2018 MCE Energy Efficiency Annual Report

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INTRODUCTION

MCE is California's first Community Choice Aggregation (CCA) program, a not-for-profit, public agency that began service in 2010 with the goals of providing cleaner power at stable rates to its customers, reducing greenhouse gas (GHG) emissions, and investing in targeted energy programs that support communities' energy needs. MCE is a load-serving entity supporting ~1,000 MW peak load, providing electricity service to approximately 470,000 customer accounts and over 1 million residents and businesses in 34 member communities across 4 Bay Area counties: Napa, Marin, Contra Costa, and Solano.

MCE's mission is to address climate change by reducing energy related GHG emissions through renewable energy supply and energy efficiency at stable and competitive rates for customers while providing local and economic workforce benefits. MCE offers 3 renewable energy products: Light Green (60% renewable); Deep Green (100% solar and wind power produced in state); and, Local Sol (100% locally-produced solar). MCE continues to exceed state renewable energy supply standards and GHG reduction targets. MCE achieved California's renewable energy goals 11 years ahead of state targets, and will meet GHG-free goals 23 years early. For more information about MCE, visit mceCleanEnergy.org.

In support of its mission, MCE has administered energy efficiency funds under California Public Utilities Code ("Code") Section 381.1(a)-(d) since 2013.[1] The California Public Utilities Commission ("Commission") originally restricted MCE's energy efficiency programs to serving gaps in Investor Owned Utility ("IOU") programs and hard-to-reach markets.[2] At the time, the Commission acknowledged that these restrictions may cause MCE's portfolio to fail the Total Resource Cost ("TRC") test and thus did not initially impose a minimum cost-effectiveness requirement on MCE.[3] In 2014, however, the Commission lifted the restrictions and imposed the same cost-effectiveness requirements on CCAs as IOUs.[4]

Program Administrators ("PA") were invited to submit business plans in 2017. On January 17, 2017, MCE filed a Business Plan with the Commission that requested authorization to expand MCE's energy efficiency portfolio to include additional sectors and programmatic offerings.[5] MCE proposed to offer programs in the following sectors: (1) Residential; (2) Commercial; (3) Industrial;

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[1] To date, MCE is the only community choice aggregator ("CCA") to have requested energy efficiency funding under Code Section 381.1(a)-(d).

[2] D.12-11-015 at pp. 45-6.

[3] D.12-11-015 at p. 46.

[4] D.14-01-033 at p. 14; see also D.14-10-046 at p. 120.

[5] See Application of Marin Clean Energy for Approval of its Energy Efficiency Business Plan (Application ("A.") 17-01-017) filed January 17, 2017.

(4) Agricultural; and (5) Workforce Education and Training. On June 5, 2018, the Commission approved MCE's Business Plan.[6]

MCE is expanding its program rollouts for 2019. The 2018 program year activities consist of pre-Business Plan programs that will continue under the Business Plan with the exception of the financing program which will close at the end of 2018.

In 2018, MCE administered the following four programs:

- Multifamily
- Small Commercial
- Single Family
- Financing

MULTIFAMILY

Program Description

MCE's Multifamily Energy Savings Program provides technical assistance, rebates, free direct install service for light touch efficiency measures,[7] and access to other resource conservation programs. The program does not offer a prescriptive measure list; instead, MCE works with properties to assess their unique needs and present them with the best energy savings opportunities. The program is available to both affordable and market rate properties with four or more units[8] located within MCE's service area. A property is not required to be an MCE customer to be eligible for participation.

MCE's Multifamily Program operates alongside the Low-Income Families and Tenants (LIFT) Pilot Program (authorized in D. 16-11-022), with the objective to blend incentives and maximize benefits to better serve income-qualified multifamily properties that are not currently benefiting from other low-income energy efficiency programs. The LIFT Pilot Program provides comprehensive services and supports fuel switching from gas to electric heat pumps for cleaner and safer energy use.

MCE works with the Association for Energy Affordability (AEA) to implement both the Multifamily and LIFT Programs. AEA serves as the implementation lead and technical assistance provider, while the Conservation Corps North Bay (CCNB) provides direct install services.

MCE's Multifamily Energy Savings Program operates under the non-exclusive Single Point of Contact (SPOC) model approved in D.18-05-041. AEA, as the program implementer, served as a SPOC and provided program participants with a uniform and integrated presentation of opportunities across demand-side management strategies and other non-energy-related

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[6] D.18-05-041, OP 33 at p. 189.

[7] The direct install service is not a standalone service but is offered to participants in the program.

[8] The program will consider 2+ units on a case-by-case basis.

opportunities. AEA provided participants with personalized attention, follow-through, and assistance, identifying solutions that met their needs, budget, and levels of readiness for change (thereby minimizing the barriers that often plague projects during the initial phases).

The Multifamily Program uses a point-based incentive structure. The point-based system allows for the measures that achieve greater savings or directly impact residents to have the highest point value. Points translate to a per-unit rebate amount and the total rebate results from multiplying that dollar amount by the total number of treated units. For income-qualified residents, MCE layered LIFT in-unit incentives on top of Multifamily Program rebates.

As in previous years, MCE continued coordinating closely with the Bay Area Regional Energy Network (BayREN) and Pacific Gas & Electric Company (PG&E) through regular meetings, check-in calls, and emails. These practices aimed to avoid customer confusion, ensure that there is no double counting of savings, and share best practices.

Strategies Employed in 2018

During 2018, MCE deployed the following strategies in its multifamily offering:

- Increased frequency of communications to participants to reduce project conversion time (move properties through the pipeline and get them into rebate reservation faster);
- Implemented upgrades to the software tool used to manage the Multifamily Program to automate data tracking, and reporting, and accommodate the needs of the new LIFT Pilot Program;
- Conducted ongoing evaluation of the LIFT Pilot Program and gathered bilingual feedback from participants to improve the delivery of both programs;
- Acted as an advocate and leader in multifamily working groups;
- Participated in forums and conferences concerning multifamily low-income programs and non-energy benefits;
- Held marketing and outreach presentations and meetings with City and County staff, affordable housing developers, property owners, local organizations, and other strategic partners;
- Employed the non-exclusive SPOC model by:
    - Expanding the range of referral services to include solar and EV technical assistance and rebates;
    - Partnering with the City of Richmond's "Energize Richmond" Campaign to provide additional incentives to Richmond property owners to cover out-of-pocket costs for completing energy efficiency upgrades;
    - Continuing the partnership with Green and Healthy Homes Initiative (GHHI) in Marin to coordinate rebates and services to address health, safety, and aging-in-place issues at properties in Marin;
    - Launching the LIFT Pilot Program to leverage incentives provided by the Multifamily Program and further assist income-qualified residents in MCE's service area.

Program Performance and Major Achievements in 2018

In 2018, MCE accomplished the following program achievements:

- Provided technical assistance to 3,506 units;
- Disbursed $163,171 in rebates;
- Completed 7 projects reserved in previous years;
- Enrolled 12[9] multifamily projects in rebate reservation. Six (6) of those projects were completed in 2018 and 6 more projects will complete in 2019 or early 2020;
- Comprehensively served 4 multifamily projects (46 units) through GHHI in Marin;
- Provided services to 1,602 low-income units of the total 3,506 units touched by the program;
- Installed free light emitting diodes (LEDs), low-flow showerheads, and faucet aerators in 13 units;
- Fostered a successful relationship with local water agencies, helping residents save 149,630 gallons of water per year;
- Supported local workforce development initiatives by working with CCNB's clients to staff MCE's direct install team and provided 31 local on-the-job training hours and 95 work hours;
- Hired and trained a local high school student intern to support the program's marketing and outreach efforts;
- Supported local green jobs by funding 1,446 local work hours through implementation contracts;
- Disbursed an additional $69,565 in rebates through the partnership with Energize Richmond and reserved another $35,000 for projects completing in 2020;
- Engaged with 6 new properties and signed rebate reservations for a total of 57 units through the LIFT Pilot Program.

Program Changes and Improvements for 2019

In 2019, MCE is planning to implement the following program improvements:

- With the approval of MCE's new energy efficiency business plan, MCE will make some adjustments to the Multifamily Program to meet new cost-effectiveness requirements such as:
    - Adjustments to the incentive structure and measure mix to achieve competitive savings targets and cost-effectiveness requirements;
    - Utilize new program offerings (Standalone Direct Install) as avenues to engage with new customers.
- Continue to expand the non-exclusive SPOC model to include other partners, leveraging funding and resources;
- Expand our GHHI work through a GHHI-EPA Business Development grant in partnership with Contra Costa Health Services;

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[9] Including projects committed in 2018 but with anticipated completion in 2019.

- Finalize development and launch of new intuitive in-house program management platform to better track and forecast program success;
- Build strategic partnerships with city and county staff, affordable housing developers and other local stakeholders;
- Continue to collect data and examine best practices throughout the implementation of the LIFT Pilot Program to better serve income-qualified costumers;
- Work to reduce program implementation costs by expediting project conversion time, and improve overall cost-effectiveness through performance and milestone-based contracts.

SMALL COMMERCIAL

Program Description

MCE's Small Commercial Program offers free energy assessments, procurement assistance, and cash rebates for lighting, heating, ventilation, and air conditioning (HVAC), refrigeration, and food service measures. In addition, the program offers project management assistance and post-project quality assurance.

MCE administers this program through a partnership with two implementation partners and coordinates closely with PG&E energy efficiency programs to reduce confusion among contractors and customers as well as eliminate double-dipping of ratepayer funding programs.

The program is marketed through contractor referrals, door-to-door outreach campaigns, call campaigns, account services representatives, MCE e-newsletters, and partnerships with local business groups.

In 2018, MCE made several changes to the program to reduce customer and contractor confusion and to streamline the billing process for implementers. Other changes to program policies are intended to increase competition among participating contractors and facilitate thorough reviews of larger projects. The changes include:

- Measuring sunsets, additions, and incentive rate reductions for various technologies;
- Changing incentive amounts to align with incentives provided by other PG&E programs;
- Developing a Joint Cooperation Memo with PG&E on how to coordinate across programs;
- Lifting business size restrictions to cover all commercial properties, regardless of their maximum peak demand;
- Requiring bids from a minimum of two participating contractors when the project lead is not generated by a contractor (e.g. referral from MCE or implementer);
- Mandating pre-approval of project scope when expected incentive payments are higher than $10,000;
- Revising definition of "Hard-to-Reach" business customers to align with the clarified definition provided in D.18-05-041.

Strategies Employed in 2018

In 2018, MCE's small commercial program employed the following strategies:

- Coordinated closely with local Energy Watch Programs (Marin Energy Watch Partnership, East Bay Energy Watch, Napa County Energy Watch) to streamline customer offering;
- Communicated program success stories through newsletters to promote program offerings;
- Shifted funding between three different implementation contracts to focus on a results-oriented program;
- Referred high energy intensity businesses that would be ideal candidates for participation in the program;
- Expansion of geographic reach of primary implementer serving Napa County, to cover all of MCE service area;
- Lifted customer size restrictions to include all commercial accounts;
- Incorporated contractor price cap (margin over distributor pricing) into program in late 2018.

Program Performance and Major Achievements in 2018

In 2018, MCE accomplished the following program achievements:

- Completed energy audits at 140 businesses;
- Completed energy efficiency retrofits at 52 customer facilities;
- Disbursed $229,644 in rebates;
- Supported local green jobs by funding an estimated 1,465 local work hours through implementation contracts.

Program Changes and Improvements for 2019

In 2019, MCE is planning the following program changes and improvements:

- Continue to build our partnerships with cities and counties, especially in new communities, through targeted marketing campaigns, customer outreach, and close coordination with local government staff, BayREN, and other utility programs;
- Work to reduce program implementation costs and improve overall cost-effectiveness through performance-based contracts;
- Retire deemed lighting opportunities;
- Shift to net-savings basis for performance and target incentive payments;
- Lower payable rates for both implementation services and customer incentives, based on approved program budgets in support of cost-effectiveness;
- Leverage engineering services and expertise for larger commercial projects;
- Use meter data wherever feasible;
- Focus additional resources on gas savings targets.

SINGLE FAMILY

Program Description

In January 2018, MCE launched for a second year, the Seasonal Savings Pilot Program. The objective of the Seasonal Savings Pilot is to measure the cost-effective savings in utilizing smart thermostat technology to remotely modify set points on HVAC equipment.

Seasonal Savings Pilot

The Seasonal Savings Pilot Program employs a software algorithm that offers customers an opportunity to make their heating or cooling schedules more efficient through a series of very small adjustments to the scheduled temperatures over a three-week period. The algorithm results in more energy efficient heating or cooling schedules for the length of the heating or cooling season. Customers are offered to join the program through their thermostat and its mobile app. and must opt-in to participate.

In order to best measure the savings impacts of the pilot program, the program was divided into a winter heating season, which ran from January 12 through April 30; and a summer cooling season, which ran from July 11 through September 30.

Seasonal Savings Winter 2018

The program makes changes to customers heating schedules, which leads to more efficient heating set points, and a reduction in heating system runtime hours. A total of 24,322 thermostats were identified in MCE's service area. The target population was randomly split into treatment and control groups with 18,183 thermostats in the target treatment group and 6,139 in the control group. 81% of the target treatment group qualified[10] to participate and 73% of the qualified thermostats opted to participate. In total, 10,735 thermostats participated in the Seasonal Savings Winter event, equal to 59% of the target group.

Based on an analysis of set points and run times, gas heated homes that opted to participate are estimated to have saved 11 hours of furnace runtime, which equals 5.2 therms of natural gas and 5.9 kWh of electricity.[11] In aggregate, the program saved 54,801 therms and 68,526 kWh.

Seasonal Savings Summer 2018

A total of 17,800 thermostats with controlled central air conditioners were identified in MCE's service area. The target population was randomly split with 5,339 thermostats in the control group and 12,461 in the treatment group. 66% of the target treatment group qualified[12] to participate and 68% of the qualified thermostats opted to participate. In total, 5,621 thermostats participated in the Seasonal Savings Summer event.

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[10] Customers qualified for the program if the thermostat was online and running a heating schedule.

[11] Primarily from reduced air handler power use.

[12] Customers qualified for the program if the thermostat was online and running a cooling schedule.

The 12,461 target group thermostats were located in 9,771 homes, which means 23% of customers had more than one thermostat with an average of 1.28 thermostats per home.

Based on an analysis of the cooling set points and run times, the program achieved an estimated 3.4% savings, translating to 5.9 fewer hours of runtime, or 21 kWh per opt-in customer. The aggregated savings totaled 116,484 kWh.

Strategies Employed in 2018

In 2018, MCE's Single-Family Energy Efficiency Program used the following strategies:

- Launched a pilot program to test the impacts of remote thermostat adjustments;
- Expanded the pilot program to the new MCE service area, increasing participation and savings.

Program Performance and Major Achievements in 2018

In 2018, MCE accomplished the following program achievements:

- 10,735 customers enrolled in the Seasonal Savings Winter 2018, resulting in 54,801 therms and 68,526 kWh savings;
- 5,621 customers enrolled in the Seasonal Savings Summer 2018, resulting in 116,484 kWh savings.

Program Changes and Improvements for 2019

In 2019, MCE is planning the following program improvement:

- Review 2019 deployment results to evaluate how this program fits the new programs mix in MCE's expanded portfolio.

FINANCING

Program Description

MCE serves as a liaison for the Property Assessed Clean Energy (PACE) Open Marketplace in Marin County. PACE provides a financing option for energy efficiency, renewable energy, and water upgrades to residential and commercial buildings. Property owners can finance up to 100% of the project, for up to 30 years, as a tax assessment on their property tax bill. The assessment obligation may be assumed by the new owner upon sale of property, and under most leases, can be shared with tenants. In its role as a liaison, MCE assists with lead generation, marketing, data collection, and consumer protection activities.

In 2017, MCE launched a project that analyzed the performance of PACE projects in Marin County. Leveraging PACE project data collected from PACE providers along with meter data, MCE worked with Open Energy Efficiency (Open EE) to assess the performance of PACE projects relative to site-specific baselines. This study was completed in 2018.

In previous years, MCE offered a financing program that provided loans to be repaid on customers' energy bill. The On-Bill Repayment (OBR) program was a public/private partnership between River City Bank and MCE but was retired in early 2017 due to low uptake. MCE continues to support the outstanding loan that was offered through the OBR program before it closed.

Strategies Employed in 2018

In 2018, MCE's financing program employed the following strategies:

- Continued to support the outstanding residential loan offered through the OBR program in previous years;
- Continued to work with the County of Marin to offer an open market PACE model to increase the financing options available to residential and non-residential customers.

Program Performance and Major Achievements in 2018

In 2018, MCE accomplished the following program achievements:

- Completed a PACE assessment project in collaboration with the County of Marin and Open EE, to better understand the impacts of PACE projects at the meter, and use-cases for meter data in analyzing project performance;
    - Linked PACE project records to customer meters;
    - Analyzed 269 projects;
    - Achieved an average customer savings of 1,460 kWh or 19% savings across all project types;
- Maintained the Single Family OBR loan from 2013.

Program Changes and Improvements for 2019:

MCE is planning the following program improvement in 2019:

- MCE is closing its On-Bill-Repayment (OBR) program at the end of 2019 due to the Commission's approval of MCE's Business Plan;
- MCE will continue to maintain the one outstanding residential OBR loan.

ENERGY SAVINGS

MCE's 2018 portfolio savings are presented in Table 1.

Table 1. Net Electricity and Natural Gas Savings and Demand Reduction

Annual Results	Installed Savings
TOTAL 2018 Energy Savings (GWh) - Annual	1.16
TOTAL 2018 Energy Savings (GWh) – Lifecycle	14.67
TOTAL 2018 Natural Gas Savings (MMth) – Annual	0.07
TOTAL 2018 Natural Gas Savings (MMth) – Lifecycle	0.30
TOTAL 2018 Peak Demand savings (MW) - Annual	0.15

Savings by Program and End Use

MCE's savings by program are presented in Table 2.

Table 2. Net Savings by Program

Annual Results	2018 Annual Savings		
	Electric (MWh)	**Demand (MW)**	**Gas (therm)**
Multifamily	151.217	0.008	16,468.455
Commercial	823.364	0.126	(888.814)
Single Family	185.010	0.019	54,801.00
Total	**1,159.59**	**0.15**	**70,380.64**

More than half of the portfolio's electric savings come from the Commercial Program, which installed a high number of lighting and refrigeration measures (Table 3). Most of the portfolio's gas savings come from the Multifamily Program, which installed a high number of HVAC and water heating related measures.

Table 3. Annual Net Savings by End-Use

2018	GWH	% of Total	MW	% of Total	MMTh	% of Total
Residential	**0.3362**	**29.09%**	**0.0266**	**17.51%**	**0.0713**	**101.21%**
Appliances	0.0033	0.97%	0.0022	8.40%	0.0001	0.10%
HVAC	0.1848	54.96%	0.0190	71.39%	0.0553	77.53%
Lighting	0.1330	39.56%	0.0020	7.56%	0.0001	0.12%
Refrigeration	0.0072	2.14%	0.0009	3.50%	(0.0003)	(0.35%)
Water Heating	0.0087	2.59%	0.0004	1.35%	0.0072	10.14%
Other	(0.0008)	(0.22%)	0.0021	7.80%	0.0089	12.46%
Nonresidential	**0.8194**	**70.91%**	**0.1251**	**82.49%**	**(0.0009)**	**(1.21%)**
HVAC	0.0103	1.26%	0.0018	1.44%	0.0010	(113.52%)
Lighting	0.7279	88.83%	0.1029	82.29%	(0.0017)	197.49%
Refrigeration	0.0812	9.91%	0.0204	16.28%	(0.0002)	19.52%
Other	0.0000	0.00%	0.0000	0.00%	0.0000	(3.49%)
MCE Annual Portfolio Savings	**1.16**	**100%**	**0.15**	**100%**	**0.07**	**100%**

The Multifamily Program did not meet its savings goals in 2018, due in part to the long lead time for multifamily projects. However, when comparing MCE's 2018 savings targets, actual savings, and committed savings (Table 4), the total savings from completed and committed projects exceeds gas savings goals. On average it takes 18 months for a multifamily property to complete an energy efficiency upgrade project. One strategy MCE employs to mitigate the uncertainty around long project timing is to implement a phased approach in which a single project is split into smaller sequential projects each with its own completion date, inspection, and rebate payment.

Table 4. Portfolio Incentive Commitments

	2018 Targets[13]	2018 Actual	% of Target	2018 Commitments	2018 Actual + Committed	% of Target (Actual + Committed)
Net kWh savings	1,846,948	1,089,121	59%	78,695	1,167,816	63%
Net therms savings	70,289	66,761	95%	6,676	73,437	104%

Environmental Impacts

The avoided emissions data in Table 5 is calculated using the Cost-Effectiveness Tool, developed by the Energy Division of the CPUC.

Table 5. Net Environmental Impacts

Annual Results	Annual tons of CO2 avoided	Lifecycle tons of CO2 avoided	Annual tons of NOx avoided	Lifecycle tons of NOx avoided
2018 Total	569	3,677	144	1,756

Expenditures

MCE's portfolio expenditures are presented in Table 6.

Table 6. 2018 Budget and Expenditures

Summary of Portfolio Expenditures	2018 Operational Program Budget	Percent of Portfolio Budget	Cumulative Annual Expenditures, 2018	Percent of Total Annual Expenditures
Administrative	$117,046	6.24%	$92,977	7.77%
Direct Implementation	$1,113,928	59.35%	$777,208	64.94%
Incentives	$519,868	27.70%	$295,71 3	24.71%
Marketing/ Education/ Outreach	$50,870	2.71%	$14,253	1.19%
EM&V	$75,072	4.00%	$16,590	1.39%
Total Portfolio	**$1,876,783**	**100.00%**	**$1,196,740**	**100.00%**

[13] MCE-AL 25-E Appendix B

In addition to the 2018 program budget expenditures above, MCE spent an additional $97,123 on incentives that used committed funds. MCE distributed these funds to 5 properties in the form of rebates through MCE's Multifamily Program. Table 7 shows budget expenditures that include these committed expenditures.

Table 7. 2018 Budget and Expenditures (Including Committed Expenditures)

Summary of Portfolio Expenditures	2018 Operational Program Budget	Percent of Portfolio Budget	Cumulative Annual Expenditures, 2018	Percent of Total Annual Expenditures
Administrative	$117,046	6.24%	$92,977	6.90%
Direct Implementation	$1,113,928	59.35%	$831,132	61.67%
Incentives	$519,868	27.70%	$392,836	29.15%
Marketing/ Education/ Outreach	$50,870	2.71%	$14,253	1.06%
EM&V	$75,072	4.00%	$16,590	1.23%
Total Portfolio	**$1,876,783**	**100.00%**	**$1,347,788**	**100.00%**

MCE will be committing $32,443 in electric funds and $67,108 in gas funds for properties that signed MCE's Rebate Reservation form in 2018. In addition, MCE is committing $48,181 in electric funds for contracts entered into in 2018. MCE will be committing an additional $13,438 in electric funds that will be used for Evaluation, Measurement and Verification (EM&V) purposes.

Interest Earned on Funding

MCE placed our 2018 ratepayer funds in an interest-bearing account. During that time the funds accrued $88,442.79 in interest. MCE will return these funds to ratepayers and recommends that these funds be removed from the 2020 program budget. The interest accrued will be reported on MCE's 2020 Annual Budget Advice Letter.

Cost-Effectiveness

The cost-effectiveness of MCE's programs is outlined in the table below. The Total Resource Cost (TRC) Test weighs the program's net benefits against the cost to the program administrator and its customers. The Program Administrator Cost (PAC) Test measures the benefits and costs to the Program Administrator. The Multifamily Program's cost-effectiveness, while low, is comparable to other Program Administrator's multifamily programs.[14]

Table 8. Cost-effectiveness

Annual Results	TRC Ratio	PAC Ratio
Multifamily	0.12	0.67
Commercial	1.04	1.21
Single Family	0.80	0.80
2017 MCE Total	**0.31**	**0.91**

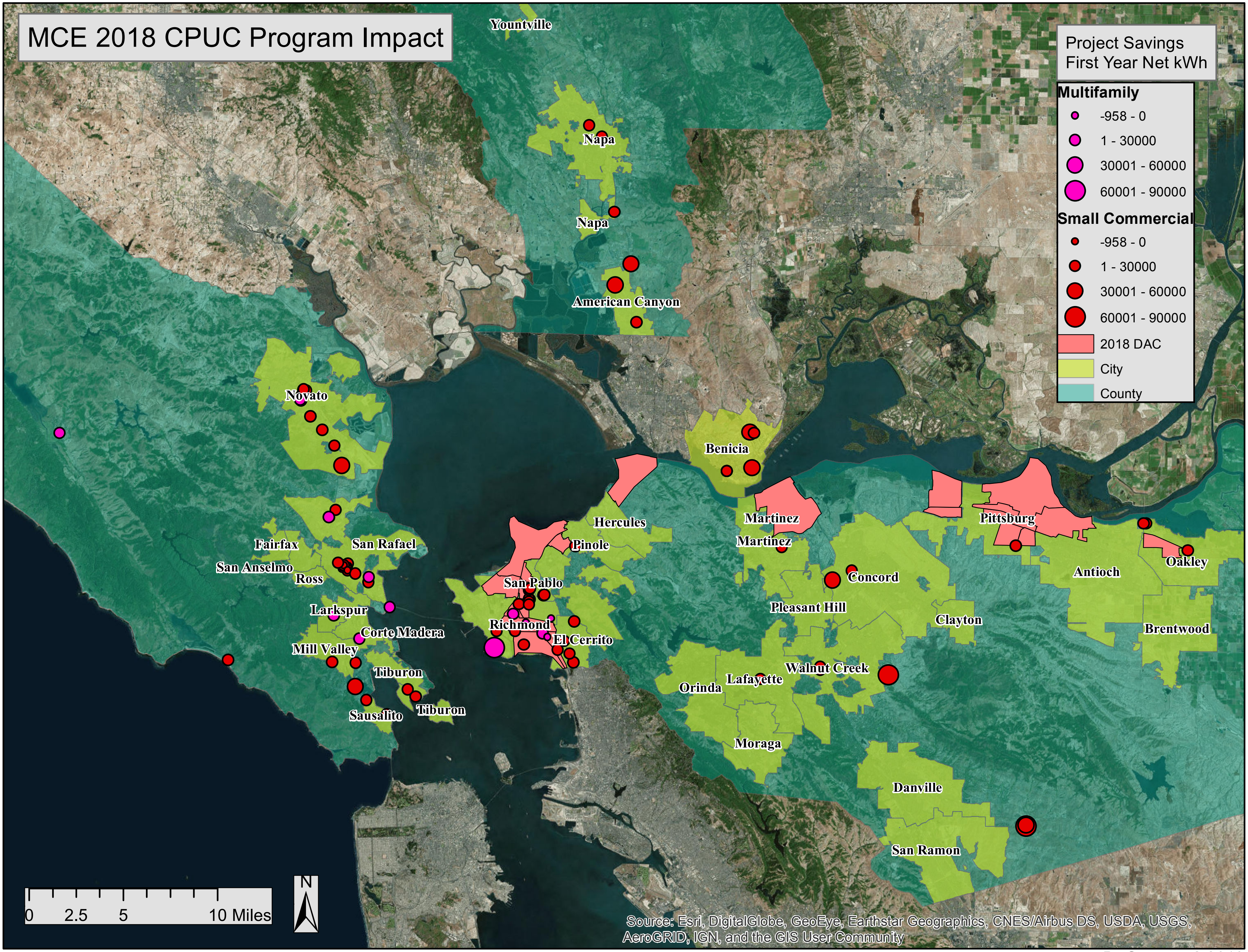
2017 Savings and Expense Update

In closing out its 2018 expenses, MCE realized that a correction occurred to the 2017 expenses in our Multifamily Program after the report was completed. The invoice correction added a Direct Implementation (DI) expense of $9.38 in gas funds and $25.37 of electric funds, for a total increase in $34.75. This amount will be placed in our 2018 Program Year. MCE is stating this discrepancy for transparency.

[14] Itron. "2013-14 Regional Energy Networks and Community Choice Aggregator Programs Impact Assessment" January 2016

Appendix A: Program Impact Maps

The following maps demonstrate the distribution of projects reported and the impact made in terms of kWh and Therms.



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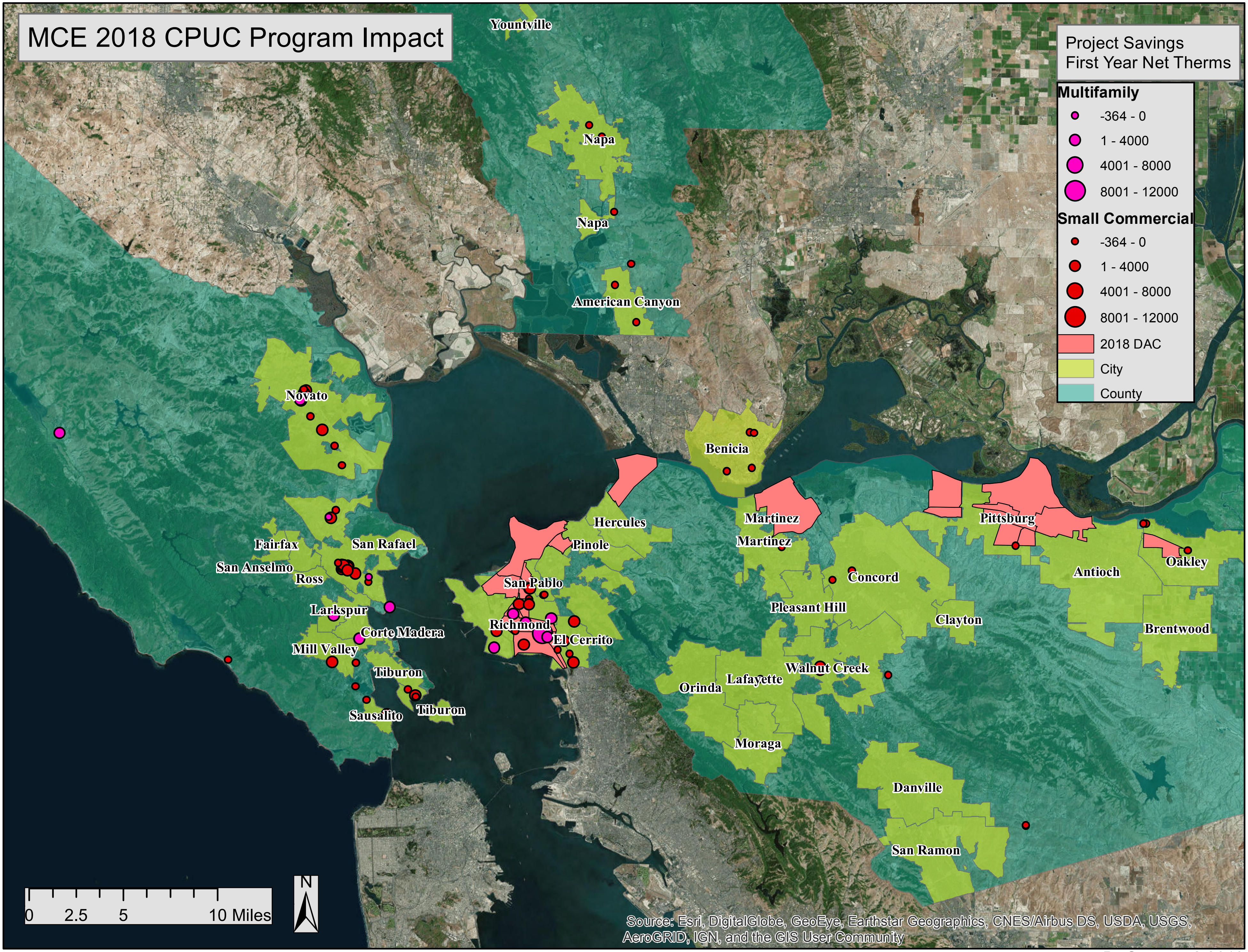

D. Genter - 2.2019