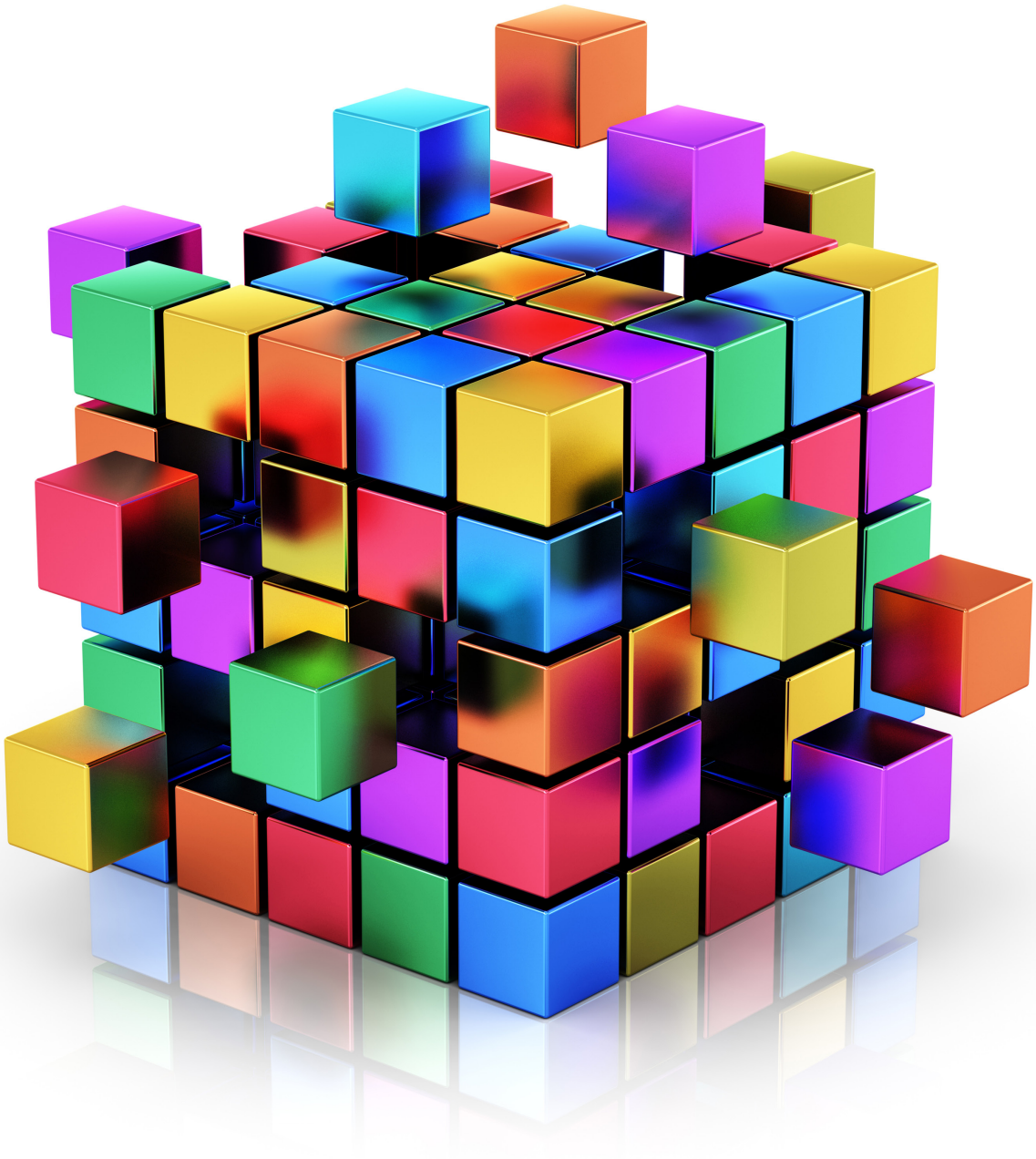
2019 ANNUAL REPORT

RANCHO CUCAMONGA MUNICIPAL UTILITY



BUILDING FOR THE FUTURE

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belco

MESSAGE FROM THE UTILITY

BUILDING FOR THE FUTURE!

2019 was another growing year for RCMU. Not only did we add two new residential communities to our electric service customer base, we also added four new large industrial warehouse buildings and expanded our electric and fiber distribution backbone by more than 60,000 linear feet.

However, the most exciting part of 2019 was the launch of the Rancho Fiber program. After many years of planning, design, construction, setbacks and many other factors, RCMU is happy to announce that Rancho Fiber is now ready for business and stands ready to serve some of the fastest internet speeds available in Rancho Cucamonga through our partnership with Inyo Networks!

King's Fish House inside the Victoria Gardens Shopping Center signed up as the first official Rancho Fiber customer in October 2019 where they are currently getting one gigabit per second (1 GBps) internet service. Currently, we have over 400 residential address locations that are ready for immediate fiber service from Rancho Fiber and over 20 commercial retail locations inside Victoria Gardens that are ready to be connected. This is an exciting time for the residents and businesses of Rancho Cucamonga as we begin providing this new fiber broadband commodity.

When it comes to building the Rancho Fiber network, we have our eyes set for the future needs of residents and businesses. Though people and skeptics may say that no one needs to use a Gigabit of bandwidth today, what people need today will not be what they will need in the near future. With the emergence of 5G and Smart City, we are planning and building our infrastructure for the ever growing number of internet enabled devices in homes and businesses so that our Rancho Fiber project will be successful well into the future! RCMU understands the importance of advance telecommunications infrastructure to the local economy and is ready to provide world-class technology options for businesses and residents in the City.

RCMU remains steadfast on continuing to serve our customers with reliable and affordable electricity, fiber optic internet, and excellent customer service. RCMU will continue to serve as a successful City enterprise and economic development tool.

DEPUTY DIRECTOR OF ENGINEERING SERVICES
UTILITIES / ENVIRONMENTAL

FRED LYN

Fiber Optic Master Plan

2019 At A Glance

FEBRUARY / MARCH 2019

Inyo Networks (Rancho Fiber's internet service provider) pulled fiber cables from the Data Center vault into the existing fiber manhole on Jersey Blvd, which holds the existing backbone fiber. This began the first link to tying in the dedicated RCMU Data Center to the City fiber network. Four 96 count fiber cables from the existing fiber service vault into the RCMU Data Center were spliced and terminated into the network racks and patch panels.

MARCH - JULY 2019

After many months of construction, including new trenching, boring, placement of new conduits, running new fiber and fiber splicing, the Rancho Fiber project completed a major milestone on July 8th with the completion and fiber turn up of the first Rancho Fiber cabinet located at the southeast corner of Victoria Gardens Lane and Monet Avenue.

The cabinet will serve as the central "hub" for providing Rancho Fiber retail service into the Victoria Gardens Shopping Center from the Inyo NOC.

MARCH 2019

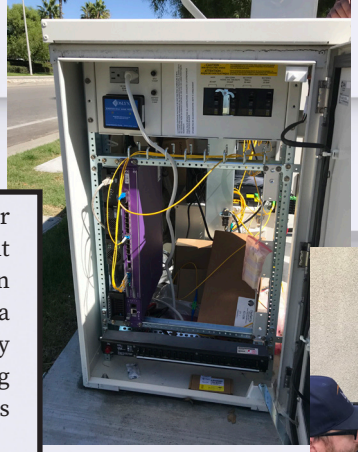
Rancho Fiber's contractor, Elecnor Belco, Inc. (Belco), ran new 96 strand fiber cable from the Foothill Boulevard and Haven Avenue vault directly into the Inyo Network's Network Operating Center (NOC) which now ties the City's fiber network into Inyo's fiber network.

AUGUST / SEPTEMBER 2019

Magellan Advisors (Rancho Fiber's design team) completed the fiber network design of the Van Daele and DR Horton communities and the Victoria Garden's Monet Avenue distribution.

The Belco team installed over 20,000 feet of 432 fiber strand count fiber optic cable. This installation will be used as the Fiber Optic "backbone" in order to provide enough capacity to service future Rancho Fiber customers.

The first fiber distribution running north on Monet Avenue was installed into the Victoria Gardens mall to prepare for commercial fiber retail service to the mall.



SEPTEMBER / OCTOBER 2019

Rancho Fiber is ready for business for some of the current residents occupying the Van Daele development - Terra Vista Homes on Terra Vista Parkway and Church Street and Building 3200A inside the Victoria Gardens Shopping Center.

The Belco team has been working hard to construct the new fiber network, set new fiber cabinets, run new fiber cables and set the final wall boxes inside the telecommunication enclosures.

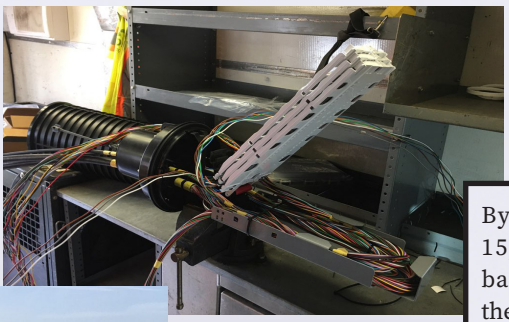
Inyo Networks began marketing our fiber products to these available properties in order to sign them up for Rancho Fiber broadband service.

King's Fish House inside the Victoria Gardens Shopping Center signed up as the first official Rancho Fiber customer, where they are currently getting one gigabit per second (1 GBps) internet service.

OCTOBER / NOVEMBER 2019

Magellan Advisors completed the fiber network design from Haven Avenue to Jersey Boulevard to The Resort Community.

During November, the Belco Team worked on bringing up new properties for Rancho Fiber service at the remaining residential units currently built at the Van Daele community, as well as the DR Horton community on Day Creek Boulevard and Base Line Road.



DECEMBER 2019

By the end of December 2019, 15,000 feet of new 432 strand backbone fiber was installed by the Belco Team from Haven Avenue at Jersey Boulevard to The Resort Community on Sixth Street and The Resort Parkway. The fiber will go throughout the new housing developments in order to provide fiber service to potentially 1,500 customers in the new community.

Over 400 residential address locations are ready for immediate fiber service and over 20 commercial retail locations inside Victoria Gardens are ready to be connected.

RCMU & GIS

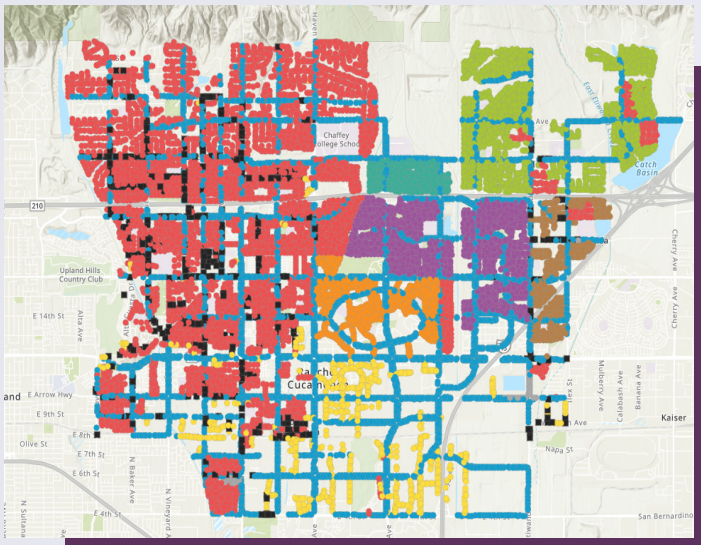
MAPPING THE FUTURE

Geographic information systems (GIS) is no longer a single function tool for utilities. Location is fundamental in strengthening operations by connecting the office to the field. Over the past few years, RCMU has been working on compiling accurate asset and infrastructure data to plot the information on GIS maps that will be beneficial for years to come. This information has provided the ability to share data with clients, contractors and internal City staff which increases efficiency and work flows.

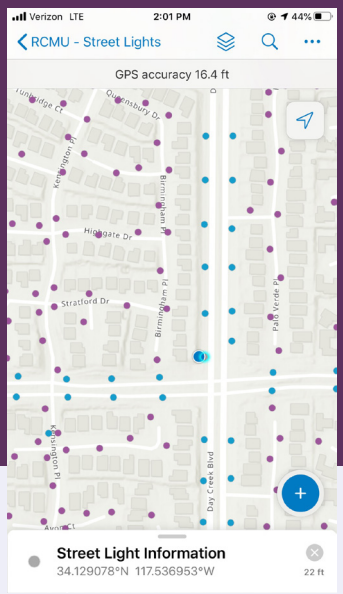
STREETLIGHTS

Over the past year, RCMU staff completed a lengthy quality control and assurance process that now provides a streetlight map that accounts for every street light in the City. The data includes ownership details, location information including GPS coordinates, Street Light Maintenance district assignments, pole type, light fixture details, service provider, account data, and more.

This information is currently being added into a work order system that will allow RCMU to communicate directly with RCMU's streetlight contractor to better expedite light outage and maintenance items.



RCMU's staff and street light contractor can also connect their smart mobile device in the field by utilizing the ArcGIS Collector application. This application enables the user to gather data in the field and synchronize the results with the GIS data base. This will allow RCMU's streetlight contractor to see exactly where the issue is and provide detailed information on how the problem was resolved in real time.



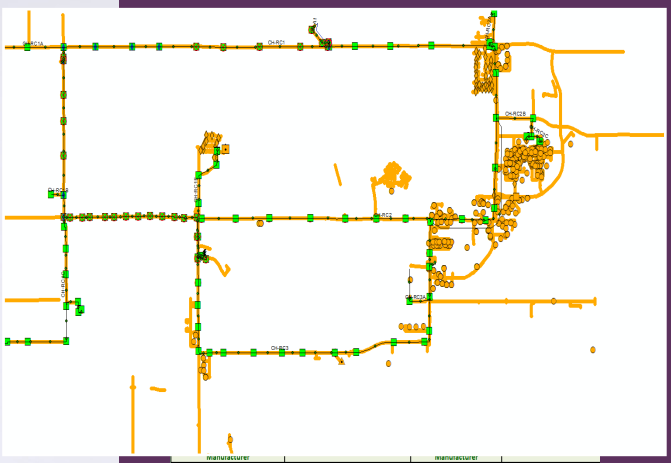
FIBER OPTICS

The Vision Fiber Management System (FMS) software manages the fiber networks by consolidating the fiber system design, asset inventory deployment, strand assignments and connectivity in a wizard driven application. The centralized management system enables the ease of access and shareability of network infrastructures when needed.

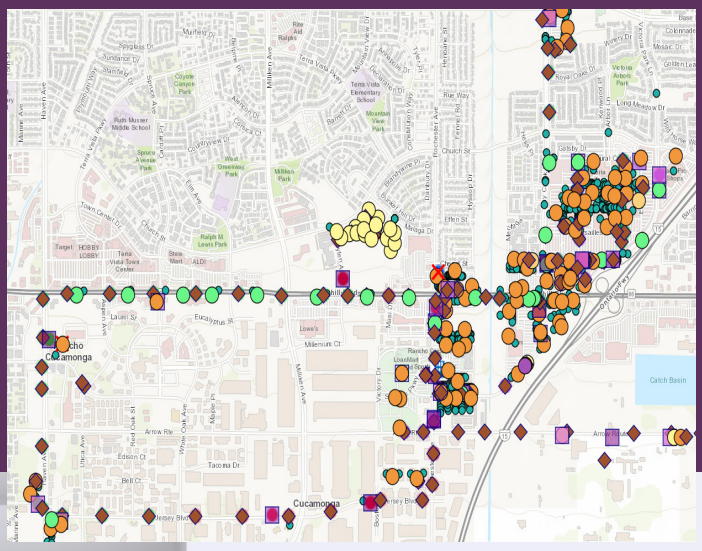
The software accepts data entry that can capture the information on geospatial maps and detailed Outside Plant (OSP) objects (including cable, conduits, slack-loops, and other OSP Components such as cabinets, splice-points, manholes, hand-holes and poles) which allows users to precisely manage our network all the way to the individual strand level.

The FMS holds many data points and allows for splicing views by creating and managing splice data simple and easy. The splicing view represents the buffer tubes and strands using the TIA-598C color codes (see side picture) defined for the fiber cable model, which provides all necessary information for color-coding fiber cables in a uniform manner. It defines identification schemes for fibers, buffered fibers, fiber units, and groups of fiber units within outside plant and premises fiber cables. This standard allows for fiber units to be identified by means of a printed legend.

Lastly, the FMS has a built-in Measuring Tool, which calculates distance between the Outside Plant Network Object and map objects, such as roads and buildings to allow for accurately placing the user's conduit, fiber, manhole, etc. on the map.



Manufacturer				Manufacturer			
Cable Measured Length	401'			Cable Measured Length	646'		
Fiber Count	288 CT			Fiber Count	288 CT		
Fiber#	Bundle	Fiber	Description	Fiber#	Bundle	Fiber	Description
1	BL	BL	Fusion	1	BL	BL	Fusion
2	BL	OR	Fusion	2	BL	OR	Fusion
3	BL	GR	Fusion	3	BL	GR	Fusion
4	BL	BR	Fusion	4	BL	BR	Fusion
5	BL	SL	Fusion	5	BL	SL	Fusion
6	BL	WH	Fusion	6	BL	WH	Fusion
7	BL	RD	Fusion	7	BL	RD	Fusion
8	BL	BK	Fusion	8	BL	BK	Fusion
9	BL	YL	Fusion	9	BL	YL	Fusion
10	BL	VI	Fusion	10	BL	VI	Fusion
11	BL	RS	Fusion	11	BL	RS	Fusion
12	BL	AQ	Fusion	12	BL	AQ	Fusion
13	OR	BL	Fusion	13	OR	BL	Fusion
14	OR	OR	Fusion	14	OR	OR	Fusion
15	OR	GR	Fusion	15	OR	GR	Fusion
16	OR	BR	Fusion	16	OR	BR	Fusion
17	OR	SL	Fusion	17	OR	SL	Fusion
18	OR	WH	Fusion	18	OR	WH	Fusion
19	OR	RD	Fusion	19	OR	RD	Fusion
20	OR	BK	Fusion	20	OR	BK	Fusion
21	OR	YL	Fusion	21	OR	YL	Fusion
22	OR	VI	Fusion	22	OR	VI	Fusion
23	OR	RS	Fusion	23	OR	RS	Fusion
24	OR	AQ	Fusion	24	OR	AQ	Fusion
25	GR	BL	Fusion	25	GR	BL	Fusion
26	GR	OR	Fusion	26	GR	OR	Fusion
27	GR	GR	Fusion	27	GR	GR	Fusion



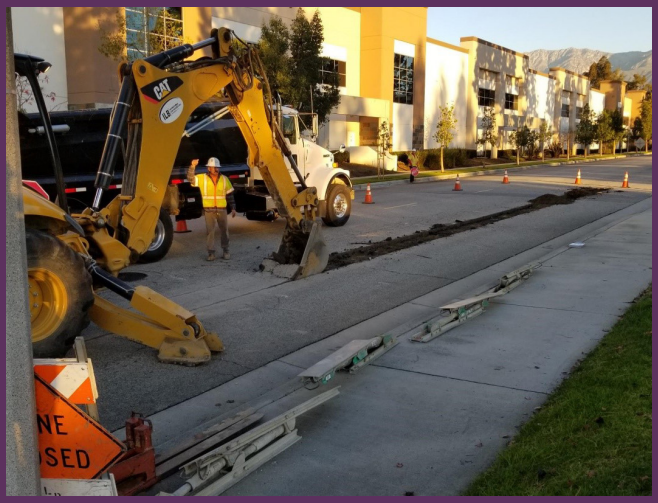
ELECTRIC

Keeping an accurate inventory of electric infrastructure is important for utilities to have on hand in the event of an emergency or outage. The assets on the map includes transformers, distribution lines, PME switches, vaults, circuits and meter locations.

Having this data available is also beneficial to share with consultants and contractors for the design of future extensions and planning of annual and emergency maintenance.

01

02



03

04

05

Line Extensions

CONSTRUCTING FOR GROWTH

Utility line extension are necessary in order to provide electric and fiber optic service to unserved parcels and new developments in the RCMU service area. Since RCMU's entire electric supply system is located underground in conduits and vaults, RCMU's contractors follows all applicable design and construction requirements that reduce safety risks associated with constructing and expanding its electric system. This includes following safe digging guidelines produced by DigAlert before and during any excavation of the street. The undergrounding of RCMU's electric lines has served as an effective mitigation measure in keeping the electric system reliable from power outages and reduces the potential of power-line ignited wildfires.

01 Van Daele / Terra Vista

214 Residential Units

Located on the southeast corner of Haven Avenue and Church Street, the 2018 Haven Avenue line extension allowed RCMU to complete electric cabling in 2019 to serve this new community.

02 DR Horton

380 Residential Units, Commercial and a Hotel

The line extension that was completed in 2018 on Day Creek Boulevard and Base Line Road provided the infrastructure for electric cabling in 2019 for this new development.

03 Utica Avenue

4 Industrial Buildings

Almost 3,000 linear feet of conduit was installed on Utica Avenue from Sixth Street to Fourth Street to provide service to four new industrial buildings.

04 Sixth Street / The Resort

1,500 Residential Units

A line extension on Sixth Street from Utica Avenue to The Resort Parkway included over 2,335 linear feet of cabling and conduit. The construction of this line will allow RCMU to provide electric service and fiber service to The Resort planned development.

05 Mayten Avenue

3 Industrial Buildings

The project included 1,200 linear feet of conduit on Mayten Avenue. This line extension will provide permanent electric and fiber service to the future XT Green and two new industrial buildings. This extension will also provide future service to the Hampton Inn Hotel and four additional industrial buildings.

Wildfire Mitigation Plan

ENSURING A SAFE AND RELIABLE FUTURE

The California wildfire threat is real and growing as we have seen the devastation it has caused in the past few years. In 2018, California adopted Senate Bill (SB) 901 as the first steps to mitigate and create greater resilience against wildfire risk. Under SB 901, electric utilities are required to develop annual wildfire mitigation plans (WMPs) to prevent, combat and respond to wildfire within their service territories.

The primary goal of RCMU's WMP is to show RCMU's existing programs, practices and measures effectively reduce the probability that RCMU's electric supply system could be the origin or contributing source for the ignition of a wildfire. On September 19, 2018, the Rancho Cucamonga City Council approved Resolution 18-103 in compliance with Senate Bill 1028 (2016), which determined that RCMU's service area was not located in an area that is considered an elevated or extreme risk of wildfires and that RCMU has zero percent (0%) electric lines that are located overhead.

RCMU's WMP indicates that in its service area and surrounding areas, high temperature, low humidity, hillside terrain, fire weather, drought, climate change and fire history are all primary risk drivers for wildfires. However, RCMU's service area is considered "low risk" because it has 100% underground electric lines in which the design, maintenance and inspection meets all utility regulatory standards. Secondly, RCMU lines are located almost two miles away from the nearest "high risk" area on the California Public Utilities Commission's Fire Threat Map. The WMP was independently evaluated by the Rancho Cucamonga Fire Protection District and found the plan addresses all of the statutorily required elements as specified in California Public Utilities Code section 8387. The plan was adopted by the Rancho Cucamonga City Council on December 18, 2019.

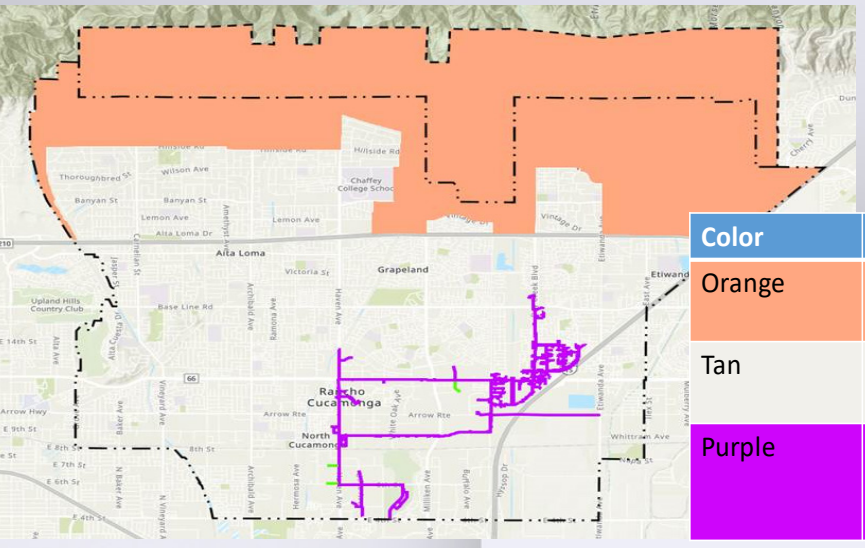
RCMU is committed and dedicated to ensuring safe and reliable electric service to its customers and community. Annual inspections are done on all infrastructure and preventative maintenance is completed as needed throughout the year.

What are PSPS events?

Southern California Edison's (SCE) Public Safety Power Shutoff (PSPS) program is an operational practice that SCE may use to preemptively shut off power in high fire risk areas to reduce fire risk during extreme and potentially dangerous weather conditions. These conditions would typically involve weather conditions such as relatively low humidity, strong winds, and hot temperatures in combination with dry fuels. Currently, SCE's PSPS practice has been to shut off power at the local electric distribution level.

Because RCMU operates and maintains its own local electric distribution system outside of SCE's system, any SCE distribution PSPS will NOT affect RCMU customers. However, SCE does operate and maintain the electric sub-transmission and transmission grid outside of RCMU. The larger transmission grid brings all of the electricity into the City. Though highly unlikely at this time, if SCE's sub-transmission and/or large transmission lines are de-energized or constrained due to PSPS, then RCMU customers will be affected by a PSPS event because SCE must shut off power on the transmission lines from the Arbors Substation which provide RCMU's only connection to the regional electricity grid.

Although the risk of a RCMU power shut off is extremely low and regardless of the reason for the outage, every step will be taken to restore power as soon as possible and as safely as possible.



Color	Category
Orange	High Wildfire Hazard
Tan	Low Wildfire Hazard
Purple	RCMU underground electric lines

Solar

SUSTAINABILITY FOR YEARS TO COME

In 2019, RCMU surpassed its goal of 1.1 megawatts (MWs) of solar photovoltaic (PV) installed as part of Senate Bill 1 (2006) which aimed to build 3,000 MWs of solar photovoltaic systems in California. RCMU has achieved 1.6 MWs in solar PV while contributing over $1.2 million dollars in rebates. During 2019, two hundred and twenty residential units are planned to be added to RCMU's customer base that are equipped with solar PV systems. Modifications to the utility billing software were completed late in the year to accommodate net metering calculations in the CIS system.

As of January 1, 2020, a new solar mandate went into effect in California and is a building code that requires new construction homes to have a solar PV system. This code applies to both single-family and multi-family homes that are up to three stories high. This mandate will impact future planned developments in the RCMU service area. RCMU is prepared to service those accounts and research innovative ways to help developers meet the state mandate such as community solar and other potential rebate options.

2019

By The Numbers

793,811 kWh

Approximate amount of energy saved based on the energy efficiency rebates issued in 2019.

2,853 kWh

Total kilowatt hours saved from participation in the Direct Install Program in 2019.

104,000 Linear Feet

Total linear feet of fiber optic cable installed in the City in 2019.

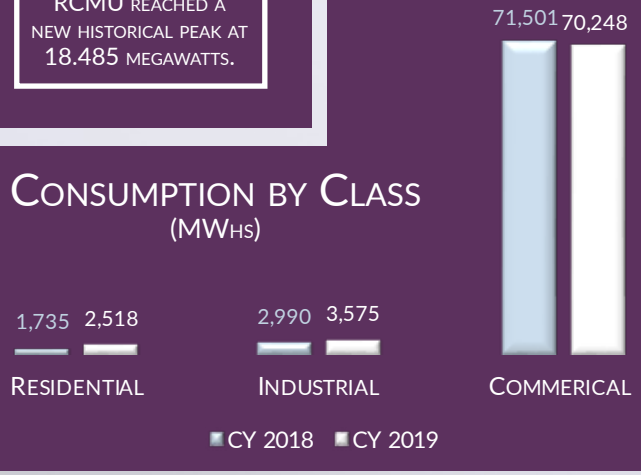
Annual System Peak (MW)

On July 24, 2019, RCMU reached a new historical peak at 18.485 megawatts.

Customers By Class

	CY 2018	CY 2019
Commercial	653	721
Industrial	1	1
Residential	331	576
TOTAL	985	1298

Consumption by Class (MWhs)



Financial Overview

FISCAL YEAR 2018/19

Revenues ($)	
Operations	$12,521,074
Wholesale	$603,489
Total Operating Revenue	$13,124,563

Expenditures ($)	
Personnel	$433,476
O & M	$1,297,772
Contract Services	$1,094,329
Purchased Power	$4,697,895
Other Operating Expenses	$3,046,289
Transfer Out to GF	$1,390,260
Misc / Bad Debt	$70,733
Contribution to Utility Fund Balance	$1,093,809
Total Operating Expenses	$13,124,563

Looking Ahead to 2020

- Complete the electric and fiber cabling for Day Creek Villas, Day Creek Square Commercial sites, Cadence Senior Living and Premier Swim School.
- RCMU electric switchover for East Civic Center parking lot and Fire Station 173 (Day Creek).
- RCMU electric and fiber line extensions: Etiwanda Avenue - South of Arrow Route, Mayten Avenue Business Park, Hampton Inn Hotel.
- Rancho Fiber backbone extension westside Foothill Boulevard.
- Continue to complete electric and fiber optic service to the remaining homes at Van Daele, DR Horton and The Resort communities.

CITY DIRECTORY

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Kristine D. Scott, Council Member

Sam Spagnolo, Council Member

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