Western Riverside Council of Governments
Technical Advisory Committee

AGENDA

Thursday, November 17, 2022
9:30 AM

Western Riverside Council of Governments
3390 University Avenue, Suite 200
Riverside, CA 92501

Join Zoom Meeting
Meeting ID: 850 5871 9278
Passcode: 361705
Dial in: (669) 944 9171 U.S.

SPECIAL NOTICE – COVID-19 RELATED PROCEDURES IN EFFECT

Due to the State or local recommendations for social distancing resulting from the threat of Novel Coronavirus (COVID-19), this meeting is being held via Zoom under Assembly Bill (AB) 361 (Government Code Section 54953). Pursuant to AB 361, WRCOG does not need to make a physical location available for members of the public to observe a public meeting and offer public comment. AB 361 allows WRCOG to hold Committee meetings via teleconferencing or other electronic means and allows for members of the public to observe and address the committee telephonically or electronically.

In addition to commenting at the Committee meeting, members of the public may also submit written comments before or during the meeting, prior to the close of public comment to jleonard@wrcog.us.

Any member of the public requiring a reasonable accommodation to participate in this meeting in light of this announcement shall contact Janis Leonard 72 hours prior to the meeting at (951) 405-6702 or jleonard@wrcog.us. Later requests will be accommodated to the extent feasible.

The Committee may take any action on any item listed on the agenda, regardless of the Requested Action.

1. **CALL TO ORDER (Rob Johnson, Chair)**

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL**

4. PUBLIC COMMENTS

At this time members of the public can address the Committee regarding any items within the subject matter jurisdiction of the Committee that are not separately listed on this agenda. Members of the public will have an opportunity to speak on agendized items at the time the item is called for discussion. No action may be taken on items not listed on the agenda unless authorized by law. Whenever possible, lengthy testimony should be presented to the Committee in writing and only pertinent points presented orally.

5. CONSENT CALENDAR

All items listed under the Consent Calendar are considered to be routine and may be enacted by one motion. Prior to the motion to consider any action by the Committee, any public comments on any of the Consent Items will be heard. There will be no separate action unless members of the Committee request specific items be removed from the Consent Calendar.

A. Summary Minutes from the September 15, 2022, Technical Advisory Committee Meeting

Requested Action(s):

1. Approve the Summary Minutes from the September 15, 2022, Technical Advisory Committee meeting.

B. Finance Department Activities Update

Requested Action(s):

1. Receive and file.

C. Approval of Technical Advisory Committee Meeting Schedule for 2023

Requested Action(s):

1. Approve the schedule of Technical Advisory Committee meetings for 2023.

6. REPORTS / DISCUSSION

A. Santa Ana Municipal Separate Storm Sewer System (MS4) Permit Compliance Program Activities Update

Requested Action(s):

1. Receive and file.

B. 2022 Fee Comparison Analysis Update

Requested Action(s):

1. Receive and file.

C. Western Riverside County Energy Resilience Plan

Requested Action(s):

1. Recommend the Executive Committee approve the final version of the Western Riverside County Energy Resilience Plan.
2. Recommend the Executive Committee direct staff to pursue funding opportunities to advance the identified projects further along in the design process.

D. Policy for TUMF Reimbursement Prior to Exhaustion of Credit for Developer Credit / Reimbursement Agreements

Requested Action(s):

1. Recommend that the Executive Committee approve an amendment to the TUMF Administrative Plan / Reimbursement Manual to allow for reimbursement prior to credit exhaustion for Developer Credit / Reimbursement Agreements.

7. REPORT FROM THE EXECUTIVE DIRECTOR
Dr. Kurt WIlson

8. ITEMS FOR FUTURE AGENDAS
Members are invited to suggest additional items to be brought forward for discussion at future Committee meetings.

9. GENERAL ANNOUNCEMENTS

Members are invited to announce items / activities which may be of general interest to the Committee.

10. NEXT MEETING
The next Technical Advisory Committee meeting is scheduled for Thursday, January 19, 2023, at 9:30 a.m., on the Zoom platform with an option for Committee members to attend in-person.

11. ADJOURNMENT

Technical Advisory Committee

Minutes

1. CALL TO ORDER

The meeting of the WRCOG Technical Advisory Committee was called to order by Chair Rob Johnson at 9:30 a.m. on September 15, 2022, on the Zoom platform.

2. PLEDGE OF ALLEGIANCE

Committee member Rob Johnson led members and guests in the Pledge of Allegiance.

3. ROLL CALL

- City of Banning - Doug Schulze*
- City of Corona - Roger Bradley
- City of Eastvale - Marc Donohue
- City of Hemet - Eddie Pust
- City of Jurupa Valley - Rod Butler
- City of Lake Elsinore - Jason Simpson*
- City of Menifee - Armando Villa
- City of Moreno Valley - Mike Lee
- City of Murrieta - Louie Lacasella*
- City of Norco - Lori Sassoon
- City of Perris - Clara Miramontes
- City of Riverside - Michael Moore
- City of San Jacinto - Rob Johnson (Chair)
- City of Temecula - Betsy Lowrey
- County of Riverside - Jeff Van Wagenen
- Eastern Municipal Water District (EMWD) - Joe Mouawad*
- March JPA - Dr. Grace Martin
- Western Municipal Water District (WMWD) - Craig Miller

4. PUBLIC COMMENTS

There were no public comments.

5. CONSENT CALENDAR – (County / Jurupa Valley) 17 yes; 0 no; 0 abstention. Items 5.A - 5.D were approved.

A. Summary Minutes from the August 18, 2022, Technical Advisory Committee Meeting

Action:

1. Approved the Summary Minutes from the August 18, 2022, Technical Advisory Committee meeting.

B. Finance Department Activities Update

Action:
1. Received and filed.

C. Regional Streetlight Program Activities Update

Action:
1. Received and filed.

D. ICMA Activities Update

Action:
1. Received and filed.

6. REPORTS / DISCUSSION

A. Local Housing Activities Assistance Program Activities Update

Suzanne Peterson, WRCOG Senior Analyst, reported that in 2019, $250M was allocated for prioritizing planning activities that would accelerate housing production to meeting the needs of every community in the state. SCAG received $47M in Regional Early Action Planning (REAP) grant funding from the State. Of that, $1.8M is dedicated to WRCOG's Subregional Partnership Program (SRP). Funds may be used on housing planning efforts to meet 6th cycle RHNA. WRCOG is using the funds for several projects; the Local Housing Activities Assistance Program has been budgeted at approximately $500K.

The Local Housing Activities Assistance Program provides direct assistance to agencies. Past assistance provided to help with Housing Elements; new and continued assistance is being offered. For interested member jurisdictions, a request form must be submitted, and an agreement must be executed between the city and WRCOG. The services provided through the requests come at no cost to the cities, as this Program is completely funded by the REAP SRP Program and WRCOG is reimbursed by SCAG.

Assistance requests range from reviewing housing development applications, to municipal code updates, to helping jurisdictions apply for HCD’s pro-housing designation.

WRCOG will be submitting a Notice of Intent to Apply for Funding for the REAP 2.0 Program, which is due October 2022. The State has allocated $23M to COGs for activities supporting cities and counties to implement projects and programs identified in their Housing Elements. WRCOG's funding is approximately $1.6M.

Assistance will continue to be provided and WRCOG will continue to accept requests for assistance. The deadline for expenditure was extended by the state so now WRCOG has more time to accept, process, and complete requests for local housing activities assistance.

Action:

1. Received and filed.

B. 4th Quarter Draft Budget Amendment for Fiscal Year 2021/2022

Andrew Ruiz, WRCOG Chief Financial Officer, reported that for the fourth quarter of Fiscal Year 2021/2022, there will be a net increase in revenues of approximately $29M primarily due to increased collections in the TUMF Program. There has been a significant increase in development activity, specifically in housing.

The other major amendment is to the Inland Regional Energy Network, or I-REN, budget. While I-REN has launched, it has not incurred as much in revenues and expenditures as originally anticipated since the Program is still ramping up. This does not change the total amounts allocated by the CPUC, as I-REN has a six-year period to expend the funds and 2022 was its first year.

Action:

1. Recommended that the Executive Committee approve the 4th Quarter draft Budget Amendment for Fiscal Year 2021/2022.

(Perris / Banning) 19 yes; 0 no; 0 abstention. Item 6.B was approved.

C. Grant Writing Assistance Program Activities Update

Christopher Tzeng, WRCOG Program Manager, reported that WRCOG commenced its Grant Writing Assistance Program in 2017 to assist its member jurisdictions in grant writing assistance. This Program also aligns with the second goal of WROCG's Strategic Plan in identifying and securing grants and other potential opportunities for member jurisdictions.

The Program provides four services: technical assistance with grant application development on eligible grant programs, advisory services, bi-weekly grant opportunities tables, and grant program fact sheets. The Program has provided assistance on grant application development on over 45 applications for the subregion with over 20 applications being awarded, totaling over $70M in grant funding.

WRCOG provided assistance on an Active Transportation Program grant application for the Cities of Riverside and Temecula, and also assisted the City of San Jacinto with the development of an active transportation highway Safety Improvement Plan.

WRCOG is now able to assist with housing-related grant programs in the interim with the use of REAP grant program funds.

Action:

1. Received and filed.

D. Environmental Department Activities update

Olivia Sanchez, WRCOG Program Manager, reported that over the past year, the Solid Waste Committee received presentations and information on SB 1383, held a workshop on the Capacity Planning for Organic Waste and Food Recovery, and is receiving and discussing current and pending

legislation.

The Capacity Planning for Organic Waste and Food Recovery project started in April 2022 with MSW consultants to assist member cities that expressed interest. MSW worked with those members, local franchise haulers, and edible food recovery facilities to determine tonnages and gaps in capacity. Overall MSW determined that Riverside County as a whole, needs 66,314 tons of organic waste capacity and 21,211 tons of edible food recovery capacity. MSW continues to work with cities on completing the implementation plan.

Used oil / filter collection events have continued virtually over the past year, with 634 participants and 345 used oil filters exchanged. Under the Household Hazardous Waste grant WRCOG staff increased used oil capacity at certified collection centers, from 1,850 gallons to 3,700 gallons in 10 WRCOG cities.

The Love Your Neighborhood initiative supports marketing and awareness on illegal disposal and littering, using online platforms. A new website will be deployed in a few weeks to support cleanup efforts and to address illegal dumping. Cities interested in participating in this program may contact WRCOG staff.

Action:

1. Received and filed.

7. REPORT FROM THE EXECUTIVE DIRECTOR

Dr. Kurt Wilson, WRCOG Executive Director, reported that WRCOG's Fellowship Program will continue for this fiscal year. Planning is underway for next year's General Assembly, tentatively scheduled for June 29, 2023, at the Pechanga Resort Casino. Cal CMA's annual conference is being held in Columbus, Ohio this year. There are a number of programs available for City Managers in transition. If anyone has any questions, please reach out to Dr. Wilson. Staff are working on a future presentation regarding wildfires.

8. ITEMS FOR FUTURE AGENDAS

Committee member Jeff Van Wagenen would like a presentation on the development of Care Court.

9. GENERAL ANNOUNCEMENTS

Chair Johnson welcomed Committee member Lori Sassoon, City of Norco. The City of San Jacinto purchased a fire truck in 2020, and is looking for a bay large enough to house it.

10. NEXT MEETING

The next Technical Advisory Committee meeting is scheduled for Thursday, October 20, 2022, at 9:30 a.m., on the Zoom platform with an option for Committee members to attend in-person.

11. ADJOURNMENT

The meeting of the Technical Advisory Committee adjourned at 10:20 a.m.

Western Riverside Council of Governments
Technical Advisory Committee

Staff Report

Subject: **Finance Department Activities Update**

Contact: **Andrew Ruiz, Chief Financial Officer, aruiz@wrcog.us, (951) 405-6740**

Date: **November 17, 2022**

Requested Action(s):

1. Receive and file.

Purpose:

The purpose of this item is to provide an update on the Agency financials through August 2022.

WRCOG 2022-2027 Strategic Plan Goal:

Goal #3 - Ensure fiscal solvency and stability of the Western Riverside Council of Governments.

Background:

On January 12, 2022, the Executive Committee adopted a new Strategic Plan with specific fiscal-related goals:

1. Maintain sound, responsible fiscal policies.
2. Develop a process to vet fiscal impact(s) and potential risk(s) for all new programs and projects.
3. Provide detailed financial statements for public review online.

Regarding goal #1, staff have planned out a process to go through and revise all of its fiscal-related policies and plan to have them vetted and revised by the end of the fiscal year. Staff will begin by updating its investment policy with the assistance of its financial advisor, Public Financial Management (PFM), and will seek input from the Finance Directors Committee at its next meeting.

Regarding goal #3, staff have updated the public financial statements with significantly more detail, including breaking out each line item by fund, department, and program. These detailed financial statements provide more transparency into each of the Agency's funds and programs.

As staff continue to work through these goals, input through WRCOG's Committee structure will be important to ensure the goals are being met.

Financial Report Summary Through August 2022

The Agency's Financial Report summary through August 2022, a detailed overview of WRCOG's financial statements in the form of combined Agency revenues and costs, plus a detailed breakout, is

provided as an attachment.

Fiscal Year (FY) 2021/2022 Year End and Agency Audit

FY 2021/2022 has now ended and the Agency's books have now been closed. WRCOG will be utilizing the services of the audit firm Van Lant and Fankhanel (VLF) to conduct its financial audit. During FY 2021/2022, an RFP was released for financial auditing services as a Government Finance Officers Association (GFOA) best practice, as WRCOG has utilized auditing firm Rogers, Anderson, Malody and Scott for the past five years. WRCOG ended up selecting a new audit firm (VLF) to conduct its audits based on the results of the RFP.

In July 2022, VLF conducted the first phase of the audit, known as the interim audit, which involves preliminary audit work that is conducted prior to the books being fully closed. The interim audit tasks are conducted in order to gain an understanding of the Agency's processes during the year and to compress the period needed to complete the final audit after the books have been closed. The interim audit has now been completed and the full audit has started in October 2022 with expected completion by the end of November.

Prior Action(s):
November 9, 2022: The Administration & Finance Committee received and filed.

November 7, 2022: The Executive Committee received and filed.

Fiscal Impact:
Finance Department activities are included in the Agency's adopted Fiscal Year 2022/2023 Budget under the Administration Department under Fund 110.

Attachment(s):
Attachment 1 - Aug 2022 Agency Financials

Western Riverside Council of Governments
Budget-to-Actuals - Total Agency
As of August 31, 2022

Description	Actual	FY 23 Budget	Variance
Revenues			
Member Dues	$294,410	$294,410	$0
Fellowship	$0	$100,000	$100,000
Interest Revenue - Other	$0	$5,000	$5,000
Operating Transfer Out	$191,990	$2,476,847	$2,284,857
REAP Revenue	$0	$1,050,000	$1,050,000
LTF Revenue	$1,002,500	$930,000	($72,500)
Other Misc Revenue-RIVTAM	$5,000	$25,000	$20,000
Commerical/Service	$112,311	$1,560,000	$1,447,689
Retail	$118,013	$4,160,000	$4,041,987
Industrial	$959,113	$8,320,000	$7,360,887
Residential/Multi/Single	$94,137	$1,456,000	$1,361,863
Operations and Maintenance	$0	$0	$0
Residential/Multi/Single	$2,259,283	$34,944,000	$32,684,717
Multi-Family	$1,212,694	$4,680,000	$3,467,306
Beaumont TUMF Settlement Revenue	$0	$900,000	$900,000
Citizens Trust Investment Interest	$0	$275,000	$275,000
PACE Revenue	$6,375	$0	($6,375)
Hero Admin Fees	$37,600	$2,725,000	$2,687,400
WRCOG HERO CAFTA Revenue	$0	$150,000	$150,000
PACE Commercial Sponsor Revenue	$0	$50,000	$50,000
Regional Streetlights Revenue	$36,856	$135,542	$98,686
IREN - Public Sector	$0	$10,038,349	$10,038,349
Solid Waste - SB1383	$117,593	$117,593	$0
Solid Waste	$124,206	$173,157	$48,951
Used Oil Grants	$198,398	$198,398	$0
Air Quality - Other Reimburse	$126,000	$270,167	$144,167
LTF Revenue	$70,000	$70,000	$0
REAP Revenue	$0	$132,064	$132,064
Total Revenues	**$6,966,480**	**$75,236,527**	**$68,270,047**

Western Riverside Council of Governments
Budget-to-Actuals - Total Agency
As of August 31, 2022

Description	Actual	FY 23 Budget	Variance
Expenses			
Salaries & Wages - Fulltime	$338,142	$3,064,926	$2,749,096
Fringe Benefits	$566,260	$1,399,419	$963,349
Overhead Allocation	$288,411	$2,174,586	$1,962,841
General Legal Services	$426,887	$1,551,600	$1,244,532
Audit Svcs - Professional Fees	$0	$30,000	$30,000
Bank Fees	$0	$67,008	$67,008
Commissioners Per Diem	$10,200	$72,000	$61,800
Parking Cost	$4,827	$28,000	$23,173
Office Lease	$58,468	$340,000	$281,532
WRCOG Auto Fuels Expenses	$0	$1,000	$1,000
WRCOG Auto Maintenance Expense	$0	$500	$500
Parking Validations	$711	$14,100	$13,390
Staff Recognition	$1,660	$3,100	$1,440
Coffee and Supplies	$0	$2,500	$2,500
Event Support	$41,359	$165,000	$123,641
Program/Office Supplies	$3,629	$22,800	$19,171
Computer Equipment/Supplies	$0	$7,000	$7,000
Computer Software	$8,750	$104,500	$95,750
Rent/Lease Equipment	$1,214	$15,000	$13,786
Membership Dues	$12,561	$59,250	$46,689
Subscription/Publications	$5,780	$8,950	$3,170
Meeting Support Services	$70	$3,350	$3,296
Postage	$119	$8,250	$8,131
Other Household Exp	$642	$2,600	$1,958
Storage	$1,058	$5,500	$4,442
Printing Services	$824	$4,650	$3,826
Computer Hardware	$60	$9,000	$8,940
Misc. Office Equipment	$58	$1,000	$942
Communications - Regular Phone	$3,689	$17,500	$13,811
Communications - Cellular Phones	$976	$16,900	$15,924
Communications - Computer Services	$3,419	$40,000	$36,581
Communications - Web Site	$0	$8,000	$8,000
Equipment Maintenance - Comp/Software	$290	$7,500	$7,210
Maintenance - Building and Improvement	$4,287	$12,000	$7,713
Insurance - Errors & Omissions	$0	$50,000	$50,000
Insurance - Gen/Busi Liab/Auto	$0	$54,266	$54,266
WRCOG Auto Insurance	$0	$6,000	$6,000
Data Processing Support	$1,776	$8,000	$6,224
Recording Fee-PACE	$989	$14,000	$13,031
Seminars/Conferences	$0	$24,850	$24,850
Travel - Mileage Reimbursement	$2	$20,030	$20,028
Travel - Ground Transportation	$44	$10,300	$10,256
Travel - Airfare	$0	$36,750	$36,750
Lodging	$889	$80,600	$79,711
Meals	$301	$10,730	$10,429

Western Riverside Council of Governments
Budget-to-Actuals - Total Agency
As of August 31, 2022

Description	Actual	FY 23 Budget	Variance
Other Incidentals	$0	$1,500	$1,500
Training	$120	$33,250	$33,130
OPEB Repayment	$0	$110,526	$110,526
Supplies/Materials	$0	$8,900	$8,900
Advertising Media - Newspaper Ad	$29,000	$29,048	$48
Staff Education Reimbursement	$0	$7,500	$7,500
Compliance Settlements	$40,280	$200,000	$159,720
Direct Costs	$0	$1,660,177	$1,660,177
Consulting Labor	$252,877	$8,018,122	$7,779,913
TUMF Project Reimbursement	$0	$25,000,000	$25,000,000
COG REN Reimbursement	$0	$1,474,000	$1,492,957
Total Expenses	**$2,110,629**	**$46,126,038**	**$44,398,056**

Western Riverside Council of Governments
Budget-to-Actuals - Administration
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Administration			
					Revenues			
110	12	40001	0	0	Member Dues	$294,410	$294,410	$0
110	12	49001	0	0	Interest Revenue - Other	$0	$5,000	$5,000
110	12	97001	0	0	Operating Transfer Out	$191,990	$2,476,847	$2,284,857
					Total Revenues	**$486,400**	**$2,776,257**	**$2,289,857**
					Expenses			
110	12	60001	0	0	Salaries & Wages - Fulltime	$111,636	$944,788	$833,152
110	12	61000	0	0	Fringe Benefits	$363,715	$449,211	$85,496
110	12	65101	0	0	General Legal Services	$11,911	$115,000	$103,090
110	12	65401	0	0	Audit Svcs - Professional Fees	$0	$30,000	$30,000
110	12	65505	0	0	Bank Fees	$0	$2,000	$2,000
110	12	65507	0	0	Commissioners Per Diem	$10,200	$70,000	$59,800
110	12	71615	0	0	Parking Cost	$4,827	$28,000	$23,173
110	12	73001	0	0	Office Lease	$58,468	$340,000	$281,532
110	12	73003	0	0	WRCOG Auto Fuels Expenses	$0	$1,000	$1,000
110	12	73004	0	0	WRCOG Auto Maintenance Expense	$0	$500	$500
110	12	73102	0	0	Parking Validations	$711	$10,000	$9,290
110	12	73104	0	0	Staff Recognition	$1,160	$3,100	$1,940
110	12	73106	0	0	Coffee and Supplies	$0	$2,500	$2,500
110	12	73107	0	0	Event Support	$5,250	$45,000	$39,750
110	12	73108	0	0	Program/Office Supplies	$3,629	$20,000	$16,371
110	12	73109	0	0	Computer Equipment/Supplies	$0	$5,500	$5,500
110	12	73110	0	0	Computer Software	($200)	$35,000	$35,200
110	12	73111	0	0	Rent/Lease Equipment	$1,214	$15,000	$13,786
110	12	73113	0	0	Membership Dues	$11,061	$30,000	$18,939
110	12	73114	0	0	Subscription/Publications	$5,764	$6,000	$236
110	12	73115	0	0	Meeting Support Services	$54	$500	$446
110	12	73116	0	0	Postage	$0	$5,000	$5,000
110	12	73117	0	0	Other Household Exp	$642	$1,500	$858
110	12	73119	0	0	Storage	$0	$1,500	$1,500
110	12	73120	0	0	Printing Services	$824	$1,000	$176
110	12	73122	0	0	Computer Hardware	$60	$8,000	$7,940
110	12	73201	0	0	Communications - Regular Phone	$3,689	$17,500	$13,811
110	12	73204	0	0	Communications - Cellular Phones	$387	$7,500	$7,113

Western Riverside Council of Governments
Budget-to-Actuals - Administration
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
110	12	73206	0	0	Communications - Computer Services	$3,419	$40,000	$36,581
110	12	73209	0	0	Communications - Web Site	$0	$8,000	$8,000
110	12	73302	0	0	Equipment Maintenance - Comp/Software	$290	$5,000	$4,710
110	12	73303	0	0	Maintenance - Building and Improvement	$4,287	$12,000	$7,713
110	12	73401	0	0	Insurance - Errors & Omissions	$0	$50,000	$50,000
110	12	73405	0	0	Insurance - Gen/Busi Liab/Auto	$0	$50,266	$50,266
110	12	73407	0	0	WRCOG Auto Insurance	$0	$6,000	$6,000
110	12	73601	0	0	Seminars/Conferences	$0	$3,500	$3,500
110	12	73611	0	0	Travel - Mileage Reimbursement	$2	$3,500	$3,498
110	12	73612	0	0	Travel - Ground Transportation	$44	$1,500	$1,456
110	12	73613	0	0	Travel - Airfare	$0	$3,000	$3,000
110	12	73620	0	0	Lodging	$0	$1,500	$1,500
110	12	73630	0	0	Meals	$215	$3,500	$3,285
110	12	73650	0	0	Training	$0	$30,000	$30,000
110	12	73660	0	0	OPEB Repayment	$0	$110,526	$110,526
110	12	73801	0	0	Staff Education Reimbursement	$0	$7,500	$7,500
110	12	85100	0	0	Direct Costs	$0	$160,177	$160,177
110	12	85101	0	0	Consulting Labor	$31,345	$250,000	$218,655
					Total Expenses	**$634,604**	**$2,941,068**	**$2,306,465**

Western Riverside Council of Governments
Budget-to-Actuals - Administration
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Fellowship			
					Revenues			
110	12	40009	4700	0	Fellowship	$0	$100,000	$100,000
					Total Revenues	**$0**	**$100,000**	**$100,000**
					Expenses			
110	12	60001	4700	0	Salaries & Wages - Fulltime	$15,431	$174,412	$158,981
110	12	61000	4700	0	Fringe Benefits	$1,408	$15,660	$14,252
110	12	65101	4700	0	General Legal Services	$0	$100	$100
110	12	73102	4700	0	Parking Validations	$0	$1,000	$1,000
110	12	73107	4700	0	Event Support	$0	$1,000	$1,000
110	12	73108	4700	0	Program/Office Supplies	$0	$500	$500
110	12	73115	4700	0	Meeting Support Services	$0	$250	$250
110	12	73116	4700	0	Postage	$0	$100	$100
110	12	73601	4700	0	Seminars/Conferences	$0	$150	$150
110	12	73611	4700	0	Travel - Mileage Reimbursement	$0	$1,000	$1,000
110	12	73612	4700	0	Travel - Ground Transportation	$0	$150	$150
110	12	73630	4700	0	Meals	$0	$350	$350
110	12	73650	4700	0	Training	$0	$250	$250
110	12	85101	4700	0	Consulting Labor	$0	$500	$500
					Total Expenses	**$16,839**	**$195,422**	**$178,583**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Clean Cities			
					Revenues			
120	80	41402	1010	0	Air Quality	$126,000	$270,167	$144,167
120	80	41701	1010	0	LTF Revenue	$70,000	$70,000	$0
					Total Revenues	**$196,000**	**$340,167**	**$144,167**
					Expenses			
120	80	60001	1010	0	Salaries & Wages - Fulltime	$7,546	$170,523	$170,523
120	80	61000	1010	0	Fringe Benefits	$2,396	$86,260	$86,260
120	80	63000	1010	0	Overhead Allocation	$6,000	$36,000	$36,000
120	80	73107	1010	0	Event Support	$0	$10,000	$10,000
120	80	73115	1010	0	Meeting Support Services	$0	$500	$500
120	80	73116	1010	0	Postage	$0	$400	$400
120	80	73611	1010	0	Travel - Mileage Reimbursement	$0	$500	$500
120	80	73612	1010	0	Travel - Ground Transportation	$0	$250	$250
120	80	73613	1010	100	Travel - Airfare	$0	$3,500	$3,500
120	80	73620	1010	100	Lodging	$0	$3,500	$3,500
120	80	73630	1010	0	Meals	$0	$500	$500
120	80	73640	1010	0	Other Incidentals	$0	$500	$500
120	80	73703	1010	0	Supplies/Materials	$0	$1,500	$1,500
120	80	85101	1010	0	Consulting Labor	$14,668	$25,850	$25,850
					Total Expenses	**$22,326**	**$339,783**	**$317,457**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Love Your Neighborhood			
					Revenues			
110	80	41201	1035	0	Love Your Neighborhood Revenue	$0	$50,000	$50,000
					Total Revenues	**$0**	**$50,000**	**$50,000**
					Expenses			
110	80	73107	1035	0	Event Support	$0	$10,000	$10,000
110	80	85101	1035	0	Consulting Labor	$0	$40,000	$40,000
					Total Expenses	**$0**	**$50,000**	**$50,000**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Solid Waste			
					Revenues			
110	80	40301	1038	0	SB 1383	$117,593	$117,593	$0
110	80	41201	1038	0	Solid Waste	$124,206	$123,157	($1,049)
					Total Revenues	**$241,800**	**$240,750**	**($1,049)**
					Expenses			
110	80	60001	1038	0	Salaries	$8,269	$61,429	$53,159
110	80	61000	1038	0	Fringe Benefits	$2,503	$31,224	$28,721
110	80	63000	1038	0	Overhead Allocation	$2,000	$12,000	$10,000
110	80	65101	1038	0	Legal	$270	$1,000	$730
110	80	73102	1038	0	Parking Validations	$0	$500	$500
110	80	73107	1038	0	Event Support	$0	$2,000	$2,000
110	80	73114	1038	0	Subscriptions/Publications	$0	$250	$250
110	80	73204	1038	0	Cell Phone Expense	$87	$500	$413
110	80	73601	1038	0	Seminars/Conferences	$0	$500	$500
110	80	73611	1038	0	Mileage Reimbursement	$0	$250	$250
110	80	73612	1038	0	Ground Transportation	$0	$150	$150
110	80	73613	1038	0	Airfare	$0	$250	$250
110	80	73630	1038	0	Meals	$0	$500	$500
110	80	73650	1038	0	Training	$0	$500	$500
110	80	85101	1038	0	Consulting Labor	$47,165	$129,556	$82,391
					Total Expenses	**$60,295**	**$240,609**	**$180,314**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Used Oil			
					Revenues			
140	80	41401	2057	0	Used Oil Grants	$198,398	$198,398	$0
					Total Revenues	**$198,398**	**$198,398**	**$0**
					Expenses			
140	80	60001	2057	0	Salaries & Wages - Fulltime	$10,289	$76,400	$66,111
140	80	61000	2057	0	Fringe Benefits	$3,115	$38,486	$35,371
140	80	63000	2057	0	Overhead Allocation	$3,307	$19,839	$16,533
140	80	65101	2057	0	General Legal Services	$0	$1,000	$1,000
140	80	73102	2057	0	Parking Validations	$0	$250	$250
140	80	73107	2057	0	Event Support	$11,109	$20,000	$8,891
140	80	73108	2057	0	Program/Office Supplies	$0	$500	$500
140	80	73113	2057	0	Membership Dues	$0	$500	$500
140	80	73115	2057	0	Meeting Support Services	$0	$1,000	$1,000
140	80	73119	2057	0	Storage	$1,058	$4,000	$2,942
140	80	73120	2057	0	Printing Services	$0	$1,000	$1,000
140	80	73204	2057	0	Communications - Cellular Phones	$38	$200	$162
140	80	73405	2057	0	Insurance - Gen/Busi Liab/Auto	$0	$1,000	$1,000
140	80	73601	2057	0	Seminars/Conferences	$0	$2,000	$2,000
140	80	73611	2057	0	Travel - Mileage Reimbursement	$0	$1,000	$1,000
140	80	73612	2057	0	Travel - Ground Transportation	$0	$500	$500
140	80	73630	2057	0	Meals	$0	$500	$500
140	80	73703	2057	0	Supplies/Materials	$0	$1,000	$1,000
140	80	73704	2057	0	Advertising Media - Newspaper Ad	$29,000	$29,048	$48
					Total Expenses	**$57,915**	**$198,223**	**$140,308**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Inland Regional Energy Network			
					Revenues	**Actual**	**FY 23 Budget**	**Variance**
180	67	41480	2080	71XX	IREN - Public Sector	$0	$6,239,958	$6,239,958
180	67	41480	2080	72XX	IREN - Workforce Education and Training	$0	$2,323,361	$2,323,361
180	67	41480	2080	73XX	IREN - Codes and Standards	$0	$1,475,030	$1,475,030
					Total Revenues	**$0**	**$10,038,349**	**$10,038,349**
					Expenses	**Actual**	**FY 23 Budget**	**Variance**
180	67	60001	2080	7101	Salaries & Wages - Fulltime	$19,270	$221,281	$202,011
180	67	60001	2080	7201	Salaries & Wages - Fulltime	$6,191	$71,088	$64,898
180	67	60001	2080	7301	Salaries & Wages - Fulltime	$5,786	$66,439	$60,654
180	67	61000	2080	7101	Fringe Benefits	$6,583	$100,535	$93,952
180	67	61000	2080	7201	Fringe Benefits	$2,115	$31,124	$29,009
180	67	61000	2080	7301	Fringe Benefits	$1,977	$28,691	$26,715
180	67	63000	2080	7101	Overhead Allocation	$20,311	$350,457	$330,146
180	67	63000	2080	7201	Overhead Allocation	$6,525	$111,309	$104,784
180	67	63000	2080	7301	Overhead Allocation	$6,098	$103,597	$97,499
180	67	65101	2080	7101	General Legal Services	$1,600	$13,400	$11,800
180	67	65101	2080	7111	General Legal Services	$1,600	$1,600	$0
180	67	65101	2080	7201	General Legal Services	$1,600	$13,400	$11,800
180	67	65101	2080	7211	General Legal Services	$1,600	$1,600	$0
180	67	65101	2080	7301	General Legal Services	$1,600	$13,400	$11,800
180	67	65101	2080	7311	General Legal Services	$1,600	$1,600	$0
180	67	65505	2080	7101	Bank Fees	$0	$1,500	$1,500
180	67	73102	2080	7101	Parking Validations	$0	$1,000	$1,000
180	67	73107	2080	7103	Event Support	$4,167	$20,833	$16,667
180	67	73107	2080	7113	Event Support	$4,167	$4,167	$0
180	67	73107	2080	7203	Event Support	$4,167	$20,833	$16,667
180	67	73107	2080	7213	Event Support	$4,167	$4,167	$0
180	67	73107	2080	7303	Event Support	$4,167	$20,833	$16,667
180	67	73107	2080	7313	Event Support	$4,167	$4,167	$0
180	67	73113	2080	7101	Membership Dues	$0	$25,000	$25,000
180	67	73117	2080	7101	Other Household Exp	$0	$1,000	$1,000

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
180	67	73120	2080	7101	Printing Services	$0	$2,500	$2,500
180	67	73122	2080	7101	Computer Hardware	$0	$1,000	$1,000
180	67	73125	2080	7101	Misc. Office Equipment	$58	$1,000	$942
180	67	73204	2080	7101	Communications - Cellular Phones	$0	$3,600	$3,600
180	67	73601	2080	7101	Seminars/Conferences	$0	$10,000	$10,000
180	67	73611	2080	7101	Travel - Mileage Reimbursement	$0	$10,530	$10,530
180	67	73612	2080	7101	Travel - Ground Transportation	$0	$5,000	$5,000
180	67	73613	2080	7101	Travel - Airfare	$0	$25,000	$25,000
180	67	73620	2080	7101	Lodging	$0	$70,000	$70,000
180	67	73630	2080	7101	Meals	$0	$2,880	$2,880
180	67	73703	2080	7101	Supplies/Materials	$0	$1,000	$1,000
180	67	85100	2080	7101	Direct Costs	$0	$1,500,000	$1,500,000
180	67	85101	2080	7101	Consulting Labor	$2,056	$2,937,874	$2,935,819
180	67	85101	2080	7103	Consulting Labor	$245	$245	$0
180	67	85101	2080	7111	Consulting Labor	$2,056	$2,056	$0
180	67	85101	2080	7113	Consulting Labor	$245	$245	$0
180	67	85101	2080	7201	Consulting Labor	$2,056	$1,726,119	$1,724,064
180	67	85101	2080	7203	Consulting Labor	$245	$245	$0
180	67	85101	2080	7211	Consulting Labor	$2,056	$2,056	$0
180	67	85101	2080	7213	Consulting Labor	$245	$245	$0
180	67	85101	2080	7301	Consulting Labor	$2,056	$1,017,167	$1,015,112
180	67	85101	2080	7303	Consulting Labor	$245	$245	$0
180	67	85101	2080	7311	Consulting Labor	$2,056	$2,056	$0
180	67	85101	2080	7313	Consulting Labor	$245	$245	$0
180	67	85182	2080	7101	COG REN Reimbursement	$0	$916,256	$922,575
180	67	85182	2080	7201	COG REN Reimbursement	$0	$341,155	$347,474
180	67	85182	2080	7301	COG REN Reimbursement	$0	$216,589	$222,908
					Total Expenses	**$33,532**	**$10,028,330**	**$9,994,798**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					PACE Funding			
					Revenues			
110	67	40601	2104	0	PACE Revenue	$6,375	$0	($6,375)
					Total Revenues	**$6,375**	**$0**	**$6,375**
					Expenses			
110	67	73506	2104	0	Recording Fee-PACE	$34	$0	($34)
					Total Expenses	**$34**	**$0**	**($34)**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Greenworks			
					Revenues			
110	67	40604	2105	0	Greenworks	$0	$150,000	$150,000
					Total Revenues	**$0**	**$150,000**	**$150,000**
					Expenses			
110	67	60001	2105	0	Salaries & Wages	$7,564	$58,176	$50,612
110	67	61000	2105	0	Fringe Benefits	$2,524	$30,934	$30,934
110	67	63000	2105	0	Overhead Allocation	$4,000	$24,000	$24,000
110	67	73506	2105	0	Recording Fee	$0	$2,000	$2,000
110	67	85101	2105	0	Consulting Labor	$0	$34,757	$34,757
					Total Expenses	**$14,088**	**$149,866**	**$142,303**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Twain			
					Revenues			
110	67	40607	2115	0	PACE Commercial Sponsor Revenue	$0	$50,000	$50,000
					Total Revenues	**$0**	**$50,000**	**$50,000**
					Expenses			
110	67	65101	2115	0	General Legal Services	$0	$6,000	$6,000
110	67	73506	2115	0	Recording Fee	$0	$2,000	$2,000
110	67	85101	2115	0	Consulting Labor	$0	$10,000	$10,000
					Total Expenses	**$0**	**$18,000**	**$18,000**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Clean Fund			
					Expenses			
110	67	65101	2120	0	General Legal Services	$0	$5,000	$5,000
					Total Expenses	**$0**	**$5,000**	**$5,000**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					California Resiliency Challenge			
					Revenues			
110	67	41606	2225	0	Grant Revenue	$0	$132,064	$132,064
					Total Revenues	**$0**	**$132,064**	**$132,064**
					Expenses			
110	67	60001	2225	0	Salaries & Wages - Fulltime	$1,542	$8,035	$6,493
110	67	61000	2225	0	Fringe Benefits	$513	$3,635	$3,122
110	67	65101	2225	0	General Legal Services	$101	$250	$149
110	67	85101	2225	0	Consulting Labor	$0	$119,127	$119,127
					Total Expenses	**$2,156**	**$131,047**	**$128,891**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					HERO			
					Revenues			
110	67	40603	5000	0	Hero Admin Fees	$37,600	$2,725,000	$2,687,400
					Total Revenues	**$37,600**	**$2,725,000**	**$2,687,400**
					Expenses			
110	67	60001	5000	0	Stwide AB811 Salaries & Wages	$49,869	$326,906	$277,037
110	67	61000	5000	0	Fringe Benefit	$16,048	$182,932	$182,932
110	67	63000	5000	0	Overhead Allocation	$66,667	$400,000	$400,000
110	67	65101	5000	0	GENERAL LEGAL SERVICES	$131,549	$900,000	$888,270
110	67	65505	5000	0	Bank Fee	$0	$48,000	$48,000
110	67	65507	5000	0	Commissioners Per Diem	$0	$2,000	$2,000
110	67	73102	5000	0	Parking Validations	$0	$200	$200
110	67	73107	5000	0	Statewide - Event Support	$0	$500	$500
110	67	73108	5000	0	General Supplies	$0	$300	$300
110	67	73109	5000	0	Computer Supplies	$0	$1,000	$1,000
110	67	73110	5000	0	Computer Software	$0	$2,000	$2,000
110	67	73113	5000	0	NWCC- Membership Dues	$0	$1,500	$1,500
110	67	73114	5000	0	Subscriptions/Publications	$0	$1,000	$1,000
110	67	73115	5000	0	Meeting Support Services	$16	$500	$500
110	67	73116	5000	0	Postage	$86	$2,000	$1,914
110	67	73204	5000	0	Cellular Phone	$134	$1,500	$1,366
110	67	73504	5000	0	Data Processing Support	$1,776	$8,000	$6,224
110	67	73506	5000	0	Recording Fee	$955	$10,000	$9,065

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
110	67	73601	5000	0	Seminar/Conferences	$0	$2,500	$2,500
110	67	73611	5000	0	Travel - Mileage Reimbursement	$0	$500	$500
110	67	73612	5000	0	Travel - Ground Transportatoin	$0	$500	$500
110	67	73613	5000	0	Travel - Airfare	$0	$2,500	$2,500
110	67	73620	5000	0	Lodging	$889	$1,500	$611
110	67	73630	5000	0	Meals	$0	$500	$500
110	67	73640	5000	0	Statewide Other Incidentals	$0	$500	$500
110	67	73650	5000	0	Training	$120	$2,000	$1,880
110	67	73703	5000	0	Supplies/Materials	$0	$1,500	$1,500
110	67	81010	5000	0	Compliance Settlements	$40,280	$200,000	$159,720
110	67	85101	5000	0	CA HERO Direct Exp	$309	$160,000	$159,691
					Total Expenses	**$308,698**	**$2,260,338**	**$2,154,209**

Western Riverside Council of Governments
Budget-to-Actuals - Energy and Environmental Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Streetlights			
					Revenues			
110	67	40615	2026	0	Regional Streetlights Revenue	$36,856	$135,542	$98,686
					Total Revenues	**$36,856**	**$135,542**	**$98,686**
					Expenses			
110	67	60001	2026	0	Salaries	$8,125	$63,779	$55,654
110	67	61000	2026	0	Fringe Benefits	$2,703	$31,032	$28,329
110	67	63000	2026	0	Overhead Allocation	$2,000	$12,000	$10,000
110	67	65101	2026	0	Legal	$135	$750	$615
110	67	65505	2026	0	Streetllights Bank Fees	$0	$508	$508
110	67	73102	2026	0	Parking Validations	$0	$150	$150
110	67	73104	2026	0	Staff Recognition	$500	$0	($500)
110	67	73107	2026	0	Event Support	$0	$1,000	$1,000
110	67	73108	2026	0	Program/Office Supplies	$0	$500	$500
110	67	73114	2026	0	Subscriptions/Publications	$0	$1,600	$1,600
110	67	73115	2026	0	Meeting&Support	$0	$600	$600
110	67	73116	2026	0	Postage	$33	$150	$117
110	67	73204	2026	0	Communications - Cellular Phones	$51	$500	$449
110	67	73601	2026	0	Seminars/Conferences	$0	$1,200	$1,200
110	67	73611	2026	0	Travel - Mileage Reimbursement	$0	$250	$250
110	67	73612	2026	0	Travel-Ground Transportation	$0	$500	$500
110	67	73613	2026	0	Travel - Airfare	$0	$1,000	$1,000
110	67	73620	2026	0	Lodging	$0	$800	$800
110	67	73630	2026	0	Meals	$0	$250	$250
110	67	73650	2026	0	Training	$0	$500	$500
110	67	73703	2026	0	Supplies/Materials	$0	$2,900	$2,900
110	67	85101	2026	0	Consulting Labor	$0	$15,433	$15,433
					Total Expenses	**$13,548**	**$135,402**	**$121,855**

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					TUMF Administration			
					Revenues			
110	65	43001	1148	0	Commerical/Service	$4,492	$62,400	$57,908
110	65	43002	1148	0	Retail	$4,721	$166,400	$161,680
110	65	43003	1148	0	Industrial	$38,365	$332,800	$294,435
110	65	43004	1148	0	Residential/Multi/Single	$94,137	$1,456,000	$1,361,863
110	65	43005	1148	0	Multi-Family	$48,508	$187,200	$138,692
110	65	43027	1148	0	Beaumont TUMF Settlement Revenue	$0	$36,000	$36,000
					Total Revenues	**$190,222**	**$2,240,800**	**$2,050,578**
					Expenses			
110	65	60001	1148	0	Salaries & Wages Fulltime	$46,959	$389,173	$342,215
110	65	61000	1148	0	Fringe Benefits	$15,191	$177,218	$162,027
110	65	63000	1148	0	Overhead Allocation	$133,333	$800,000	$666,667
110	65	65101	1148	0	General Legal Services	$7,981	$75,000	$67,019
110	65	65505	1148	0	Bank Fees	$0	$15,000	$15,000
110	65	73102	1148	0	Parking Validations	$0	$500	$500
110	65	73108	1148	0	General Supplies	$0	$500	$500
110	65	73109	1148	0	Computer Supplies	$0	$500	$500
110	65	73110	1148	0	Computer Software	$8,950	$65,000	$56,050
110	65	73113	1148	0	Membership Dues	$0	$1,500	$1,500
110	65	73114	1148	0	Subscriptions/Publications	$16	$100	$84
110	65	73116	1148	0	POSTAGE	$0	$100	$100
110	65	73117	1148	0	Other Household Expenses	$0	$100	$100
110	65	73120	1148	0	Printing Services	$0	$150	$150
110	65	73204	1148	0	Cellular Phone	$279	$3,000	$2,721

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
110	65	73302	1148	0	Equipment Maintenance	$0	$2,500	$2,500
110	65	73405	1148	0	Insurance - Gen/Busi Liab/Auto	$0	$3,000	$3,000
110	65	73601	1148	0	Seminar/Conferences	$0	$1,500	$1,500
110	65	73611	1148	0	Travel - Mileage Reimbursement	$0	$1,500	$1,500
110	65	73612	1148	0	Travel - Ground Transportation	$0	$250	$250
110	65	73613	1148	0	Travel-AirFare	$0	$750	$750
110	65	73620	1148	0	Lodging	$0	$800	$800
110	65	73630	1148	0	Meals	$0	$1,000	$1,000
110	65	73640	1148	0	Other Incidentals	$0	$500	$500
110	65	85101	1148	0	Outside Consultants	$81,187	$450,000	$368,813
					Total Expenses	**$293,896**	**$1,989,641**	**$1,695,745**

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					TUMF			
					Revenues			
220	65	43001	1148	0	Commercial/Svcs	$107,819	$1,497,600	$1,389,781
220	65	43002	1148	0	Retail	$113,292	$3,993,600	$3,880,308
220	65	43003	1148	0	Industrial	$920,748	$7,987,200	$7,066,452
220	65	43004	1148	0	Residential/Multi/Single	$2,259,283	$34,944,000	$32,684,717
220	65	43005	1148	0	Multi Family	$1,164,186	$4,492,800	$3,328,614
220	65	43027	1148	0	Beaumont TUMF Settlement Revenue	$0	$864,000	$864,000
220	65	49104	1148	0	Citizens Trust Investment Interest	$0	$275,000	$275,000
					Total Revenues	**$4,565,328**	**$54,054,200**	**$49,488,872**
					Expenses			
220	65	65101	1148	3307	Beaumon Legal Srvs-URBAN LOGIC	$287	$287	$0
220	65	65101	1148	3310	General Legal Services	$258,684	$394,595	$135,910
220	65	65101	1148	3311	General Legal Services	$5,118	$5,118	$0
220	65	85160	1148	0	TUMF Project Reimbursement	$0	$25,000,000	$25,000,000
					Total Expenses	**$264,090**	**$25,400,000**	**$25,135,910**

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Grant Writing			
					Expenses			
110	65	85101	1300	0	Consulting Labor	$0	$20,000	$20,000
					Total Expenses	**$0**	**$20,000**	**$20,000**

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Local Transportation Fund			
					Revenues			
210	65	41701	1400	0	LTF Revenue	$1,002,500	$930,000	($72,500)
					Total Revenues	**$1,002,500**	**$930,000**	**($72,500)**
					Expenses			
210	65	60001	1400	0	Salaries & Wages - Fulltime	$28,391	$346,880	$318,489
210	65	61000	1400	0	Fringe Benefits	$9,308	$153,100	$143,792
210	65	63000	1400	0	Overhead Allocation	$30,000	$180,000	$150,000
210	65	65101	1400	0	General Legal Services	$0	$2,500	$2,500
210	65	73102	1400	0	Parking Validations	$0	$500	$500
210	65	73107	1400	0	Event Support	$0	$500	$500
210	65	73108	1400	0	Program/Office Supplies	$0	$500	$500
210	65	73110	1400	0	Computer Software	$0	$2,500	$2,500
210	65	73113	1400	0	Membership Dues	$1,500	$750	($750)
210	65	73116	1400	0	Postage	$0	$500	$500
210	65	73204	1400	0	Communications - Cellular Phones	$0	$100	$100
210	65	73601	1400	0	Seminars/Conferences	$0	$3,500	$3,500
210	65	73611	1400	0	Travel - Mileage Reimbursement	$0	$1,000	$1,000
210	65	73612	1400	0	Travel - Ground Transportation	$0	$1,500	$1,500
210	65	73613	1400	0	Travel - Airfare	$0	$750	$750
210	65	73620	1400	0	Lodging	$0	$2,500	$2,500
210	65	73630	1400	0	Meals	$85	$750	$665
210	65	73703	1400	0	Supplies/Materials	$0	$1,000	$1,000
210	65	85101	1400	0	Consulting Labor	$36,623	$250,000	$213,377
					Total Expenses	**$105,907**	**$948,829**	**$842,922**

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					RIVTAM			
					Revenues			
110	65	42001	2039	0	Other Misc Revenue-RIVTAM	$5,000	$25,000	$20,000
					Total Revenues	**$5,000**	**$25,000**	**$20,000**
					Expenses			
110	65	60001	2039	0	Salaries & Wages - Fulltime	$605	$6,353	$5,748
110	65	61000	2039	0	Fringe Benefits	$183	$3,504	$3,321
110	65	85101	2039	0	Consulting Labor	$0	$15,000	$15,000
					Total Expenses	**$788**	**$24,858**	**$24,070**

Western Riverside Council of Governments
Budget-to-Actuals - Transportation and Planning Programs
As of August 31, 2022

Fund	Department	Account	Project	Location	Description	Actual	FY 23 Budget	Variance
					Regional Early Action Planning (REAP)			
					Revenues			
110	65	41606	2235	0	REAP Revenue	$0	$1,050,000	$1,050,000
					Total Revenues	**$0**	**$1,050,000**	**$1,050,000**
					Expenses			
110	65	60001	2235	0	Salaries & Wages - Fulltime	$10,670	$79,264	$68,594
110	65	61000	2235	0	Fringe Benefits	$3,358	$35,872	$32,514
110	65	63000	2235	0	Overhead Allocation	$11,350	$125,383	$114,033
110	65	65101	2235	6001	General Legal Services	$1,251	$0	($1,251)
110	65	85101	2235	0	Consulting Labor	$27,777	$809,101	$781,324
					Total Expenses	**$54,406**	**$1,049,620**	**$995,214**

Western Riverside Council of Governments
Technical Advisory Committee

Staff Report

Subject: **Approval of Technical Advisory Committee Meeting Schedule for 2023**

Contact: **Chris Gray, Deputy Executive Director, cgray@wrcog.us, (951) 405-6710**

Date: **November 17, 2022**

Requested Action(s):

1. Approve the schedule of Technical Advisory Committee meetings for 2023.

Purpose:

The purpose of this item is to provide and obtain approval of a meeting schedule for 2023.

WRCOG 2022-2027 Strategic Plan Goal:

Goal #4 - Communicate proactively about the role and activities of the Council of Governments.

Background:

Attached is the proposed schedule of 2023 meeting dates for the Technical Advisory Committee. All Technical Advisory Committee meeting dates are proposed for the 3rd Thursday of the month at 9:30 a.m.

Prior Action(s):

None.

Fiscal Impact:

This item is for informational purposes only; therefore there is no fiscal impact.

Attachment(s):

Attachment 1 - WRCOG TAC meeting schedule for 2023

WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS
SCHEDULE OF MEETINGS FOR 2023

WRCOG Standing Committee	Day	Time	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Technical Advisory Committee	3rd Thurs.	9:30 a.m.	19	16	16	20	18	15	**DARK**	17	21	19	16	**DARK**

Western Riverside Council of Governments
Technical Advisory Committee

Staff Report

Subject: **Santa Ana Municipal Separate Storm Sewer System (MS4) Permit Compliance Program Activities Update**

Contact: **Darcy Kuenzi, Government Affairs Officer, Riverside County Flood Control and Water Conservation District, dkuenzi@rivco.org, (951) 955-1688**

Date: **November 17, 2022**

Requested Action(s):

1. Receive and file.

Purpose:

The purpose of this item is to provide a presentation regarding the current status of Regional (MS4) Permit Renewal for the Santa Ana River Watershed.

WRCOG 2022-2027 Strategic Plan Goal:

Goal #5 - Develop projects and programs that improve infrastructure and sustainable development in our subregion.

Background:

The Cities and County of Riverside, as well as the Riverside County Flood Control and Water Conservation District and the Coachella Valley Water District (Permittees), are jointly regulated by National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permits issued by the Santa Ana, Colorado, and San Diego Regional Water Quality Control Boards. These permits, issued pursuant to the federal Clean Water Act, are designed to protect local lakes, rivers, and streams from pollution associated with urban runoff. The NPDES MS4 Permits require Permittees to take action to regulate business and new developments, as well as residential areas and Permittee facilities in order to minimize the potential for pollutants to be mobilized by runoff and conveyed through the storm drain system to local lakes, rivers, and streams. Enhanced programs are required to address waterbodies that may be impaired by pollutants in urban runoff.

In January 2010, the Santa Ana Regional Water Quality Control Board (Regional Board) adopted the National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit (2010 MS4 Permit) for stormwater discharges from areas in unincorporated Riverside County, the Riverside County Flood Control and Water Conservation District (District) and from the Cities of Beaumont, Calimesa, Canyon Lake, Corona, Eastvale, Hemet, Jurupa Valley, Lake Elsinore, Menifee, Moreno Valley, Norco, Perris, Riverside, and San Jacinto. The District is designated as the Principal Permittee under the MS4 Permit and represents the co-permittees to implement area-wide programs required by the MS4 Permit through an Implementation Agreement. The 2010 MS4 Permit expired in January 2015

and was administratively extended by the Regional Board. It will remain in effect until a new permit is adopted by the Santa Ana Water Board.

In late 2018, the Regional Board indicated that the next MS4 Permit will be a regional permit, naming all 60 permittees in Orange, Riverside, and San Bernardino Counties. On December 24, 2021, the Regional Board released a Staff Working Proposal (SWP) of a regional permit to the 60 permittees of San Bernardino County, Riverside County, and Orange County.

The presentation will address:

1. Tri-County MS4 Permit renewal process overview for the Santa Ana River Watershed
2. Significant changes in compliance costs
3. Projected timeline of “Tentative Draft Permit” and next steps

Prior Action(s):
May 19, 2022: The Technical Advisory Committee received and filed.

Fiscal Impact:
This item is for informational purposes only; therefore, there is no fiscal impact.

Attachment(s):
Attachment - Stormwater Permits Program Update

Stormwater Permits Program Update

WRCOG City Manager TAC
November 17, 2022

RIVERSIDE COUNTY
WATERSHED PROTECTION

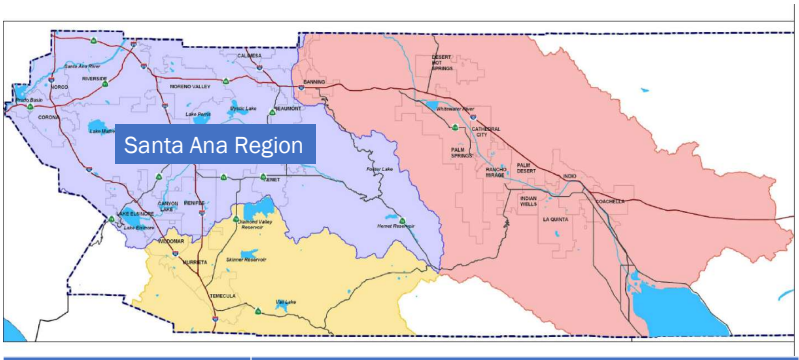
1

Outline

- Municipal Permit Renewal (Santa Ana)
  - New Regulatory Requirements
  - Next Steps
- Q & A

2

Riverside County NPDES Permits



Principal Permittee	Riverside County Flood Control and Water Conservation District (RCFC&WCD)*	
Co-Permittees	1. Beaumont	9. Moreno Valley
	2. Calimesa	10. Murrieta
	3. Canyon Lake	11. Norco
	4. Corona	12. Perris
	5. County of Riverside (County)	13. Riverside
	6. Hemet	14. San Jacinto
	7. Lake Elsinore	15. Wildomar
	8. Menifee	

3

Santa Ana MS4 Permit Renewal Status

- **2022 January - September** — Section-by-Section discussions with the RB (Staff and EO)
- **2022 October 19** — Transmitted Redlined SWP + Additional Rationale Document to RB
- **2022 December 5 - 6** — Meeting scheduled with RB to review Redlined SWP and ARD
- **1st Quarter 2023** — Release of SWP 2.0 for further discussion or Tentative Order for public review + Adoption
- **2023 - 2028** — 5th Term Regional Permit Implementation

4

Proposed SAR Permit: New Requirements

- Total Maximum Daily Loads
  - Compliance through numeric targets instead of current BMP based approach and within 5-10 years
- Watershed Planning & Public Engagement
  - Tri-County Collaboration
  - Creation of comprehensive watershed management plan
- Trash Amendments
  - Full implementation of trash capture devices no later then 12/2/2030

5

Proposed SAR Permit: New Requirements

- Land Development
  - Additional project eligibility and revised BMP sizing requirements
- Construction
  - Fee waiver for public construction activities eliminated
- Municipal Facilities
  - Increased maintenance frequencies; New pesticide application plan and procedures
- Commercial & Industrial Site Inspection
  - Increased inspection & reporting frequencies

6

Proposed SAR Permit: New Requirements

- Public Education
  - Annual surveys
- Staff Training
  - Training for staff and contractors
- Program Management
  - Individual jurisdictional reporting
- Environmental Monitoring
  - Causal assessments

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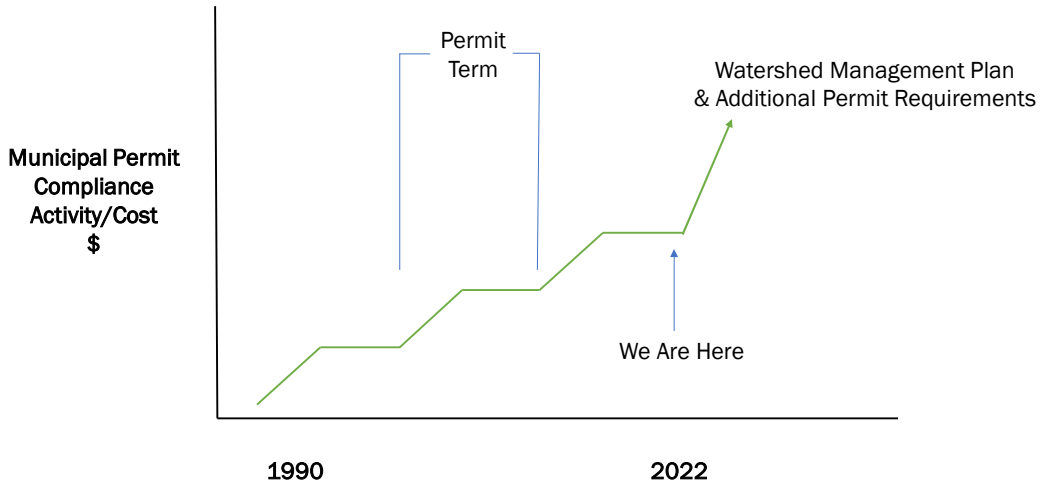
In Summary



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Santa Ana MS4
Proposed Deliverables

Item	Deliverables	Tentative Deadline
1	Permit Adoption,Becomes Effective, Expiration	
2	CBRP Updates or Amendments	60 days from Permit effective date
3	CNRP Updates or Amendments	60 days from Permit effective date
4	Legal Authority Review/Updates	90 days from Permit effective date
5	Reasonable Assurance Analysis	November 15
6	WQMP Database	6 months from Permit effective date
7	Integrated Pest Management Plan	Not Specified (presume 90 days from effective date)
8	WMP NOI	60 days from effective date + 30dly pub rev.
9	Municipal Inspections (additional reqts)	Not Specified (presume 90 days from effective date)
10	WQMP/Technical Guidance Updates	Not Specified (presume 90 days from effective date)
11	PEA (incorporate additional reqts)	Not Specified (presume 90 days from effect date)
12	Planning/LandDev Req Updates	Not Specified (presume 90 days from effect date)
13	Annual Progress Report	November 15
24	Monitoring and Reporting Program (incorporate additional reqts)	November 15
25	Impl Agrmt/Cost Share Renewal	Not Specified (within 12 mo of effect date?)
26	Inter-Agency Agreement Renewals	Not Specified (within 12 mo of effect date?)
27	Qrtly Rpts (sites w/o IGP coverage)	15 days from end of each qrtr of calendar yr
28	MS4 Maps Reviewed/Updated/ Uploaded to SMARTS	Annually (presumably for the AR)
29	Training Program Review/Updates	Annually (presumably for the AR)
30	WMP (final draft)	12 months following NOI approval
31	Provide updated contact info to Sanitation District	Not Specified (presumably for the AR)
32	Treatment BMP Categorization/ Performance Ratings Review & Updates	12 months from Permit effective date
33	Pub Ed general audience survey	60 months from Permit effective date
34	Report of Waste Discharge	6 months before expiration of this Order
35	Achieve Full Trash Capture	December 2nd, 2030
36	Initial imminent threat notice	24 hours of becoming aware
37	Imminent threat report	5 business days after initial notice
38	WQBELs (where related TMDL has an implementation plan)	Consistent with TMDL Implementation Plan
39	TSO Request (where WQBELs are not being achieved)	Within 60 days after becoming aware of non-compliance
40	Structural treatment BMP waiver notice	Within 30 days prior to Permittee issuing a waiver
41	Draft Plans	Within 6 months of becoming aware of an exceedance of water quality standards
42	Causal Assessment Results	Within 60 days of completed assessment
43	Coord,compile,report on items of common interest	Not Specified (presume as needed)
44	Coord public input on items of common interest	Not Specified (presume as needed)

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Santa Ana MS4
Permit Renewal Status

Discussion Topics (15)

Meetings with the RB Staff (12)
(Additional meetings with RB Lawyers)

Redlines+ARD (8 months)

10

Questions?

11

Contacts

Riverside County Flood Control &
Water Conservation District

Rohini Mustafa, PE
Engineering Project Manager
(951)955-1330

Aldo Licitra
Permit Manager
(951)955-0842

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Western Riverside Council of Governments
Technical Advisory Committee

Staff Report

Subject: 2022 Fee Comparison Analysis Update

Contact: Christopher Tzeng, Program Manager, ctzeng@wrcog.us, (951) 405-6711

Date: November 17, 2022

Requested Action(s):

1. Receive and file.

Purpose:

The purpose of this item is to provide an introduction to the 2022 Fee Comparison Analysis Update.

WRCOG 2022-2027 Strategic Plan Goal:

Goal #5 - Develop projects and programs that improve infrastructure and sustainable development in our subregion.

Background:

In 2016 WRCOG conducted a study to analyze fees / exactions required and collected by jurisdictions / agencies in and immediately adjacent to the WRCOG subregion. The study was presented to various WRCOG committees and subsequent presentations were completed to various City Councils in the subregion. Based on the feedback provided and the requests made for data and presentations, WRCOG indicated the study would be updated on a consistent basis to enable jurisdictions the value of understanding the impact of fees on development and the regional economy. An updated analysis utilizing 2018 data was completed at the beginning of 2019. An update to the analysis utilizing data available in 2022 commenced in May 2022.

Overview

The update to the Fee Comparison Analysis is following the same methodology as in 2016 and 2018, and is updating the fee structures of the various fees. The Analysis provides WRCOG jurisdictions with comprehensive fee comparisons. The study also discusses the effect of other development costs, such as the cost of land and interest rates, within the overall development framework. Another key element of this study is an analysis documenting the economic benefits of transportation investment. The draft Fee Comparison Analysis is being presented to this Committee for review and input and to verify the data utilized is the latest and greatest. The update is expected to be finalized in January 2023.

Fee Comparison Methodology

Jurisdictions for Fee Comparison: In addition to the jurisdictions within the WRCOG subregion, the study

analyzed sample jurisdictions within the Coachella Valley, San Bernardino County, and the northern portion of San Diego County. The inclusion of additional neighboring / peer communities allows for consideration of relative fee levels between the WRCOG subregion and jurisdictions in surrounding areas that may compete for new development.

Land Uses and Development Prototypes

Fee comparisons have been conducted for five key land use categories - "development prototypes," including single family residential, multi-family residential, office, retail, and industrial developments. Since every development project is different, and because fee structures are often complex and derived based on different development characteristics, it is helpful to have "development prototypes" for each of the land uses studied. The use of consistent development prototypes increases the extent to which the fee comparison is an "apples-to-apples" comparison.

Development prototypical projects that will be analyzed are as follows:

- Single-family residential development: 50-unit residential subdivision; 2,700 square foot homes, and 7,200 square foot lots
- Multi-family residential development: 200-unit market-rate, 260,000 gross square foot apartment buildings
- Retail development: 10,000-gross square foot retail buildings
- Office development: 20,000-gross square foot, Class A or Class B office buildings
- Industrial development: 265,000 gross square foot high-cube industrial buildings

Fee Categories

The primary focus of the analysis is on the array of fees charged on new development to pay for a range of infrastructure / capital facilities. The major categories of fees include 1) school development impact fees; 2) water / sewer connection / capacity fees; 3) city capital facilities fees; 4) regional transportation fees (TUMF in Western Riverside County); and 5) other capital facilities / infrastructure / mitigation fees charged by other regional / subregional agencies. These fees typically represent 80% to 90% of the overall development fees on new development. Additional processing, permitting, and entitlement fees are not included in this analysis. The analysis focuses on development impact fees, as these fees are much larger than planning / processing fees for comparison purposes.

Service Providers and Development Prototypes

The system of infrastructure and capital facilities fees in most California jurisdictions is complicated by multiple service providers and, often, differential fees in different parts of individual jurisdictions. Multiple entities charge infrastructure / capital facilities fees – e.g., city, water districts, school districts, and regional agencies. In addition, individual jurisdictions are often served by different service providers (e.g., more than one water district or school district) with different subareas within a jurisdiction, sometimes paying different fees for water facilities and school facilities. In addition, some city fees, such as storm drain fees, are sometimes differentiated by jurisdictional subareas. To maintain consistency, the service providers utilized in the previous analyses will be utilized. Individual service providers were selected where multiple service providers were present, and an individual subarea was selected where different fees were charged by subarea.

Next Steps

The goal at this time is to provide WRCOG member agencies the opportunity to verify their fee collection structure. WRCOG has provided a similar report to the Planning Directors Committee and Public Works Committee at their respective October 2022 meetings. WRCOG has received comments from agencies and are making any necessary revisions to the fee collection structure. A draft report will be completed by the beginning of December 2022 and will be disseminated to the member agencies for review and input. WRCOG will bring the draft report to the Committee at the appropriate time. It is anticipated that a final version of this analysis will be completed in early 2023.

Prior Action(s):
October 13, 2022: The Public Works Committee received and filed.

October 13, 2022: The Planning Directors Committee received and filed.

Fiscal Impact:
Transportation and Planning Department activities are included in the Agency's adopted Fiscal Year 2022/2023 Budget under the Transportation Department. This analysis is covered under TUMF (Fund 110) to provide additional information on development fees charged to support the TUMF Nexus Study.

Attachment(s):
None.

Western Riverside Council of Governments
Technical Advisory Committee

Staff Report

Subject: **Western Riverside County Energy Resilience Plan**

Contact: **Daniel Soltero, Program Manager, dsoltero@wrcog.us, (951) 405-6738**

Date: **November 17, 2022**

Requested Action(s):

1. Recommend the Executive Committee approve the final version of the Western Riverside County Energy Resilience Plan.
2. Recommend the Executive Committee direct staff to pursue funding opportunities to advance the identified projects further along in the design process.

Purpose:

The purpose of this item is to present the draft Western Riverside County Energy Resilience Plan.

WRCOG 2022-2027 Strategic Plan Goal:

Goal #5 - Develop projects and programs that improve infrastructure and sustainable development in our subregion.

Background:

In November 2019, the Bay Area Council announced the California Resilience Challenge (CRC), a statewide effort led by businesses and a diverse range of partners that provides grants for local governments to build climate resiliency and to support a shared vision for a resilient California in the face of increasing climate threats.

In April 2020, the Bay Area Council, through the CRC, awarded WRCOG a $200,000 grant to develop the Plan to build resiliency against power shutoffs and/or power issues at subregional critical facilities by developing a blueprint for energy resiliency technologies, projects, and strategies for member agencies.

Draft Western Riverside County Energy Resilience Plan

Western Riverside County is known for its warm, dry Mediterranean climate. Eleven of WRCOG's member jurisdictions are located at the base of mountain areas, including the Santa Ana Mountains in the Cleveland National Forest (home to the "Holy Fire" in 2018). In recent years, millions of California power customers have gone without power due to Public Safety Power Shutoffs (PSPS) events, which have been standard practice for many years but not to the scale experienced recently. Additionally, extreme heat days, wildfires, and flooding are all predicted to increase further in the subregion due to climate change. These climate-related challenges will be exacerbated by large population growth in the region, increasing energy demand and further stressing the energy grid.

WRCOG has developed a Western Riverside County Energy Resilience Plan (Plan) in response to increasing power interruptions resulting from strains and stressors such as wildfires, extreme heat events, and PSPS. This Plan is intended to guide decision-making related to the identification of and investment into critical facilities and other community assets. The Plan achieves this in two stages: 1) Identification and Prioritization of Critical Facilities; and 2) Evaluation of Design and Implementation Options for Energy Resilience Solutions. Attached to this Staff Report is a draft Plan, which is being refined and will be finalized by the time it is presented to the Executive Committee in December 2022.

For purposes of this Plan, energy resilience is defined as the ability of energy systems to prepare for and adapt to changing conditions, and to withstand and recover rapidly from disruptions. To make an energy system resilient it requires an understanding of what can go wrong, what the likelihood of it going wrong is, and how to mitigate the likelihood of the event from occurring and the consequences from the event. It is also important to note that energy resilience strategies have already been implemented by governments, schools, and community-based nonprofits, and typically involve solar photovoltaic (PV) systems and battery energy storage systems (BESS). Several studies have been completed that address ways to link multiple facilities into a microgrid, which is a group of interconnected, energy-consuming devices and equipment (i.e., homes, businesses, or industrial facilities) and distributed energy resources (i.e., solar PV system, BESS, wind turbine, etc.) within clearly defined electrical boundaries that act as a single controllable entity with respect to the utility grid. These microgrids generally operate while connected to the utility grid but, thanks to control capabilities (smart controls), these microgrid systems can disconnect from the conventional utility grid and operate autonomously to meet anticipated or potential utility outages, essentially creating an "island" with continuous power supply.

Early on in the development of the Plan, staff conducted outreach with member agency staff from Public Works Departments and facility managers to identify critical facilities in member agency jurisdictions that they would deem appropriate for resilience upgrades. Member agency staff identified several types of facilities, including water system infrastructure, fire stations, emergency operations centers, and community centers, as critical facilities.

Once having a list of facilities, staff embarked to understand how location, demographics, and socioeconomic status contribute to climate change vulnerability, as knowing which areas have more vulnerable populations and hazards helps decision-makers prioritize where and how to allocate resources when wildfires, extreme heat events, and other climate-related hazards occur. This stage of the Plan outlines four factors: 1) social vulnerability / community value, 2) operational needs, 3) physical hazard sensitivity, and 4) existing infrastructure, in the form of a matrix, to be evaluated in order to identify priority facilities in need of resilience upgrades and investment.

Overall, there are many social, economic, and environmental factors that influence community and individual vulnerability to climate impacts and their ability to adapt to climate change. The Center for Disease Control's Social Vulnerability Index (SVI) score, along with the matrix prioritization, was used to identify which facilities serve residents with the greatest vulnerability to climate hazards. The social vulnerabilities factored into this analysis include socioeconomic status, household composition and disability, minority status and language, and housing and transportation. The communities with the highest overall social vulnerability scores include:

- City of Banning (two facilities)

- City of Beaumont (two facilities)
- City of Jurupa Valley (four facilities)
- City of Lake Elsinore (three facilities)
- City of Moreno Valley (three facilities)

The natural and climate hazards for Western Riverside County were identified using three resources: Cal-Adapt, Resilient IE, and member jurisdiction staff expertise. Based on these sources, the following climate hazards were identified as the most impactful to the facilities and population served: extreme temperature, flooding, wildfire, human health hazards, and drought. The hazard sensitivity evaluation includes considering the location of the facility and that location's sensitivity to a particular hazard and the likelihood of a hazard to disrupt energy supply to the facility.

Existing infrastructure and operational needs of each facility were also analyzed as part of the prioritization method. Operational needs were reviewed to determine the feasibility for the facility to continue to provide services during an electric grid disruption or other emergency situation. Facility features for each site were ranked on a three-point scale to identify equipment and electric loads that support mission-critical services by ranking them as "uninterruptable," "essential," and "non-essential." Additionally, existing infrastructure was reviewed to address the physical attributes of the facility that are related to providing continuous energy supply or supporting the needs that are reliant on electricity such as lighting, heating and cooling, refrigeration of medicines, or telecommunications. This criteria includes analysis of fundamental issues such as the age of the building, the age and condition of the energy equipment, availability of backup power generation, and the overall capacity of the electricity system.

With all the prior information and data, an evaluation matrix was developed to review the characteristics of the various critical facilities identified by WRCOG member agencies. The purpose of the matrix is to provide an objective method to integrate a broad range of important facility factors and characteristics that impact the overall resilience of the facility as well as the broader community. A scoring system was developed to place each facility on 100-point scale, with higher scoring facilities seen has having the greatest need for intervention to enhance its resilience. Different weighting factors were attributed to each aspect of the facility that was evaluated ranging from its impact on community value, the operational characteristics such as providing shelter or a place of assembly, the potential sensitivity of a facility to nearby hazards, and the services or resources provided relative to the anticipated community needs during a disruption in the energy system. The weighting used to reflect the conditions in Western Riverside County could be adjusted if the matrix were to be used in another location with different threats, risks, and vulnerabilities and community composition.

Once the matrix was developed, staff coordinated a stakeholder meeting with the Plan's Advisory Group, consisting of representatives from various member agencies, to receive feedback and confirm the three sites for the second stage of the Plan. Based on discussion with WRCOG member agencies, several factors were weighted more highly, such as security, ability to maintain medical care, and the ability to meet the needs of the most vulnerable populations and community. Using this method and integrating the Advisory Group's feedback and discussion, staff identified the City of Beaumont's Wastewater Treatment Plant, the City of Menifee's Kay Ceniceros Senior Center, and the City of Jurupa Valley's Fire Station 16. In December 2021, staff initiated data requests to the case study facility managers and shortly thereafter received a notice from the City of Beaumont that it was opting-out of the Energy Resilience Plan since it had already completed a similar resilience study at its wastewater treatment plant. As such, staff shifted its focus to the City of Banning's Wastewater Reclamation Plant.

With the critical facilities identified and prioritized, the framework for designing energy resilience strategies focuses on developing a technical solution. This stage determines what hazards to mitigate or protect against, what level of reliability and resilience to design to, what technologies and design elements could be part of the solution, and what resources can be mapped to the selected technologies to help with implementation. First, one must identify the resilience requirements for a given facility to arrive at a “desired end-state” that we can aim for when selecting design solutions. Next, analyze the capabilities of a facility to prevent, mitigate, and recover from a disruption event, which is typically informed by reviewing existing infrastructure. If the capabilities fall short of the requirements, then a resilience gap is identified; the essential goal of this Plan is to fill those gaps by selecting and implementing energy resilience strategies. Each of these factors, along with possible resilience interventions, are discussed in this Plan in the form of case studies, which outline the decision-making framework used to identify the facilities located in the Cities of Banning, Jurupa Valley, and Menifee, and the ways in which they can become more resilient to future utility power interruptions.

The case study at the City of Menifee's Kay Ceniceros Senior Center identified that flooding, human health, and extreme temperatures as the highest threats to the area. The microgrid simulator used for this effort identified four potential scenarios with different system architecture, or combination or energy resources to sustain the critical electrical loads summarized as 70% of existing load. The baseline scenario proposes installing a 62 kilowatt (kW) photovoltaic (PV) system, a 36 kW diesel generator, and a 85 kilowatt-hour (kWh) / 185 kW battery energy storage system (BESS). This combination of onsite power generation and storage will sustain critical loads through the typical outage at this facility which occurs 1.2 times per year and lasts 2.5 hours.

The case study at the City of Banning's Wastewater Reclamation Plant identified flooding, wildfire, earthquakes and landslides, and human health hazards from vulnerable populations as the highest threats in the area. The baseline scenario proposes keeping the diesel generators and installing a 123 kW PV system and a 85 kWh / 185 kW BESS. This combination of onsite power generation and storage will sustain 100% of the facility's electrical load through the typical outage at this facility which occurs three times per year and lasts 4.5 hours.

The case studies at the City of Jurupa Valley's Fire Stations 16 & 17 identified similar energy resilience strategies, including installation of PV systems and BESS, and retaining existing diesel or natural gas backup generators.

This Plan also recognizes that water and wastewater systems are important elements of resilience, but water systems were not a focus of AECOM's scope of work. Instead, UCR CE-CERT was hired to conduct a resilience analysis of water systems in the WRCOG subregion. Having prior experience with WMWD, specifically for energy efficiency upgrades and strategies, as well as microgrid implementation experience, UCR was a great candidate to assist staff with a resilience analysis of water systems. The analysis is currently being finalized and will be included in the final version of the Plan.

Energy resiliency projects often require a combination of funding and financing strategies. As such, this Plan also includes a chapter summarizing available funding and financing strategies that support the electrification of and resilience planning for critical facilities, with an emphasis on inclusion of energy storage for emergency response. The chapter would also include key consideration for the implementation and governance, including an understanding that the agencies that own and/or operate the facility are likely to be the primary implementers of energy measures. Other important partners

include the local utility, such as Southern California Edison or the local municipal utilities that could provide technical expertise as it relates to energy systems, as well as community-based organizations that could provide expertise from a public input standpoint.

WRCOG staff have been tracking various funding opportunities to plan for potential next steps which can include conducting microgrid concept design feasibility studies on the next highest priority sites in the matrix, or to do more design work on the existing case studies to reach a more advanced design specification and get closer to implementation. For example, staff are currently tracking the Governor's Office of Planning & Research Integrated Climate Adaptation and Resilience Planning (ICARP) grants, which provide funding to help fill local, regional, and tribal adaptation planning and resilience needs, provide resources, and support the development of a pipeline of climate resilient projects. The ICARP Adaptation Planning Grant could assist with further analyses for facilities that were identified as priority sites in the matrix to complete a microgrid concept design, or to advance the existing concept designs from the four case studies to a more refined design stage.

Staff have been coordinating with representatives from the cities involved in this Plan to discuss the potential to pursue available funding to conduct more additional case studies, or refine the existing case studies to a more advanced design stage. To date, staff has met with representatives from the Cities of Corona, Menifee, Murrieta, Riverside, and Wildomar, and has received positive feedback and interest on participating with WRCOG on future microgrid feasibility studies and concept design on their critical facilities.

This item was also discussed at the November 9, 2022, Administration & Finance Committee to seek the same recommendations and requested actions.

Prior Action(s):
October 13, 2022: The Public Works Committee received and filed.

October 12, 2022: The Administration & Finance Committee received and filed.

October 3, 2022: The Executive Committee approved Amendment No. 1 to the Professional Services Agreement with AECOM authorizing an increase to the contract amount and extra work related to the Western Riverside County Energy Resilience Plan.

September 14, 2022: The Administration & Finance Committee recommended that the Executive Committee approve Amendment No. 1 to the Professional Services Agreement with AECOM authorizing an increase to the contract amount and extra work related to the Western Riverside County Energy Resilience Plan.

Fiscal Impact:
All activities as part of the Western Riverside County Energy Resilience Plan are included in the approved budget for the Energy & Environment Department as part of General Fund expenses (Fund 110). Expenses incurred by WRCOG are being reimbursed by the California Resilience Challenge grant.

Attachment(s):
Attachment 1 - Draft Western Riverside County Energy Resilience Plan

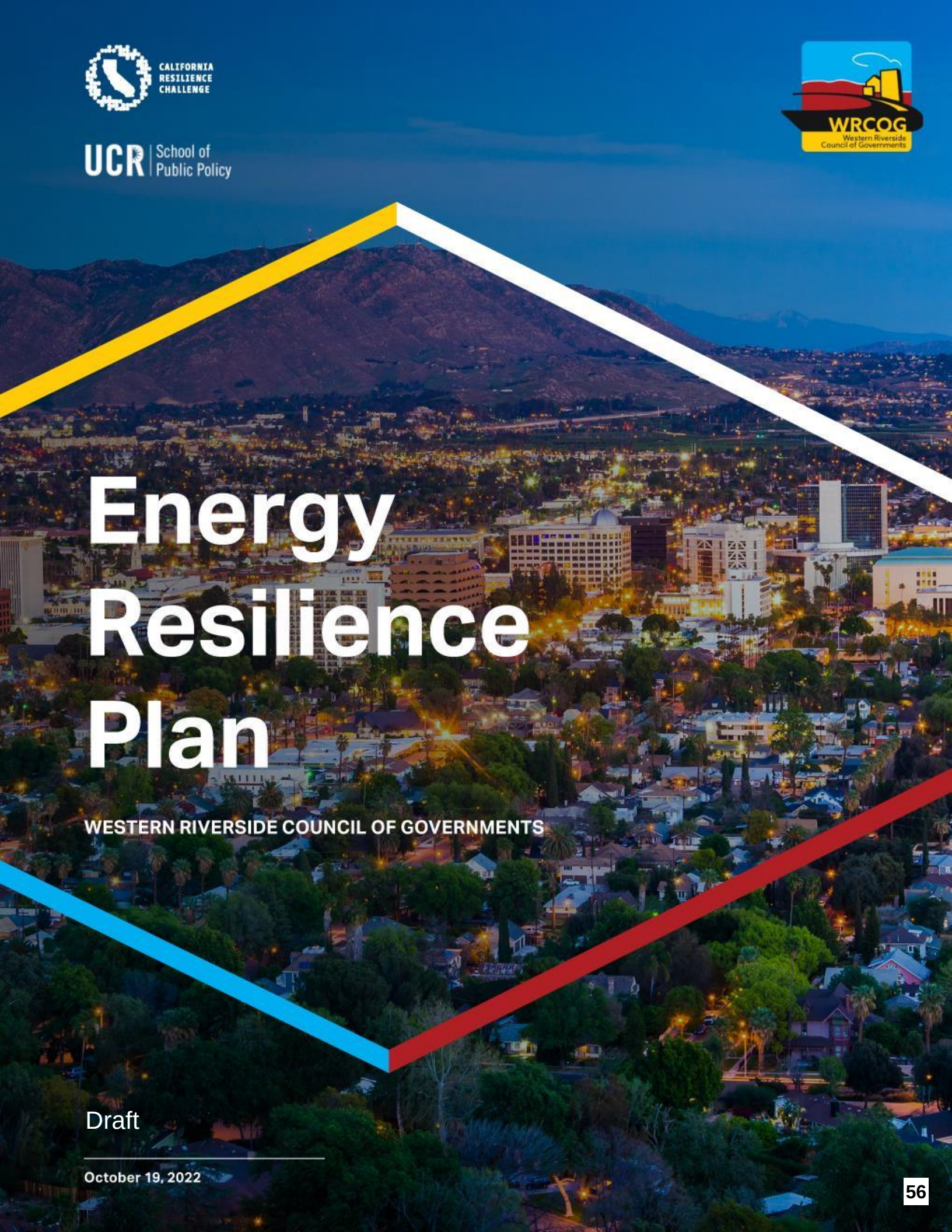
Attachment

Draft Western Riverside County Energy Resilience Plan

CALIFORNIA RESILIENCE CHALLENGE

UCR | School of Public Policy

WRCOG Western Riverside Council of Governments



Energy Resilience Plan

WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS

Draft

October 19, 2022

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ACKNOWLEDGEMENTS

To be completed in the Final Draft.

ACRONYMS AND ABBREVIATIONS

To be completed in the Final Draft.

EXECUTIVE SUMMARY

To be completed in the Final Draft.

1. INTRODUCTION

Western Riverside Council of Governments (WRCOG) represents the collective voice of eighteen member jurisdictions. Western Riverside County is known for its warm, dry Mediterranean climate. Eleven of WRCOG's member jurisdictions are located at the base of mountain areas, including the Santa Ana Mountains in the Cleveland National Forest (home to the "Holy Fire" in 2018). In recent years, millions of California power customers have gone without power due to Public Safety Power Shutoffs (PSPS) events, which have been standard practice for many years but not to the current scale until recently. Additionally, extreme heat days, wildfires, and flooding are all predicted to increase further in the subregion due to climate change. These climate-related challenges will be exacerbated by large population growth in the region, increasing energy demand and further stressing the energy grid.

WRCOG has developed this Energy Resilience Plan (Plan) as a response to increasing power interruptions resulting from strains and stressors such as wildfires, extreme heat events, and PSPS. As the Plan is implemented, it will allow WRCOG and its member agencies to be better prepared in coming years for climate change impacts. Building on the previous initiatives **CAPtivate** and **Resilient IE**, the Plan provides a framework for decision making to develop targeted and prioritized energy resilience projects.

The ability of each jurisdiction to locally respond to climate-related disruptions depends heavily on the dependability of energy and power supply at critical facilities. This Plan contributes to improving resilience in the region by developing a blueprint for facility energy resilience assessment, technologies, projects, and applications for WRCOG's member jurisdictions to be able to respond to environmental events when the need arises.

The Plan has led with a stakeholder-first approach to identifying the energy resilience needs of the subregion, working with each member jurisdiction to identify critical facilities and critical loads, prioritize facilities based on a multi-criteria methodology, and develop strategies to maintain power supply during grid interruptions from environmental or PSPS events.

1.1. Why Energy Resilience?

Energy Resilience, like energy supply more generally, is a means to an end. When energy supply for a community is reliable and affordable, it is transformative, leading to greater prosperity and greater quality of life for all. Energy infrastructure has become so engrained in the daily necessities of life that it has become taken for granted in many communities. It is only in recent years, through an uptick in energy disruptions caused by unprecedented environmental hazards and natural disasters, that communities have begun recognizing just how fragile this critical infrastructure can be.

This recognition has driven some communities, and WRCOG in particular, to action. As an agency charged with facilitating collective action on important issues that affect its members, WRCOG has developed this Energy Resilience Plan as a means to an end: a means to improve the social and economic resilience of the Western Riverside community through acting on the fragile yet critical infrastructure that the community relies on, energy.

This translates to a few goals that were established for this Plan early in the development process. The primary goals established by WRCOG and its member jurisdictions are to create an Energy Resilience Plan that yields:

- **Consistent access** to electricity for all critical public safety community facilities;
- Fundamental **health and safety services** at critical public and private facilities for all members of the community; and
- **Replicable** examples of how energy resilience can be implemented at prototypical locations.

These established goals underpin WRCOG's Energy Resilience Plan, guiding the development process and ensuring the resultant Plan best serves the needs of the community.

1.2. WRCOG Context

WRCOG is a joint powers authority whose purpose is to unify Western Riverside County so that it can speak with a collective voice on important issues that affect its members. Member jurisdictions include eighteen cities in Western Riverside County, the County of Riverside, Morongo Band of Mission Indians, and the Eastern and Western Municipal Water Districts. WRCOG examines a range of regional matters critical to Western Riverside County's future. In April 2020, the Bay Area Council awarded WRCOG a grant to develop this Energy Resilience Plan as part of the California Resilience Challenge Committee.

WRCOG has been a leader in promoting energy efficiency, sustainability, and resilience in Western Riverside County. It has numerous programs to assist its members in enhancing their sustainability efforts including:

- **Western Riverside Energy Partnership (WREP)**: local government partnership between Southern California Edison (SCE), Southern California Gas Company (SoCalGas), and fourteen jurisdictions in the WRCOG subregion, designed to achieve energy savings, reduce utility bills, and enhance the level of comfort in municipal, commercial, and residential buildings. WREP promotes energy efficiency by increasing community awareness and participation in energy efficiency, demand response and self-generation programs.
- **Resilient IE**: suite of resources to assist with local resilience planning and adaptation to climate hazards. Resilient IR resources include vulnerability assessments and adaptation strategies, hazard

and evacuation maps, Climate Resilient Guidebook, and Resilient IE toolkit/template Resilient Element.

- **Clean Cities Coalition**: a program designed to reduce petroleum use in the transportation sector through the integration of advanced alternative technologies including zero-emission vehicles (ZEV) and improve air quality in Western Riverside County.

1.3. Climate Change

Climate is the long-term behavior of the atmosphere – typically represented as averages – for a given time of year. This includes average annual temperature, snowpack, or rainfall. Human emissions of carbon dioxide and other greenhouse gas emissions (greenhouse gases) are important drivers of global climate change, and recent changes across the climate system are unprecedented. Greenhouse gases trap heat in the atmosphere, resulting in warming over time. This atmospheric warming leads to other changes in the earth systems, including changing patterns of rainfall and snow, melting of glaciers and ice, and warming of oceans. Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes include heatwaves, heavy precipitation, droughts, and hurricanes.[1]

While climate projections cannot predict what will happen at a certain date in the future, projections can provide cities with information about what to expect from the climate in the future. For example, climate projections can estimate how much warmer the temperature will be in summer or how many more extreme weather events are likely to occur in the future. Climate projections, however, cannot forecast with precision when those events will occur.

In short, climate change is expected to make many natural hazards more frequent and more severe, which exacerbates the potential hazard sensitivity of critical infrastructure and assets and vulnerable populations.

1.4. Energy Resilience Definition and Context

Resilience can be defined as "**the ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances**."[2]

Energy resilience, meanwhile, has been defined as "**the ability of energy systems to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions**."[3]

To make an energy system resilient requires an understanding of what can go wrong, what is the likelihood of it going wrong, and how to mitigate the likelihood of a disruptive event from happening or the impact of the event when it does happen. In other words, resilience is about the ability to mitigate risks, as defined[4] in Figure 1.1.

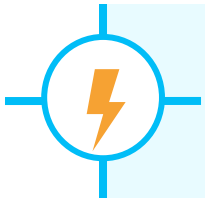
---

[1] Intergovernmental Panel on Climate Change. (2021). Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.

[2] Center for Climate and Energy Solution

[3] Presidential Policy Directive -- Critical Infrastructure Security and Resilience

[4] Department of Homeland Security's Risk Assessment Methodology



RISK = THREAT x VULNERABLITY x CONSEQUENCES

THREAT – potential issue that could have negative impacts

VULNERABLITY – likelihood of being impacted by threat

CONSEQUENCES – effects and cost of being impacted by a threat

Figure 1.1: Definition of Risk for Energy Systems

To provide context for this definition of energy resilience and how energy infrastructure changes might be applied in the WRCOG community, a literature review was conducted at the start of the planning process. Key findings from the literature review are discussed below.

Resilience measures (energy efficiency, load management, solar photovoltaics, battery storage) have been implemented at facilities owned by local governments, school districts, and community-based non-profits. Most of the examples are of solar plus storage serving individual facilities. Several studies have been completed that address ways to link multiple facilities into a larger microgrid, but regulatory constraints and associated costs have been barriers to implementation. Good candidates for multi-facility microgrids are locations with large parcels owned by a single entity, such as civic centers, schools, or corporate campuses. Appendix H includes references to a few case studies that highlight its applicability.

Electric resilience concerns across California include:

- Localized equipment failure - transformers, switchgear
- Overheating of transmission lines – heat-related impeded electricity flow
- Equipment failure or transmission loss due to wildfire
- Increasing electricity demand – building decarbonization, electric vehicles
- Rolling blackouts due to insufficient capacity (2- to 6-hour disruptions)
- Public Safety Power Shut Offs (up to 48-hour disruptions)
- Seismic, fire, or other extreme event (72 hours or more)

The types of facilities most often discussed for resiliency upgrades include the following. There are pros and cons associated with each type of facility discussed including:

- Local Schools and Community Colleges
- Civic Center Public Buildings – City Hall, Police Station
- Other Public Buildings – Library, Community Center, Recreation Center
- Private Community Assets – YMCA/YWCA, Religious Organization Facilities, Boys and Girls Club

Finally, the types of resiliency interventions explored by other communities throughout California most often include:

- Energy efficiency
- Solar photovoltaics plus battery storage
- Microgrids
- Community resilience hubs

All of these angles for energy resilience helped provide context and shaped the focus for how this Plan was developed. In particular, with respect to how this Plan may be useful as a guide outside of WRCOG, these overarching topics provide a frame of reference for how challenges that this Plan attempts to address are being grappled with much more broadly than just in Western Riverside County.

1.5. What Does This Plan Do?

WRCOG prepared this Plan to support WRCOG members and other jurisdictions in preparing for and responding to power interruptions resulting from events such as wildfires, extreme heat, or PSPS. The Plan provides information for future decision-making regarding how to prioritize public facilities for implementation of energy efficiency upgrades, local energy generation, microgrids, and energy storage systems, to increase facility and community resilience.

This plan is also intended to serve as a handbook to guide decision-making related to the identification of and investment into critical facilities and other community assets. The plan outlines four factors, social vulnerability/community value, operational needs, physical hazard sensitivity, and existing infrastructure, in the form of a matrix, to be evaluated in order to identify priority facilities in need of resilience upgrades and investment. Each of these factors along with possible resilience interventions are discussed in this plan in the form of case studies of facilities located in three WRCOG member cities. The case studies outline the decision-making framework used to identify the facilities and the ways in which they can become more resilient to future utility power interruptions.

2. FRAMEWORK FOR IDENTIFYING AND PRIORITIZING CRITICAL FACILITIES

The WRCOG Energy Resilience Plan is intended to guide decision-making related to the identification of and investment into critical facilities and other community assets. The Plan achieves this in two stages:

1. Identification and Prioritization of Critical Facilities
2. Evaluation of Design and Implementation Options for Energy Resilience Solutions

The framework for identifying and prioritizing critical facilities outlines four factors to be evaluated in order to identify priority facilities and rank their needs for resilience upgrades and investment: social vulnerability/community value, operational needs, physical hazard sensitivity, and existing infrastructure.

2.1. Identifying Critical Facilities

This Plan focuses on critical facilities because of the everyday utility and benefit that their operations provide to the community as well as their importance for disaster response.

Additional "essential facilities" can include:

- Transportation infrastructure
- Water infrastructure
- Water and sewer mainlines
- Substations
- Electric generation and distribution infrastructure
- Telecommunications infrastructure
- Aviation control towers
- Grocery stores
- Government facilities

FEMA defines critical facilities as:

"Facilities or infrastructure that are necessary for the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals."[4]

In the development of this Plan, WRCOG member jurisdiction Public Work departments and facilities managers were engaged to determine which municipal facilities best fit the Federal Emergency Management Agency (FEMA) description of critical facilities and met vital needs for communities during hazard events to maintain health and safety. WRCOG members identified several types of facilities including water system infrastructure, fires stations, emergency operations centers, and community centers as critical facilities deemed applicable for resilience upgrades. Figure 2.1 shows the type of critical facilities identified throughout WRCOG based on responses from nine member agencies.

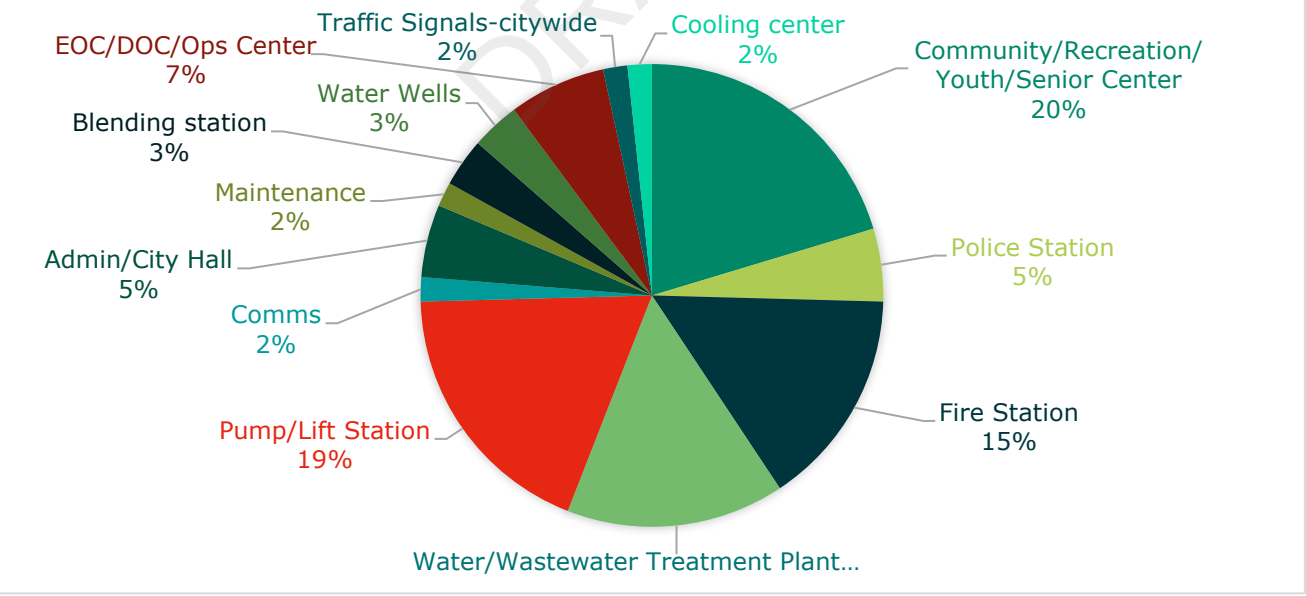


Figure 2.1: Critical facility typology distribution across WRCOG

[5] FEMA. (2020). Accessed from: https://www.fema.gov/glossary/critical-facility#:~:text=Typical%20critical%20facilities%20include%20hospitals,alternatives%20and%20floodplain%20management%20plans.

In addition to determining the type of facility to focus on for resiliency interventions, this plan provides a framework to identify which critical facilities should be prioritized for investment based on the following four factors discussed further below: community value, operational needs, physical hazard sensitivity, and existing infrastructure.

2.2. Identifying Social Vulnerabilities facing Western Riverside County

2.2.1 Understanding Community Value (Social Vulnerability)

Understanding how place, demographics, and socioeconomic status contribute to climate change vulnerability helps identify avenues for policy and/or programmatic interventions. Knowing which areas of WRCOG's jurisdiction have more vulnerable residents helps decision-makers prioritize where and how to allocate resources when wildfires, extreme heat events, and other climate-related hazards occur.

Overall, there are many social, economic, and environmental factors that influence community and individual vulnerability to climate impacts and their ability to adapt to climate change. For example, outdoor workers are at greater risk of heat stroke and related illnesses from extreme heat events, lower income residents have fewer resources to repair flood or fire damage and may live in poor housing conditions, and people with limited English language proficiency are less likely to access programs that could help during or after an extreme weather event. Moreover, individual biological factors, such as age or health status, can amplify a population's sensitivity to climate change.

Communities of color are often burdened with multiple, overlapping factors that cumulatively impact their ability to adapt or respond to climate change. Structural and institutional racism in economic, government, and social systems has resulted and continues to result in the disproportionate distribution of climate burdens and exposures, such as a low concentration of tree canopy coverage and a high concentration of impervious surfaces. In addition, a growing body of social epidemiological research has found that repeated experiences of racism become biologically embedded in the body and results in "weathering" or premature physiological deterioration, which in turn increases a population's sensitivity to climate hazards.

2.2.2 Social Vulnerability Findings in WRCOG

The Social Vulnerability Index (SVI) score and matrix prioritization identified which facilities serve residents with the greatest vulnerability to climate hazards. The social vulnerabilities identified in Western Riverside County include:

Socioeconomic Status: This category measures the proportion of the population who is below poverty, unemployed, has no high school diploma, and income levels. The most straightforward way socioeconomic status affects disaster is related to income or assets. Households with lower incomes may not have the funds to prepare their home for climate change hazards, or the ability to recover if their home gets damaged. Lower income and unemployed populations are also less likely to have access to healthcare, leading to a higher incidence of chronic conditions (such as heart and pulmonary conditions) which put them more at risk of health effects from heat and wildfire.

Figure 2.2 depicts the spread of socioeconomic vulnerability within Western Riverside County. The communities of Moreno Valley, Banning, Jurupa Valley, and Lake Elsinore have high scores in this sector.

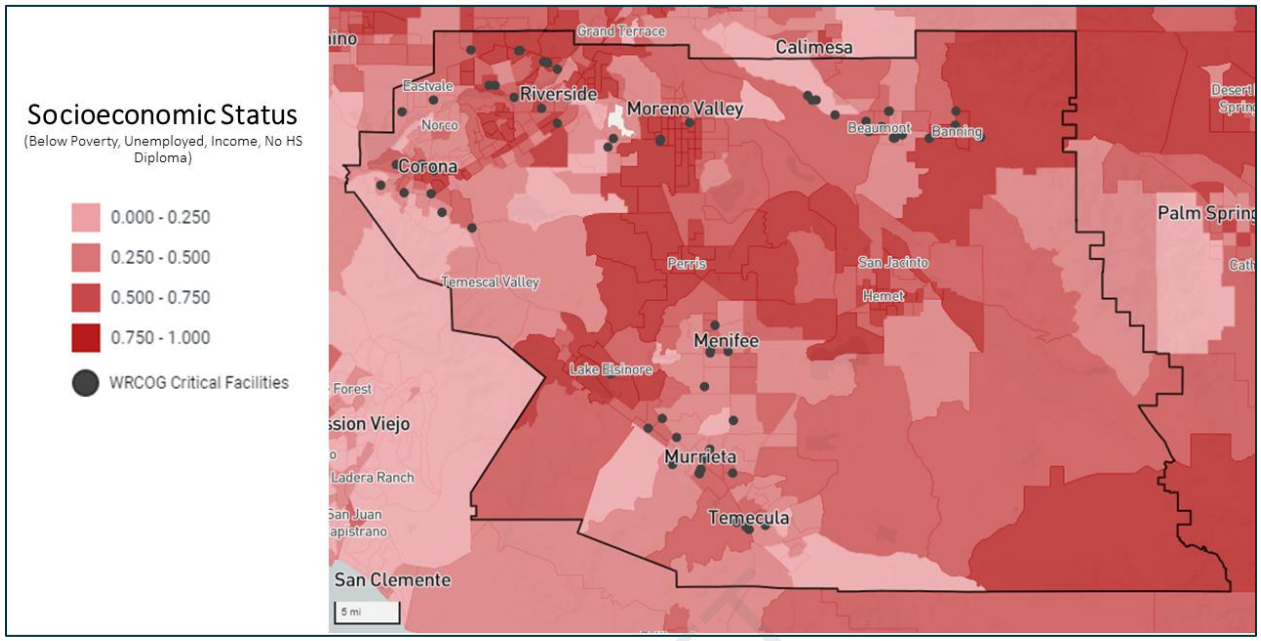


Figure 2.2: Socioeconomic Status Scores

Household Composition and Disability: This category measures the proportion of households with people aged 65 or older, aged 17 or younger, people older than age five with a disability, and single-parent households. Older adults, children, and people with a disability are physiologically and socially more vulnerable to extreme events or climate stressors. For example, older adults and people with a disability may have reduced mobility, communication abilities, and/or mental functioning which could make it difficult to evacuate (for example in a wildfire, flood, or landslide) or understand and/or carry out preparedness measures in their homes. Older adults are also more likely to have chronic illnesses (such as heart and pulmonary conditions) that increase the risk of heat illness and medical problems from wildfire smoke.

Children, particularly younger ones, are socially vulnerable because they do not have the resources or knowledge to cope with climate change hazards. They are typically dependent on their parents or other adults to keep them safe and healthy. Physical characteristics (such as the fact that they are still growing, their smaller size, the way they regulate body temperature) also put them more at risk of health effects from heat and wildfire.[6]

[6] Kenney WL, Craighead DH, Alexander LM. 2014. Heat waves, aging, and human cardiovascular health. *Med Sci Sports Exerc*. 46(10): 1891-1899.

Figure 2.3 shows that household composition is mixed throughout the subregion, but the communities of Banning, Moreno Valley, Jurupa Valley, Menifee, and Lake Elsinore have high scores in this sector.

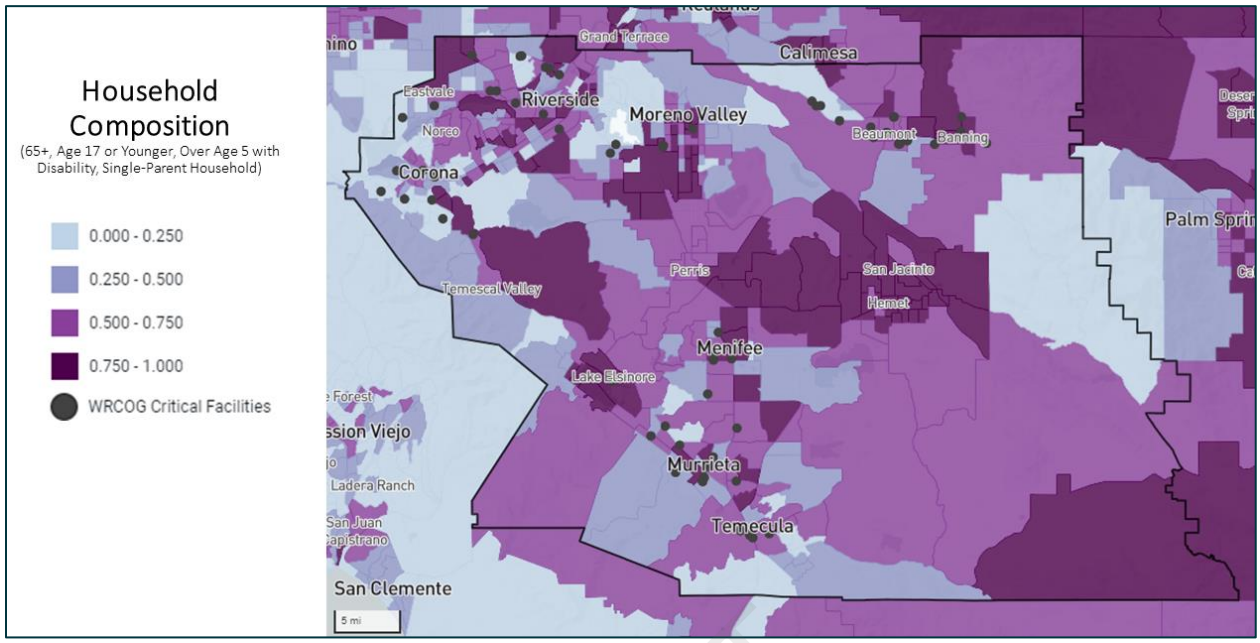


Figure 2.3: Household Composition and Disability Scores

Minority Status and Language: This category measures the proportion of the population that are a racial minority and/or speak English "less than well." Historic and current day social and economic marginalization makes populations of color more vulnerable to the impacts of climate change. Of course, race and ethnicity are connected to all three of the other SVI categories. Populations who are not proficient in English may have limited access to information and resources. Because of a lack of culturally relevant content, they may not fully understand climate hazards, preparedness actions, or emergency communications.

Figure 2.4 shows the distribution of scores throughout the subregion. Jurupa Valley, Riverside, and Lake Elsinore have high scores in this sector.

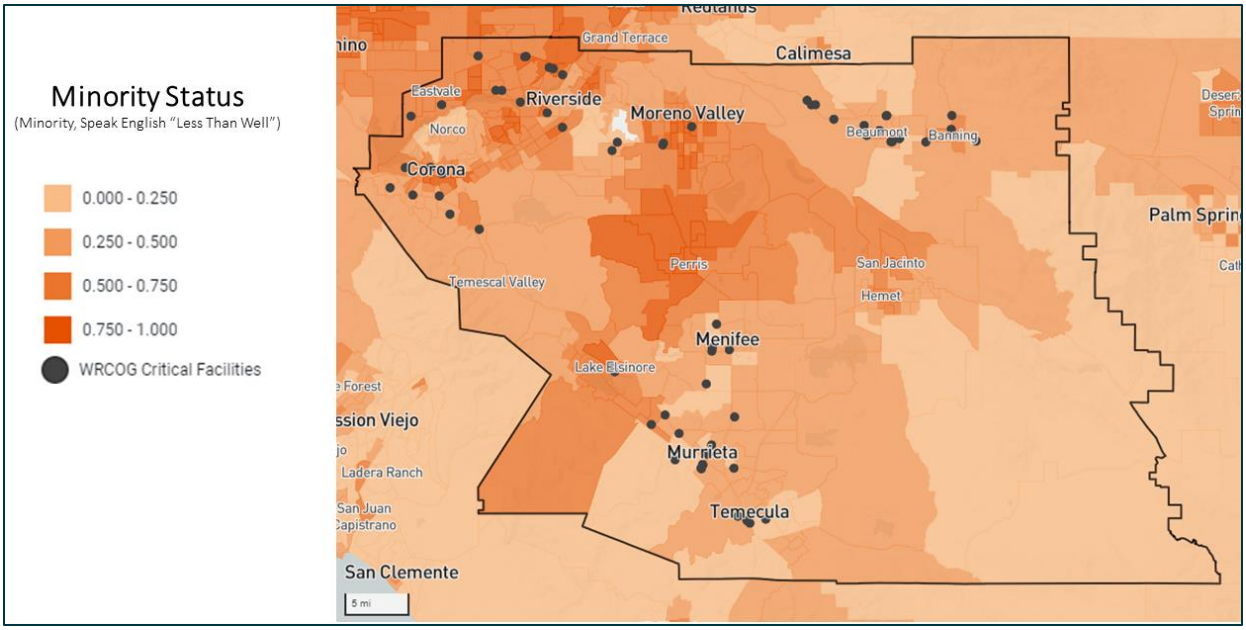


Figure 2.4: Minority Status and Language Scores

Housing and Transportation: This category includes housing and transportation factors that lead to higher risk to natural disasters and public health threats for populations. Factors include the number of multi-unit dwellings, mobile homes, group quarters, crowding, and the proportion of households with no vehicle. Homes that are well-constructed are better at protecting inhabitants from climate stressors and extreme events. For example, having better insulation and air conditioning reduces the effects of extreme heat. Or a stick-built home is likely to sustain less damage from a flood than a mobile home.

Figure 2.5 shows the distribution of scores throughout Western Riverside County. The communities of Banning, Beaumont, Jurupa Valley, Moreno Valley, and Lake Elsinore have high scores in this sector.

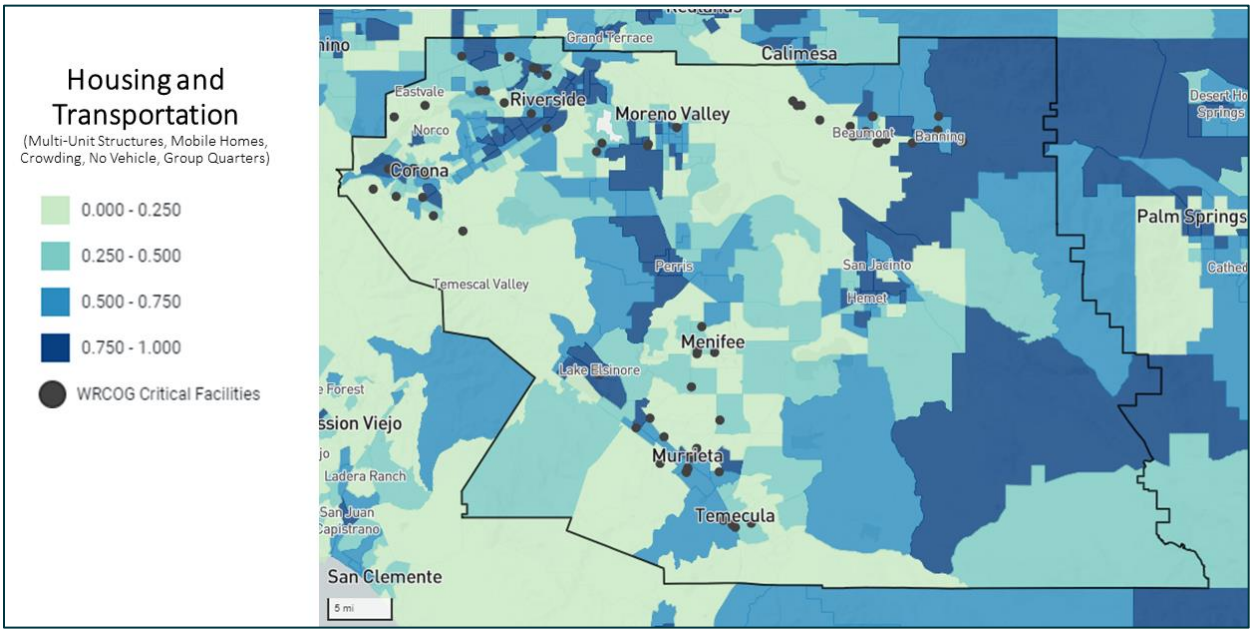


Figure 2.5: Housing and Transportation Scores

The Socioeconomic Status and Household Composition & Disability CDC SVI themes are the greatest contributors to social vulnerability in the WRCOG region. This indicates the need for facility improvements that support populations including lower-income households, older adults, children, and people with disabilities. Figure 2.6 shows overall SVI scores for Western Riverside County.

The communities with the highest overall social vulnerability scores and the number of critical facilities identified there are:

- Jurupa Valley (4 facilities)
- Moreno Valley (3 facilities)
- Lake Elsinore (3 facilities)
- Banning (2 facilities)
- Beaumont (2 facilities)

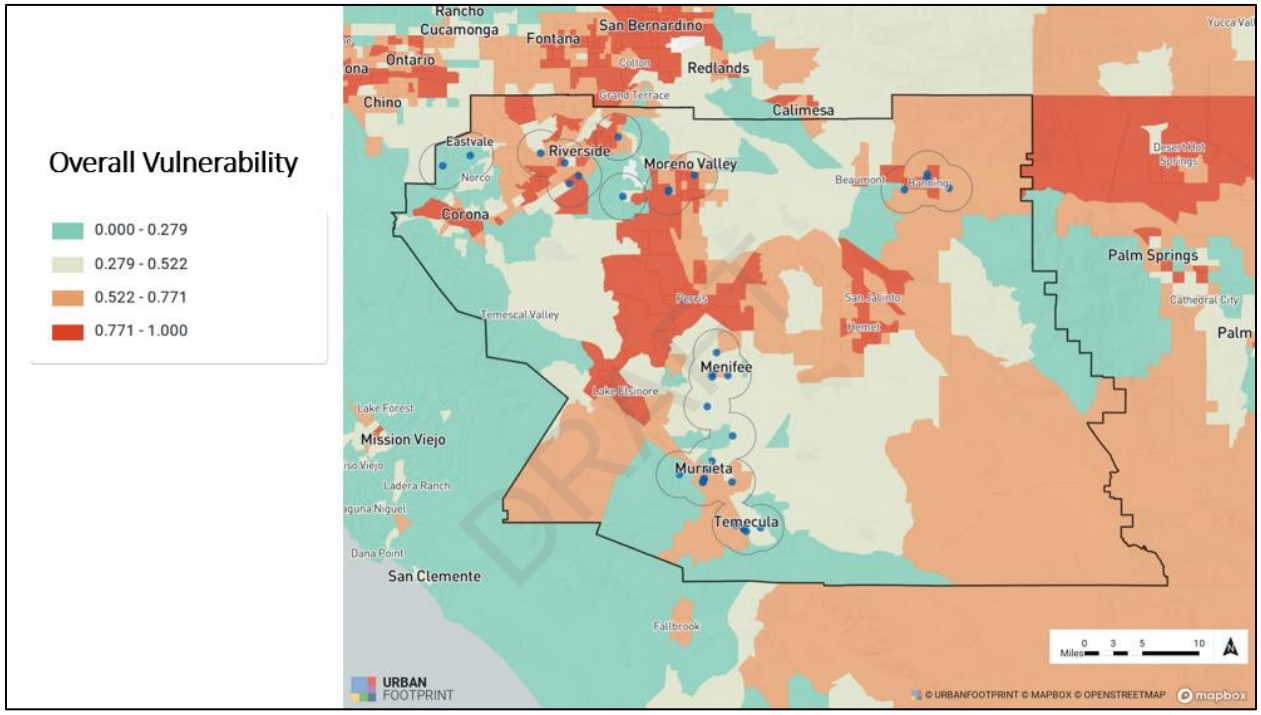


Figure 2.6: Overall Vulnerability Scores

2.3. Identifying Natural Hazards facing Western Riverside County

The natural and climate hazards for Western Riverside County were identified using three resources: Cal-Adapt, Resilient IE, and member jurisdiction staff expertise. Cal-Adapt 2.0 is a collaboration between state agency funding programs, university, and private sector researchers to provide regionally downscaled climate projections and data that are sanctioned by the state to be used in climate adaptation resiliency and planning. Cal-Adapt utilizes California's Fourth Climate Change assessment to model the extent and impact of climate hazards on communities.

Resilient IE is an adaptation and resilience strategy prepared for the WRCOG subregion of the Inland Empire with a focus on transportation infrastructure, community vulnerability assessments, and resilience planning, in collaboration with San Bernardino County Transportation Authority and Caltrans.

Additionally, several working sessions were held with WRCOG and several member jurisdictions to identify which hazards posed the greatest threat to their communities and assets, based on local experience and institutional knowledge.

Based on these sources, the following subregional climate hazards were identified:

Air Quality: Air Quality within the Western Riverside subregion is impacted by high levels of ozone and particle pollution that has plagued the region. Rising temperatures can exacerbate the air pollution and trap harmful ground-level ozone in the air due to increased water vapor. Poor air quality can have direct health effects, such as reduced lung function, pneumonia, asthma, cardiovascular diseases, and premature death. Ozone concentrations are projected to increase by 5 to 10 parts per billion by 2050 in the Los Angeles region, especially in those areas that currently experience high levels of ozone.[7]

Drought: 75% of water supplied to customers in the WRCOG subregion is imported from the Sacramento-San Joaquin Bay Delta via the State Water Project or the Colorado River. As such, much of the water is from the Sierra Nevada snowpack, which is projected to decrease by 2100 under all climate scenarios, as illustrated in Figure 2.7.[8]

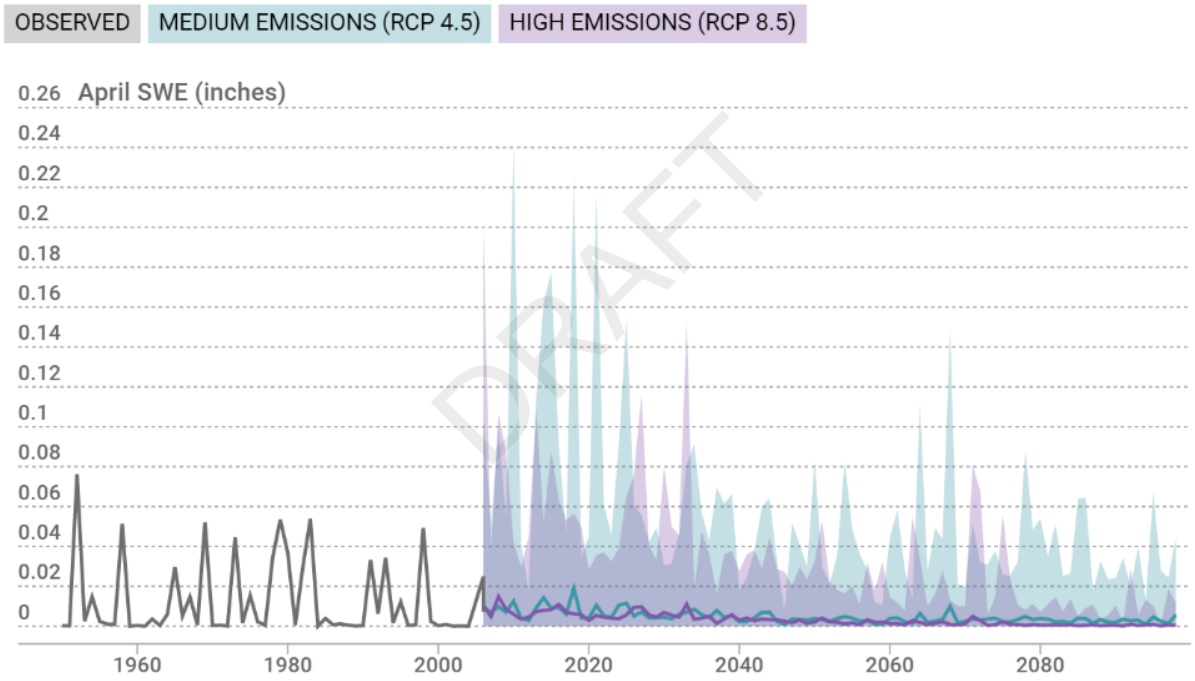


Figure 2.7: April Sierra Nevada Snow Water Equivalent *(Source: Cal-Adapt, 2022)*

Flooding: Although Southern California is likely to experience a decrease in overall precipitation levels due to climate change, the region is also expected to see an increase in the number of extreme precipitation events. Although flooding may occur in areas not designated as flood zones, the

[7] Resilient IE (2020).
[8] Data derived from 32 LOCA downscaled climate projections generated to support California's Fourth Climate Change Assessment. Details are described in Pierce et al., 2018.

regulatory standard for identifying flood areas is through the FEMA special hazard flood zone maps, which identify 100-year flood zones. Figure 2.8 identifies FEMA 100-year flood zones for the subregion.

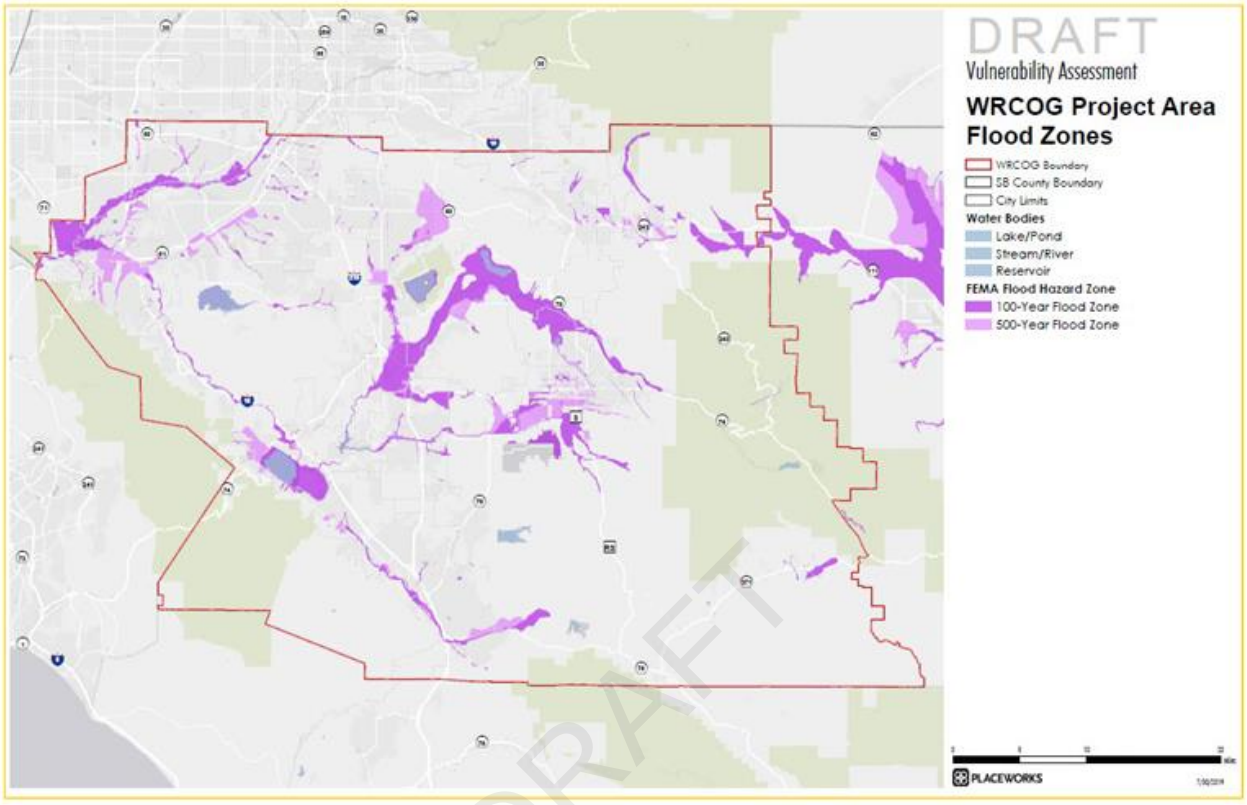


Figure 2.8: FEMA 100-year Flood Zones (Source: FEMA (2018) and WRCOG (2019).

Extreme Temperature: Climate change is expected to increase overall global temperatures (IPCC 2013). The subregion will experience this increase in average annual heat in a variety of ways, including an increased number of extreme heat days[9] and heat waves, warmer summer evenings, and warmer average annual temperatures.

[9] Threshold temperature for a location is defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at that location. In Riverside County, the threshold temperature is 106.0 °F.

As identified in Figure 2.9, the number of extreme heat days is projected to rise through 2050, where the average year could include 23-29 extreme heat days, and 30-59 extreme heat days per year by 2099.[10]

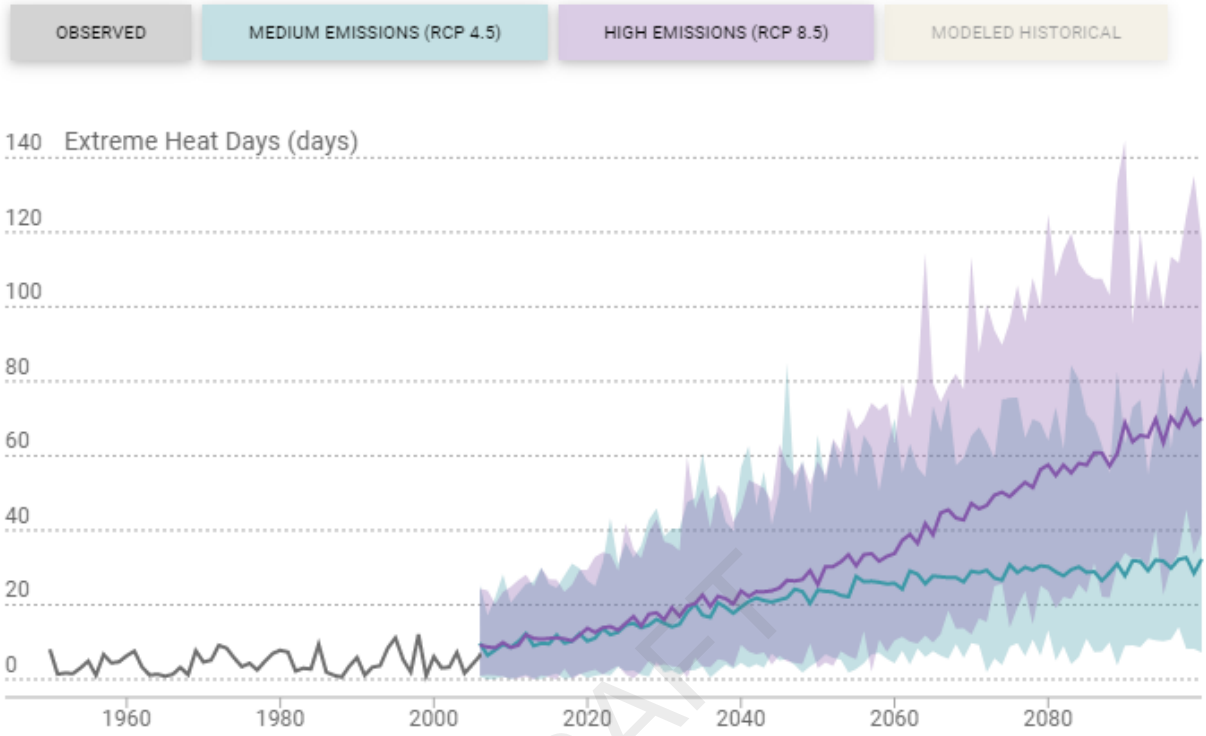


Figure 2.9: Number of days in a year when daily maximum temperature is above a threshold temperature of 106.0 °F in Riverside County *(Source: Cal-Adapt, 2022)*

Wildfire: Higher temperatures and drought create extremely dry fuel conditions that can increase the likelihood and intensity of wildfire. According to the California Fourth Climate Change Assessment, the WRCOG region may see a 13.4% increase in average annual acres burned above historic levels by mid-century. By the end of the century this increase is projected to decrease to 2.3% above historic levels due to wildfire fuel reductions associated with increased drought and extreme heat conditions. In addition to the direct physical threat to life and property, smoke released during an event can have a detrimental effect on the subregion's air quality. Figure 2.10 shows the average increase between historic and future annual acres burned within the Western Riverside subregion.

[10] Data derived from 32 LOCA downscaled climate projections generated to support California's Fourth Climate Change Assessment. Details are described in Pierce et al., 2018.

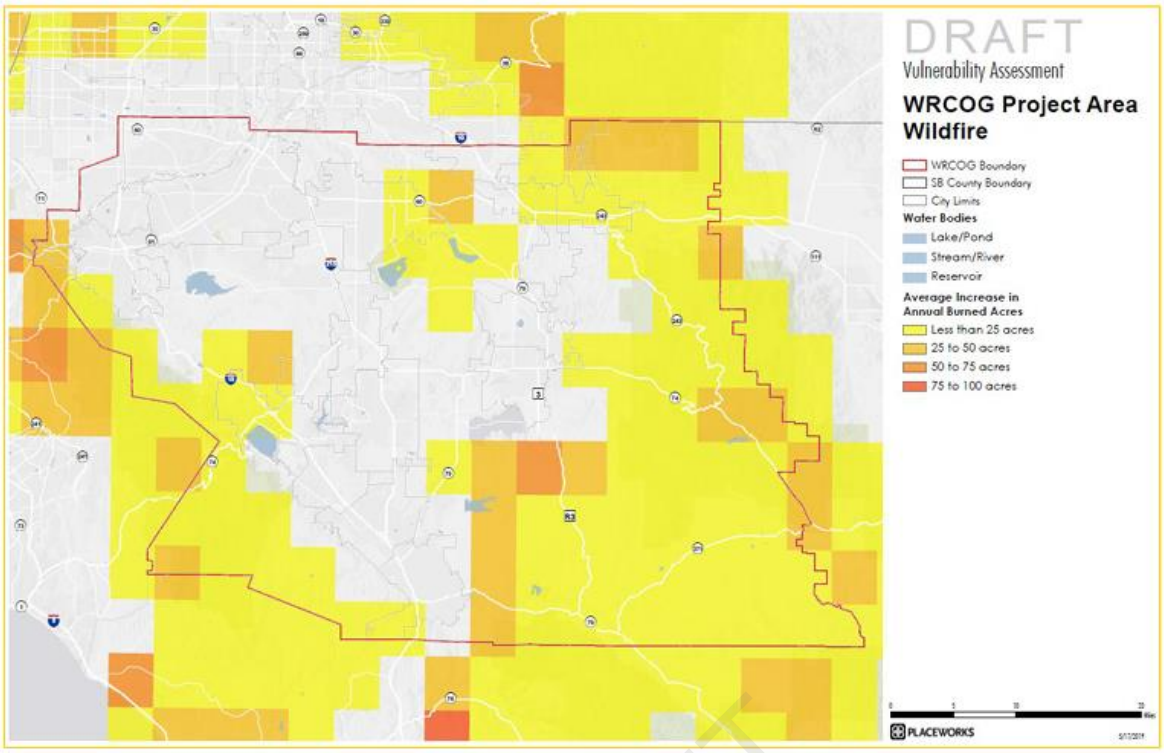


Figure 2.10: Average Increase Between Historic (1962-1990) and Future (2070-2099) Annual Burned Acres *(Source: CEC, 2019)*

Human Health Hazards: Climate hazards can have detrimental health impacts on communities, especially vulnerable populations, as discussed further in the Social Vulnerability section. Californians face a variety of increasing health problems such as more heat-related illnesses, breathing and heart troubles, food and water contamination, traumatic injuries, mental health challenges, and exposure to infectious diseases.[11] Extreme heat can exacerbate the air pollution and trap harmful ground-level ozone in the air due to increased water vapor.[12] Flooding can threaten food and water safety and lead to more contaminated runoff and failures of wastewater treatment facilities, which can lead to outbreaks of gastrointestinal infections.[13] Wildfire smoke produces particle pollution, which is the principal public health threat from short-and longer-term exposure to wildfire smoke. The health effects of particle pollution exposure can range from relatively minor (e.g., eye and respiratory tract irritation) to more serious health effects (e.g., exacerbation of asthma and heart failure, and premature death).[14]

[11] Louise Bedsworth et al. (2018). Statewide Summary Report. California's Fourth Climate Change Assessment, California Governor's Office of Planning and Research, Scripps Institution of Oceanography, California Energy Commission, and California Public Utilities Commission.
[12] Resilient IE (2020).
[13] Juli Trtanj et al. (2016) "Climate Impacts on Water-Related Illnesses," chapter 6 in The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment, USGCRP health2016.globalchange.gov/downloads.
[14] US EPA (2021).

2.4. Prioritizing Critical Facilities

2.4.1. Overview of Prioritization Framework

An evaluation matrix was developed to review the characteristics of the various critical facilities identified by WRCOG member jurisdictions. The purpose of the matrix is to provide an objective method to integrate a broad range of important facility factors and characteristics that impact the overall resilience of the facility as well as the broader community. A scoring system was developed to place each facility on 100-point scale, with higher scoring facilities seen has having the greatest need for intervention to enhance its resilience. For example, a facility with a score of 80 is more resilient than a facility scoring 60, to be able to meet its needs in order to sustain its operations during a disaster event. Different weighting factors were attributed to each aspect of the facility that was evaluated ranging from its impact on community value, the operational characteristics such as providing shelter or a place of assembly, the potential sensitivity of a facility to nearby hazards, and the services or resources provided relative to the anticipated community needs during a disruption in the energy system.

Based on discussion with WRCOG member agencies several factors were weighted more highly such as security, ability to maintain medical care, and the ability to meet the needs of the most vulnerable populations and community. The weighting used to reflect the conditions in West Riverside County could be adjusted if the matrix were to be used in another location with different threats, risks, and vulnerabilities and community composition.

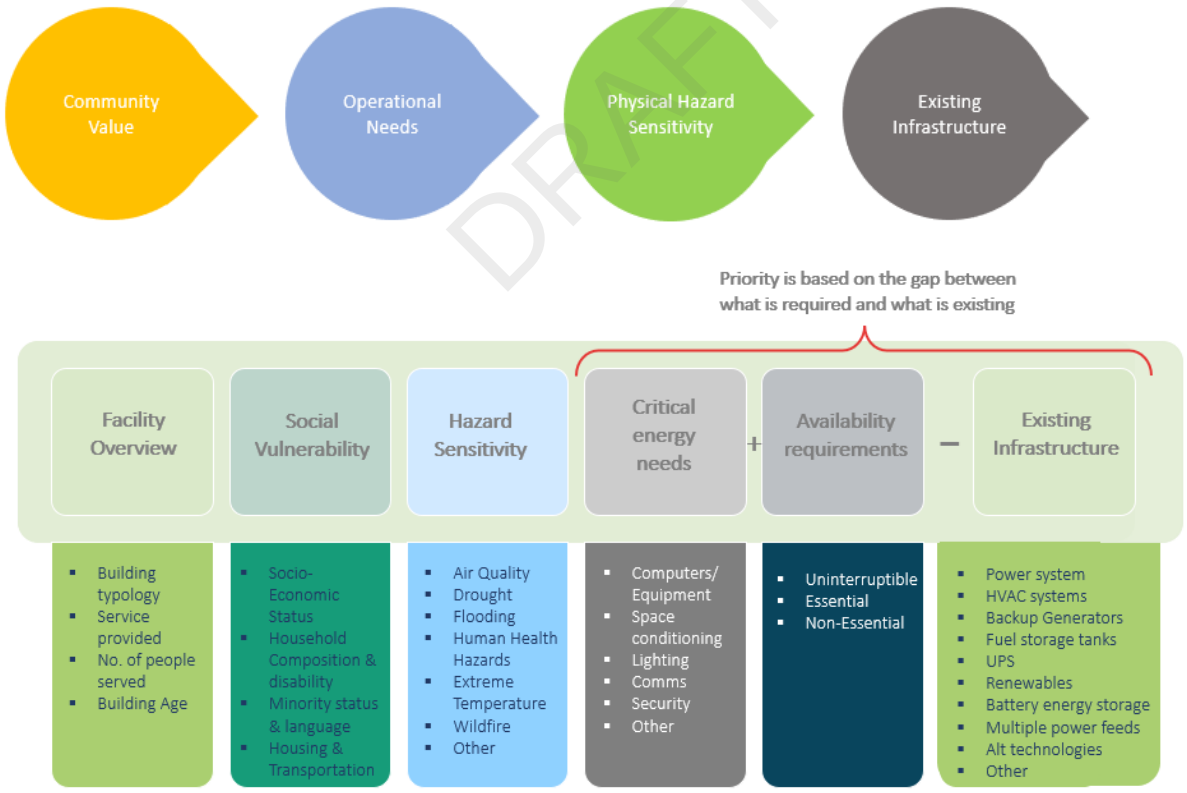


Figure 2.11: Facility Prioritization Factors

2.4.2. Community Value (Social Vulnerability)

This assessment uses the CDC/ATSDR Social Vulnerability Index (CDC SVI)[15] to identify census tracts in the WRCOG jurisdiction that have greater vulnerability to climate-related hazards such as wildfire and extreme heat. The index uses data from American Community Survey (ACS) 2014-2018 5-year estimates for fifteen variables grouped into four themes: Socioeconomic Status, Household Composition & Disability, Minority Status & Language, and Housing Type & Transportation (See Figure 2.12).

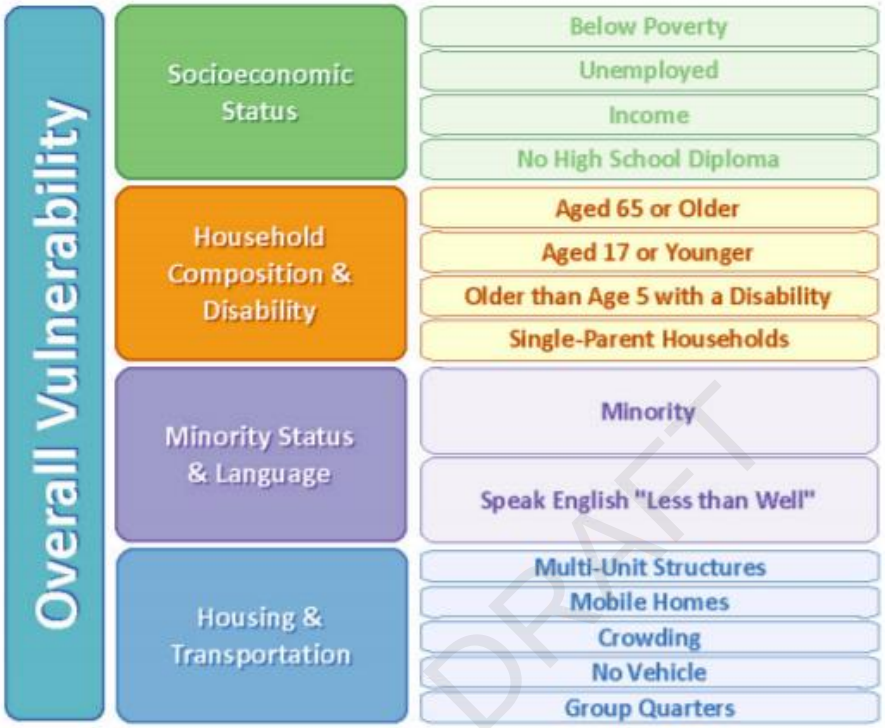


Figure 2.12: CDC/ATSDR SVI Variables Used *(Source: CDC, 2022)*

To analyze the CDC SVI data for the WRCOG jurisdiction, R+A downloaded the 2018 SVI dataset for California.[16] This dataset shows the relative vulnerability, shown as a percentile ranking, of all census tracts within California (rather than all US census tracts). The WRCOG facilities were then mapped so they could be matched up with the SVI data for the census tract they belong to using UrbanFootprint software.

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[15] https://www.atsdr.cdc.gov/placeandhealth/svi/index.html

[16] Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2018 Database California. https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Accessed August 2021.

To translate the CDC SVI percentile results into the WRCOG Facility Prioritization Matrix Community Value (Social Vulnerability) sector, each facility received points for its tract's overall SVI score. The following methodology is used to convert the percentile score to points in the matrix:

- Over 75th percentile = 4 points
- > 50-75th percentile = 3 points
- > 25-50th percentile = 2 points
- 0-25th percentile = 1 point

In order to determine the community value of a facility, several criteria should be evaluated including number of people served, socioeconomic status, household composition and disability, minority status and language, access to housing and transportation, and overall social vulnerability of the population served by the facility. This analysis determines the scale and vulnerability of the community served by the asset/facility. The higher the vulnerability of the population served, the higher the priority of the facility for resilience interventions.

During the development of this Plan, the SVI analysis was validated by speaking with WRCOG staff and representatives from the cities identified as most at-risk.

Key stakeholders to engage around this topic to validate the analysis and learn more about specific community needs include:

- **Representatives from populations identified as socially vulnerable**
- **Community based organizations**

2.4.3. Operational Needs (Energy Needs & Availability Requirements)

This category addresses the various functions and services that the facilities are currently providing or services that are provided to community members. The analysis in this component of facility prioritization is used to determine the feasibility to continuing to provide these services in a time of electrical grid disruption or other emergency situation.

Each of the facility features are ranked on three-point scale. Three points are assigned to services that cannot be interrupted, such as refrigeration of medication, two points to services that are essential such as heating and cooling, and one point to services than are non-essential. Figure 2.13 shows the type of critical energy needs at various facilities and how important it is to preserve those functions during power disruptions.

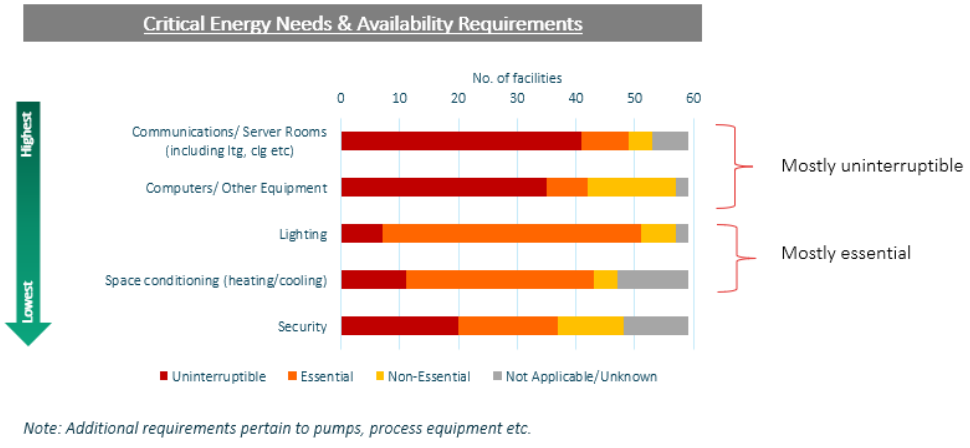


Figure 2.13: Facility critical energy needs and availability requirements

The evaluation starts with a determination of whether the function of services of the facility can be relocated. Having location flexibility enables the services to be brought to the specific community that is being impacted, rather than requiring community members to travel to the facility.

The next factor is the presence of computers and other operations or communications equipment. Given their sensitivity, preservation of electronic resources is seen as high priority. Facilities with computers are allocated a higher score to reflect the importance protecting these resources and, ideally being able to maintain operations of data and communications.

Space conditioning, either heating or cooling can be vital to protecting people that have health-related concerns that can be exacerbated by extreme heat or cold. This can include persistent cardiovascular or respiratory illnesses. Over time exposure to extreme heat or cold can be life threatening.

Lighting is important to maintain for the security and safety of people occupying the building. Facilities with the ability to provide lighting in an area where people can congregate and access other resources are considered to be a significant resilience asset.

Key stakeholders to engage at this step in the process to provide insight into the details of facility operations and systems include:

- **Municipal and/or regional emergency management personnel**
- **Public safety departments including Fire, Police**
- **Public and critical facilities managers**
- **Public works and/or utility departments**

Maintaining communications is critical during times of disruption of emergency, through the cell phone on internet networks. This can be as simple as providing phone charging and as significant as having a secure server or server room that is connected to long-term backup power source.

Location in a secured area is considered to be a positive attribute. This could be a facility located in a secure city building or maintenance yard or a secure school site in the community. Ability to monitor who comes in and out the facility, provide lighting, provide separation between people or families, and generally protect those using the facility from harm are critical concerns in facility selection.

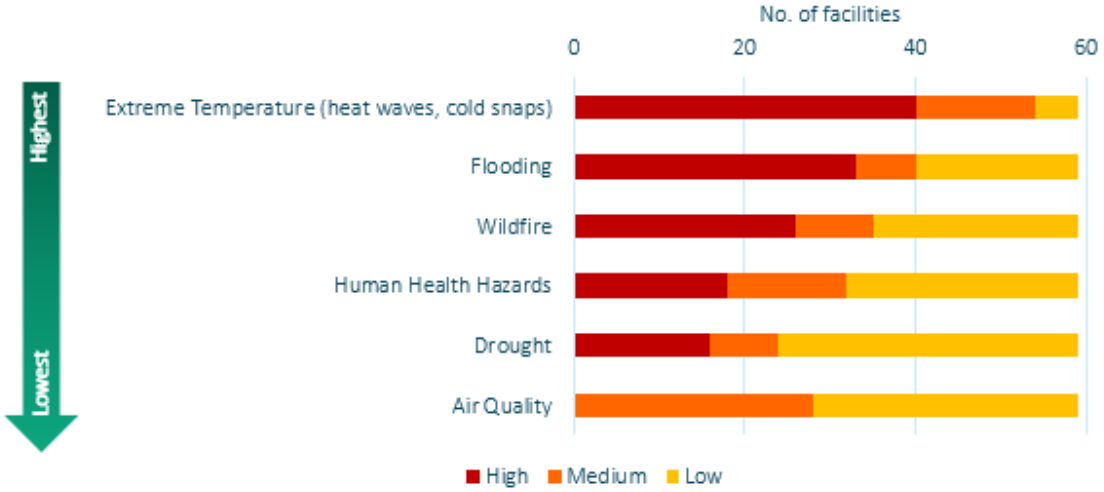
During the development of this Plan, a request for information was sent to facility managers to collect data about the operations of critical facilities and followed up with stakeholder interviews to provide more detail and confirm information.

2.4.4. Physical Hazard Sensitivity

The third prioritization factor is physical hazard sensitivity, which assess the scale and nature of the physical threats to the asset/facility. They are measured on a three-point scale, where three points are assigned for high sensitivity, two points are assigned for low sensitivity, and one point is assigned to low sensitivity for each hazard. Zero points are assigned if the hazard does not apply. Physical threats to critical facilities include:

- PSPS
- Extreme heat
- Wildfire
- Flood
- Earthquake

Physical threats can interrupt the power supply to critical facilities as a result of physical damage to infrastructure and or the preemptive shutoff of energy supply to minimize possible damage to infrastructure and/or the community. Many critical facilities across WRCOG are susceptible to physical threats from climate hazards. Figure 2.14 identifies the hazard sensitivity of critical facilities in Western Riverside County to various climate hazards.



Note: Additional threats include PSPS and earthquakes. Latter specifically applicable to Riverside.

Figure 2.14: Physical Threats to Critical Facilities

The hazard sensitivity evaluation includes considering the location of the facility and that location's sensitivity to a particular hazard (i.e. Is the facility located in a high wildfire severity zone?) and the likelihood of a hazard to disrupt energy supply to the facility.

During the development of this Plan, a workshop was hosted with WRCOG member jurisdiction emergency management personnel and public works departments to discuss which climate hazards were affecting their cities and how facilities and communities were being impacted.

Key stakeholders to engage at this step in the process include:

- **Municipal and/or regional emergency management personnel**
- **Public safety departments including Fire and Police**
- **Public and critical facilities managers**

2.4.5. Existing Infrastructure

The criteria in this component of the prioritization analysis address the physical attributes of the facility that are related to providing continuous energy supply or supporting the needs that are reliant on electricity such as lighting, heating and cooling, refrigeration of medicines, or telecommunications.

The criteria include fundamental issues such as the age of the building, the age and condition of the energy equipment, and the overall capacity of the electricity system. Older buildings are more likely to have less efficient systems or need energy upgrades and may have capacity constraints on electrical service or the feasibility of adding new systems. Older buildings may also have opportunities to

integrate energy resilience measures into planned facility upgrades. the age and condition of the energy equipment, presence and capacity of heating and cooling systems. Other infrastructure factors include the presence and capacity of heating and cooling systems, which is a critical concern if the facility is planned to be place of refuge or assembly.

The next cluster of criteria address methods of maintaining power to provide basic services. These include back up generation, fuel storage tanks, battery storage, and on-site energy generation. Photovoltaic systems designed to operate autonomously from the power grid can serve this need during daylight hours but need to the combined with other methods to provide energy for longer periods.

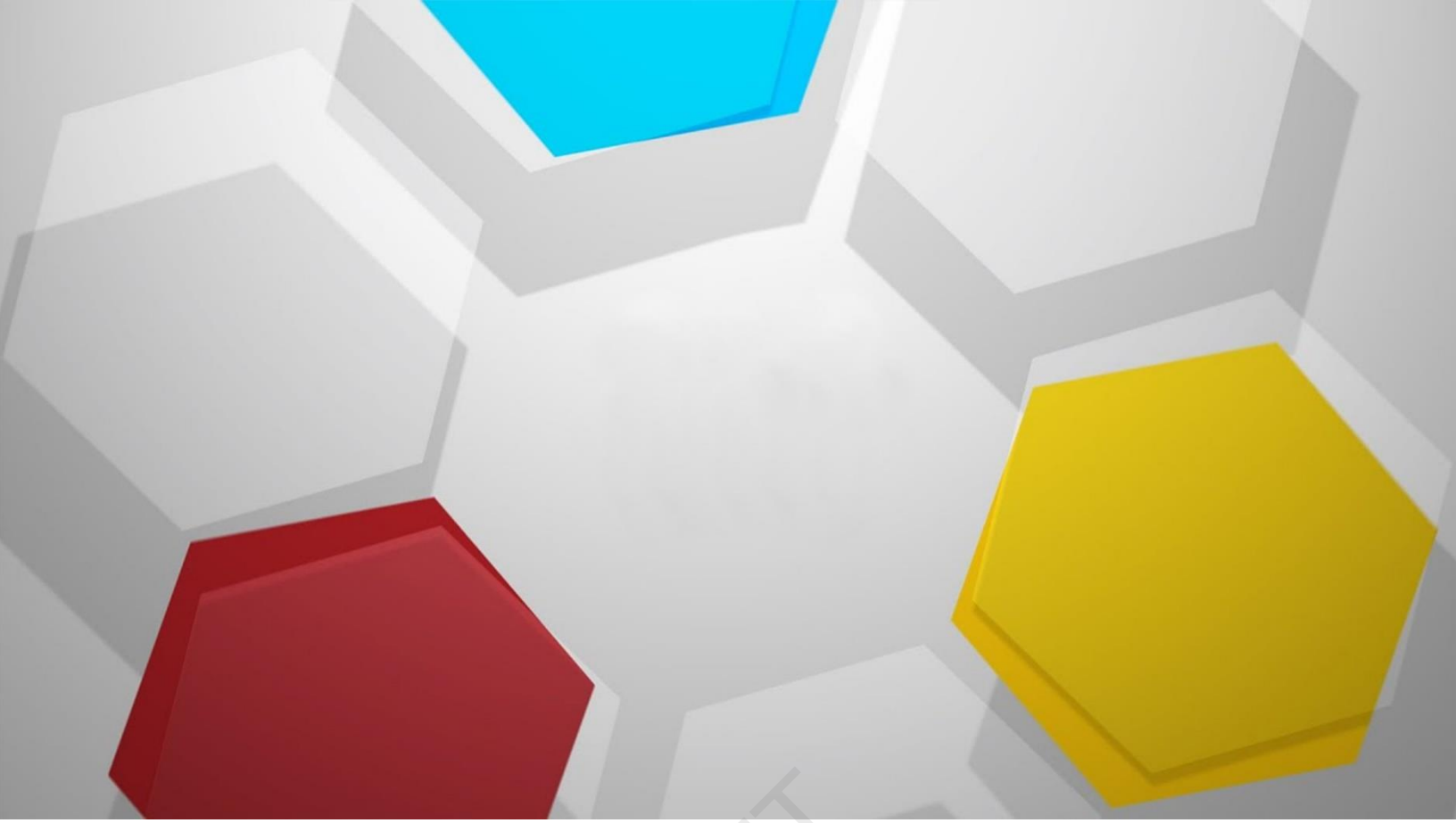
Typical backup generations systems are designed to maintain building energy services for relatively short periods. If the facilities are considered for a longer period of use, which is likely, the existing backup systems may need to be increased to provide energy for 12-24 hours or be augmented by on-site generation to extend the duration that the facility provide resilience services. Other factors include whether there are multiple ways to feed energy to the property or if the property is able to switch from one source, such as diesel generator, to another energy source such as PV or batteries without major disruption to services.

The presence of these energy infrastructure components and services at a given facility are compared to an ideal list of systems and services to determine the score in each category. This analysis is used to determine the gap between a specific facility and an ideal situation. Facilities with greater diversity services and existing capacity, and thus a smaller gap, receive a higher score in this section of the prioritization analysis.

Similar to the operational needs factor, a request for information was sent to facility managers to collect data about critical facilities and followed up with stakeholder interviews to provide more detail and confirm information, during the development of this Plan.

Key stakeholders to engage at this step in the process to provide insight into the details of facilities include:

- **Municipal and/or regional emergency management personnel**
- **Public and critical facilities managers**
- **Public works departments**



3. FRAMEWORK FOR DESIGNING FOR ENERGY RESILIENCE

As stated previously, The WRCOG Energy Resilience Plan serves as a guide for decision-making related to the identification of and investment into critical facilities and other community assets in two stages:

1. Identification and Prioritization of Critical Facilities
2. Evaluation of Design and Implementation Options for Energy Resilience Solutions

With the critical facilities identified and prioritized, the framework for designing for Energy Resilience focuses on developing a technical solution. This includes determining what hazards to mitigate or protect against, what level of reliability and resilience to design to, what technologies and design elements could be part of the solution, and what resources can be mapped to the selected technologies to help with implementation.

3.1. Evaluating Energy Resilience

This section describes the process to defining what are the design objectives of a resilient energy system for critical WRCOG facilities. It is an attempt to answer the question:

"*How resilient is resilient enough?*"

There are many levels of resilience, and many layers of backups and redundancies that could be applied to a given situation. So, the challenge for any prudent engineer or emergency planner is to navigate how to put boundaries on that decision-making process. One approach can be summarized below, as follows:

$$Resilience = \frac{[Capabilities]}{[Requirements]}$$

In other words, designing a facility to be "resilient enough" means designing it to have resilience capabilities that are appropriately aligned with the resilience requirements. Designing capabilities that far exceed the requirements appropriate for that facility, i.e., achieving ">100%" (conceptually) would constitute overinvestment of infrastructure.

3.2.1. Defining the Energy Resilience Requirements

When we successfully tease out the resilience requirements are for a given facility, we come to a "desired end-state" that we can aim for when selecting our design solutions. This desired end-state should be built up from a holistic understanding of the **Mission Needs** of a facility, i.e., what is/are the function(s) and purpose of the facility being evaluated and what systems must be operational in order for the mission to be successful. Missions for a facility can include emergency response, water treatment and water distribution, critical life safety, community cooling hubs, etc. Mission Needs can include lighting, computers and network connectivity for communications, HVAC systems, and specialized equipment such as garage bay doors, medical equipment, pumps, etc. This top-down approach for defining resilience requirements can be summarized in **Error! Reference source not found.**.

As illustrated in **Error! Reference source not found.**, a resilience evaluation informs the **resources** required to support successful operation. Most critical missions require some degree of **power** supply to assure mission success, either for the whole facility or for critical circuits. Depending on the mission, **heating** and **cooling** may be critical in order to maintain sensitive climate control requirements. Reliable **water** supply may also be a requirement for mission success, although in some cases reliable water supply is the *outcome* of mission success (such as for water/ wastewater treatment and distribution systems).[17]

[17] Water and wastewater systems at a facility are important elements of resilient infrastructure, but have not been the focus of this effort.

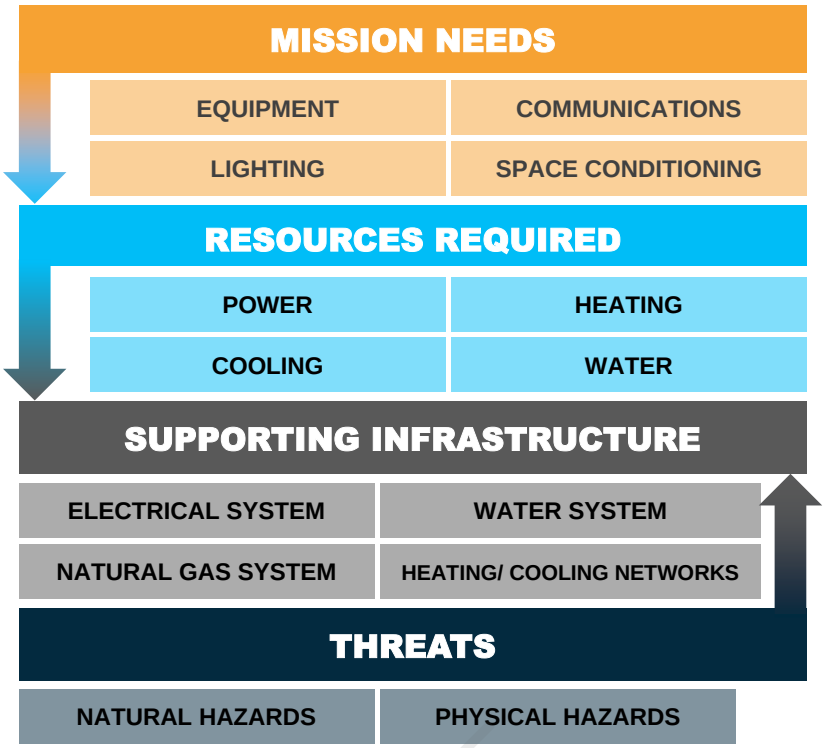


Figure 3.1: Top-down approach to defining energy resilience requirements

Resource requirements can be defined in three tiers of availability that we have found to be sufficient for describing all possible scenarios for Mission Needs, defined in Table 3-1.

Table 3-1: Tiers of Resource Availability Requirements

Tier	Description
Uninterruptible	Resource must be continuously available and cannot experience even momentary disruptions in supply or quality.
Essential	Resource must be available during a specific activity for a given duration. Minor variations in resource quality can be tolerated without significant disruption.
Non-Essential	Resource can be lost, or quality can be degraded for extended periods without severe consequence.

To determine the availability requirements for each resource at a given facility, it is recommended to start with a narrative understanding of the facility by engaging stakeholders who know the facility well, including but not limited to:

- The **facility manager**, who can speak to what systems are in place, what they are used for, and where are the chronic issues that have historically caused mission disruptions.
- The **site director**, who can speak to the broader functions of the facility, the implications to community resilience if utilities are disrupted, and what kind of contingency plans are in place (or lacking) to mitigate mission interruption due to facility degradation (such as whether the mission can be relocated somewhere else).

Through interviewing the facility manager and site director of the critical facility being assessed, each end-use for each resource can be categorized into Uninterruptible, Essential, or Non-essential. For the case studies, this was achieved by sending a facility questionnaire to the key stakeholders to gain initial understanding and then following up with a phone interview. The result is a complete knowledge base for the resource requirements of the facility. For most facilities, such as the **Menifee Senior Center** and **Jurupa Valley Fire Station** case studies, the resource end-uses that are categorized as Uninterruptible or Essential will be a focused subset of the total resource use at the facility. This can be a very helpful discovery because it means that the facility's resilience strategy can hone in on that subset of more critical end-uses instead of building a strategy that serves the entirety of all resources used. When resources are scarce in an austere environment such as the aftermath of a natural disaster, having a clear understanding of which end-uses are most critical will help ensure that those scarce resources are allocated appropriately.

The resource requirements thus identified, an understanding of the supporting infrastructure is a natural next step. The **supporting infrastructure** represents not just the physical, engineered systems present in a facility but also the management systems applied to a facility such as maintenance plans and emergency protocol exercises. When a mission needs resources to ensure success, it is the supporting infrastructure that provides those resources. This includes the power distribution system (transformers, panels, circuits), the HVAC system (mechanical equipment, pipes, ducts, natural gas supply), the water and wastewater systems (pipes, pumps, valves), and management systems.

Similarly, it is the supporting infrastructure that must survive the **threats** present in a given community or geographic location. Threats include the natural hazards present in the area (heat waves, earthquakes, heavy rains and flooding, strong winds, etc.) as well as the social vulnerabilities and physical threats that a community may face (socioeconomic factors, social unrest, public health challenges, etc.). Revisit Chapter 2 for how to assess the threats present in a given location.

To recap, when designing a facility for energy resilience, it is the Supporting Infrastructure that provides the Resources required for the Mission, and it is the Supporting infrastructure that must survive the Threats facing the community. The level of risk mitigation pursued (the resilience requirement) is informed both by the degree to which the critical Resources are required for mission success and the magnitude of the Threats that may cause resource disruption. The Supporting Infrastructure, therefore, is our entry point into making changes at a facility that will enhance its ability to achieve mission success amid a range of threats and is the focus of the rest of this chapter. See Figure 3.2 for a conceptual recap.

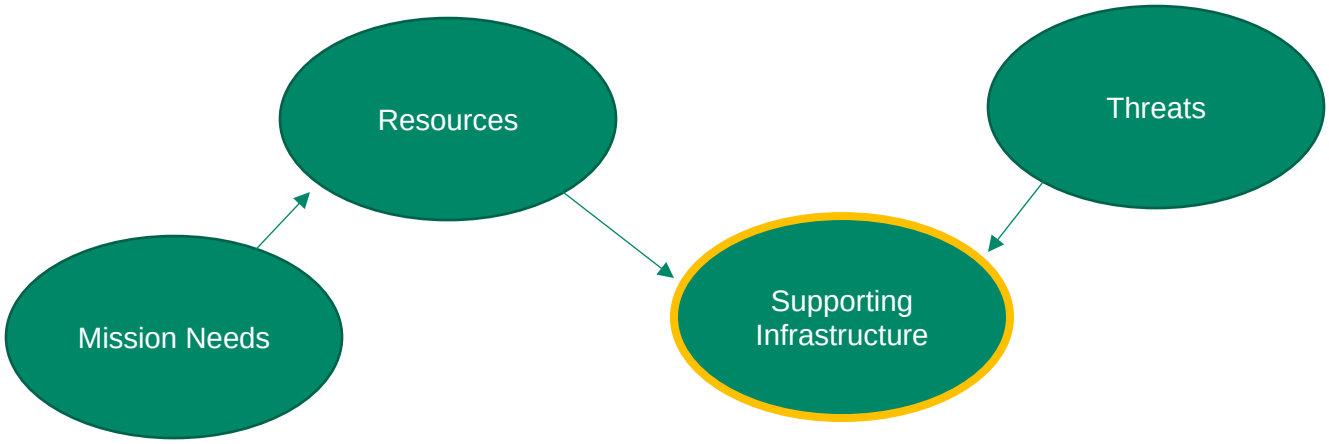


Figure 3.2 Supporting Infrastructure is the entry-point for addressing threats and providing resources for mission success at a facility

3.2.2. Defining the Energy Resilience Capabilities

An effective energy resilience strategy involves more than a simply installing a backup diesel generator with some fuel storage and calling it a day. Resilience includes **preventing** utility service disruptions from ever occurring, **mitigating** the impact of utility service disruptions when they do occur, and **recovering** to full operations in the aftermath of a disruption event.

The capability of a facility to prevent, mitigate, and recover from a disruption event is informed by the **Supporting Infrastructure** defined in the previous section. To assess the energy resilience capability of the supporting infrastructure, the three qualities of resilient infrastructure (prevention, mitigation, recovery) can be subdivided into ten energy resilience attributes. These are described in Table 3-2. When evaluating the resilience capability of a facility, evaluating according to each of these attributes can be helpful for making sure that Energy Resilience is being looked at from all angles.

Table 3-2: Energy Resilience Attributes

RESILIENCE ATTRIBUTES	ATTRIBUTE QUALITIES
Cybersecurity Of Energy Systems	Protection in place for energy systems (e.g. HVAC controls, centralized monitoring, etc.) to resist a cyber attack
Physical Hardening	Protection of energy infrastructure (e.g. electrical supply lines and switch stations, district heating plants and pipes, etc.) from threats such as flooding, fire, and strong winds
Redundant Supply Paths	Separated supply paths to minimize the system infrastructure's vulnerability to the same local threat. (e.g. having multiple electrical supply lines from same source routed through the north and south of campus respectively)
Energy Source Diversity	Alternative sources of energy available to supply critical loads (e.g., utility connection, on-site renewable energy, and emergency backup diesel generator)
Energy Demand Reduction	Conservation and management of energy use in order to reduce the requirement for critical backup capacity and increase outage sustainment time
Load Sustainment Capacity	Ability to maintain energy supply to critical demand from on-site sources. Includes generation, fuel storage, controls, and infrastructure
Emergency Management Protocols	Level of emergency response plan and personnel training
Islanding Capabilities, Analytics, & Controls	Automation of back-up systems, predicting threats, performance indicators to support response efforts
Personnel Availability For Assessment & Repair	Ability to access staff (be it university, contractor, or local specialists) of appropriate expertise for damage assessment and repair
Equipment, Parts & Procurement	Ensuring replacement critical equipment and parts are available. Also includes standardization of components and secured procurement practices

3.2.3. Defining the Energy Resilience Gaps

When compared against the Energy Resilience *Requirements*, the existing Energy Resilience *Capabilities* provide insight into how well the facility can meet the Needs of the Mission that the facility is charged to perform. If the capabilities fall short of the requirements, then a **Resilience Gap** is identified. The essential goal of an energy resilience plan is to fill these gaps by selecting and implementing energy resilience strategies.

For guidance on how to assess the existing infrastructure serving a critical facility, refer to Section 2.4.5.

As the gaps are identified, ideas may start to form about what areas need more attention. The Resilience Attributes can help provide a more focused direction for that attention. Once that direction becomes unveiled, that is when the resilience strategies come in.

For example, the **Menifee Senior Center** was identified as a critical facility with an Essential power requirement to serve as a cooling and heating emergency shelter and food distribution location for residents of the community. The existing infrastructure assessment informed that this essential power supply requirement was not being met. The utility power supply capacity was sufficient when the grid is operational, but in response to a Threat such as a wildfire-caused PSPS event, no alternative power source would be available. In other words, the Resilience Gap of insufficient Energy Source Diversity was identified. With the gap thus identified, strategies can be considered that are designed to close that gap.

3.2. Selecting Energy Resilience Strategies

In order to close a resilience gap, we start thinking about the nature of the gap and the different strategies available to us. Is the resource supply susceptible to physical damage? Does the facility consume excessive energy relative to its needs? Is there a lack of controls ability to phase down non-critical loads? Based on the kind of gap, we can look at the relevant menu of strategies and narrow down which strategy fits the need the best.

A complete list of energy resilience strategies considered in this Energy Resilience Plan is provided in Appendix F. This is not an exhaustive list covering all possible design approaches to energy resilience, but it does capture the majority of desired end-states or capabilities that would apply to the WRCOG community. The more agnostic take by focusing on desired end-states and capabilities instead of focusing on specific, technical solutions allows the project engineer to identify the best solution for a specific site in the context of rapidly evolving energy technology. However, a selection of specific technical solutions that are more commonly deployed are also included in this list for expedience.

Besides addressing resilience gaps, feeding into the strategy selection is a consideration of the site **constraints** and **opportunities**. These key considerations inform what kinds of strategies can make sense for the facility. This is an appropriate time to re-engage the facility manager and site director because they will know the site better than any utility bills or as-built drawings can describe. Be sure to compliment this with reliable data such as utility bills (including interval data) and as-built drawings that can verify and support the claims of the facility manager and site director, because these references will be needed when forming the basis of design for a technical solution.

Appendix F provides a complete list of strategies considered in this Energy Resilience Plan. To help with identifying resilience strategies that can be applied to fill a resilience gap, each strategy is tagged with a Category, which Resource(s) the strategy supports, and which Resilience Attribute(s) the strategy addresses. Additionally, some key considerations intended to inform whether the strategy is worth further evaluation are included. Table 3-3 provides a sample of what is included in Appendix F.

Table 3-3: Sample of Energy Resilience Strategies Appendix

Strategy	Category	Resource	Resilience Attribute	Key Considerations
On-site Solar	Energy Supply	Power	Energy Source Diversity	- Rooftop/Parking Area - Circuit capacity - Structural support - Shading - Glare
Batter Energy Storage System	Energy Storage	Power	Energy Source Diversity; Energy Demand Reduction	- Outdoor space with clearances - Circuit capacity - Advanced controls
Diesel Generator	Backup Power	Power	Load Sustainment Capacity	- Outdoor space with clearances - Ventilation requirements - Noise requirements - Fuel storage capacity - Dedicated emergency circuits

Categories that each energy resilience strategy will fall under:

- Backup Power
- Controls & Communications
- Electrical Distribution
- Energy Conservation
- Energy Management
- Energy Storage
- Energy Supply
- Maintenance
- Mechanical Systems
- Other

Resource(s) that each energy resilience strategy may support:

- Power
- Heating
- Cooling
- Water

Resilience Attribute(s) that each energy resilience strategy may address: see Table 3-2.

By making use of this dataset of energy resilience strategies, and by keeping in mind the Resilience Gaps and Key Considerations, we can arrive at a short-list of strategies to pursue.

3.3. Implementing Selected Strategies

When the engineers and facility stakeholders have worked out which Energy Resilience Strategies are appropriate to move forward with, it is time to develop the technical designs and financing plans for implementation.

Note that some of the strategies that may be selected for implementation are programmatic. Other strategies are more technological in nature and can be generally described as “strategies that require projects to implement.” This section focuses on those strategies that require projects to implement (see).

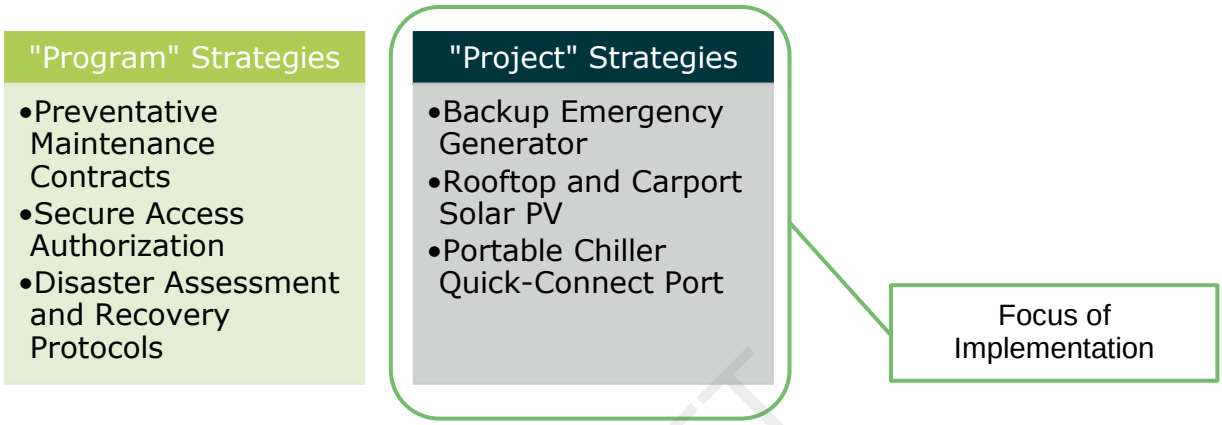
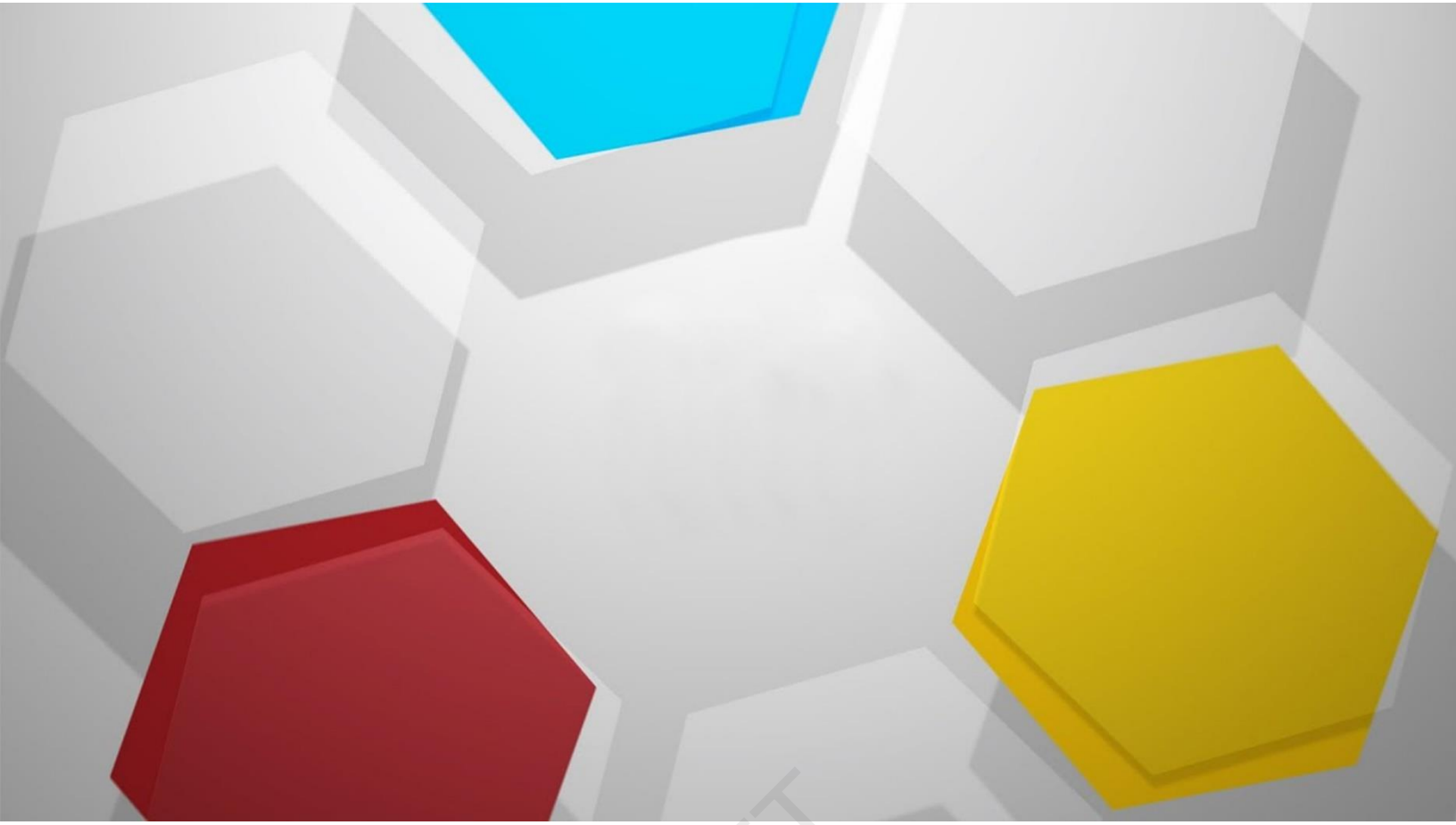


Figure 3.3: Program-oriented vs Project-oriented Energy Resilience Strategies

For the **technical design**, the Case Studies in Appendix A serve as a reference to provide insight into the design process for arriving at an energy resilience solution.

Methodology used for arriving at the designs in the case studies to be provided in the Final Draft. To include inputs to technical optimization model, overview of optimization functions, and outputs from the optimization model.

For insight into how to identify **funding and financing strategies** to support implementation of projects, specifically to support the electrification of and resilience planning for critical facilities in the WRCOG region with an emphasis on inclusion of energy storage for emergency response, refer to Appendix G.



4. CONCLUSION

The WRCOG Energy Resilience Plan serves two primary functions. First, to serve as a decision-making guide for WRCOG members regarding implementation of energy resilience projects to increase facility and community resilience against regional power interruptions. Second, to serve as a more general guide for governance organizations outside of Western Riverside County to begin to untangle the complex topic of community resilience through energy resilience. This conclusion addresses both elements.

4.1. Impact for WRCOG and Members

This Energy Resilience Plan will have a lasting impact on the community by enhancing the day-to-day health and wellbeing of communities through reducing the negative impacts of natural disasters and power interruptions. The Plan achieves this by outlining a pathway for equitable and reliable access to electricity at all critical facilities across WRCOG Member Jurisdictions, ensuring fundamental access to health and public safety services for all members of the Western Riverside community. By being modeled around a replicable framework, this plan can benefit other communities and jurisdictions beyond Western Riverside County.

The Plan provides WRCOG with a methodical approach to painting a complete portrait of all facilities that have been identified by member jurisdictions as having a critical role to play in responding locally to climate-related disruptions. Figure 4.1 illustrates this impact.

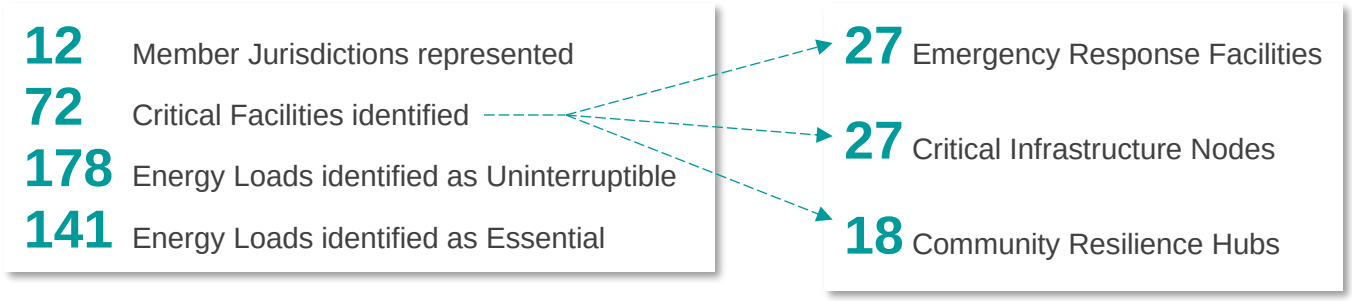


Figure 4.1: Energy Resilience Scale of Impact

4.2. Next Steps

The main priority for achieving the full potential of this Energy Resilience Plan is to scale the findings from the Case Studies to apply to the remaining critical facilities across WRCOG Member Jurisdictions.

4.2.1. Technical Implementation Next Steps

To be completed in Final Draft.

4.2.2. Financial Implementation Next Steps

The Energy Resiliency Plan details a regional transition to renewable energy in critical infrastructure, including the ability to quickly adapt to drought, extreme heat, and other climate changes. Implementation will be most effective and efficient if multiple actions are pursued in tandem, which may include using funding and financing sources to support multiple, or bundled, projects. Near-term next steps (within one to two years) for beginning implementation of priority actions may include:

- **Identify partnership opportunities to plan, fund, and implement climate actions.** WRCOG's efforts in this planning process convened jurisdictions together from across Western Riverside County, opening the opportunity to continue these partnerships as agencies begin to pursue funding. Partnerships between public agencies can also increase the competitive edge of grant applications. Other civic institutions, notably UC Riverside, may also offer partnership opportunities.
- **Determine which strategies will require environmental review, technical analysis, and/or complex partnerships and permitting.** Some of the priority actions will have longer implementation timelines due to environmental review requirements or financing coordination (e.g., new sales tax, bond issuance). To meet its electrification goals in a timely manner, WRCOG member jurisdictions will need to start the first phase of work on these longer-term projects.
- **Track new federal funding opportunities as guidance is released.** The IIJA and Inflation Reduction Act present enormous opportunities. While the available details on known programs are summarized in this chapter, the federal government is regularly releasing new program announcements related to funding eligibility and availability.
- **Being preparing application materials for the state grants that have been allocated additional funding in the Governor's 2022-2023 budget.** Some funding for these grants may already be or will soon be available and will have short application deadlines. An early start on application materials will give WRCOG member jurisdictions more time to match actions to grant opportunities, define strong proposal narratives, and identify potential partnerships.

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APPENDICES

A. Case Studies

A1. Case Study 1- Banning Wastewater Treatment Plant

Facility Overview

The Banning Wastewater Treatment Plant (WTP) plant located at 2242 Charles St, Banning, CA 92220 treats wastewater from approximately 30,000 people, including 12,800 dwellings and the surrounding community.

Banning WTP is currently connected to the Southern California Edison (SCE) utility on the TOU-GS-2-D-CPP tariff. As a critical infrastructure system, the WHP has an existing backup power system comprising of two diesel generators, each dedicated to half of the plant with the total capacity of 900 gallons of diesel storage.

Figure A.1: City of Banning WTP site location

Past Disruptions

The WTP has experienced 7 SCE grid outages over the past several months with the longest one being 5 hours. However, such outages have not yet led to any operational disruptions or degradations as the backup generators have been able to cover the full plant electrical loads. However, given the

importance of the WTP to the community, and due to the fact that no redundant diesel generator exists, additional backup power systems may be warranted because:

- If either of the existing diesel generators fail; no other alternative exists to power that section of the plant
- In case of major disasters that may cause prolonged outages, the diesel storage may not be sufficient and fuel re-supply may be compromised
- Air quality regulations limit the run hours of fossil-based generators and alternatives are being promoted at the regional and state level for environmental benefits

Therefore, to prevent such cascading effects of power outage to other utility functions, it is proposed that multiple on-site power sources to be incorporated into the plant infrastructure to provide enough flexibility and redundancy to enhance system resilience against power outages.

Resilience enhancement against grid outages requires technical and financial analyses to develop a viable solution which includes a recommended size and combination of power generation and energy storage assets. This analyses, along with detailed simulation of the microgrid system, is further discussed in the section below.

Analysis and Simulations

To assess how the current and proposed system would response to prolonged utility power outages, a comprehensive microgrid modelling and analysis was carried out. For this purpose, HOMER Grid software tool was used. HOMER Grid is a microgrid modeling software that is being widely used in the research and industry communities to design and optimization of microgrids, size different components of the system, and also to perform a technical and financial feasibility assessment. This tool can also help with resilience and reliability assessment of various microgrid combinations, which has been the main focus of the current study.

In order to develop the baseline model (i.e. business as usual), the annual load of the WTP was collected and input to the model. AECOM received partial load profile for “Aug 22nd 2021 to March 2nd 2022” and estimates were used to fill in missing data based on known load profiles in order to have a complete year for analysis. The existing diesel generators were also modeled to reflect the current status as the baseline of the model.

Utility bill analysis identified that the utility charges were $74,447 for the period Jun 2020 to May 2021. The tariff is not Time of Use and energy costs is determined by a flat rate of $0.0923 per kWh used. During the period of 06/2020-05/2021 the total energy consumption was 784,000 kWh. Peak demand of 120 kW was measured during Nov 14th, Dec 24th, and Feb 23rd.

Figure depicts the monthly variations in the monthly energy consumptions and the breakdown of billing charges. The electrical load heatmap for the Banning WTP is presented in ***Figure A.3***.

Figure A.2: System annual electricity consumption and billing charges

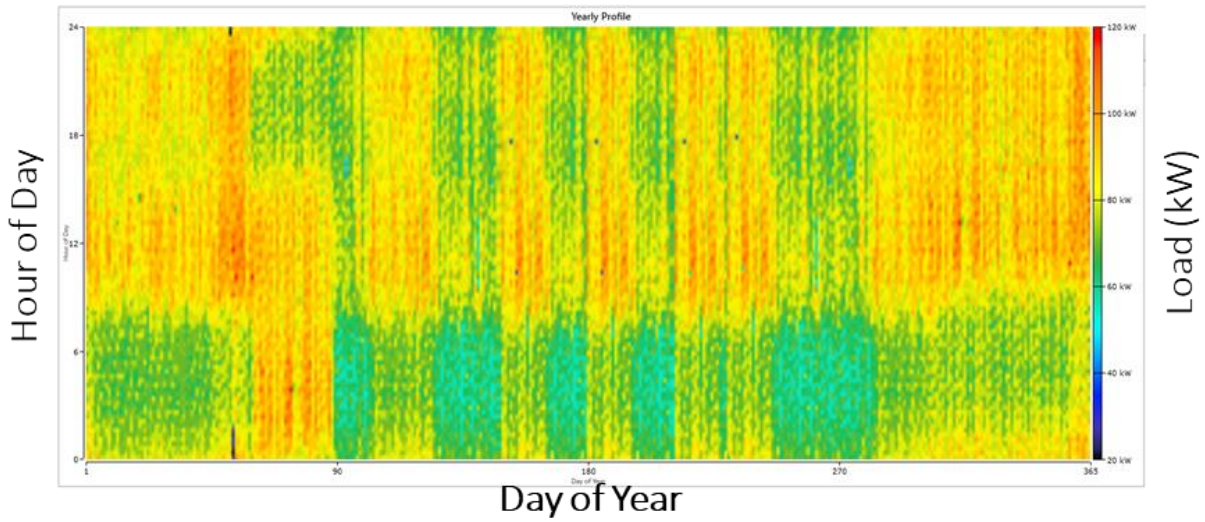

Figure A.3: Heat map of the Banning WTP electrical load

Improving resilience of the WTP to utility power outages can be enhanced through implementation of diverse power sources. To achieve this goal, it is proposed that on-site solar photovoltaics (PVs), as an additional source of power, along with battery energy storage systems (BESS) to be utilized and various combinations and sizes to be evaluated. The capacity of the existing diesel generators totals 130 kW. PV array size was dictated by the available space on land at the south-west corner of the site, resulting in 123 kW system.

For the purpose of this analysis, it is assumed that 100% of the plant load is critical and that no downtime is acceptable. Figure A.4 schematically shows the main components and connections of the developed microgrid for Banning WTP.

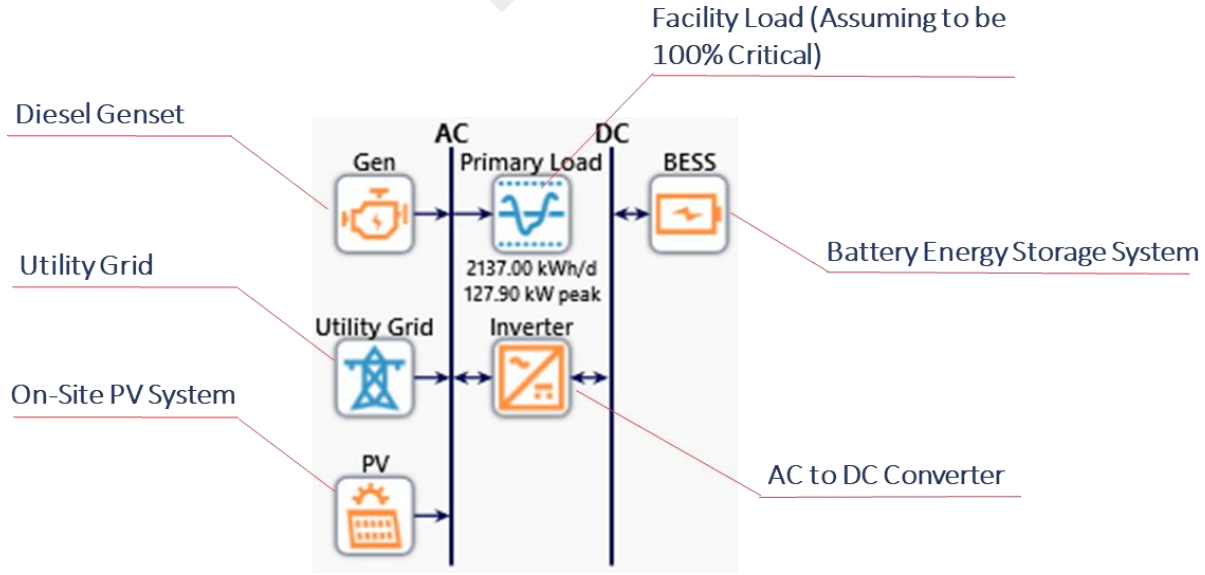

Figure A.4: Microgrid architecture and components

The analysis considered the numbers and duration of historical power outages sourced from SEC reliability reports[18]. System Average Interruption Frequency (SAIFI) and System Average Interruption Duration (SAIDI) numbers, representing average frequency of sustained interruptions and average duration of sustained interruptions respectively, were used in this study. According to the historical reliability of SEC circuits serving the Banning city for 2021, the SAIDI has been 772 minutes and the SAIFI has been 2.9. Therefore, it was assumed that the system would have to endure three 4.5 hours-long outages each year.

The distribution of these outages will be randomly selected by the software; one example is shown in **Error! Reference source not found.**Figure A.5. Depending on the reliability requirements set for the facility. In this case study, we assumed that 100% of the plant load is critical and should be covered throughout the year, i.e., no down time or degradation of performance is allowed.

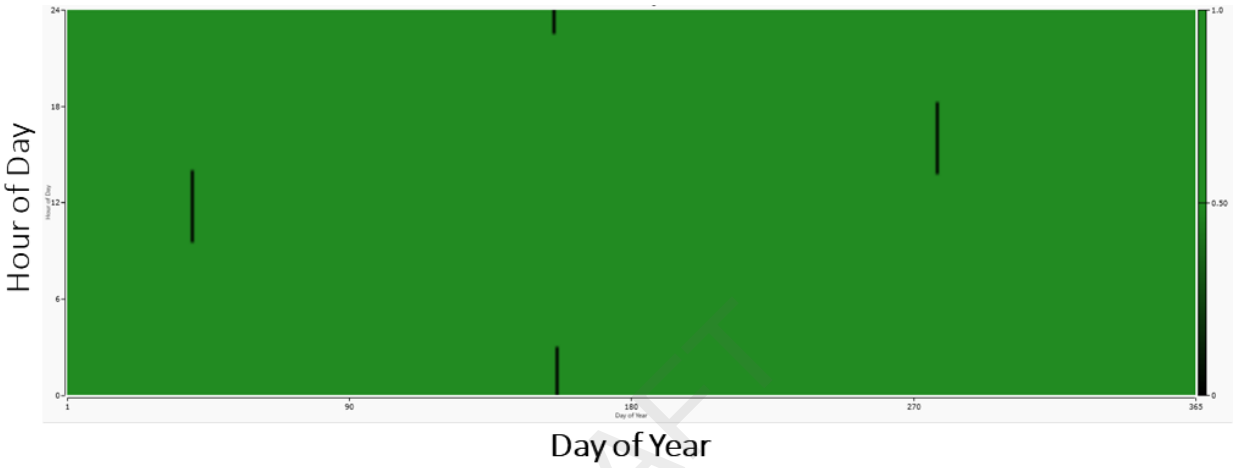

Figure A.5: Random distribution of outages throughout the year

Results and Recommendations

Feasible solutions for the Banning WTP are summarized in Table A-1. These solutions essentially include those system sizes and combinations, referred to as system Architecture, that are capable of meeting the loads during the defined outage scenarios. Each battery pack has the rated capacity of 85 kWh/185 kW, and the software will come up with the optimum number of packs for each system architecture. We have also considered scenarios without diesel generators (i.e., scenarios 5 and 6) to see if there will be any benefits into replacing the existing ones if they are nearing their end of life.

$$SAIDI = \frac{sum\ of\ all\ sustained\ customer\ interruption\ durations}{total\ number\ of\ customers\ served}$$

$$SAIFI = \frac{sum\ of\ total\ quantity\ of\ "sustained"\ customer\ interruptions}{total\ number\ of\ customers\ served}$$

[18] Circuit Reliability Review- Banning, 2022, SOUTHERN CALIFORNIA EDISON

Table A-1: Banning WWTP microgrid modelling results

	Architecture			Cost				System		
Scn.	PV (kW)	Generator (kW)	BESS (kWh/kW)	NPC ($)	LCOE ($/kWh)	CapEx ($)	Simple Payback (yr)	Renewable Fraction (%)	Generator Hours	BESS Autonomy (hr)
1	123	130	-	$920 k	0.091	$194 K	11.2	27.5	10	-
2	-	130	-	$950 k	0.094	$0.0 K	-	0	14	-
3	**123**	**130**	**85/185**	**$1.00 M**	**0.099**	**$243 K**	**17.3**	**27.5**	**4**	**0.95**
4	-	130	85/185	$1.03 M	0.102	$48 K	-	0	10	0.95
5	123	-	425/925	$1.33 M	0.131	$435 K	-	27.5	-	4.77
6	-	-	510/1110	$1.43 M	0.142	$289 K	-	0	-	5.73

These scenarios are ranked based on the net present costs (NPC).[19] Scenario 2, which is the baseline scenario, has the second best NPC; however, the renewable fraction (defined as annual renewable energy generation divided by annual energy consumption) is zero and the generator runtime is 14 hrs/yr. Scenarios 3 is comprised of solar PVs, BESS, and diesel generators; this combination provides multiple benefits in terms of resilience performance and integration of renewable energy. Availability of multiple power sources improves the system flexibility and thereby enhance resilience against power outages. In case of future outages become longer and more frequent, the system would be able to sustain the plant operations for longer periods compared to other scenarios investigated here; see the reduced generators runtime for scenario 3 compared to other scenarios which means less reliance on diesel fuel, less maintenance, and longer lifetime for the diesel generators; for those reasons, and considering only slightly higher NPC compared with the baseline case, Scenario 3 is the proposed option in improving resilience posture of the system while also reducing GHG emissions and maintaining the economic performance close to the existing situation. The single-line diagram of the proposed system is shown in Figure A.6.

[19] Cost includes equipment capital cost only. All-in cost (design, construction, etc.) to be included in Final Draft.

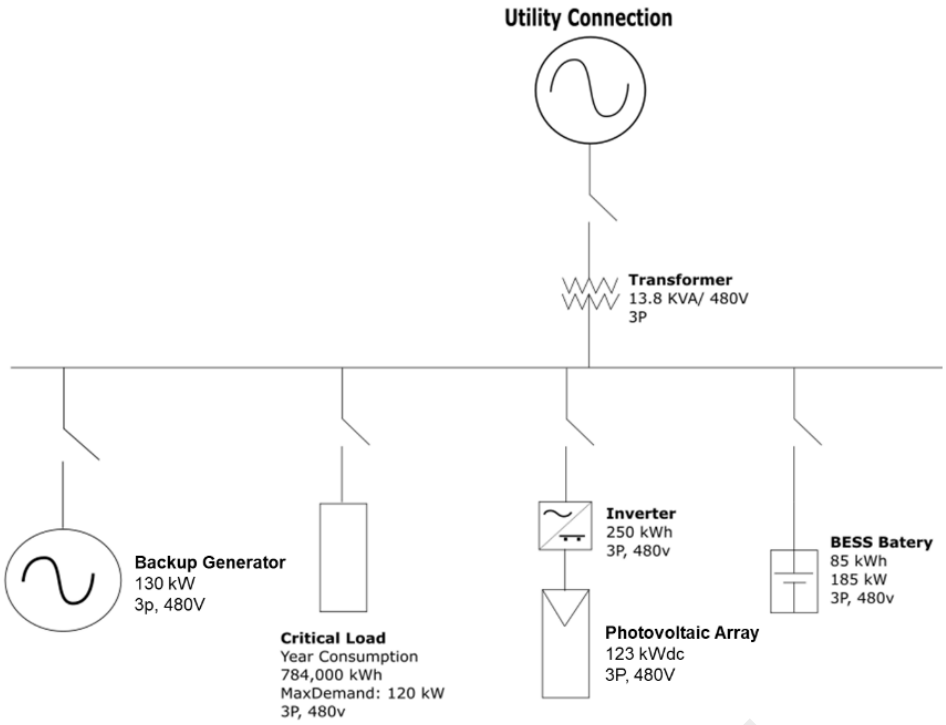

Figure A.6: Single-line diagram of the proposed system for Menifee Senior center

A2. Case Study 2- Menifee Senior Center

Facility Overview

The Menifee Senior Center is located at 29844 Haun Rd Menifee CA 92586 serving 100+ seniors. The Menifee Senior Center is also being utilized as cooling and heating emergency shelter and food distribution location for residents of the community.

The facility is currently connected to the Southern California Edison (SCE) utility on the TOU-GS-2-D-CPP tariff. The backup system includes a 36 kW diesel generator. The site location is shown in the Figure A.7 below.

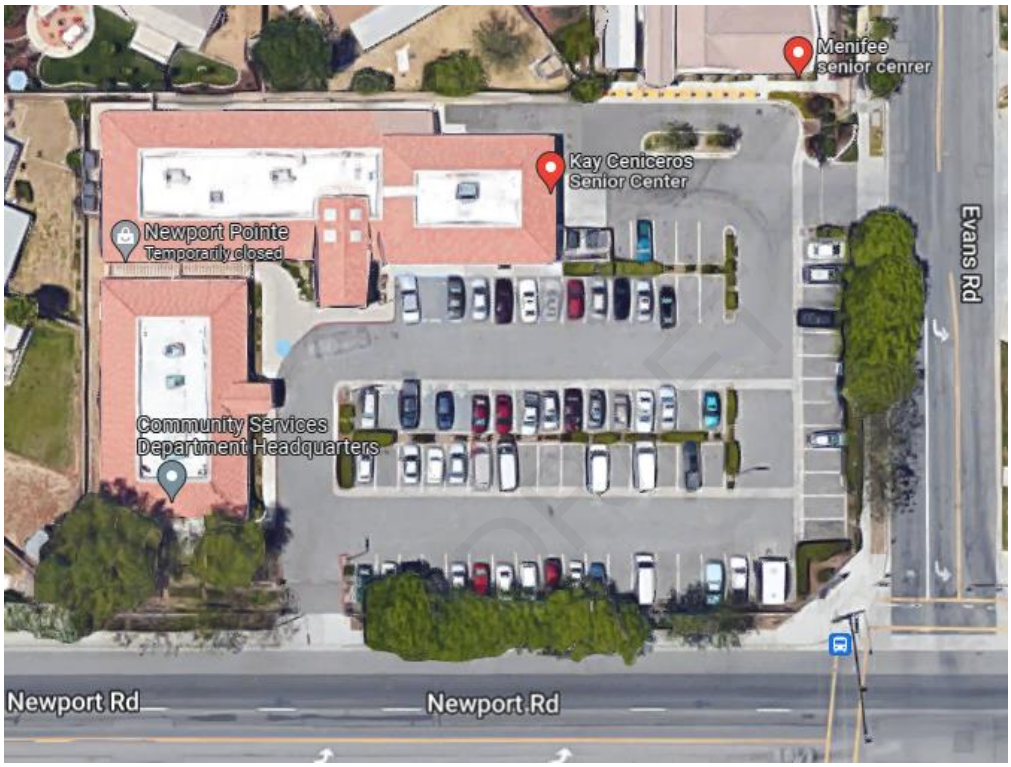

Figure A.7: Menifee Senior Center site location

Past Disruptions

The hazard sensitivity assessment revealed that flooding, and human health risks caused by extreme temperatures are among the highest threats. The latter one can be alleviated by enhancing reliability of the heating and cooling systems. In addition to regular scheduled maintenance to ensure reliable operation of the heating and cooling systems, reliable power sources are required. As grid outages are becoming more frequent, improving resilience of the energy systems against them is critical and has been the focus of this study. Such analyses along with detailed simulation of the plant system is further discussed in the section below.

Analysis and Simulations

To assess how the current and proposed system would response to prolonged utility power outages, a comprehensive microgrid modelling and analysis was carried out. For this purpose, HOMER Grid software tool was used. HOMER Grid is a microgrid modeling software that is being widely used in the

research and industry communities to design and optimization of microgrids, size different components of the system, and also to perform a technical and financial feasibility assessment. This tool can also help with resilience and reliability assessment of various microgrid combinations, which has been the main focus of this study.

In 2021, the total cost of electricity charges was $31,110 which includes energy charges, demand charges, and fixed charges. The annual electricity consumption during the year of 2021 has been 133,590 kWh with the peak demand being 58 kW happened on August 1st. Figure A.8 depicts the monthly variations in the monthly energy consumptions and the breakdown of billing charges. The electrical load heatmap for the Menifee Senior Center is presented in Figure A.9.

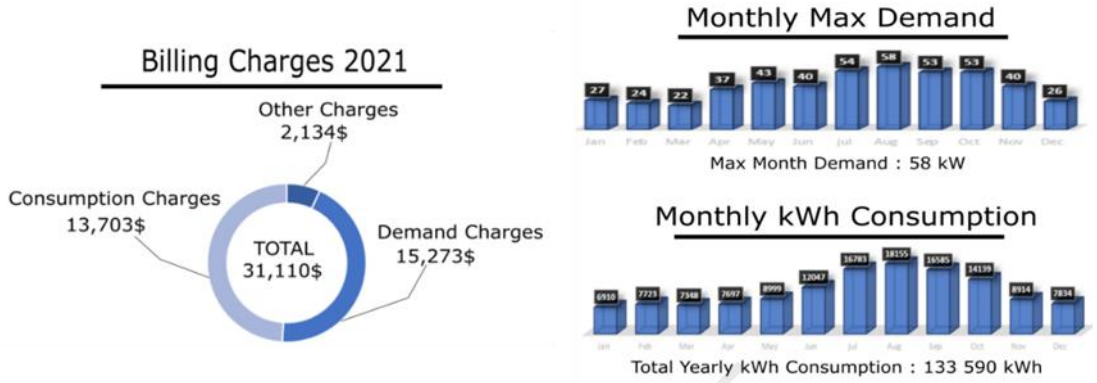

Figure A.8: System annual electricity consumption and billing charges

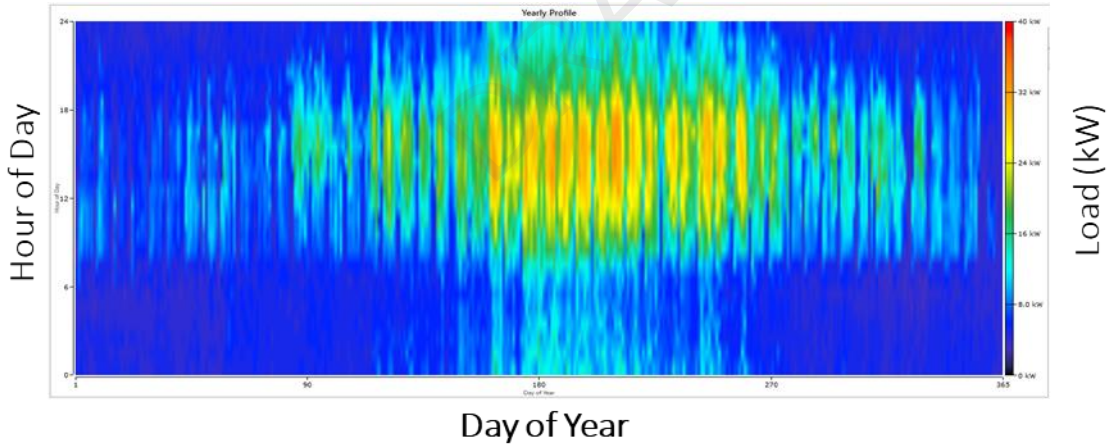

Figure A.9: Heat map of the Menifee Senior Center electrical load

As mentioned earlier, improving resilience performance of the Menifee Senior Center against utility power outages can be enhanced through implementation of diverse power sources. To achieve this goal, it is proposed that on-site solar photovoltaics (PVs), as an additional source of power, along with battery energy storage systems (BESS) to be utilized and various combinations and sizes to be evaluated. The capacity of the existing (or planned) diesel generator is 36 kW.

Figure A.10 shows the proposed location for the solar PV arrays which can accommodate a 62 kW PV system and also provide shaded parking area for the staff and customers.

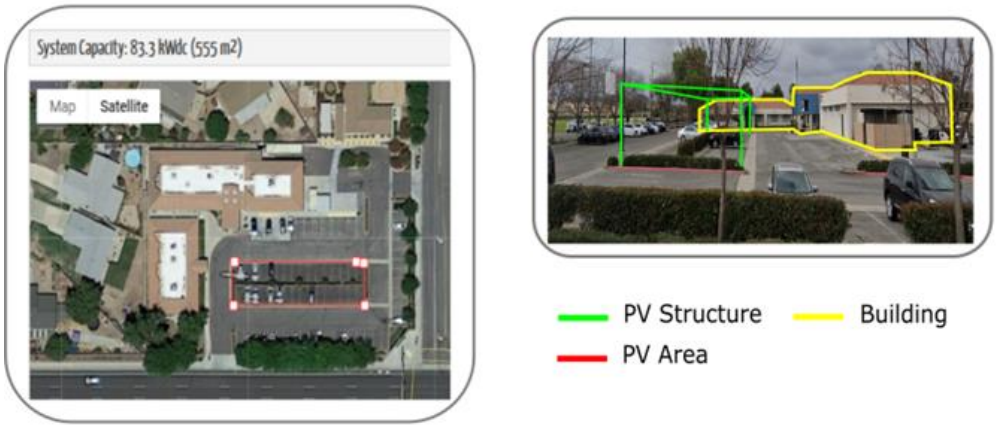

Figure A.10- Menifee Senior Center- PV system location

For the purpose of this analysis, it is assumed that 70% of the facility load, associated with the non-office building, is critical. That is particularly important in how the HOMER tools will treat the load in terms of resilience requirements which would directly impact how the microgrid components are sized and operated. In this case study, no down time is allowed, and the tool will develop the system such that all the loads are met at all the time throughout the year even in case of prolonged grid outages. Figure A.11 schematically shows the main components and connections of the developed microgrid for Menifee Center.

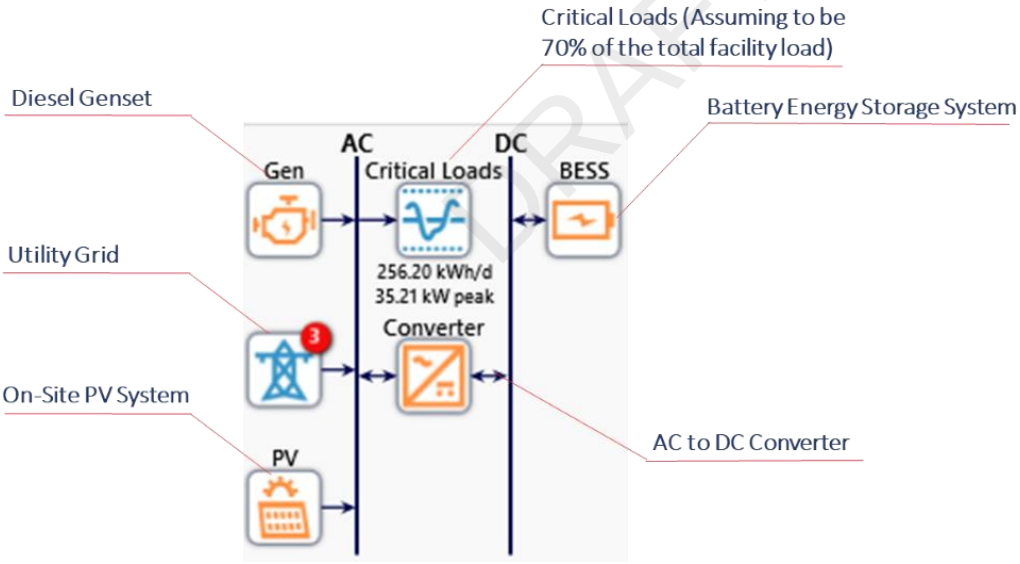

Figure A.11- Menifee Senior Center- Microgrid architecture and components

To evaluate reliability and resilience of the facility, grid outages should be modelled, and the system respond to such outages to be evaluated. Towards that end, frequency and duration of power outages are needed as input to the software model. Statistics of the past grid outages is available at city level through SEC reliability reports[20]. SAIFI and SAIDI numbers, representing average frequency of sustained interruptions and average duration of sustained interruptions respectively, were used in this study. According to the historical reliability of SEC circuits serving the city of Menifee for 2021, the

[20] Circuit Reliability Review- Menifee, 2022, Southern California Edison

SAIDI has been 175 minutes and the SAIFI has been 1.2. Therefore, it was assumed that each year the system would have to endure 1.2 outages each being 2.5 hours long.

The distribution of these outages will be randomly selected by the software; one example is shown in Figure A.12. Depending on the reliability requirements set for the facility, the software will size the solar and battery system such that those requirements are met at all times. In this case study, we assumed that 70% of the facility load is critical and should be covered throughout the year, i.e., no down time or degradation of performance is allowed for that portion of the load.

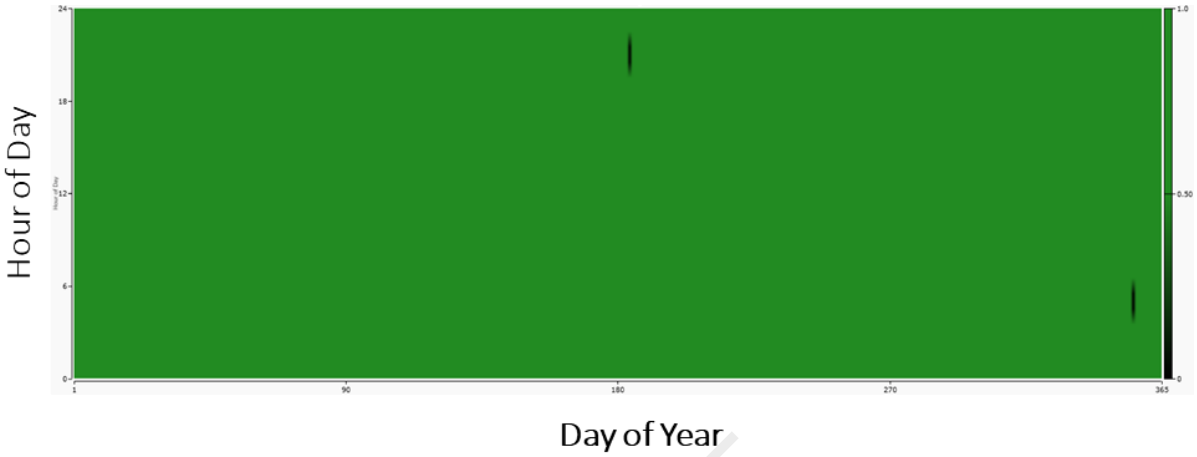

Figure A.12: Menifee Senior Center- Random distribution of outages throughout the year

Results and Recommendations

Feasible solutions for the Menifee Senior Center are summarized in Table A-2. These solutions essentially include those system sizes and combinations, referred to as system Architectures, that are capable of meeting the critical loads during the defined outage scenarios. Each battery pack has the rated capacity of 85 kWh/185 kW, and the software will come up with the optimum number of packs for each system architecture.

Table A-2: Menifee Senior Center- Microgrid modeling results

	Architecture			Cost				System		
Scn.	PV (kW)	Gen (kW)	BESS (kWh/kW)	NPC ($)	LCOE ($/kWh)	CapEx ($)	Simple Payback (yr)	Renewable Fraction (%)	Generator Hours	BESS Autonomy (hr)
1	62	36	-	$124 k	0.082	$149,450	9.5	75.8	4	-
2	-	36	-	$131.5 k	0.172	$27,000	-	0.0	4	-
3	**62**	**36**	**85/185**	**$146.4 k**	**0.108**	**$190,950**	**9.7**	**82.9**	**3**	**8**
4	-	36	85/185	$161.6 k	0.201	$68,500	-	0.0	4	8

These feasible scenarios are ranked based on the net present costs (NPC).[21] Scenario 2 represents the baseline scenario and has the second best NPC; however, the renewable fraction for this scenario is zero. Additionally, the generator runtime is 4 hrs/yr which is the highest among all feasible scenarios. Scenarios 3 is comprised of solar PVs, BESS, and diesel generators; this combination provides multiple benefits in terms of resilience performance and integration of renewable energy. Availability of multiple power sources improves the system flexibility and thereby enhance resilience against power outages. In case of future outages become longer and more frequent, the system would be able to sustain critical operations for longer periods compared to other scenarios investigated here; in other words, reduced generators runtime for scenario 3 compared with other scenarios can be translated to less reliance on diesel fuel, less maintenance, and longer lifetime for the diesel generators; for those reasons, and considering that the NPC of this scenario is only slightly higher than other scenarios, Scenario 3 is the proposed option for improving resilience posture of the system while also reducing GHG emissions and maintaining the economic performance close to the existing situation. Implementation of BESS would provide a more flexible demand management and can reduce demand charges on the utility bills. The single-line diagram of the proposed system is shown in Figure A.13.

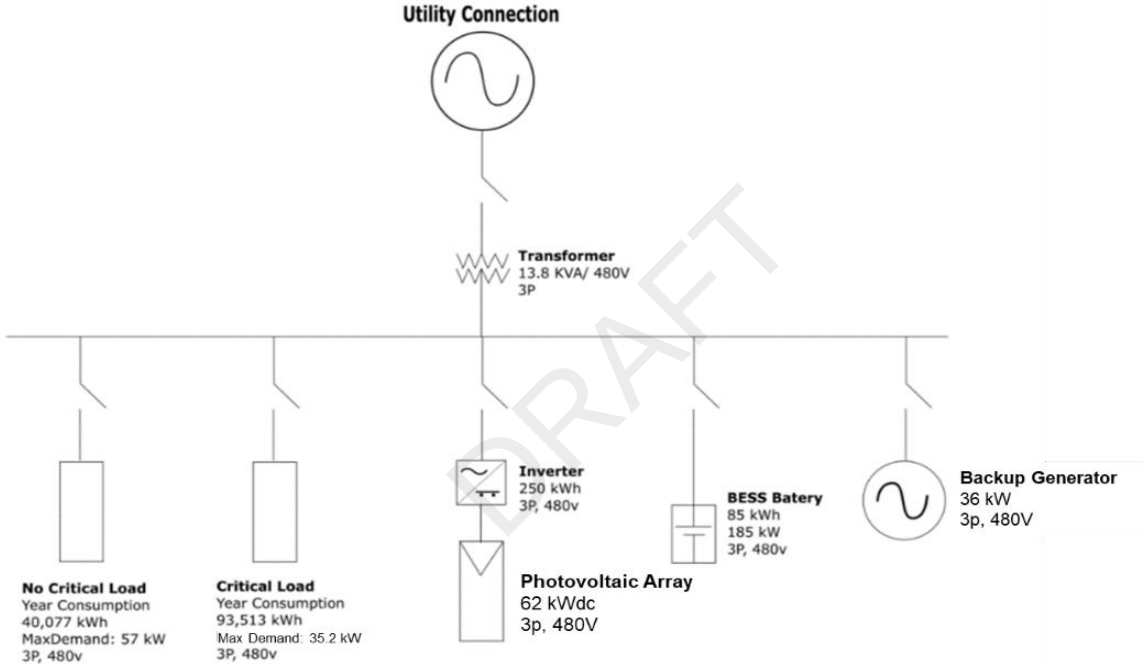

Figure A.13: Single-line diagram of the proposed system for Menifee Senior center

[21] Cost includes equipment capital cost only. All-in cost (design, construction, etc.) to be included in Final Draft.

A3. Case Study 3- Jurupa Valley Fire Station 16

Facility Overview

The Jurupa Valley Fire Station 16 is located at 9270 Limonite Ave, Jurupa Valley, CA. The facility is 40+ years old and serves around 10,000 people. The facility team has recently acquired a 12 kW backup generator.

The facility is currently connected to the Southern California Edison (SCE) utility on the TOU-GS-1-B tariff. The site location is shown in Figure A.14 below.

Figure A.14: Jurupa Valley Fire Station 16 site location

Analysis and Simulations

To assess how the current and proposed system would response to prolonged utility power outages, a comprehensive microgrid modelling and analysis was carried out. For this purpose, HOMER Grid software tool was used. HOMER Grid is a microgrid modeling software that is being widely used in the research and industry communities to design and optimization of microgrids, size different components of the system, and also to perform a technical and financial feasibility assessment. This tool can also help with resilience and reliability assessment of various microgrid combinations, which has been the main focus of this study.

In 2021, the total utility charges was $5,256 which includes energy charges, demand charges, and fixed charges. The total energy consumption during 2021 has been 26,923 kWh with the peak demand

reaching 11.28 kW on July 11th. Figure A.15 depicts the monthly variations in the monthly energy consumptions and the peak demands. The electrical load heatmap for this facility is shown in Figure A.16.

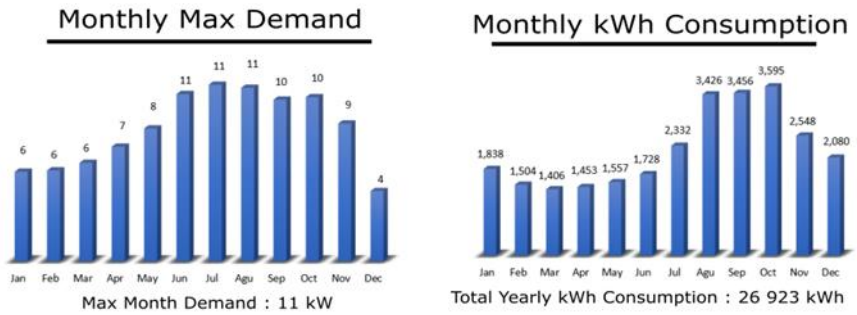

Figure A.15: Monthly electricity consumption and peak demands

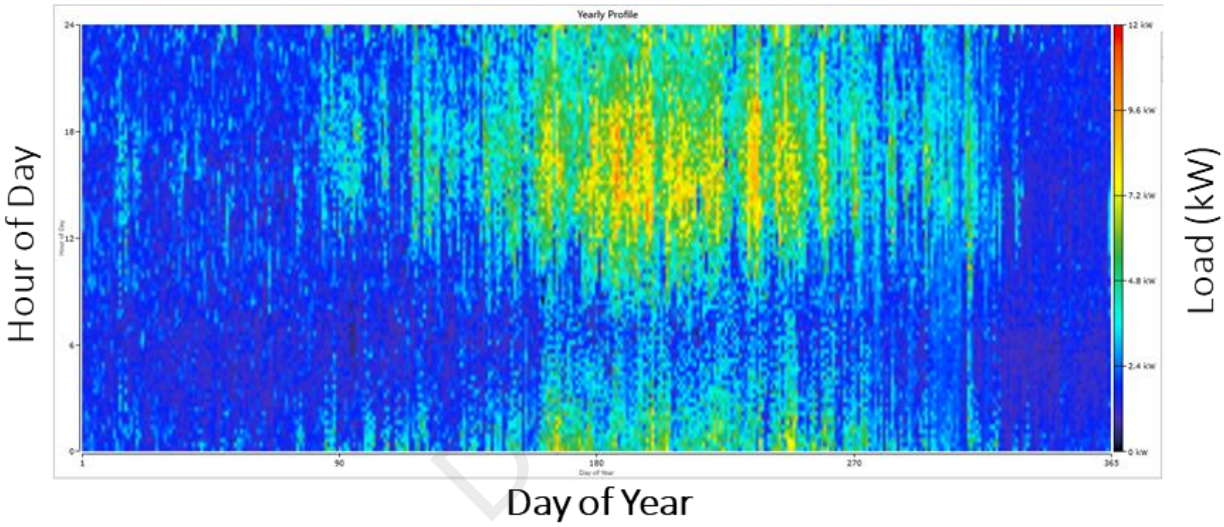

Figure A.16: Heat map of the Jurupa Valley Fire Station 16 electrical load

To improve resilience performance of the facility, it is proposed that on-site solar photovoltaics (PVs), as an additional source of power, along with battery energy storage systems (BESS) to be utilized and various combinations and sizes to be evaluated. The capacity of the existing (or planned) diesel generator is 12 kW. Figure A.17 shows the proposed location for the solar PV arrays which can accommodate a 14 kW PV system and also provide shaded parking area for the staff.

Figure A.17: Jurupa Valley Fire Station 16 - PV system location

For the purpose of this analysis, 100% of the facility load is assumed to be critical. That is particularly important in how the HOMER tools will treat the load in terms of resilience requirements which would directly impact how the microgrid components are sized and operated. In this case study, no down time is allowed, and the tool will develop the system such that all the loads are met at all the time throughout the year even in case of prolonged grid outages. Figure A.18 schematically shows the main components and connections of the developed microgrid for Jurupa Valley Fire Station 16.

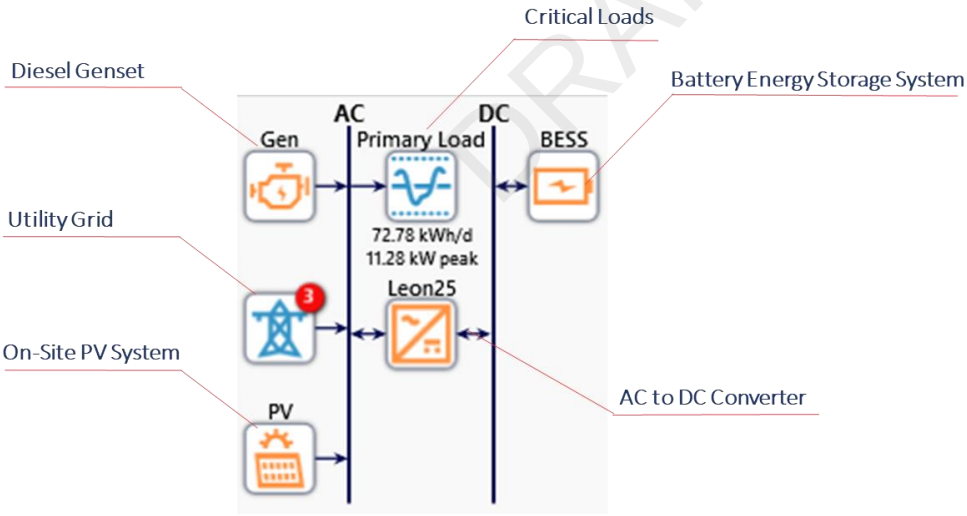

Figure A.18: Jurupa Valley Fire Station 16 - Microgrid architecture and components

To evaluate reliability and resilience of the facility, grid outages should be modelled, and the system respond to such outages to be evaluated. Towards that end, frequency and duration of power outages are needed as input to the software model. Statistics of the past grid outages is available at city level through SEC reliability reports[22]. SAIFI and SAIDI numbers, representing average frequency of sustained interruptions and average duration of sustained interruptions respectively, were used in this

[22] Circuit Reliability Review- Jurupa Valley, 2022, SOUTHERN CALIFORNIA EDISON

study. According to the historical reliability of SEC circuits serving the Jurupa Valley for 2021, the SAIDI has been 891 minutes and the SAIFI has been 2.7. Therefore, it was assumed that each year the system would have to endure 2.7 outages each being 5.5 hours long.

The distribution of these outages will be randomly selected by the software; one example is shown in Figure A.19**Error! Reference source not found.**. Depending on the reliability requirements set for the facility, the software will size the solar and battery system such that those requirements are met at all times. In this case study, we assumed that 100% of the plant load is critical and should be covered throughout the year, i.e., no down time or degradation of performance is allowed.

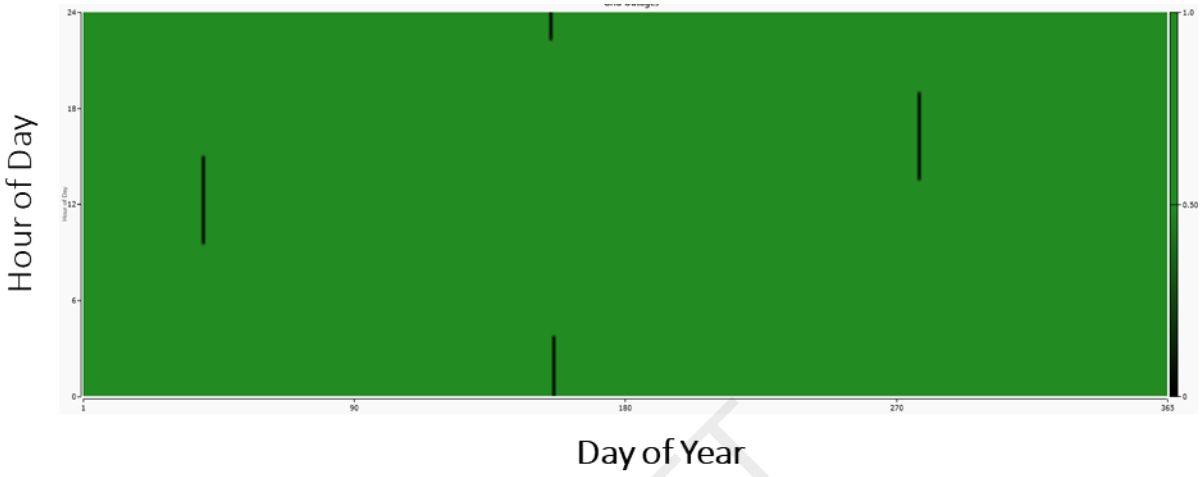

Figure A.19: Jurupa Valley Fire Station 16 - Random distribution of outages throughout the year

Results and Recommendations

Feasible solutions for the Jurupa Valley Fire Station 16 are summarized in Table A-3. These solutions essentially include those system sizes and combinations, referred to as system Architectures, that are capable of meeting the critical loads during the defined outage scenarios. Each battery pack has the rated capacity of 10.5 kWh/10.5 kW, and the software will come up with the optimum number of packs for each system architecture.

Table A-3: Jurupa Valley Fire Station 16- microgrid modeling results

	Architecture			Cost				System		
Scn.	PV (kW)	Gen (kW)	BESS (kWh/kW)	NPC ($)	LCOE ($/kWh)	CapEx ($)	Simple Payback (yr)	Renewable Fraction (%)	Generator Hours	BESS Autonomy (hr)
1	14	12	-	$27.8 k	0.066	$27.6 k	7.7	66.2	8	-
2	**14**	**12**	**10.5/10.5**	**$37.2 k**	**0.089**	**$33.6 k**	**10**	**67.1**	**3**	**2.8**
3	-	12	-	$41.4 k	0.159	$0	-	0	7	-
4	-	12	10.5/10.5	$50.1 k	0.193	$5.9 k	-	0	19	2.8

These feasible scenarios are ranked based on the net present costs (NPC).[23] Scenario 3 represents the baseline scenario and has the third best NPC. Scenarios 2 is comprised of solar PVs, BESS, and diesel generators; this combination provides multiple benefits in terms of resilience performance and integration of renewable energy. Availability of multiple power sources improves the system flexibility and thereby enhance resilience against power outages. In case of future outages become longer and more frequent, the system would be able to sustain critical operations for longer periods compared to other scenarios investigated here; in other words, reduced generators runtime for scenario 2 compared with other scenarios can be translated to less reliance on diesel fuel, less maintenance, and longer lifetime for the diesel generators. Scenario 2 will also result in a better economic performance compared to the baseline case; for those reasons, and considering that it has lower GHG emissions, Scenario 2 is the proposed option for improving resilience posture of the system. Implementation of BESS would provide flexibility towards better demand management and can reduce demand charges on the utility bills. The single-line diagram of the proposed system is shown in Figure A.20.

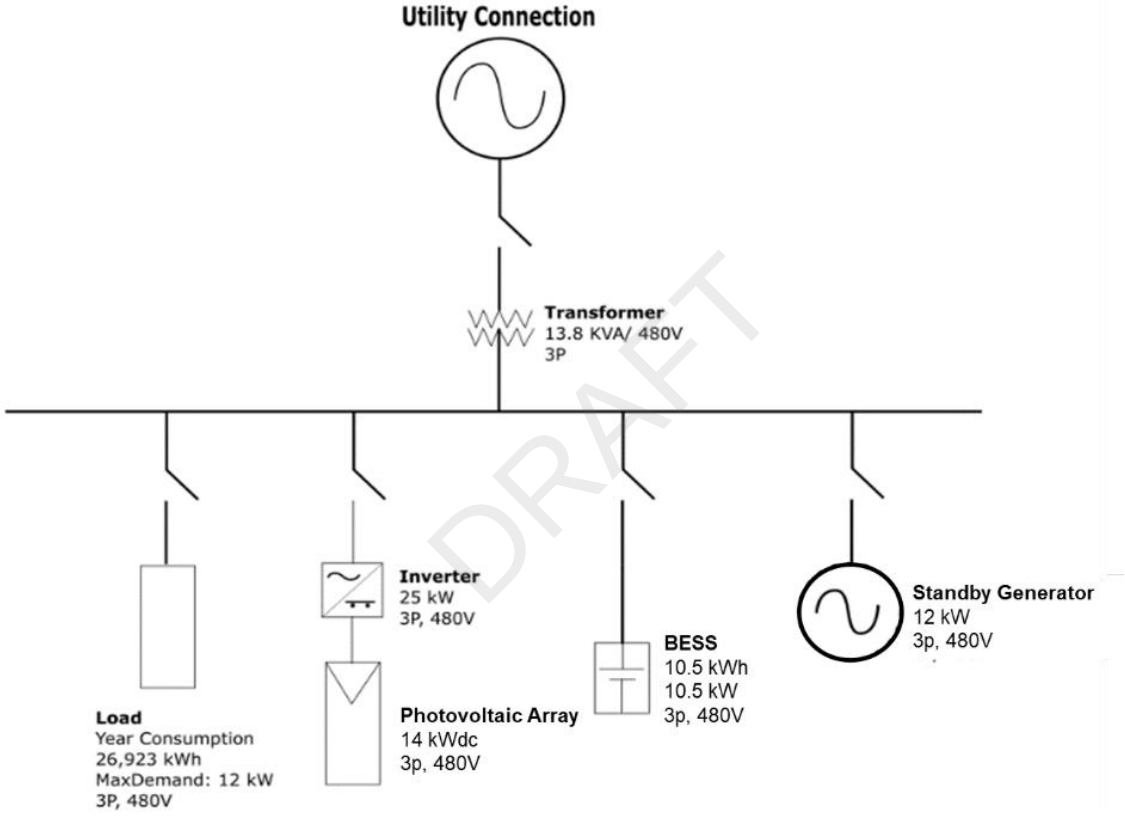

Figure A.20: Single-line diagram of the proposed system for Jurupa Valley Fire Station 16

Similar analysis was carried out on Jurupa Valley Fire Station 17 which is a larger and newer facility located at 10400 San Sevaine Way, Mira Loma, CA 91752. As shown in

A4. Case Study 4- Jurupa Valley Fire Station 17

[23] Cost includes equipment capital cost only. All-in cost (design, construction, etc.) to be included in Final Draft.

Complete analysis for Jurupa Valley Fire Station 17 to be provided in Final Draft.

Table A-4, the PV+BESS+Diesel Generator scenario, i.e. scenario 2, would be the best solution as it improves both resilience, economic, and environmental performance compared to the baseline scenario (scenario 3).

A4. Case Study 4- Jurupa Valley Fire Station 17

Complete analysis for Jurupa Valley Fire Station 17 to be provided in Final Draft.

Table A-4- Jurupa Valley Fire station 17- microgrid modeling results

	Architecture			Cost				System		
Scn.	PV (kW)	Generator (kW)	BESS (kWh/kW)	NPC ($)	LCOE ($/kWh)	CapEx ($)	Simple Payback (yr)	Renewable Fraction (%)	Generator Hours	BESS Autonomy (hr)
1	55	24	-	$62.5 k	0.042	$108.6 k	8.1	74.5	17	-
2	**55**	**24**	**10.5/10.5**	**$98.6 k**	**0.067**	**$131.4 k**	**10.9**	**74.9**	16	**1**
3	-	24	-	$107.7 k	0.150	$0	-	0	31	-
4	-	24	10.5/10.5	$143.6 k	0.199	$22.8 k	-	0	33	1

B. Social Vulnerability

To be completed in the Final Draft.

C. Natural Hazards

To be completed in the Final Draft

D. Critical Facility Questionnaire

WRCOG Critical Assets- Questionnaire			[NAME OF JURISDICTION]
	Guidance	*Facility 1*	*Facility 2*
Facility Name	*As extracted from the WRCOG Regional Facility List spreadsheet circulated earlier; add/modify list as needed.*	[FACILITY NAME]	[FACILITY NAME]
			FACILITY OVERVIEW
Facility Type	*As extracted from the WRCOG Regional Facility List spreadsheet circulated earlier; add/modify list as needed.*		
Services Provided	*As extracted from the WRCOG Regional Facility List spreadsheet circulated earlier; add/modify list as needed.*		
No. of people served	*On average, how many people does this facility serve under normal operations? Select range from dropdown menu.*		
Facility Age	*Select from dropdown menu.*		
			HAZARD SENSITIVITY
Air Quality	*Identify degree of sensitivity against each threat, by selecting one of the following options from the dropdown menu:* ***Low*** ***Medium*** ***High***		
Drought			
Flooding			
Human Health Hazards			
Extreme Temperature (heat waves, cold snaps)			
Wildfire			
Other?	*Note any additional remarks on threat probability and consequence*		
			MOST CRITICAL ENERGY NEEDS
Computers/ Other Equipment	*Identify most prioritized energy needs for the facility by selecting "X" where applicable. Leave other fields blank.*		
Space conditioning (heating/cooling)			
Lighting			
Communications/ Server Rooms (including ltg, clg etc)			
Security			
Other?	*Note any additional remarks on critical energy needs here*		
			AVAILABILITY REQUIREMENTS
Computers/ Other Equipment	*Identify availability requirements to meet the most critical energy needs by selecting one of the following options from the dropdown menu:* ***Uninterruptible*** *: Eg-24x7, no downtime at all; Eg- 911 call center comms* ***Essential*** *: Eg- can afford minor downtime, Eg- fire station* ***Non-Essential*** *: Eg: can afford downtime, can stay offline for a few hours without major impact, Eg- Contracting office* ***Not Applicable***		
Space conditioning (heating/cooling)			
Lighting			
Communications/ Server Rooms (including ltg, clg etc)			
Security			
Additional remarks	*Note any additional remarks on availability requirements can be entered here*		
			EXISTING INFRASTRUCTURE
Electrical/Power System Condition	*Select from dropdown menu*		
HVAC System Condition	*Select from dropdown menu*		
Backup Generators	*Identify if facility has backup generators that support facility load, in part or in full, from dropdown selection*		
Fuel storage tanks	*Identify if facility has fuel storage tank, from dropdown selection*		
Power conditioning systems (UPS)	*Identify if facility has UPS supporting critical loads of the concerned facility, from dropdown selection*		
Renewable energy supply	*Identify if facility has solar PV or other forms of renewable energy, from dropdown selection*		
Battery energy storage	*Identify if facility has battery energy storage systems, from dropdown selection*		
Multiple power feeds	*Identify if facility has multiple power feeds, from dropdown selection*		
Opportunity for alternative technologies	*Identify if alternate energy on site can be an option, or if there is room to expand current alternative systems. Enter response in words.*		
Additional remarks	*Any additional remarks on current infrastructure or on any of the above can be entered here. Note any issues related to backup power, power outages, or power quality*		
What are the key challenges you anticipate in implementing resilience measures on this site ?	*Enter response in words. Mention any key pain points, if they exist, specific to the facility or region.*		

E. Asset Prioritization Matrix

WRCOG Facility Prioritization Matrix

Facility Overview

Community Value (Social Vulnerability) — *The scale and vulnerability of the community served by the asset/facility.* Columns: People served; Socioeconomic Status; Household Composition & Disability; Minority Status & Language; Housing & Transportation; Overall Social Vulnerability. Scale: <100=1, 100-1k=2, 1k-10k=3, >10k=4; 4 percentiles (highest (4) to lowest (1)).

Operational Needs (Energy Needs & Availability Requirements) — *The requirements for energy at the at the facility to maintain function.* Columns: Relocatability; Computers/ Other Equipment; Space conditioning (heating/cooling); Lighting; Communications/ Server Rooms (including; Security. Scale: Y=1, N=3; Uninterruptible=3, Essential=2, Non-essential=1, N/A= 0.

Physical Hazard Sensitivity — *The scale and nature of the physical threats to the asset/facility.* Columns: Air Quality; Drought; Human Health Hazards; Flooding; Extreme Temperature (heat waves, cold; Wildfire. Scale: High=3, Medium=2, Low=1, N/A=0.

Existing Infrastructure — *The asset's/facility's existing systems which influence its ability to operate.* Columns: Facility age- Old/ Avg/New; Electrical/Power systems condition; HVAC systems; Backup Generators; Fuel storage tanks; Power conditioning systems (UPS); Renewable energy supply; Battery energy storage; Multiple power feeds; Opportunity for alternative technologies. Scale: <10 yrs=1, 10-40yrs; Poor=3, Avg/Fair=2, Good=1; Mon=3, Yes-P=2, Yes-; Yes=1, Yes w/gaps=2, No=3, Not needed= blank/0.

TOTAL SCORE — Max=100

All responses translated from questionnaire and coded per category as highlighted in this row — Low to High

Attribute weights listed in this row: 1.25 | 1.25 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 2.0 | 2.0 | 2.0 | 2.0 | 3 | 2.3 | 0.5 | 1 | 1 | 1 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81

Agency	Facility name	Building Type	Services Provided	TOTAL SCORE
DUMMY				100
CORONA	Wells 7, 8, 9A, 11, 12, 13, 14, 15, 17, 1	Water Wells	Groundwater pumped for treatment used as potable water	86
BEAUMONT	Beaumont Fire Station	Fire Station	Emergency ops	83
CORONA	Desalter	Potable WTP	Potable water treatment for distribution	82
CORONA	Sierra del Oro Treatment Plant	Potable WTP	Potable water treatment for distribution	81
CORONA	Garretson Blending Station	Blending station	Blend multiple sources of potable water for distribution	81
CORONA	Water Reclamation Facility 1	Water Reclamation	WWT to be used as reclaimed water	81
CORONA	Lester Water Treatment Plant	Potable WTP	Potable water treatment for distribution	80
CORONA	15 Wastewater Lift Stations	Lift station	Lift station	80
CORONA	Water Reclamation Facility 2	Water Reclamation	WWT to be used as reclaimed water	80
BEAUMONT	Beaumont Police Station	Police Station	Emergency ops	80
JURUPA VALLEY	County Sheriff's Station	Police Station	Emergency ops	79
CORONA	Mangular Blending Station	Blending station	Blend multiple sources of potable water for distribution	79
CORONA	Water Reclamation Facility 3	Water Reclamation	WWT to be used as reclaimed water	79
BEAUMONT	City of Beaumont WWTP	WWTP	24/7 WWT	78
JURUPA VALLEY	County Fire Station 18	Fire Station	Emergency ops	77
JURUPA VALLEY	County Fire Station 16	Fire Station	Emergency ops	77
JURUPA VALLEY	County Fire Station 38	Fire Station	Emergency ops	75
BANNING	Water Canyon Production Wells	Water production well	Wells in water canyon to provide city water	74
BEAUMONT	Four Seasons Lift Station	WW Pump Station	Lift station	73
JURUPA VALLEY	County Fire Station 17	Fire Station	Emergency ops	73
BEAUMONT	Beaumont Mesa Lift Station	WW Pump Station	Lift station	73
RIVERSIDE	Riverside Water Quality Control Plant	Sewer treatment plant	Sewer treatment plant for potable use	72
BEAUMONT	Noble Creek Lift Station	WW Pump Station	Lift station	71
BEAUMONT	Marshall Creek Lift Station	WW Pump Station	Lift station	71
MURRIETA	Murrieta Fire Station 5	Fire Station	Emergency ops	70
MENIFEE	Fire Station #68	Fire Station	Emergency response	70
MENIFEE	Kay Cenicerros Senior Center	Senior Center	Senior center and shelter	69
MURRIETA	Murrieta Fire Station 2	Fire Station	Emergency ops	69
MENIFEE	City Hall	City Hall	City service hall	69
RIVERSIDE	Wood Rd Swer Lift Station	Lift station	Lift station	69
BEAUMONT	Upper Oak Valley Lift Station	WW Pump Station	Lift station	69
BEAUMONT	San Timoteo Repeater	Comms	Control/Comm for sewer conveyance	68
RIVERSIDE	Emergency Operation Center (EOC)	EOC	Emergency ops	68
BANNING	Wastewater Treatment Plant	WWTP	WWT for percolation ponds	68
TEMECULA	CalFIRE Station 12	Fire Station	Emergency ops	68
MURRIETA	Murrieta Fire Station 1/Admin	Fire Station	Back-up EOC	68
MENIFEE	Maintenance and Operations Center (N	Department ops center (DO	DOC location during rainstorm/flooding	68
BEAUMONT	Fairway Canyon Lift Station	WW Pump Station	Lift station	68
MURRIETA	Murrieta Fire Station 3	Fire Station	Emergency ops	68
BEAUMONT	Albert A. Chatigny, Sr. Community Rec	Community Center	Emergency center, heat/cool center, children/senior service	67
MURRIETA	Murrieta Fire Station 4	Fire Station	Emergency ops	67
BEAUMONT	Seneca Springs Lift Station	WW Pump Station	Lift station	67
MURRIETA	Murrieta Senior Center	Senior Center	Senior center and cool/heat center	67
MURRIETA	Murrieta Community Center	Community Center	Services for children/adults	66
BEAUMONT	Lower Oak Valley Lift Station	WW Pump Station	Lift station	66
JURUPA VALLEY	Jurupa Valley City Hall	Admin	City service hall	66
RIVERSIDE	Janet Goeske Senior Center	Senior Center	Senior center	65
RIVERSIDE	Ysmael Villegas Community Center	Community Center	Service for children/adults	65
MURRIETA	Murrieta Police Department	Police Station	Emergency ops	65
WILDOMAR	Fire Station #61	Fire Station	Emergency ops	64
MURRIETA	Murrieta Youth Center	Youth Center	Services for children	63
TEMECULA	Temecula Field Operations Center	Field ops	Response ops, response equipment location	63
TEMECULA	Mary Phillips Senior Center	Senior Center	Cool/heat center	62
TEMECULA	Temecula City Hall	EOC	Emergency ops	62
BANNING	Westward Lift Station	Lift station	Lift station	61
WILDOMAR	City Hall	City Hall	EOC	61
JURUPA VALLEY	City of Jurupa Valley, Fleet Maintenanc	Maintenance	Field/Maintenance/Facilities Maintenance staff use	61
EASTVALE	Fire Station 27	Fire Station	Fire Service	61
EASTVALE	Fire Station 31	Fire Station	Fire Service	60
JURUPA VALLEY	City of Jurupa Valley, Eddie D. Smith Se	Senior Center	Senior center and shelter	60
BANNING	Community Center	Community and senior cent	Cool center, services for seniors	59
MENIFEE	Lazy Creek Recreational Center	Rec Center	Service for children	58
WILDOMAR	Facility #4	Cooling center	Cool center	57
BANNING	Banning Police Station	Police Station	Emergency ops	57
TEMECULA	Temecula Community Recreation Cent	Community Center	Services for children/adults and emergency shelter	57
MORENO	City of Moreno Valley Senior Center	Senior center	daily access and services for seniors, cooling center	53
MORENO	City of Moreno Valley EOC	Emergency Operations Cent	emergency response central command	51
MORENO	City of Moreno Valley CRC	Community center /emerge	emergency shelter for disasters, COOL center	50
LAKE ELSINORE	Senior Center	cooling center	lunch service, cooling center	45
LAKE ELSINORE	Planet Youth/ Tiny Tots	child care, school	child care, school	44
LAKE ELSINORE	Neighborhood Center	child care, cooling center	child care, activities for kids	44
WILDOMAR	Facility #3	Traffic Signals-citywide		37

F. Energy Resilience Strategies

Table F: Energy Resilience Strategies

Strategy	Category	Resource	Resilience Attribute	Opportunities & Constraints
On-site Solar	Energy Supply	Power	Energy Source Diversity	- Rooftop/Parking Area - Circuit capacity - Structural support - Shading - Glare
Batter Energy Storage System	Energy Storage	Power	Energy Source Diversity; Energy Demand Reduction	- Outdoor space with clearances - Circuit capacity - Advanced controls
Diesel Generator	Backup Power	Power	Load Sustainment Capacity	- Outdoor space with clearances - Ventilation requirements - Noise requirements - Fuel storage capacity - Dedicated emergency circuits

Additional strategies to be added in Final Draft

G. Funding and Financing Strategies

The available funding and financing strategies identified in this chapter support the electrification of and resilience planning for critical facilities in the WRCOG region, with an emphasis on inclusion of energy storage for emergency response. This chapter summarizes key considerations for developing funding strategies for resiliency efforts, as well as grants and other funding and financing tools that are currently available to fund capital intensive energy resiliency projects and ongoing policies and programs.

G1. Key Considerations for Developing Funding & Financing Strategies

The following section will contain high-level descriptions of the difference between funding and financing types, revenue generating tools, and the potential role of local and regional stakeholders in the implementation process.

Funding vs. Financing

Energy resiliency projects often require a combination of funding and financing strategies. Funding includes revenues generated by a project (e.g., from electricity generated by a renewable energy project), taxes, and grants or incentives that do not need to be paid back. While many grants are very competitive and require a multi-stage application process, some are allocated through state or federal formulas that consider factors such as population size, demographics, and various other forms of Census data.

Financing, often accessed in the form of loans or bonds, is the incurrence of indebtedness to cover the initial costs of a project. Financing must be paid back with revenue, for example from the sale of electricity back to the grid, incentives, or tax credits. A common example of financing for a renewable energy project is a solar power purchase agreement (PPA). Solar PPAs are a type of public-private partnership where a developer covers most, if not all, of the cost associated with design, permitting, financing, and installation of solar energy system on a customer's property. The developer will then provide the energy generated on-site to the customer at a cost lower than the typical utility's rate. The developer of the solar energy system will benefit from the income associated with sale of electricity, as well as any related tax credits and other incentives generated from the system. In addition to public-private partnerships, other financing opportunities may include revolving loan funds operated by the state and/or bond issuances.

Implementation and Governance

The facilities evaluated in this planning process are operated by a wide range of city and county agencies, including local Police (or County Sherriff), Fire, Wastewater, and Community Services Departments. Some of the Fire stations evaluated are operated by the state (CalFIRE). In general, the agencies that own and operate facilities are likely to be the primary implementers of energy measures. Local governments are eligible to apply for most of the grants and incentives described below, enter into PPAs or other public-private partnerships, and access the other funding and financing tools described below.

However, the process for applying for competitive grants (in particular) is onerous. Larger cities and local governments that operate their municipal utilities are most likely to have the capacity to pursue state and federal grants independently. By partnering together, cities may help share the administrative burden and increase the competitiveness of grant applications. WRCOG can continue to play a valuable role in convening cross-agency partnerships, providing information about upcoming grant opportunities, and even serving as a co-applicant for specific grants that have a regional focus. Other important local partners include SCE, which (as discussed below) offers some incentive and financing programs for energy efficiency improvements.

G2. Funding & Financing Tools

Common funding and financing sources for energy resiliency projects and programs can be broadly categorized as (1) grants from local, state, and federal agencies, (2) financing tools and 3) local revenue sources. This section summarizes key funding and financing sources that are currently available to support implementation of WRCOG's regional resilience plan.

Grants and Incentives

In response to the COVID-19 pandemic and the increasing impacts of climate change, an unprecedented amount of federal and state funding is being made available to local governments for energy and resilience related projects, creating a once-in-generation opportunity to implement projects and programs that mitigate and adapt to climate change. At the same time, local agencies across the country are largely underfunded, which creates substantial competition for grant funding. The increasing frequency and intensity of extreme weather events have also increased local agency demand for grant dollars to mitigate climate change, prepare for future events, and support recovery from these events.

The grants summarized below are those that have potential to fund WRCOG and member agency's resiliency efforts, including improving resiliency to regional vulnerabilities such as wildfire, drought, flooding, and extreme heat and supporting the goal of long-term decarbonization.

State and Regional Grants

The State of California offers an array of mitigation and resilience-related grants for which WRCOG's energy resiliency plan may be well-suited. In May 2022, Governor Newsom announced a record-breaking $32 billion increase in state funding over the next four years to address climate change, including emissions reduction, drought resilience and response, extreme heat, natural carbon sequestration, renewable energy, and energy resilience (Office of Governor Gavin Newsom 2022). State grant programs that are earmarked to receive increased funding allocations because of this increased budget allocation are indicated with an asterisk.

Table G-1: State and Regional Grants Most Applicable to WRCOG Energy Resiliency Plan

Administering Organization	Program/Grant Name	Eligible Receiving Entities	Description	Eligible Uses	Funding Range	Type of Funding
California Governor's Office of Planning and Research (Cal OPR)	**Adaptation Planning Grant Program***	Local, Regional, and Tribal Governments	Adaptation Planning Grant Program provides funding to help fill planning needs, provides communities the resources to identify climate resilience priorities, and support the development of a pipeline of climate resilient infrastructure projects across the state.	• Build community planning and capacity by supporting peer to peer learning/info sharing. • Multisector/issue planning. • Support communities faced with cascading and compound impacts of climate change.	$25m released in total through multiple rounds of funding.	Competitive
California Governor's Office of Planning and Research (Cal OPR)	**Regional Resilience Planning & Implementation Grant Program***	Local, Regional, and Tribal Governments	This Program will support regions in advancing resilience through capacity-building, planning, and project implementation.	• Support regional projects that improve climate resilience and reduce risk from climate impacts. Including: wildfire, sea level rise, drought, flood, increasing temperatures, and extreme heat events.	$255m in fed funding (fed cost share) 25% local cost share ($85m set aside by FEMA to cover).	Reimbursement based; advanced funding on a case-by-case basis.
California Energy Commission (CEC)	**Energy Partnership Program**	Cities, Counties, County offices of Education, Special Districts, Public Hospitals, Public Care Facilities, Public Colleges or Universities	This Program offers services to help identify the most cost-effective, energy-saving opportunities for existing buildings and new construction. These funds may be used to conduct energy audits, prepare feasibility studies, and develop equipment performance specifications, among other construction related plans.	• Assist with contractor selection • Review commissioning plans. • Review equipment bid specifications. • Develop equipment performance specifications. • Review existing proposals and designs.	Up to $20,000 available per grantee.	Available, continuously open with final filing date. Closed once funding is expended.
California Governor's Office of Emergency Services (Cal OES)	**PrepareCA Jumpstart**	Local, Regional, and Tribal Governments	Provides technical assistance to develop local initiatives that primarily benefit eligible socially vulnerable and high hazard risk communities; and create resiliency through capacity building, mitigation, preparedness activities, education, response and recovery planning, and/or future project scoping.	• Evacuation planning – community education on mitigation. • Strengthening building codes. • Implementing a Community Emergency Response Team. • Establishing a data/fiscal management system.	$15m in state funding. Applications may not receive more than $1m in state funds.	Reimbursement based; advanced funding on a case-by-case basis.

Administering Organization	Program/Grant Name	Eligible Receiving Entities	Description	Eligible Uses	Funding Range	Type of Funding
California Resilience Challenge	California Resilience Challenge 2022 Grant Program	State communities	A statewide effort inviting local communities across CA to apply for funding for a project that addresses a unique climate threat: drought, fire, flood, or extreme heat.	• Differs case-by-case. • Santa Barbara County received an award to design two pilot climate resilience hubs that will provide safe refuge and critical services during emergencies.	$2m released in 2021, 2022 TBD.	Competitive
California Governor's Office of Emergency Services (Cal OES)	PrepareCA Match	Local, Regional, and Tribal Governments	Provides scoping/sub-application technical assistance to develop FEMA HMGP projects and activities that directly and primarily benefit socially vulnerable and high hazard risk communities.	• Address effects of future conditions such as climate change, demographics changes, population changes, and land-use changes. • Advance whole community risk reduction, including protecting access and functional needs.	$255m in fed funding (fed cost share) 25% local cost share ($85m set aside by FEMA to cover).	Reimbursement based; advanced funding on a case-by-case basis.
California Governor's Office of Planning and Research (Cal OPR)	Extreme Heat and Community Resilience Grant Program*	TBD. More information coming soon.	TBD. More information coming soon.	• TBD. More information coming soon.	TBD. More information coming soon.	TBD. More information coming soon.
Coachella Valley Mountains Conservancy	Climate Resilience and Community Access Grant Program	Nonprofit, Public Agency, Tribal Government	Seeks to invest in local conservation community by creating new programs or developing organizational or agency capacity to enhance desert resilience to climate change and foster conservation of the desert as a carbon sink.	• Enhance desert resilience to climate change. • Improve natural resources management.	Grants requests may range from $100-400,000 per grantee.	No minimum match, but applicants leveraging other funds will be preferred.
State Energy Resource Conservation and Development Commission	Community Energy Resilience Act of 2022 (SB 833)	TBD. More information coming soon.	Seeks to support local governments in developing community energy resilience plans that help achieve energy resilience objectives and state clean energy and air quality goals.	• TBD. More information coming soon.	TBD. More information coming soon.	TBD. More information coming soon.
California Department of Food and Agriculture (CDFA)	Fairground and Community Resilience Centers Program	Tribes, Community-based organizations, Nonprofits, Foundations, Public agencies, Financial institutions, small businesses, Private sector	The Fairground and Community Resilience Centers Program focuses on improving both local fairground and other community facilities to enhance the state's emergency preparedness capabilities, particularly in response to climate change.	• Infrastructure for emergency evacuation, shelter, base camps during emergency events, and critical deferred maintenance. (I.e., cooling and heating centers, clean air centers, and extended emergency evacuation response centers with kitchens, shower facilities, broadband, back-up power, etc.)	$38m of available funding.	TBD. Draft guidelines and details are currently being developed.
California Strategic	Community Resilience	California Native American Tribes, Community-based	The CRC program funds new construction and upgrades of neighborhood-level resilience centers across the state that will support	• Comprehensive retrofits that support the resilience center's ability to provide	$25m will be available in 2022-2023 fiscal year	TBD. Draft guidelines and details are

Administering Organization	Program/Grant Name	Eligible Receiving Entities	Description	Eligible Uses	Funding Range	Type of Funding
Growth Council	Centers (CRC) Program	organizations, Community development financial institutions, Faith-based organizations, Foundations, Joint powers authorities, Nonprofits, Libraries, Local government agencies, Schools, Small businesses	communities during climate and other disasters, as well as build long-term resilience, preparedness, and recovery operations for local communities.	shelter during an emergency (I.e., solar installation, energy and water efficiency appliances, etc.). • Upgrades to surrounding area that support accessibility and function of the center (I.e., community gardens, shade trees, low-carbon transportation, etc.) • Distribution of community services and resources such as food, clean water, and personal protective equipment. • Local workforce development and job force training programming.	and $75m will be available in 2023-2024 fiscal year.	currently being developed.

*These grants have been allocated funding through the 2022 California State Budget.

Federal Grants

Federal grants tend to offer larger dollar amounts per grantee than state and local grants but tend to have more requirements and lengthier application processes, which can be resource-intensive for the receiving entity. Given this, federal grants are generally better suited for higher price tag projects, including regional projects, for which the grant can cover a significant portion. A list of the federal grants that are most relevant to WRCOG's Energy Resiliency Plan are summarized in Table . Many new and legacy federal grants have received an injection of funding through President Biden's Infrastructure Investment and Jobs Act (IIJA). These funding opportunities must be used in accordance with IIJA rules, such as domestically sourced construction materials and Justice 40 Initiative requirements.

In addition to pursuing competitive funding, WRCOG jurisdictions may also consider allocating federal formula funding to improve energy resilience. For example, funds already allocated to cities and counties from the American Rescue Plan Act (ARPA) through the Coronavirus State and Local Fiscal Recovery Fund could potentially be used to fund portions of energy resiliency projects, particularly projects related to water infrastructure or replacing lost public sector revenue streams.[24] Other potential formula funding sources include the Energy Efficiency and Conservation Block Grant Program, which specifically calls out as an eligible use the development, implementation, and installation of renewable energy technologies on government buildings.

Table G-2: Federal Grants Most Applicable to WRCOG Energy Resiliency Plan

Administering Organization	Program/Grant Name	Eligible Receiving Entities	Description	Eligible Uses	Funding Range	Type of Funding
Federal Emergency Management Agency (FEMA)	**Building Resilient Infrastructure and Communities (BRIC)***	State, Tribal Gov./Org., Local Government, For-Profit Entity, Public Agency/Authority, Other, Utilities, Cooperative Organization	The Building Resilient Infrastructure and Communities program makes federal funds available to states, U.S. territories, federally recognized Tribal governments, and local communities for hazard mitigation activities.	• Capability and capacity-building. (knowledge sharing, etc.) • Mitigation projects. (projects to increases resilience and public safety) • Management costs (indirect, direct, administrative expenses.)	State allocations - $56M. National competition for mitigation projects - $919M.	Competitive
United States Department of Energy (US DOE)	**Program Updating our Electric Grid and Ensuring Reliability and Resiliency***	State, Tribal Gov./Org., Local Government, US Territory	To provide federal financial assistance to demonstrate innovative approaches to transmission, storage, and distribution, infrastructure to harden and enhance resilience and reliability.	• Innovative approaches for hardening efforts that enhance resilience and reliability. • Promotion of grid resilience by region.	$5B available in total with $1B appropriated annually for FY 2022-2026. Opens 3rd QTR, 2022.	Competitive, Cooperative Agreement, Other

[24] For example, the City of Riverside received $73,535,189 in American Rescue Plan Act (ARPA) funding, which the City had already allocated to various uses at the time of this publication. Any remaining funding, however, could be considered for this purpose.

Administering Organization	Program/Grant Name	Eligible Receiving Entities	Description	Eligible Uses	Funding Range	Type of Funding
Federal Emergency Management Agency (FEMA)	Hazard Mitigation Grant Program*	State, Tribal Gov./Org.	Hazard mitigation includes long-term efforts to reduce risk and the potential impact of future disasters. HMGP assists communities in rebuilding in a better, stronger, and safer way to become more resilient overall.	• Development and adoption of hazard mitigation plans (required to receive federal funding). • Structural resilience retrofits for buildings and utilities for resistance against hazards.	$3.46B available until expended.	Competitive. 75% federal and 25% local/state match requirement.
Energy Efficiency and Renewable Energy (EERE)	Energy Efficiency and Conservation Block Grant Program*	State, Tribal Gov./Org, Local Government, County	This program assists states, local governments, and Tribes to reduce energy use, reduce fossil fuel emissions, and improve energy efficiency.	• Energy distribution technologies; distributed resource, district heating and cooling systems. • On-site renewables; solar energy, wind energy, fuel cells.	$550M available until expended. Applications 4th QTR, 2022.	Mix of competitive and formula grants.
Department of Agriculture, Forest Service	Community Wildfire Defense Grant Program for At-Risk Communities*	State, Tribal Gov./Org., Local Government, Public Agency/Authority, Non-Profit	Provides grants to communities at risk from wildfire to develop or revise their community wildfire protection plans and carry out projects described within those plans.	• Under development. • Eligible to plan and implement fuels reduction strategies and drought mitigation.	Not to exceed $250,000 for planning or $10M for implementation per grantee.	Mix of competitive and formula grants.
Federal Grant, disbursed through State	Building Codes Implementation for Efficiency and Resilience*	States and State Partnerships	Enable sustained, cost-effective implementation of updated building energy codes to save customers money on their energy bills.	• Meeting updated building energy codes in a cost-effective manner. • Address implementation needs in both urban and suburban areas. • See sources for all eligible uses.	$225M available until expended.	Competitive
US Department of Housing and Urban Development (HUD)	Community Development Block Grant (CDBG)	Metropolitan Statistical Areas (MSAs), Cities with a minimum population of 50,000, Urban counties with a minimum population of 200,000	To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low-and-moderate income persons.	• Flexible funding to meet multi-sector/issue planning needs that intersect with climate risks. • Planning and responding to cascading and compound impacts of climate change.	$8.7B allocated for FY 2022. Minimum request of $100,000 and has no ceiling limit.	Mix of competitive and formula grants. 70% of funds must be used to benefit low-and-moderate persons.

*These grants have been allocated additional funding through IIJA.

Utility and Tax Incentives

The state and federal government currently have programs in place to incentivize an equitable transition to clean energy. Incentive programs and rebates are funding sources open to all applicable projects until the program budget is expended. To reap the benefits of incentives and rebates, the costs of planning and implementation must first be covered to establish a functioning renewable energy system.

Note that the federal Inflation Reduction Act, which was passed in August 2022, extended the solar investment tax credit and advanced energy project credit, and created new tax credits and deductions to incentivize investments in energy efficient commercial buildings, clean vehicles, alternative fuels, and clean electricity production and storage. Guidance on the details of these new programs can be expected over the coming months and years.

Table G-3. Existing Utility and Tax Incentives Most Applicable to WRCOG Energy Resiliency Plan

Administering Organization	Program Name	Description	Eligible Uses
California Public Utilities Commission (CPUC)	**Microgrid Incentive Program (MIP)**	The Microgrid Incentive Program, with $200M budget, will fund clean energy microgrids to support the critical needs of a vulnerable communities impacted by grid outages and to test new technologies or regulatory approaches to inform future action.	• Increased electricity and resiliency in communities at risk of electrical outages. • Increased reliability for critical infrastructure such as fire stations, schools, nursing homes, etc. • Reduced impacts of power outages and minimized disruptions for low-income households.
Southern California Edison (SCE)	**Self-Generation Incentive Program (SGIP)**	The Self-Generation Incentive Program (SGIP) is a CA Public Utilities Commission (CPUC) program administered by California's Investor-Owned Utilities (IOUs) that offers rebates for installing energy storage technology at your facility. These storage technologies include battery storage systems that can function in the event of a power outage.	• Self-generated energy in a storage system (i.e., battery).
United States Dept of Energy (US DOE)	**Solar Investment Tax Credit**	The solar Investment Tax Credit (ITC) is a federal tax credit for those who purchase solar energy systems for commercial scale properties. The credit is equal to a percentage of the cost of eligible equipment. Tax exempt entities may not collect the credit themselves, but the benefits may be useful in securing a PPA.	• Solar photovoltaic (PV) system that is placed in service during the tax year.

Financing Tools

Projects that generate their own revenue or cost savings create private investment opportunities. Public-private partnership (P3) agreements are cooperative agreements between one or more public and private sectors that can take different forms, such as private entity financing or management of a project in return for a promised stream of payments from a government agency. In the context of limited public funding opportunities, P3 agreements may provide capital that allows a project to be delivered faster since private operators may have more immediate access to capital and debt financing and fewer competing resource demands. Table G-4 summarizes some of the most common P3 opportunities to implement energy projects.

Table G-4. Public Private Partnership Opportunities

Strategy	Description
Power Purchase Agreement (PPA)	A Power Purchase Agreement (PPA), a type of P3, is a financial agreement in which a developer arranges for the design, permitting, financing, and installation of an energy system on a customer's property at little to no cost. The developer sells the power generated to the host customer at a fixed rate that is typically lower than the local utility's retail rate. The lower electricity price serves to offset the customer's purchase of electricity from the grid while the developer receives the income from the sales of electricity as well as any tax credits and other incentives generated from the system. These may take the form of corporate PPAs, which involve corporate or industrial buyers purchasing renewable energy directly or virtually from developers. PPAs typically last 10 to 25 years, and the developer is responsible for the operation and maintenance of the system for the duration of the agreement. The Morris Model of a PPA is when a public entity issues a government bond at a low interest rate and transfers low-cost capital to a developer in exchange for a lower PPA price.
Energy Savings Performance Contracting (ESPC)	Budget-neutral approach to building improvements that provide renewable energy, reduce energy, and increase operational efficiency. In ESPC, a facility owner partners with an energy service company (ESC) that provides design and installation of the energy improvements, arranges the financing, and in some cases provides ongoing operations and maintenance services. Similar to a PPA, a facility owner can use an ESPC to pay for today's facility upgrades with tomorrow's energy savings without tapping into capital budgets. State and local governments can implement ESPC projects in their own facilities as well as promote and support ESPC projects through ESPC programs. Ideal candidates for ESPC projects include any large building or group of buildings such as city, county, and state buildings; schools; hospitals; commercial office buildings; and multi-family buildings.
Leasing Arrangements	Tax-exempt lease-purchase agreements provide state and local governments with the opportunity to finance upgrades and use energy savings to pay for financing costs. While leasing arrangements have higher rates compared to bond financing, they are often faster and more flexible revenue-generating mechanisms.
On-Bill Tariff Financing (SCE Program)	The On-Bill Financing Program provided by Southern California Edison (SCE) offers commercial and institutional customers with a monthly usage of 100 kW or less the opportunity to reduce operating expenses and finance retrofitting projects by covering the initial costs of installing the energy saving measures. Commercial property owners pay back these costs on their monthly utility bills interest free for up to 60 months. The program includes energy assessment and includes a specific list of measures to reduce the cost of refrigeration, cooling, and lighting.

Table G-5 summarizes current loan opportunities that are relevant to WRCOG's resiliency framework. Notably, the California Infrastructure and Economic Development Bank's Infrastructure State Revolving Fund (ISRF) can be used as a source of matching funds for grants or other financing needs. Table G-6 summarizes the types of bonds that may be suitable for funding WRCOG's climate actions.

Table G-5. Relevant Loan Programs Offered by the California Infrastructure and Economic Development Bank

Program	Description
CLEEN (Green Loan) Program	The CLEEN Program provides public financing to help meet state goals of greenhouse gas reduction, water conservation, and environmental preservation. This program consists of two subprograms: (1) the Statewide Energy Efficiency Program (SWEEP), which helps local governments and nonprofit organizations make small, medium, and large-scale energy-efficiency upgrades and projects, and (2) the Light Emitting Diode Street Lighting Program, which finances the installation of LED (Light Emitting Diode) streetlights for local governments.
Infrastructure State Revolving Fund (ISRF)	The Infrastructure State Revolving Fund (ISRF) Program (through IBank) is authorized to directly provide low-cost public financing to state and local government entities, including Municipalities, Universities, Schools and Hospitals (MUSH borrowers) and to nonprofit organizations sponsored by public agencies for a wide variety of public infrastructure and economic expansion projects. In the past, WRCOG member jurisdictions have received state revolving fund loans for the development of bike path and pedestrian path lights and investments in drinking water sources.

Table G-6. Bonds Relevant to WRCOG Energy Resiliency Plan

Strategy	Description
Environmental Impact Bond (EIB)	An Environmental Impact Bond (EIB) is an innovative financing tool that uses a Pay for Success approach to provide up-front capital from private investors for environmental projects, either to pilot an innovative approach whose performance is viewed as uncertain or to scale up a solution that has been tested in a pilot program.
Revenue or General Obligation Bonds	Revenue Bonds are used to pay for projects such as major improvements to an airport, water system, garage or other large facilities which generate revenue that is then used to repay the debt. General obligation (GO) bonds are issued to pay for projects that may not have a revenue stream. Debt is repaid through an increase in the ad valorem property tax. In California, General Obligation bonds (and in some cases revenue bonds) are subject to voter approval.
Green or Climate Bonds	Green or climate bonds specifically finance climate change adaptation or mitigation projects. Eligible projects include those related to renewable energy and energy efficiency, sustainable waste management projects, sustainable land use and biodiversity conservation, clean transportation, and clean drinking water.
Utility Revenue Bonds	A utility revenue bond is a type of municipal bond issued to finance a public utility project that repays investors directly from project revenues. Utility revenue bonds are used to fund capital projects in areas considered essential to public services including hospitals, fire services, water and waste treatment facilities, and improvements to the electrical grid.

Local Revenue Sources

Another key strategy for funding and financing the region's climate actions is to develop fiscal policies that support and reinforce its climate goals. Climate change creates a long-term financial obligation, both in terms of mitigating, adapting, and responding to a climate crisis, and, as such, requires long-term fiscal planning. WRCOG's member jurisdictions may consider developing a Climate Action Fund that allocates a portion of the local General Fund to specifically fund climate mitigation and adaptation efforts.

WRCOG member jurisdictions may also identify climate action and adaptation as a priority criterion when determining how to allocate funding and prioritize programs and projects across

all funds. For example, the City of Los Angeles' Financial Policies identifies "resilience and sustainability" as a primary criterion for allocating funding and prioritizing capital projects (City Administrative Officer of Los Angeles 2020). If WRCOG member jurisdictions were to develop a similar criteria policy, it may have the effect of facilitating implementation of fund-specific, or department-specific, climate actions, such as prioritizing facility improvements that includes energy resiliency improvements.

In some cases, jurisdictions within California have implemented local climate and resource specific taxes to offset the cost of natural hazard mitigation. The City of Santa Clara renewed the Safe, Clean Water and Natural Flood Protection Program in November of 2020; a parcel tax of $.006 per square foot which protects drinking water supplies, dams from earthquakes and climate change, reduces pollutions, toxins, and contaminants in waterways, and provides flood protection. Marin County also passed the Marin Wildfire Prevention Measure in 2020; another parcel tax of 10 cents per building square foot which supports wildfire prevention including early detection and improving critical infrastructure. WRCOG member jurisdictions may consider a similar program or measure to fund regionally specific resilience efforts, which could include funds set aside for resilience improvements for critical facilities.

G3. Next Steps

The Energy Resiliency Plan details a regional transition to renewable energy in critical infrastructure, including the ability to quickly adapt to drought, extreme heat, and other climate changes. Implementation will be most effective and efficient if multiple actions are pursued in tandem, which may include using funding and financing sources to support multiple, or bundled, projects. Near-term next steps (within one to two years) for beginning implementation of priority actions may include:

- **Identify partnership opportunities to plan, fund, and implement climate actions.** WRCOG's efforts in this planning process convened jurisdictions together from across Western Riverside County, opening the opportunity to continue these partnerships as agencies begin to pursue funding. Partnerships between public agencies can also increase the competitive edge of grant applications. Other civic institutions, notably UC Riverside, may also offer partnership opportunities.
- **Determine which strategies will require environmental review, technical analysis, and/or complex partnerships and permitting.** Some of the priority actions will have longer implementation timelines due to environmental review requirements or financing coordination (e.g., new sales tax, bond issuance). To meet its electrification goals in a timely manner, WRCOG member jurisdictions will need to start the first phase of work on these longer-term projects.
- **Track new federal funding opportunities as guidance is released.** The IIJA and Inflation Reduction Act present enormous opportunities. While the available details on known programs are summarized in this chapter, the federal government is regularly releasing new program announcements related to funding eligibility and availability.
- **Being preparing application materials for the state grants that have been allocated additional funding in the Governor's 2022-2023 budget.** Some funding for these grants may already be or will soon be available and will have short application deadlines. An early start on application materials will give WRCOG member jurisdictions more time to match actions to grant opportunities, define strong proposal narratives, and identify potential partnerships.

H. Resilient Design Resources and Guidelines (References)

To be provided in Final Draft

(To include a list of additional resources and case studies)

Western Riverside Council of Governments
Technical Advisory Committee

Staff Report

Subject: **Policy for TUMF Reimbursement Prior to Exhaustion of Credit for Developer Credit / Reimbursement Agreements**

Contact: **Chris Gray, Deputy Executive Director, cgray@wrcog.us, (951) 405-6710**

Date: **November 17, 2022**

Requested Action(s):

1. Recommend that the Executive Committee approve an amendment to the TUMF Administrative Plan / Reimbursement Manual to allow for reimbursement prior to credit exhaustion for Developer Credit / Reimbursement Agreements.

Purpose:

The purpose of this item is to develop language in the TUMF Administrative Plan related to Developer Credit / Reimbursement Agreements.

WRCOG 2022-2027 Strategic Plan Goal:

Goal #5 - Develop projects and programs that improve infrastructure and sustainable development in our subregion.

Background:

WRCOG's TUMF Program is a regional fee program designed to provide transportation and transit infrastructure that mitigates the impact of new growth in Western Riverside County. Funds from TUMF are distributed based on an allocation codified in various MOUs between WRCOG, the Riverside County Transportation Commission (RCTC), the Riverside Conservation Agency (RCA), and the Riverside Transportation Agency (RTA). 46% of TUMF collections are retained by WRCOG and allocated to the five TUMF Zones based on the collections within that Zone. Another 46% of TUMF funds are provided to RCTC on a monthly basis for their use in funding regional TUMF projects per the TUMF Administrative Plan. 1.47% of all TUMF funds are allocated to RCA for the purchase of land in support of the Multi-Species Habitat Conservation Plan (MSHCP). 3% of TUMF funds are allocated to RTA for regional transit projects. The remaining 4% of TUMF funds collected go towards WRCOG for Program Administrative Expenses.

The TUMF Administrative Plan allows for three options for new development projects in the WRCOG subregion in order to meet TUMF obligations. The first option is the payment of TUMF fees. The second option is participation in a funding or financing district which directly constructs TUMF improvements. The final option is the construction by the developer of a TUMF improvement for which the developer is entitled to receive credit against its TUMF obligation. In some instances, a developer constructs an improvement which provides credit in excess of its TUMF obligation, which then entitles the developer to

receive a reimbursement from the TUMF Program.

This process is governed by the Developer Credit / Reimbursement Agreement, which sets forth the amount of potential credit, the TUMF obligation, and the process by which developers receive credit and potentially reimbursement from the TUMF Program.

In 2018, the City of Corona, a developer (Arrantine Hills, LLP), and WRCOG entered into an agreement to implement the I-15 / Cajalco Interchange Project, which also included improvements to Cajalco Road adjacent to the Interchange. At the time of the agreement, the Bedford Communities Project was approved for approximately 1,600 dwelling units and 80,000 square feet of commercial / retail uses. As part of this agreement, the Developer worked with the City to complete both the Interchange (I-15 / Cajalco Road) and improvements to Cajalco Road on either side of the Interchange. The total value of the improvements are $47.6M, with the Interchange accounting for $44.3M and the roadway improvements accounting for the remaining $3.3M. The Interchange and roadway improvements were completed in 2021. The buildout of the project has an estimated TUMF obligation of approximately $15M - $20M, which means that the Developer is due a reimbursement of approximately $25M - $30M. The amount of reimbursement can not be definitively determined at this time as the actual TUMF obligation is based on the actual number of units and the fee due at the time of permit issuance.

What complicates this reimbursement is that a portion of the reimbursement will be made by WRCOG through TUMF Zone funds and the remainder through TUMF funds controlled by RCTC, which receives 46% of all TUMF funds collected and uses those funds to implement Regional TUMF Projects. The I-15 / Cajalco Interchange is a Regional TUMF Project, which means that RCTC is responsible for funding this Project through Regional TUMF funds. The local street improvements on Cajalco Road are considered part of the WRCOG-administered Zone Program.

Concurrent with the transportation improvements, the Developer has proceeded constructing initial phases of the Project. To date, the City has issued approximately $3M in TUMF credits against a total obligation of $47.6M, which means that over $44M of TUMF credit remains.

Earlier in 2022, the Developer requested that the City provide an early reimbursement of a portion of the total amount it is due. City staff brought this item to City Council at its March 2, 2022, meeting. The Corona City Council provided direction to its staff to request that WRCOG provide a reimbursement of $3,355,000 to the Developer. This amount corresponds to the reimbursement amount associated with the Cajalco Street improvements. It is staff's understanding that the Developer has requested this reimbursement to assist with the financing of the project and for other related reasons.

Normally, WRCOG staff processes Developer credit and reimbursement requests in accordance with the TUMF Administrative Plan. What is unique about this reimbursement request is that it has been WRCOG's policy to only provide Developer reimbursement only after the completion of both the Development Project (TUMF obligation) and the Transportation Project (TUMF credit). This policy is memorialized in the TUMF Administrative Plan (Chapter 4 - Developer TUMF Credits).

The primary reason for this policy is that it ensures the overall fiscal stability of the TUMF Program by limiting instances in which WRCOG would reimburse a developer for its TUMF credit and then have to assess additional TUMF on a project, which then requires the payment of additional fees. Paying the reimbursement only after the completion of all project elements also simplifies the accounting of each project's TUMF obligation and ensures that there is only one reconciliation of a project's TUMF

obligation.

An example of a previous denial is the case of the Sycamore Creek Development. This project is a community of approximately 2,000 homes and a neighborhood commercial center in unincorporated Riverside County between the Cities of Corona and Lake Elsinore along I-15. In 2013, the Developer completed improvements to the I-15 / Indian Truck Trail interchange at a cost of $6.4M. In 2017, the Developer estimated that it was due a reimbursement of $1.9M based on its anticipated project buildout.

Consistent with WRCOG's policy, WRCOG denied this reimbursement request for a variety of reasons. The primary reason was that staff was unsure about the number of additional units the project would build out. There were 200 entitled units which had not been built at that time and the exact amount of reimbursement could not be determined at that time of the request. In this case, the Developer was asking for an early payout of all funds due to them based on their anticipated development and the projected fee levels. Also in this particular instance, the Developer's credit was finalized but their TUMF obligation was not.

In 2020, WRCOG did process a reimbursement for this developer in the amount of $1.7M, which was the final reimbursement calculation based on the build-out of the project. It should be noted that the actual reimbursement amount is less than the amount of the initial request based on a final reconciliation of the project TUMF credits and TUMF obligation. If WRCOG had paid out the initial reimbursement request, it would have overpaid the reimbursement amount.

There are several factors which could cause this current request to be viewed from a different perspective. First, the reimbursement request is for a portion of the total reimbursement. Staff estimates that the reimbursement request corresponds to less than 20% of the total future reimbursement, so this reimbursement is a partial reimbursement request instead of a full reimbursement. Given the magnitude of the projected reimbursement, a partial reimbursement at this time is not likely to create a situation whereby the Developer must return some or all of the reimbursement to WRCOG. Staff estimates that if this early reimbursement request is provided, then the remaining reimbursement will be in excess of $20M. Second, any reimbursement would be paid out of the Zone balances currently held by WRCOG. As of July 2022, the Northwest Zone Balance is $25M and there are sufficient available funds within the Northwest Zone to provide this reimbursement. For reference, the Northwest Zone includes the Cities of Corona, Eastvale, Jurupa Valley, Norco, and Riverside, and the County of Riverside. Third, the reimbursement request is tied to one of the largest TUMF projects completed in the 20-year history of the TUMF Program. The I-15 / Cajalco Road interchange was a needed regional infrastructure project and it is likely that the Interchange would not have been built when it was but for the contribution provided by the Developer. The Project is an example of an effective public / private partnership between the City of Corona, the Developer, WRCOG, RCTC, and other parties. Finally, this reimbursement request is solely for TUMF Zone funds, which are administered by WRCOG. The remaining reimbursement amount will be the responsibility of RCTC and any reimbursement will be paid through the RCTC Regional Program.

The WRCOG Public Works Committee heard this item on August 11, 2022. The WRCOG Technical Advisory (TAC) Committee heard this item on August 18, 2022. The Public Works Committee directed staff to convene a TUMF Northwest Zone Technical Advisory Committee meeting (Public Works Directors from the Cities of Corona, Eastvale, Jurupa Valley, Norco, Riverside, and Riverside County) to discuss this matter in further detail and took no additional action. The WRCOG TAC recommended

denial of this reimbursement request rather than have further discussions on this item.

On September 14, 2022, the Administration & Finance Committee heard this item and directed staff to work concurrently on two items. The first action was to convene a meeting of the TUMF Northwest Zone TAC and Executive Committee to provide a recommendation regarding this request for early reimbursement. The second action was to direct staff to develop a comprehensive policy regarding early reimbursement for Developer Credit / Reimbursement Agreements. The Administration & Finance Committee also directed that staff return this item for further discussion once these items were complete so that the Committee could make a final recommendation to the WRCOG Executive Committee.

Based on that direction, staff has prepared the following policy for consideration. Staff is requesting review by the Technical Advisory Commission of this proposed policy change, which would be implemented through an update to the TUMF Administrative Plan / Reimbursement Manual.

The suggested policy change has three elements. The first element sets a series of criteria which would limit the application of this policy to certain TUMF facilities as listed below:

- A Regionally Significant Transportation improvement, defined as those facilities that typically propose to have six lanes at build-out and extend between multiple jurisdictions, or a discrete usable segment thereof, as determined by WRCOG,
- Any Type 1, 2, or 3 Interchange on an interstate highway system,
- Any railroad crossing with an estimated construction cost of more than $10,000,000, or
- Any bridge located on a regionally significant arterial, defined as those facilities that typically propose to have six lanes at build-out and extend multiple jurisdictions, or a discrete usable segment thereof, as determined by WRCOG

The second set of criteria would further limit the application to a specific set of circumstances, which are intended to limit the instances in which a request for early reimbursement can be made. Limits on an application would include:

- Reimbursement requests prior to the exhaustion of credits can only be made when the anticipated reimbursement is $15M or greater. The reimbursement is calculated as the difference between the anticipated TUMF obligation and the TUMF credit generated by the transportation project for which the developer is seeking reimbursement.
- The transportation project subject to the early reimbursement request has been completed satisfactorily and formally accepted by the member agency who submits the reimbursement request within five years of acceptance.
- The developer must have completed a portion of the development project which constitutes at least 25% of the anticipated TUMF obligation,
- The developer has applied for building permits with the previous six months.
- The developer is currently meeting all obligations to the member agency.
- A developer may only apply for no more than 10% of the total anticipated reimbursement.
- Early reimbursement can only be requested when completion of the development project is anticipated to be five years or greater at the time of the request.
- Only one application for early reimbursement may be made during the term of a Credit / Reimbursement Agreement.

The final criteria relates to the approval process which will rely on the applicable TUMF Zone to provide a recommendation. Based on established procedures in place for decision making at the Zone level, the following process would be used in regards to any early reimbursement request:

- Step #1 - WRCOG member agency submits a formal request in writing WRCOG to the WRCOG Executive Director or his designee. This formal request should include a certification from the member agency that the requested reimbursement complies with all of the requirements noted above.
- Step #2 - WRCOG reviews the reimbursement request and determines eligibility based on the criteria above.
- Step #3 - WRCOG Executive Director or his/her designee approves or denies the request for consideration by the TUMF Zone associated with the reimbursement request.
- Step #4 - WRCOG would then convene a meeting of the applicable Zone Technical Advisory Committee (TAC). The Zone TAC would provide a recommendation regarding the early reimbursement request. This recommendation will note both the approval or denial of the request and their recommendation on how to allocate this reimbursement to various years within the 5-Year TIP.
- Step #5 - WRCOG would then convene a meeting of the Zone Executive Committee, which is composed of an elected representative from each WRCOG member agency in the applicable Zone. The Zone Executive Committee will review and make a recommendation to the Executive Committee.
- Step #6 - Once the Zone Executive Committee makes a recommendation, the item would be brought to the WRCOG Executive Committee for its review and approval.

The process above mirrors that of decision making by the TUMF Zones since the inception of the TUMF Program. The use of the Zone staff and elected officials ensures that the persons most affected by the reimbursement request would be the ones making the recommendation regarding the request. Additionally, the Zone TAC and Zone Executive Committee would be best positioned to determine available revenues and anticipated reimbursements to determine if this request would negatively impact delivery of other Zone projects.

Prior Action(s):

October 13, 2022: The Public Works Committee recommended that the Executive Committee maintain the current policy which prohibits reimbursement prior to the exhaustion of credits.

September 14, 2022: The Administration & Finance Committee directed staff to convene a meeting of the TUMF Northwest Zone to discuss this reimbursement request and to also develop a comprehensive policy to address this reimbursement request. Staff was also directed to bring this item back to the Administration & Finance Committee after completing these tasks.

August 18, 2022: The Technical Advisory Committee recommended denial of the reimbursement request.

August 11, 2022: The Public Works Committee requested that no action be taken at this time and directed staff to convene a meeting of the TUMF Northwest Zone to discuss the reimbursement request and to develop a comprehensive policy relating to early reimbursements for consideration by the PWC.

Fiscal Impact:
This policy does not authorize any specific reimbursement of TUMF funds. Any reimbursements that would occur under this policy change would be paid out of TUMF Fund 220 and would be allocated to the TUMF Zone which approves the reimbursement request.

Attachment(s):
Attachment - TUMF Reimbursement Prior to Exhaustion of Credits Policy

5.3 Reimbursement Prior to Exhaustion of Credits

As outlined in Section 5.1, the TUMF Program does not provide reimbursement for developer contributions until all TUMF credits are exhausted. In limited circumstances, a WRCOG member agency may request that an early reimbursement be provided if certain criteria are met.

First, only the following projects are eligible for consideration related to an early reimbursement:

- A "Regionally Significant Transportation Improvement", defined as those facilities that typically propose to have six lanes at build-out and extend between multiple jurisdictions, or a discrete usable segment thereof, as determined by WRCOG;
- Any Type 1, 2, or 3 interchange on an interstate highway system;
- Any railroad crossing with an estimated construction cost of more than $10 Million, or
- Any bridge located on a regionally significant arterial, defined as those facilities that typically propose to have six lanes at build out and extend multiple jurisdictions, or a discrete usable segment thereof, as determined by WRCOG

A project which does not fall into one of the above categories is not eligible for early reimbursement. If the project falls into one of the above categories, it is only eligible for early reimbursement if it can meet the following criteria:

- Reimbursement requests prior to the exhaustion of credits can only be made when the anticipated reimbursement is $15 Million or greater. The reimbursement is calculated as the difference between the anticipated TUMF obligation and the TUMF credit generated by the project for which the developer is seeking reimbursement.
- The project subject to the early reimbursement request has been completed satisfactorily and formally accepted by the member agency who submits the reimbursement request within five years of acceptance;
- The developer must completed a portion of the development project which constitutes at least 25% of the anticipated TUMF obligation;
- The development has applied for building permits with the previous six months;
- The development is currently meeting all of its obligations to the member agency;
- A developer may only apply for no more than 10% of the total anticipated reimbursement;
- Early reimbursement can only be requested when completion of the development project is anticipated to be 5 years or greater at the time of the request;
- Only one application for early reimbursement may be made during the term of a Credit/Reimbursement agreement.

The process for considering an early reimbursement is described below.

Step #1- WRCOG member agency submits a formal reimbursement request in writing to the WRCOG Executive Director or his designee. This formal request should include a certification from the member agency that the project is eligible for requested reimbursement and complies with all of the requirements noted above.

Step #2- WRCOG reviews the reimbursement request and determines eligibility based on the criteria outlined in this Section 5.3.

Step #3- WRCOG Executive Director or his/her designee approves or denies the request for consideration by the TUMF Zone associated with the reimbursement request.

Step #4- WRCOG would then convene a meeting of the applicable Zone Technical Advisory Committee (TAC). The Zone TAC would review and make a recommendation regarding the early reimbursement request. This recommendation will note both the approval or denial of the request and their recommendation on how to allocate this reimbursement to various years within the 5-Year Transportation Improvement Program.

Step #5- WRCOG would then convene a meeting of the Zone Executive Committee, which is composed of an elected representative from each WRCOG member agency in the applicable Zone. The Zone Executive Committee will review and make a recommendation to the Executive Committee.

Step #6- Once the Zone Executive Committee makes a recommendation, the reimbursement request would be brought to the WRCOG Executive Committee for their review and approval.