE BSTR 1951	4/9/2018	6924	1580 AGATE, MENTONE, CA 92359	1376342	100	29532	234.93003	77	126	\$36	\$4,577	68%					
TREATMENT P300 BSTR "B"	4/6/2018	70157	1950 NEVADA ST	1586	40	414144	259.79915	71.9	1594	\$28	\$44,313	68%					
TREATMENT P300 BST "C"	4/6/2018	70158	1950 NEVADA ST	1586	100	398592	257.40741	69.2	1548	\$28	\$42,649	68%					

**CITY OF REDLANDS
MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT
PUMP EFFICIENCY DATA**

Pumping Plant Name	Test Date	Pump Reference Number	Pump Location	CSS Service Account #	Motor HP	kWh / Year	kWh / Acre Ft.	kW	Annual Acre Ft.	Avg \$ / Acre Ft.	Annual Cost	Test Eff. %	Impr. Eff %	kWh Annual Savings	Impr. Annual Cost	Est. \$ Annual Savings	Potential kWh Incentive
MENTONE ACRES WELL 2	6/12/2018	7525	2224 PLANT, REDLANDS, CA 92373	1342855	300	544404	677.23466	229.7	804	\$93	\$75,128	72%					
COUNTRY CLUB BOOSTER 2387	10/2/2018	15025	2903 PLANT E-7 140 HP, REDLANDS, CA., 92373	1376312	200	57972	391.96152	163.4	148	\$60	\$8,909	67%					
COUNTRY CLUB BOOSTER 2386	10/2/2018	15026	2903 PLANT E-7 140 HP, REDLANDS, CA., 92373	1376312	150	244224	350.54502	114.7	697	\$54	\$37,532	68%					
2382 BOOSTER	9/11/2018	15079	1371 Sliger / Ward Way	1121938	50	130332	479.19265	22.5	272	\$72	\$19,550	66%					
BOOSTER 2330	9/25/2018	26207	32300 YUCAIPA BLVD., YUCAIPA, CA, 92399	10028684	150	11724	622.69543	79	19	\$238	\$4,490	69%					
COUNTRY CLUB BOOSTER 2385	10/2/2018	27806	2903 PLANT E-7 140 HP, REDLANDS, CA., 92373	1376312	100	42636	335.71657	70.1	127	\$52	\$6,552	65%					
WELL 39	9/19/2018	29864	71 S IOWA ST, REDLANDS, CA 92374	18297962	250	85992	780.68469	161	110	\$293	\$32,303	72%					
EAST LUGONIA 3	9/19/2018	29887	2551 MILL CREEK RD, MENTONE, CA 92359-9795	14549141	25	71820	475.19938	21	151	\$52	\$7,900	58%					
5TH BSTR 2311	8/31/2018	29900	3410 PLANT H-4, REDLANDS, CA 92373	1376376	150	21096	360.19758	155	59	\$75	\$4,365	68%					
E. LUGONIA 6	9/19/2018	33706	1500 AMETHYST ST, MENTONE, CA 92359	41794270	30	14676	433.29164	22.1	34	\$113	\$3,816	58%					
TEXAS BOOSTER 1553	12/4/2018	33965	1409 TEXAS ST, REDLANDS, CA 92374-2180	1115443	250	661644	324.48997	195.5	2039	\$49	\$99,247	75%					

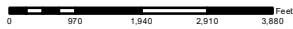
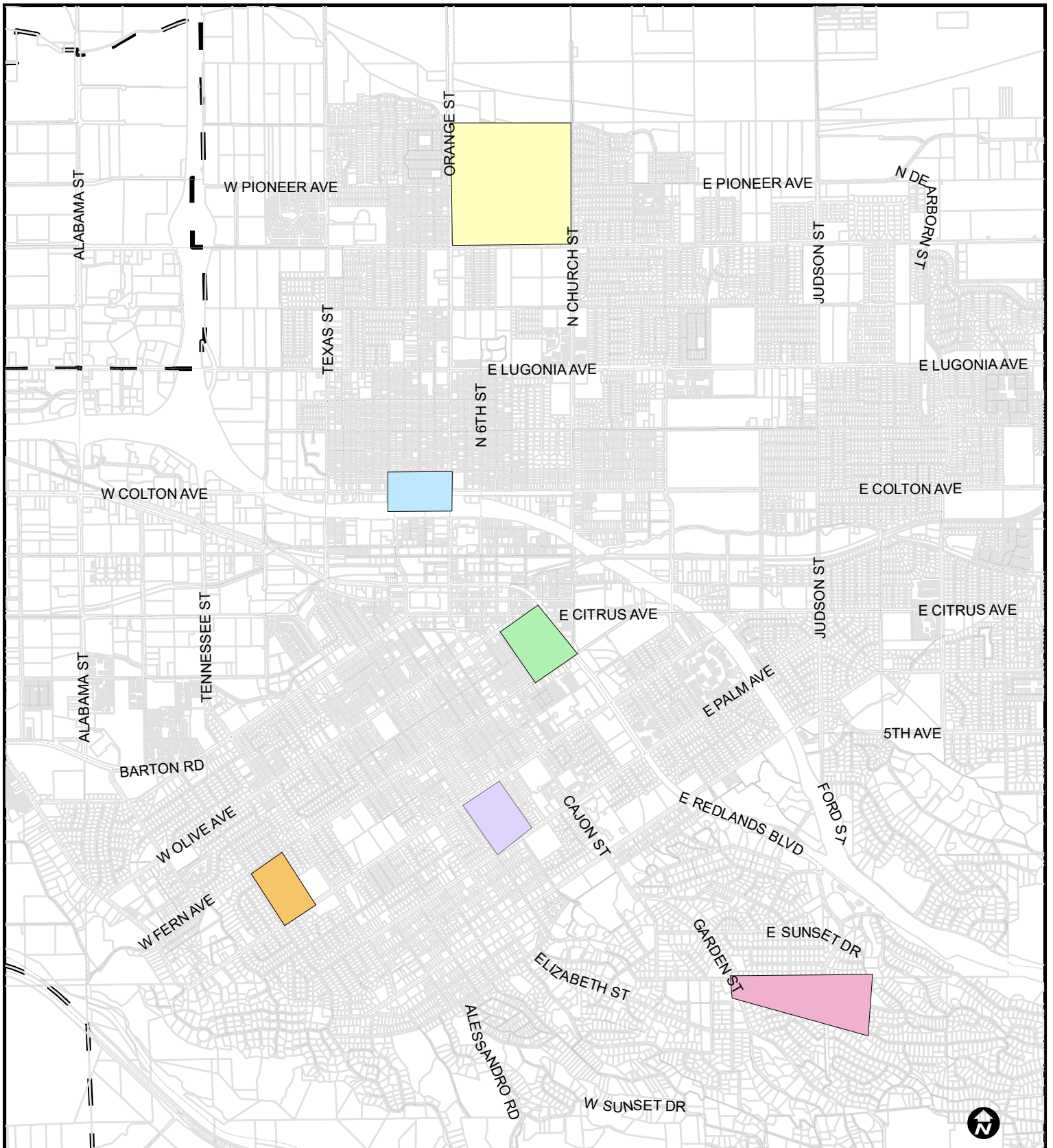




— PMP 2022 STREET RESURFACING PROJECT

PMP 2022 STREET RESURFACING PROJECT LOCATION MAP





2022 Citywide Sidewalk and ADA Ramp Replacement Project Location Map

Legend:

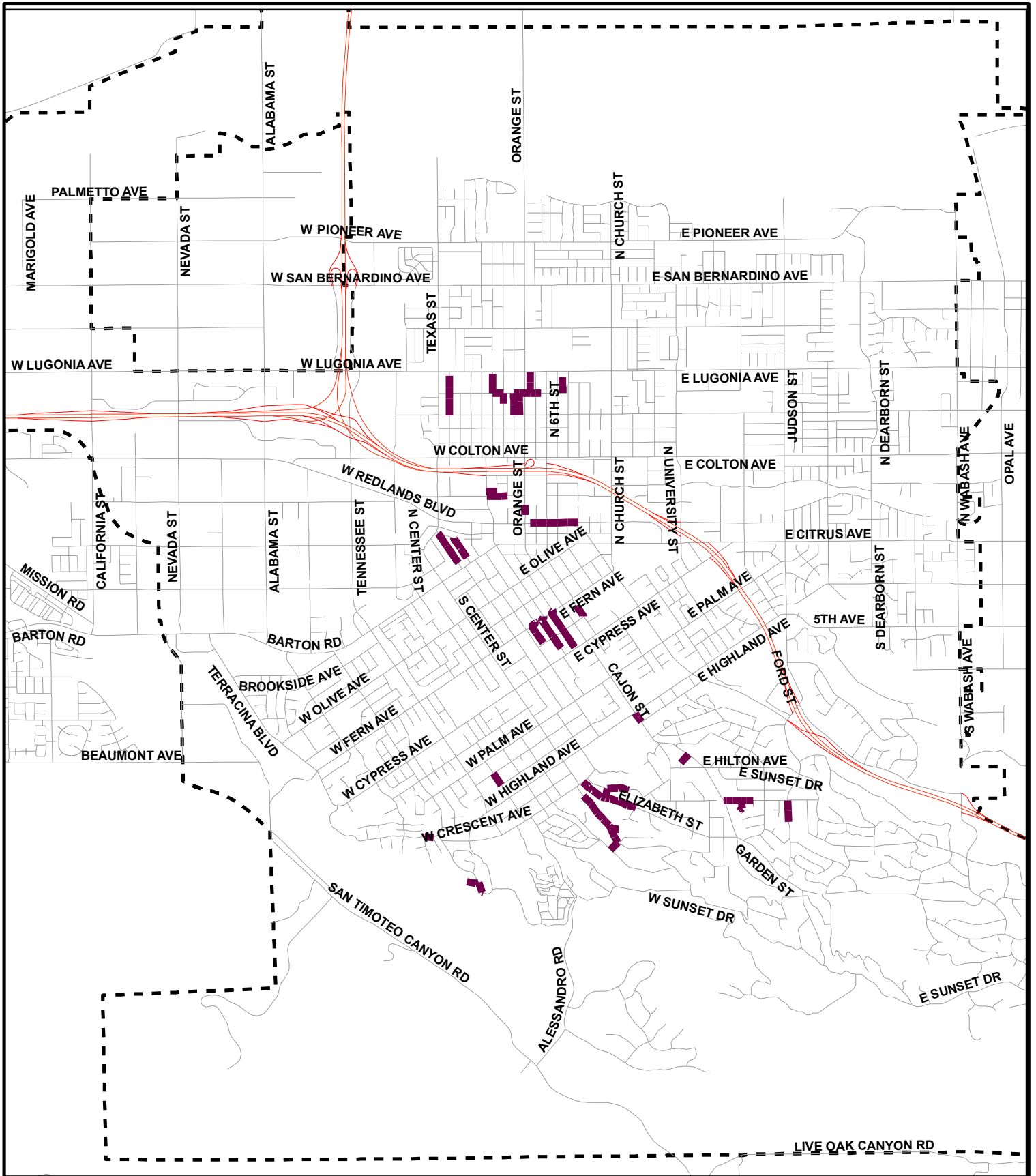
- Area A
- Area B
- Area C
- Area D
- Area E
- Area F

**MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT
CIP PROJECTS LIST**

PLANNING		Org Key	PL	Project Name	Project Phase	Progress	Consultant/Contractor	PM/Engineer	FY 2022-23
P1	WATER	501910		2023 CIP Water Pipeline Replacement	PLANNING	0%			
P2	GENERAL	101400		2023 Citywide Sidewalk & ADA Ramp Replacement	PLANNING	0%			
P3	WATER	501910	501056	HAWC Booster Pump Rehabilitation	PLANNING	0%			
P4	PMP	211910	211008	PMP 2023 Street Resurfacing Project	PLANNING	0%			
P5	WATER	501910	501059	Seismic Assessment Improvements - Texas Grove Reservoir	PLANNING	0%			
P6	WATER	501910	501055	Sunset Reservoir Replacement	PLANNING	0%			
P7	WATER	501910	501058	Tate Clarifier Coating & Covers	PLANNING	0%			
P8	WATER	501910	501040	Tate Transmission Line Replacement	PLANNING	0%			
P9	GENERAL/PMP	101/211	211009	2023 Alley Paving Improvements	PLANNING	0%		Elva	
P10	ARTERIAL	252400		California Street Widening at Lugonia Ave	PLANNING	0%		Gerard	
P11	WASTEWATER	521910		2023 CIP Sewer Pipeline Replacement	PLANNING	0%		Johana	
P12	WATER	501910	501057	WTP Mechanical & Electrical Equipment Replacement	PLANNING	0%		Paul	
P13	HSIP C10	240400		Wabash & Highland Ave Enhanced Crosswalk	PLANNING	1%		Veronica	\$250,000.00
P14	WATER	501910	501044	Well Perchlorate Treatment	PLANNING	1%		Paul	\$325,000.00
P15	WATER	501910	501051	1750 Blend Manifold Replacement	PLANNING	5%		N/A	\$120,000.00
P16	WATER	501910	501028	Fixed Generators - 5th, Texas & Country Club	PLANNING	5%		Paul	\$100,000.00
P17	WATER	501910	501053	Hinckley WTP Paving	PLANNING	5%		Gerard	\$350,000.00
P18	WATER	501910	501007	Agate #2 Well Rehabilitation	PLANNING	5%		N/A	\$175,000.00
P19	WATER	501910	501042	Tank Mixers	PLANNING	5%		Paul	\$150,000.00
P20	TRAFFIC SIGNAL	243400		Traffic Signal Design at Cypress and Cajon	PLANNING	25%		Goutam	\$600,000.00
Planning Projects - Cost Summary									\$2,070,000.00
DESIGN		Org Key	PL	Project Name	Project Phase	Progress	Consultant/Contractor	PM/Engineer	Current Budget
D1	WASTEWATER	521910		2022 CIP Sewer Pipeline Replacement	DESIGN	5%		Johana	\$3,000,000.00
D2	WATER	501910	501910	Hinckley WTP Sludge Press	DESIGN	25%	Dudek	Paul/John	\$700,000.00
D3	WATER	501910	501004	Hinckley WTP Backup Generator Replacement	DESIGN	25%		Paul	\$140,000.00
D4	GENERAL/PMP	101/211	211007	2022 Alley Paving Improvements	DESIGN	30%		Elva	\$1,300,000.00
D5	WATER	501910	501009	Tate WTP Influent Line Engineering	DESIGN	30%	Carollo Engineers, Inc.	Paul/John	\$835,549.00
D6	PMP	211910	211006	PMP 2022 Street Resurfacing Project	DESIGN	50%		Gerard	\$4,000,000.00
D7	WATER	501910	501039	2022 CIP Water Pipeline Replacement	DESIGN	50%		Gerard	\$4,500,000.00
D8	ATP C2	240400	C400005	ATP Highland/Redlands Regional Connector - Orange St	DESIGN	65%	KOA Consultants	Veronica	\$1,532,843.00
D9	GENERAL	101400		2022 Citywide Sidewalk & ADA Ramp Replacement	DESIGN	85%		Elva	\$1,000,000.00
D10	TDA	241400	S241005	2021 Transit Stop Improvement	DESIGN	90%		Veronica/Johana	\$46,340.00
D11	ARTERIAL	252400	252001	Citrus Avenue Widening Project	DESIGN	90%		Elva	\$900,000.00
D12	HSIP C9	240400	F400003	HSIP Cycle 9 – Pedestrian In-Roadway Lights	DESIGN	90%		Veronica	\$250,000.00
D13	ATP C3	240400	C400007	ATP East Valley Corridor Bike Rte Interconnect - Alabama	DESIGN	95%	KOA Consultants	Veronica	\$2,112,000.00
D14	PMP	211910	211004	SBCounty/Mentone/Redlands Paving Project	DESIGN	99%	SB County	Goutam	\$78,750.00
D15	WATER	501910	501050	Temporary Sunset Reservoir	DESIGN	100%		Veronica	\$2,500,000.00
Design Projects - Cost Summary									\$22,895,482.00
BID & AWARD		Org Key	PL	Project Name	Project Phase	Progress	Consultant/Contractor	PM/Engineer	Current Budget

MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT
CIP PROJECTS LIST

Bid & Award Project - Cost Summary									\$0.00
CONSTRUCTION	Org Key	PL	Project Name	Project Phase	Progress	Contractor	PM/Inspector	Contract Amount	
C1	PMP/GF	101/211	211005	Alley Paving Improvements	CONST	5%	Tryco General Engineering	Elva	\$1,238,000.00
C2	HSIP C8	240400	F400003	HSIP Cycle 8 - Pedestrian Heads Project	CONST	5%	Econolite Systems, Inc.	Veronica	\$541,682.53
C3	HSIP C8	240400	F400001	HSIP Cycle 8 - Signal Preemption Project	CONST	5%	AGA Engineers, Inc./Baker Electric	Veronica	\$937,418.00
C4	TRAFFIC SIGNAL	253400	253007	Traffic Signal Improvements (Brockton/University)	CONST	5%	Elecnor Belco Electric, Inc.	Elva/Daniel	\$507,745.00
C5	WATER	501910	501006	Water System SCADA Design & Integration - Phase 2	CONST	5%	TESCO Controls, Inc.	Paul/Daniel	\$3,679,720.00
C6	TDA	240400	S241001	Orange Blossom Trail - Phase 3	CONST	10%	Deark E&C, Inc.	Gerard	\$782,396.00
C7	WATER	501910	501037	Citywide Water Meter Replacements	CONST	40%	Ferguson Enterprises, LLC	Paul	\$783,356.96
C8	WATER	501910	501005	Wells and Booster Pump Maintenance	CONST	45%	General Pump Company, Inc.	Paul	\$2,630,561.34
C9	SBCTA	254400	254002	I-10/Alabama Street Improvement (\$15,150,600)	CONST	62%	Ortiz Enterprises, Inc.	Kyle/Daniel	\$2,506,921.00
C10	WASTEWATER	521910	521006	MBR & Digester Improvements Project- Phase 1B	CONST	90%	GSE Construction Co. Inc.	Goutam/Daniel	\$7,311,740.00
C11	SBCTA	254400	254001	I-10/University Interchange Project (\$5,812,935)	CONST	99%	SBCTA/ADVANTEC/SEMA	Kyle/Daniel	\$1,234,260.00
C12	WATER CONSV	501910	501002	Brookside Median Landscape Improvements	CONST	100%	Urban Habitat	Veronica	\$193,855.50
C13	GENERAL FUND	101400	400015	Citywide Sidewalk and ADA Ramp Replacement Phase 2	CONST	100%	Universal Construction & Engineering	Elva/Daniel	\$981,152.05
C14	WATER	501910	501039	2021 CIP Water Pipeline Replacement	CONST	100%	Borden Excavation, Inc.	Gerard/Daniel	\$3,555,000.00
C15	PMP	211910	211003	PMP 2021 Street Resurfacing Project	CONST	100%	Matich Corp	Gerard/Frannie	\$9,235,780.00
Construction Projects - Cost Summary									\$36,119,588.38
Project Total Dollars									\$61,085,070.38



City of **REDLANDS** "A CITY THAT WORKS"

PROPOSED SEWER PIPELINE REPLACEMENT
2022 CIP SEWER PIPELINE REPLACEMENT PROJECT
LOCATION MAP

