Affordability Metrics Implementation

Staff Proposal

R.18-07-006

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Executive Summary

Phase I of the Affordability Rulemaking (R.) 18-07-006 established the metrics that will be used for measuring affordability, as well as the data sources and methodologies for doing so. This staff proposal builds on the foundation laid by Decision (D.) 20-07-032 (the Decision) by establishing how these metrics can be used to provide forward-looking analyses, the process by which the metrics will be refreshed on an annual basis, and how the metrics can be used in various capacities by the California Public Utilities Commission (CPUC).

Staff recommends the CPUC assign the primary responsibility for calculating and interpreting the affordability metrics for use in proceedings to the energy Investor-Owned Utilities (IOU) and the Class-A water utilities. Furthermore, staff recommends applying affordability analyses to grant applications, proceedings, and other proposals involving essential communications services. Affordability metrics applications for each industry are detailed in the implementation strategy chapter of this proposal.

- **Energy**:
    - **Use Case #1:** Staff recommends all General Rate Case (GRC) applications and other non-GRC utility ratesetting applications with a proposed revenue requirement increase greater than one percent triggers affordability analysis reporting requirements in both the application and testimony.[1] Significant changes to proposed revenue requirement resulting from a Settlement Agreement or a Proposed Decision (PD) requires updated affordability metric calculations and interpretation analysis.[2]

    - **Use Case #2**: The geographic granularity of the affordability metrics may be useful to ED staff working in program areas that assess different levels of program fund allocations or benefits for low-income customers who reside in certain areas identified by the metrics. A case that may serve as a model is presented based on a recent directive in a low-income proceeding decision.[3]

    - **Use Case #3**: Staff will also evaluate how the metrics can be used to assess the effectiveness of proposals to make electric rates more affordable, such as those discussed at the En Banc hearing held on February 24, 2021 and subsequently summarized in the 2021 Senate Bill (SB) 695 (Kehoe, 2009) Report.[4] These proposals will be explored further as part of Phase 3 of the Affordability Proceeding.

[1] *See* "Implementation Strategy" chapter for a complete list of requirements at the time of filing an application. Applies to both the large energy IOUs and the Small and Multi-Jurisdictional Utilities (SMJU).
[2] While the affordability analysis requirement is initially triggered by an *increase* in proposed revenue requirement in the application, subsequent *changes* to proposed revenue requirement in a Settlement Agreement or Proposed Decision are generally a decrease in proposed revenue requirement.
[3] Decision on Energy Savings Assistance (ESA) program applications for 2021 – 2026 program years (D.)21-06-015.
[4] "Utility Costs and Affordability of the Grid of the Future: An Evaluation of Electric Costs, Rates, and Equity Issues Pursuant to P.U. Code Section 913.1," CPUC, May 2021. https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/en-banc/senate-bill-695-report-2021_en-banc-white-paper.pdf

- **Water**:
    - Staff recommends Class A water utilities submit affordability calculations as part of each General Rate Case application and with applications and advice letters where proposed revenue increases are greater than one percent. Formal proceedings should include additional affordability analysis and discussion of the metrics.

    - Class As should work with Water Division staff to create updated affordability calculations in advance of a Proposed Decision or draft Resolution, as well with each proposed Settlement Agreement. The utility should then provide an analysis based on the updated calculations in its comments.

    - Staff recommends the Class As complete the Rate and Bill Tracking tool for water in subsequent GRCs and update it with each rate change thereafter.

- **Communications:**
    - Utilize the affordability framework as an overarching filter to ensure providers funded by the $6 billion broadband initiative provide essential communications services with an affordable pricing plan to all impacted customers.

    - Apply affordability metrics to measure the effectiveness of the CPUC's public purpose programs in bridging the Digital Divide.

This staff proposal introduces a specialized, Excel-based tool, the Affordability Ratio Calculator, for use by essential service providers and other parties in calculating the Affordability Ratio (AR). The goal of providing the Affordability Ratio Calculator is to assist stakeholders[5] with calculating the AR metric and standardize its calculation. It is anticipated that there will be a steep learning curve as stakeholders learn how to calculate and interpret the metrics, particularly the AR metric, which requires a thorough understanding of the forecasting assumptions of the metric inputs and of the geographically-based outputs.

In an effort to provide context to the values of the affordability metrics, staff also introduces two new definitions of vulnerable communities based on the AR and Socioeconomic Vulnerability Index (SEVI) metrics. **Areas of Affordability Concern (AAC)** refers to geographic areas where the AR metric for representative low-income households is disproportionately higher than it is for the rest of the state, based on the distribution of AR values for a given industry.[6] This identifies communities where representative low-income households' ability to pay for essential services is severely lacking as compared to the rest of the state.

The second concept is a variation of disadvantaged communities (DAC), and is known as the **SEVI-DAC**. While the traditional definition of a DAC is a census tract with a CalEnviroScreen score in the top 25

[5] Stakeholders include essential service providers and other parties to proceedings.
[6] "CPUC-jurisdictional parts of the state" applies to Energy and Water industries; Communication industry AACs are based on the distribution of AR values for the entire state.

percent, a SEVI-DAC is a census tract that has a SEVI score in the top 25 percent. By using SEVI rather than CalEnviroScreen, this alternative definition of DACs focuses specifically on the socioeconomic factors that make a community vulnerable rather than incorporating additional considerations, such as pollutants.

Both of these concepts complement existing definitions of vulnerable communities and give policymakers the tools to focus exclusively on the socioeconomic conditions that burden them. By excluding non-socioeconomic factors in the identification of SEVI-DACs, this designation ensures that the most economically vulnerable communities are highlighted and are not obscured when other factors, such as environmental and demographic considerations, are included. By providing these additional concepts, the CPUC has the ability to select the most appropriate method for geographically targeting resources based on the goals of a specific program or proceeding.

1. Introduction and Background

This staff proposal recommends how to implement the affordability metrics and methodologies adopted by the CPUC in the Affordability Rulemaking (R.)18-07-006 in Decision (D.)20-07-032 (Decision).[7] The Decision adopted three metrics, affordability ratio, hours at minimum wage, and socioeconomic vulnerability, and supporting methodologies to be considered by the CPUC when assessing the affordability of essential electricity, gas, water, and communications utility services. This proposal provides recommendations on how to calculate the metrics and establishes procedures for the CPUC to implement them.[8]

A concise summary of the affordability metrics is provided here, but for more information please refer to the Decision which establishes a definition for each of the three different but complementary metrics. The Decision also defines affordability as "the degree to which a representative household is able to pay for an essential utility service charge, given its socioeconomic status."[9] The three independent but interrelated affordability metrics rely on data with small geographic granularity and assess affordability across utilities over time to create a more complete picture of affordability than any one metric. Implementation of these metrics will allow stakeholders and decision-makers to consider the relative impact on the affordability of proposals before the CPUC.

a. Affordability Ratio (AR)

The affordability ratio (AR) metric quantifies the percent of a household's income used to pay for an essential utility service after non-discretionary costs, such as housing and other essential utility services, are removed from the household's income. The higher an AR, the less affordable the utility service. AR may be calculated for any given income level in a given area,[10] with AR_{20} (the AR for a household in the 20th percentile income level) and AR_{50} (the AR for a household in the 50th percentile of income) chosen by staff as the standard representations.[11] The AR metric is sensitive to geographic variations in cost-of-living, which can impact the amount of income available to pay for essential utility services.

b. Hours at Minimum Wage (HM)

The hours at minimum wage (HM) metric allows stakeholders to conceive of essential utility bills in terms of something most people can relate to – hours of labor. The use of minimum wage in the HM metric accounts for the lowest wages legally available in a given location, and as a result implicitly

[7] *See* D.20-07-032.

[8] The Assigned Commissioner's Fourth Amended Scoping Memo and Ruling filed September 15, 2021 put forth the issues to be determined in the second phase of this proceeding which are included herein, with the exception of "How to incorporate any approved essential usage study from Application (A.) 19-11-019" as the referenced essential usage study is still in process and not yet approved.

[9] D.20-07-032, Conclusion of Law (COL) 6.

[10] The AR metric is calculated for a representative household at a given point in the income distribution for a geographic area known as a Public Use Microdata Area (PUMA). This distribution of incomes is particular to each PUMA and is measured in the Census Bureau's American Community Survey (ACS). PUMAs are "non-overlapping, statistical geographic areas that partition each state or equivalent entity into geographic areas containing no fewer than 100,000 people each." There are currently 265 PUMAs in the state of California. By looking at a common income percentile across the different PUMAs in California, the AR metric characterizes the relative wealth of each PUMA to the others. More information on PUMAs can be found on the Census Bureau's website: https://www.census.gov/programs-surveys/geography/guidance/geo-areas/pumas.html

[11] The 20th percentile was selected because it represents households that are low-income but may not necessarily qualify for an assistance program such as California Alternate Rates for Energy (CARE).

considers the impact of utility bills on lower-income customers regardless of the affluence of the community as a whole.

c. Socioeconomic Vulnerability Index (SEVI)

The socioeconomic vulnerability index (SEVI) metric allows for an affordability assessment that is independent of essential utility service charges. The SEVI metric describes the relative socioeconomic characteristics of census tracts, referred to as communities, in terms of poverty, unemployment, educational attainment, linguistic isolation, and percent of income spent on housing.[12] The goal of the SEVI metric in this context is to highlight those communities where uniform changes in rates may have a disproportionate impact on affordability. Thus, the SEVI metric allows for an affordability assessment that is independent of the absolute value of essential utility service charges.

Table 1 presents a summary of the interpretation and the relative strengths of the affordability metrics.

Metric	Interpretation	Strengths	Weaknesses
Affordability Ratio	Percent of discretionary budget (after accounting for housing and other utilities) available to pay for essential levels of utility service	• Can focus on different income levels • Relates census geography to utility service territories and bills • Can forecast values	• Complicated to compute • Difficult to interpret due to complex geographic details
Hours at Minimum Wage	Number of hours needed to work at minimum wage to pay for essential levels of utility service	• Easy to understand • Describes low-income households' affordability regardless of community's wealth	• Does not account for housing costs
Socioeconomic Vulnerability Index	Comparison of census tracts and their relative sensitivity to rate changes	• Geographically granular at census tract level • Accounts for socioeconomic factors other than income and housing costs	• Relatively static metric; derived from CES • Cannot be forecasted to reflect expected changes to rates • Does not include utility bills

Table 1: Interpretation, Strengths, and Weaknesses of Affordability Metrics

[12] The socioeconomic indicators are those used by the California Office of Environmental Health Hazard Assessment in developing its CalEnviroScreen (CES) score.

2. Affordability Metrics Calculation and Ongoing Support

This chapter establishes the forecasting methodology for each input of the AR metric, the process by which these inputs will be refreshed annually, and how those results will be shared with the public. Staff will make publicly available an Affordability Ratio Calculator (ARC) tool that will allow for calculation of the AR metric by anyone who wishes to understand the affordability impacts associated with a hypothetical essential usage bill amount in future years. The tool will be maintained by CPUC staff and updated annually in conjunction with the Annual Affordability Report.

In addition, the expectations for forecasting future values of the other two affordability metrics, HM and SEVI are also set forth herein. While SEVI is a metric that is derived from CalEnviroScreen (CES) and is not capable of being forecasted, HM can be predicted for future years. However, CPUC staff does not plan on issuing a tool for the calculation of future HM values at this juncture.

a. Affordability Ratio Forecasting Methodology

This section describes the methodology for forecasting future values of the AR metric's inputs. The goal of this forecasting framework is to provide a geographically granular estimate of how socioeconomic conditions will change in California, which will allow for estimation of affordability impacts when combined with assumed future values of essential usage bills. It is important for this methodology to produce results that are specific to the major regions within the state of California, since one of the main uses of the affordability metrics is the ability to compare affordability between different parts in the state. Using statewide or national averages for economic forecasting indicators would simply result in household income and housing cost estimates from the retrospective analysis being inflated or deflated uniformly across the entire state.

This framework relies on the macroeconomic forecasting work of the state's Department of Finance (DOF). DOF's Economic Research Unit uses an econometric model developed by the consulting firm IHS Global Insight to predict US economic indicators and combines these results with its own California-specific econometric model to produce regional forecasts. Both of these models consist of a complex system of equations that represent the economic activity of individual industries, as well as the interaction between these industries and consumers' purchasing behavior. More information on these models is provided on the DOF website.[13]

Among other outputs, these models produce regional estimates of inflation for baskets of goods as well as inflation for individual categories of goods and services. Inflation for a basket of goods is generally measured by a consumer price index (CPI). One component of these CPI measures is a shelter price inflation estimate, which is also relevant to this forecasting methodology.

i. Income

CPI, which is tracked and reported by the Bureau of Labor Statistics (BLS), is a widely accepted measure of changes in consumer prices for a "market basket" of goods and services, and is often used in cost-of-living wage adjustments.[14] While individual households may experience changes in income that deviate

[13] "Department of Finance Econometric Models," California Department of Finance. https://www.dof.ca.gov/Forecasting/Economics/Documents/Economic_Models.pdf

[14] "Consumer Price Index Frequently Asked Questions," U.S. Bureau of Labor Statistics. https://www.bls.gov/cpi/questions-and-answers.htm

from estimated and actual changes in CPI, this metric is a widely used proxy for income growth for the general public because it reflects the nominal change in income required to maintain the same standard of living.

The forecasting methodology for the affordability metrics will make use of two different measures of CPI to predict regional changes in household incomes: CPI for all urban consumers, or CPI-U, and CPI for urban wage earners and clerical workers, or CPI-W. The California Department of Finance macroeconomic models produce both sets of values for a five-year forecast period (the forecast period includes the current year; for instance, the forecast issued in 2020 includes 2020 through 2024).[15]

CPI-U is designed to reflect changes in consumer prices for products and services purchased by 88 percent of the total US population.[16] Because it is meant to reflect typical consumer prices for the vast majority of Americans, CPI-U will be used to estimate income growth for households at the 50th percentile of the income distribution of each public use microdata area (PUMA) in this forecasting methodology. This will be accomplished by taking the most recent estimate of household income at the 50th percentile of the income distribution for each PUMA (based on the most recently available data from the Census Bureau's American Community Survey Public Use Microdata 5-Year Sample, as detailed in D.20-07-032) and escalating it based on the CPI-U estimates provided by the Department of Finance for each metropolitan statistical area (MSA). An MSA is a collection of counties that consist of an urbanized area and the surrounding counties and are determined by the Office of Management and Budget (OMB).[17]

There are four MSAs in the state of California: Los Angeles (Los Angeles and Orange counties), San Francisco (Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties), San Diego (San Diego county), and Riverside (Riverside and San Bernardino counties). For PUMAs that fall within these MSAs, median income growth will be based on the CPI-U estimates that the Department of Finance produces for each MSA. For PUMAs that do not fall within these MSAs, the CPI-U forecasts for the United States average will be used instead as a proxy.

While CPI-U is meant to represent the growth in consumer prices for the vast majority of Americans, CPI-W measures consumer price changes for households "in which more than one-half of the household's income comes from clerical or wage occupations." This metric is the predecessor to CPI-U and was originally slated to be discontinued from future BLS reports until some CPI data users complained that the broader CPI-U measure would no longer reflect the experience of low- and middle-income workers.[18]

Since this metric is meant to track the growth in consumer prices for lower-income households as compared to CPI-U, the forecasting methodology will use CPI-W to estimate changes in income for

[15] "Economic Forecasts, U.S. and California," California Department of Finance. https://www.dof.ca.gov/Forecasting/Economics/Eco_Forecasts_Us_Ca/
[16] "Why Does BLS Provide Both the CPI-W and CPI-U?" U.S. Bureau of Labor Statistics. https://www.bls.gov/opub/btn/volume-3/why-does-bls-provide-both-the-cpi-w-and-cpi-u.htm
[17] "About Metropolitan and Micropolitan Statistical Areas," U.S. Census Bureau. https://www.census.gov/programs-surveys/metro-micro/about.html
[18] "Why Does BLS Provide Both the CPI-W and CPI-U?" U.S. Bureau of Labor Statistics. https://www.bls.gov/opub/btn/volume-3/why-does-bls-provide-both-the-cpi-w-and-cpi-u.htm

households at the 20th percentile of the income distribution. These values are reported at the same level of geographic detail as CPI-U and will be used similarly.

ii. Housing Costs

One component of the CPI market basket is shelter. This metric measures the general change in price for rent for renters and "owners' equivalent of rent" for homeowners, with the two combined into a single shelter metric that is a weighted average.

The Department of Finance forecast data includes a breakout of the CPI market basket components for each MSA, including the shelter component. The forecasting methodology for AR will use this value as a measure of the change in housing costs for the forecast period.

iii. Future Values of Essential Usage Bills for Other Industries

In order to forecast future values of the AR metric, it is necessary to have an estimate of future essential usage bills for all of the services considered. This means that, for an affordability analysis of a rate change for a provider of one essential service, the Affordability Ratio Calculator will need to have estimates of future values for the other essential services as well.

The specific values for future years' essential usage bills depend on the scenario being considered. In order to understand the affordability impact associated with a future rate change, the AR metric would need to be calculated for the specific set of essential usage bills that a stakeholder is considering. Rather than relying on staff to do this analysis as part of each revenue requirement proposal, staff will make an Affordability Ratio Calculator available to the public so that essential service providers and other parties to proceedings can perform this analysis on their own.

b. Affordability Ratio Calculator

Affordability Ratio is a metric that relies on multiple data sources and several analytical steps to produce input values for the calculation. Rather than simply define the metric and rely on essential service providers and other parties to calculate AR, staff propose issuing an annually updated Excel-based calculator that will be pre-populated with all of the values needed to calculate AR for representative households at the 20th and 50th percentiles of the income distribution within each PUMA based on the most recently available socioeconomic, essential usage bills, and forecast data. This tool will be made available to the public through the CPUC website. The process of updating and issuing this tool will coincide with preparation of the Annual Affordability Report.

This section describes key elements of the Affordability Ratio Calculator and the process by which it will be updated annually.

i. Format and Uses

The tool will contain, for each census tract in the state of California, the following pieces of data: essential usage bills for each industry, estimates for household income at the 20th and 50th percentiles of the income distribution for the PUMA in which the census tract is located (calculated as described in D.20-07-032), estimates of housing costs for representative households at those income levels based on analysis at the PUMA level (derived from regression analysis as described in D.20-07-032), the number of housing units estimated to be in each census tract, the weighting factors used to derive weighted averages of the AR values at larger geographic scales, and regional metrics from the most recently

available Department of Finance economic forecast (including CPI-U, CPI-W, and the shelter component of the CPI metrics).

The tool will contain AR_{20} and AR_{50} values for each essential service, as well as AR values for all four essential services bundled together, within each census tract. For census tracts where multiple providers for a given essential service are present, the tool will calculate AR values for each unique combination of providers within those tracts.

While census tract-level results are useful for detailed analysis and identification of specific communities in some contexts, staff recognizes that results are also needed for larger geographic areas so that affordability outcomes can be summarized across a provider's service territory. The tool will also generate summary results at the following levels of geographic detail: for electricity and natural gas, the tool will generate results for climate zones subdivided into constituent PUMAs, as well as for climate zones as a whole; for water, the tool will generate results for individual water providers and ratemaking areas; and for communications, the tool will generate results at the PUMA level.

The tool will be able to generate these values for the most recent historical year for which data is available (the "base analysis year") and will also be able to forecast AR values for a 7-year forecast period based on the most recently available Department of Finance economic forecast and user-defined inputs for essential usage bills during the forecast period. For the years that fall outside the Department of Finance's 5-year forecast period, the CPI and shelter escalator values will be assumed to be equal to the average values for those escalators during the 5-year forecast period. The tool will come pre-populated with estimates for essential usage bills in future years by applying the forecasted US average CPI-U values. Those essential usage bill values can be overwritten in order to estimate AR values for a specific scenario, such as for a general rate case (GRC) with a proposed rate and associated essential usage bills. The tool will generate AR results for forecast years at the same geographic levels that were described for the base analysis year.

ii. Annual Update Schedule

The Affordability Ratio Calculator will be updated each year and used to prepare the Annual Affordability Report, with the results for the base analysis year being the focus of the report. CPUC staff will make the tool available to the public by posting the updated tool on the CPUC website.

The specific timing of the updated calculator and Annual Affordability Report will depend on the availability of the underlying datasets used to calculate the inputs.

c. Forecasting of HM

Unlike AR, HM is a relatively straightforward metric. The only two inputs are the essential usage bills and the minimum wage for a given locality. For future values of HM, the specific essential usage bills would depend on the scenario being considered (this is a user-defined input in the Affordability Ratio Calculator).

Instead of providing a calculator to compute future values of HM, staff will rely on essential service providers and parties to proceedings to produce estimates of HM for a given scenario. Where forecasted HM values are required in applications, essential service providers will be expected to estimate future values for essential usage bills and identify the most likely future values of local minimum wage.

d. Forecasting of SEVI

As stated previously, SEVI is derived from components of CalEnviroScreen, which is a metric that is not updated on an annual basis. Rather than attempt to forecast future values of SEVI, it is assumed that SEVI will only be used based on the most recently available data for CalEnviroScreen. These results will be published annually as part of the supplementary workpapers that accompany the Annual Affordability Report.

3. Interpretation of Results

Staff indicated in the previous chapter how the affordability metrics for use in proceedings are to be *calculated*. Staff believes that the electric and gas IOUs, the Class-A water utilities, and communications service providers are in the best position to introduce to the proceeding record the affordability metrics in a manner that best balances affordability with other important goals in a proceeding. *Interpretation analysis* of affordability metrics calculated as part of proceedings will be incumbent on the energy IOUs, Class-A water utilities, communications service providers, as well as all other stakeholders, including those who choose to perform this analysis as intervenors in a revenue request or program proposal proceeding.[19]

In this chapter, staff presents practical ways to interpret the AR_{20} metric and the SEVI metric, and use them to quantitatively and geographically assess the affordability of essential utility services.

a. Affordability Demarcations and Areas of Affordability Concerns using AR_{20}

AR_{20} values generated by the Affordability Ratio Calculator based on historical data, such as those used to generate the Annual Affordability Report, quantitatively identify CPUC-jurisdictional areas with geographical context to evaluate affordability of essential utility services in CPUC proceedings.

The data observed in the 2019 Annual Affordability report indicate that some areas have disproportionate affordability concerns. In most cases, these concerns stem from particularly low 20th percentile incomes, which are outside of the CPUC's control. It is nevertheless useful to identify specific AR_{20} values (demarcations) to aid in interpretation of the affordability metrics results and provide guidance on how to recognize where affordability problems are most severe.

Staff identify these demarcations as the point of inflection in each industry's AR_{20} distribution of values across the state, based on the observed data in the 2019 Annual Affordability report.[20] The demarcations are intended to help interpret the results of the affordability metrics and give guidance as to where affordability problems are most severe. The demarcations for each industry are shown in Table 2. The AR_{20} distributions for all four industries are shown in Figure 1 through Figure 4. These demarcations should serve as guidance in determining the affordability of essential utility service charges at this time. For a given industry, AR_{20} values above the demarcation points can indicate enhanced difficulties in making ends meet. As future iterations of the Annual Affordability Report are produced and additional data on the affordability metrics becomes available, staff may revisit the definitions of the demarcations.

[19] *See* "Implementation Strategy" chapter.

[20] For the electricity, gas, and water demarcations, inflection points were identified based on the distribution of AR_{20} results in CPUC-jurisdictional service territories only.

Industry	Inflection Point %
Electric	15%
Gas	10%
Water	10%
Communications	15%

Table 2: AR_{20} Distribution Inflection Point by Industry (2019)

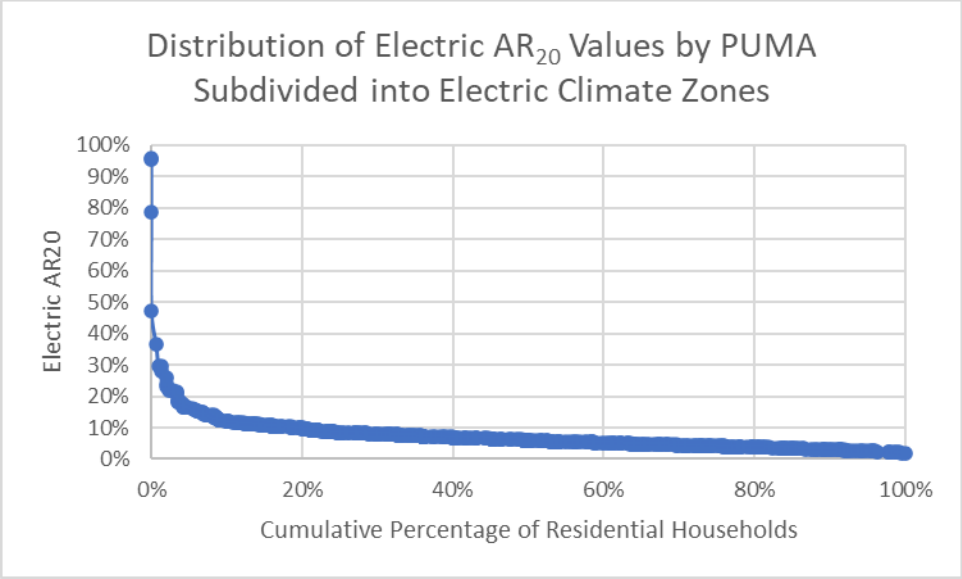

Figure 1: Distribution of Electric AR_{20} Values by Percent of Residential Households (2019)

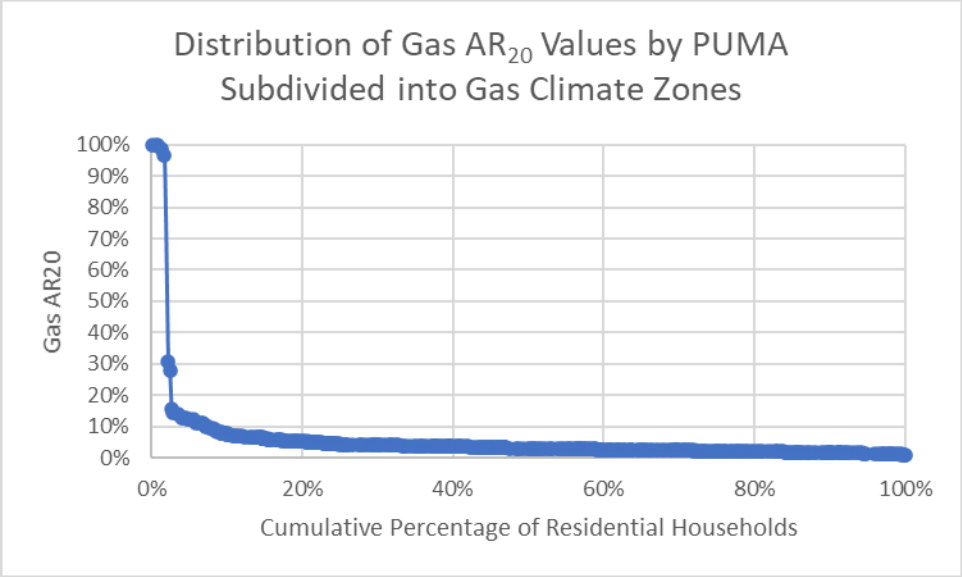

Figure 2: Distribution of Gas AR_{20} Values by Percent of Residential Households (2019)

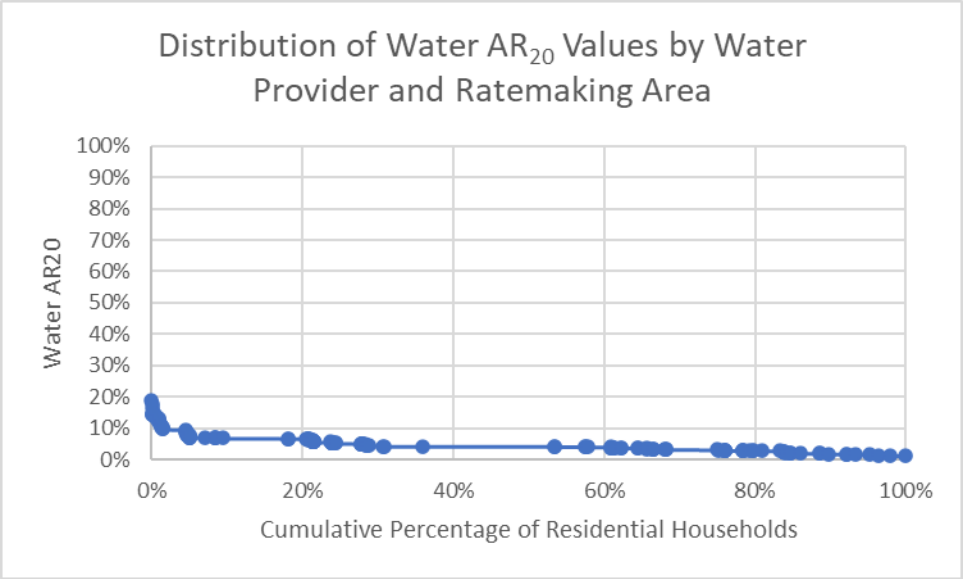

Figure 3: Distribution of Water AR_{20} Values by Percent of Residential Households (2019)

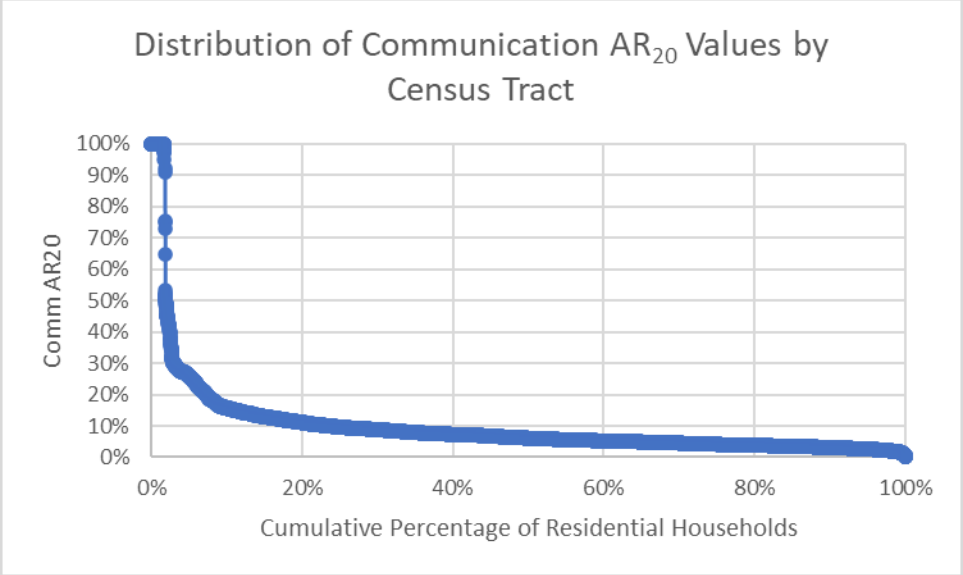

Figure 4: Distribution of Communications AR_{20} Values by Percent of Residential Households (2019)

To further apply the affordability demarcations, staff introduce the concept of Areas of Affordability Concern (AAC). In this proposal, we define AACs for each industry as the geographical areas with AR_{20} scores greater than the affordability demarcations. Defining AACs using affordability demarcations is useful for benchmarking typical observed ranges of affordability, which provides a static reference point against which to compare future observed values.

A sample list of census tracts that fall in AACs is provided in Appendix A.

b. Socioeconomic Vulnerability Index Disadvantaged Communities (SEVI-DACs)

The SEVI metric is derived from components of CalEnviroScreen 3.0 and can be applied in a similar manner as the CalEnviroScreen metric for the purpose of identifying socioeconomically vulnerable communities. While the CalEnviroScreen metric considers the full suite of factors that make a community disadvantaged (including environmental and health indicators in addition to socioeconomic indicators), the SEVI metric is specifically focused on the socioeconomic elements that contribute to a community's marginalization.

California Environmental Protection Agency identifies disadvantaged communities (DACs) as census tracts in which the overall CalEnviroScreen score ranks in the top 25 percent.[21] Similarly, we define "socioeconomic vulnerability index disadvantaged communities" (SEVI-DACs) as census tracts with SEVI scores that rank in the top 25 percent, as shown in Figure 5. These areas are particularly vulnerable to future rate changes from a socioeconomic standpoint.

[21] 106 census tracts were omitted from the CalEnviroScreen 3.0 (2018 update) analysis due to a lack of data.

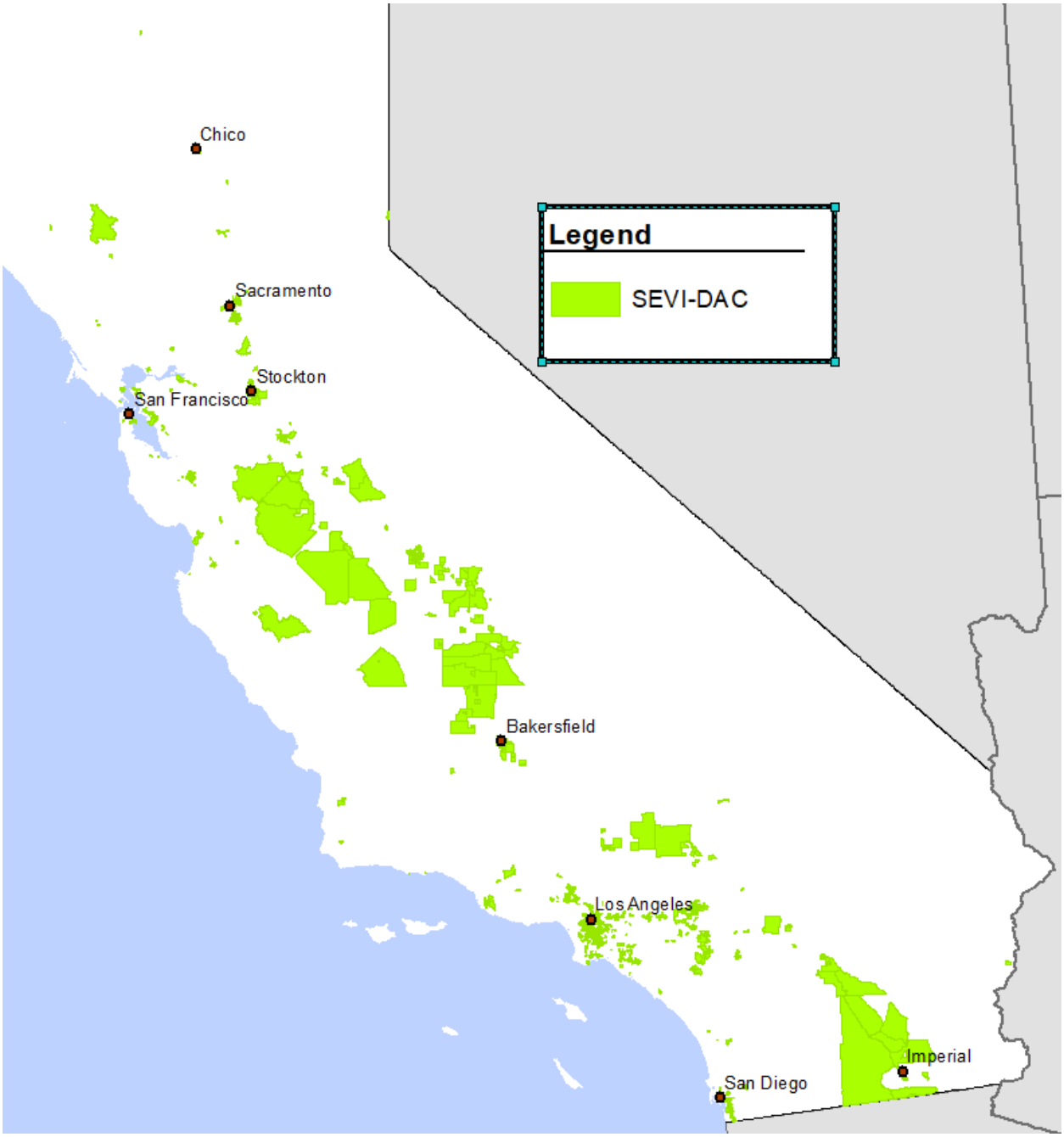

Figure 5: Socioeconomic Vulnerability Index Disadvantaged Communities

Work papers identifying these census tracts will be made public, along with the AAC census tracts, each year when the Annual Affordability Report is issued and an updated Affordability Ratio Calculator is released. Because the SEVI metric is derived from CalEnviroScreen, a metric that is not updated annually, the list of SEVI-DACs may not change from year to year. The list of SEVI-DACs has also been identified in supplementary work papers issued along with this staff proposal in Appendix A.

The difference between the two sets of DACs is that, because SEVI does not consider factors such as pollution levels, they highlight slightly different communities, as can be seen in Figure 6. With the

removal of the environmental and health factors from the SEVI metric, the SEVI-DAC designation will not necessarily highlight communities with significant environmental and public health burdens that would otherwise score high on the CalEnviroScreen metric.

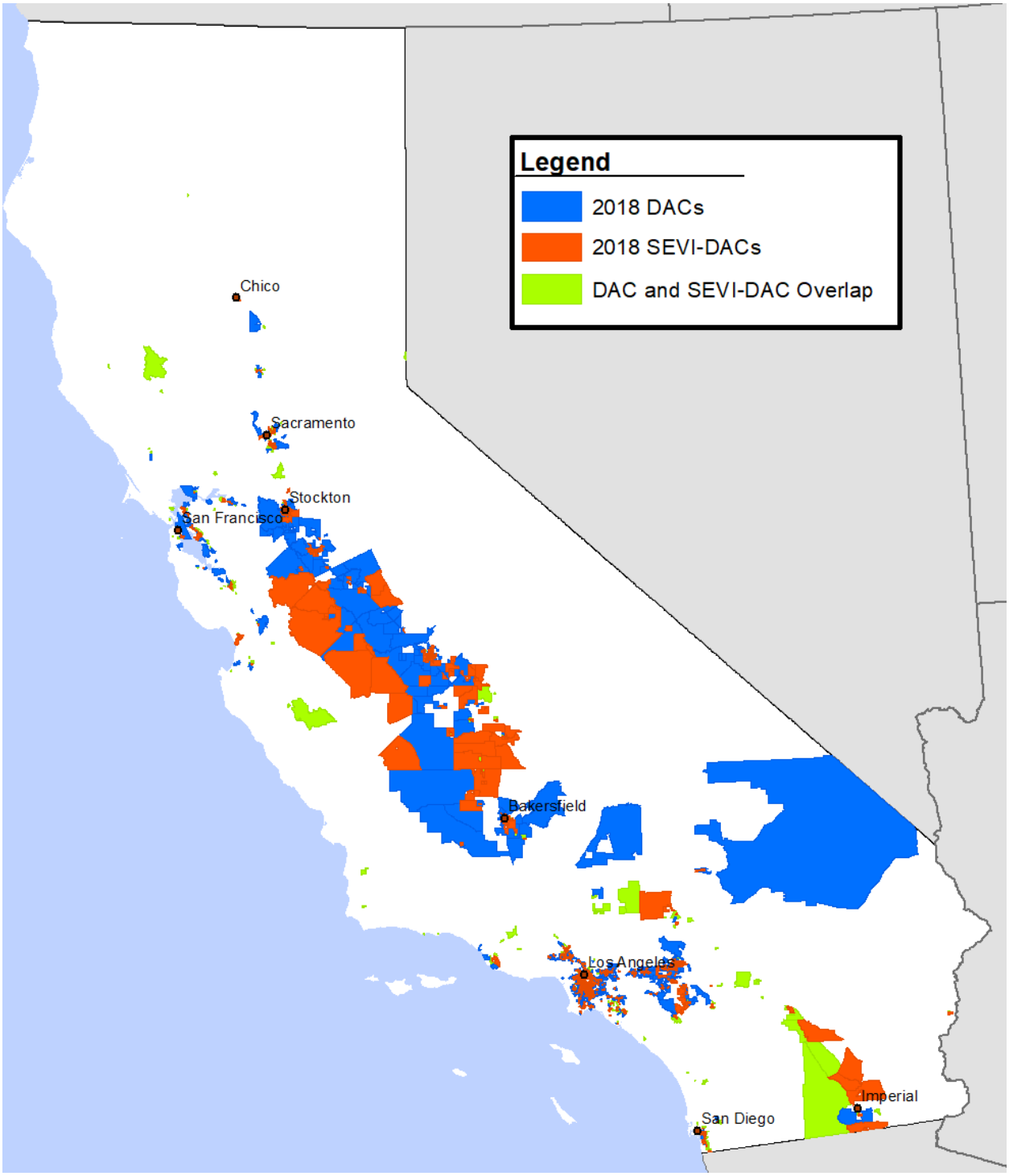

Figure 6: DACs vs SEVI-DACs

c. Environmental and Social Justice (ESJ) Communities

In 2019, the CPUC adopted the Environmental and Social Justice (ESJ) Action Plan,[22] which aims to expand stakeholder inclusion in CPUC decision-making and improve services to ESJ communities in California. ESJ communities include, but are not limited to, disadvantaged communities,[23] tribal lands, low-income households,[24] and low-income census tracts.[25] To further the goals of the CPUC, decision-makers can apply this affordability framework to environmental and social justice efforts.

The ESJ Action Plan consists of nine overarching goals, including to "consistently integrate equity and access considerations throughout CPUC proceedings and other efforts." This affordability framework, with its ability to identify AACs and SEVI-DACs, provides a tangible, geographically-based set of definitions to further the goals of the ESJ Action Plan. Overlap between the AACs and ESJ communities represents a subset of ESJ communities with the highest affordability concerns. Simply put, the affordability framework can specifically target the ESJ communities where the affordability of utility rates may be a significant concern.

The maps in Figure 7 through Figure 10 show the relationship between the AACs for each industry and the communities identified as "ESJ communities" in the ESJ Action Plan. See Appendix C to view industry specific areas in more detail for Figures 7 to Figure 10.

[22] *See* CPUC Environmental and Social Justice Action Plan at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M263/K673/263673090.PDF

[23] Defined as census tracts with CalEnviroScreen scores that rank in the top 25 percent.

[24] Defined in the ESJ Action Plan as households with incomes below 80 percent of the area median income

[25] Defined in the ESJ Action Plan as census tracts with household incomes less than 80 percent of the area or state median income

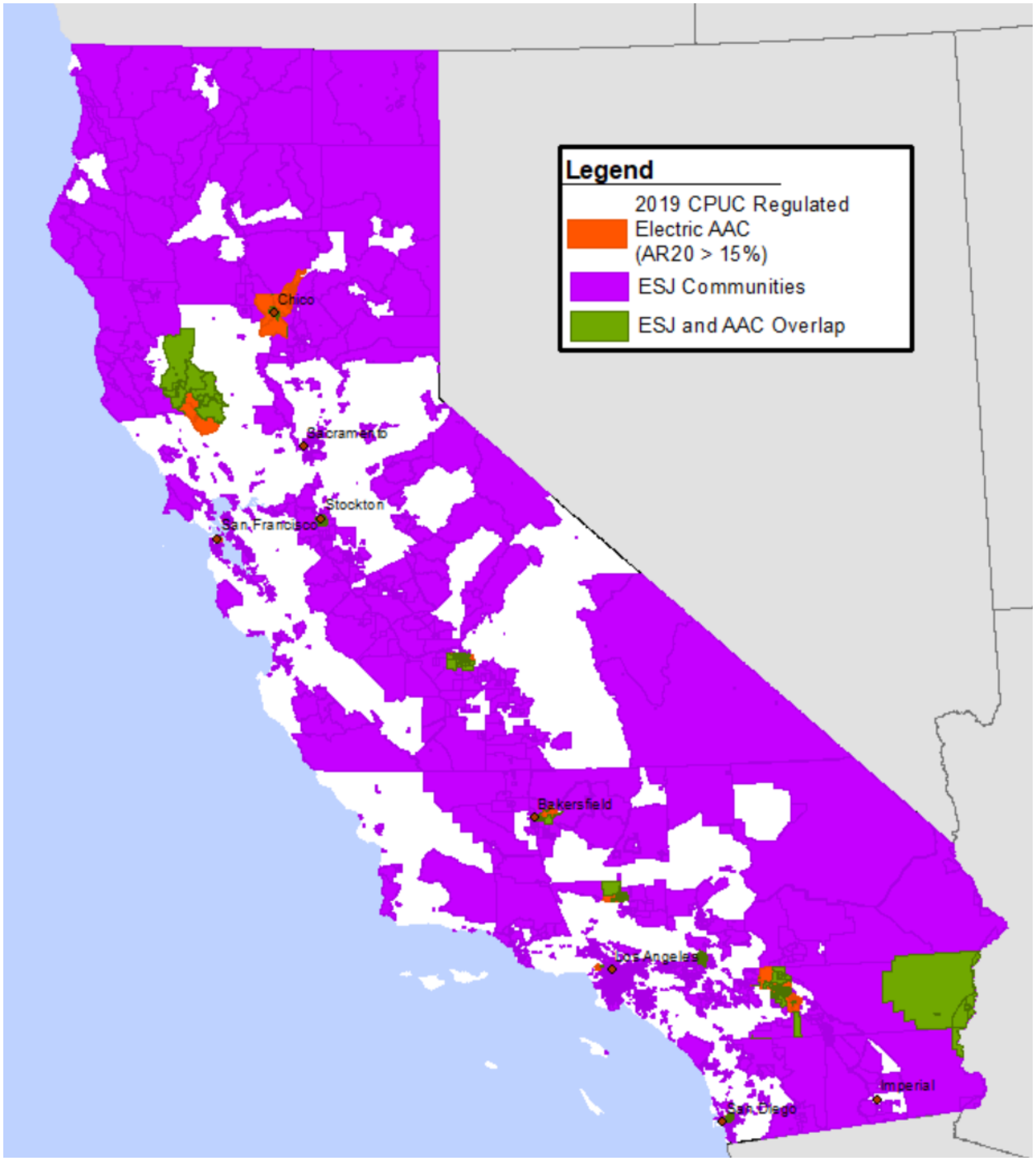

Figure 7: Electrical AAC Against ESJ Boundaries

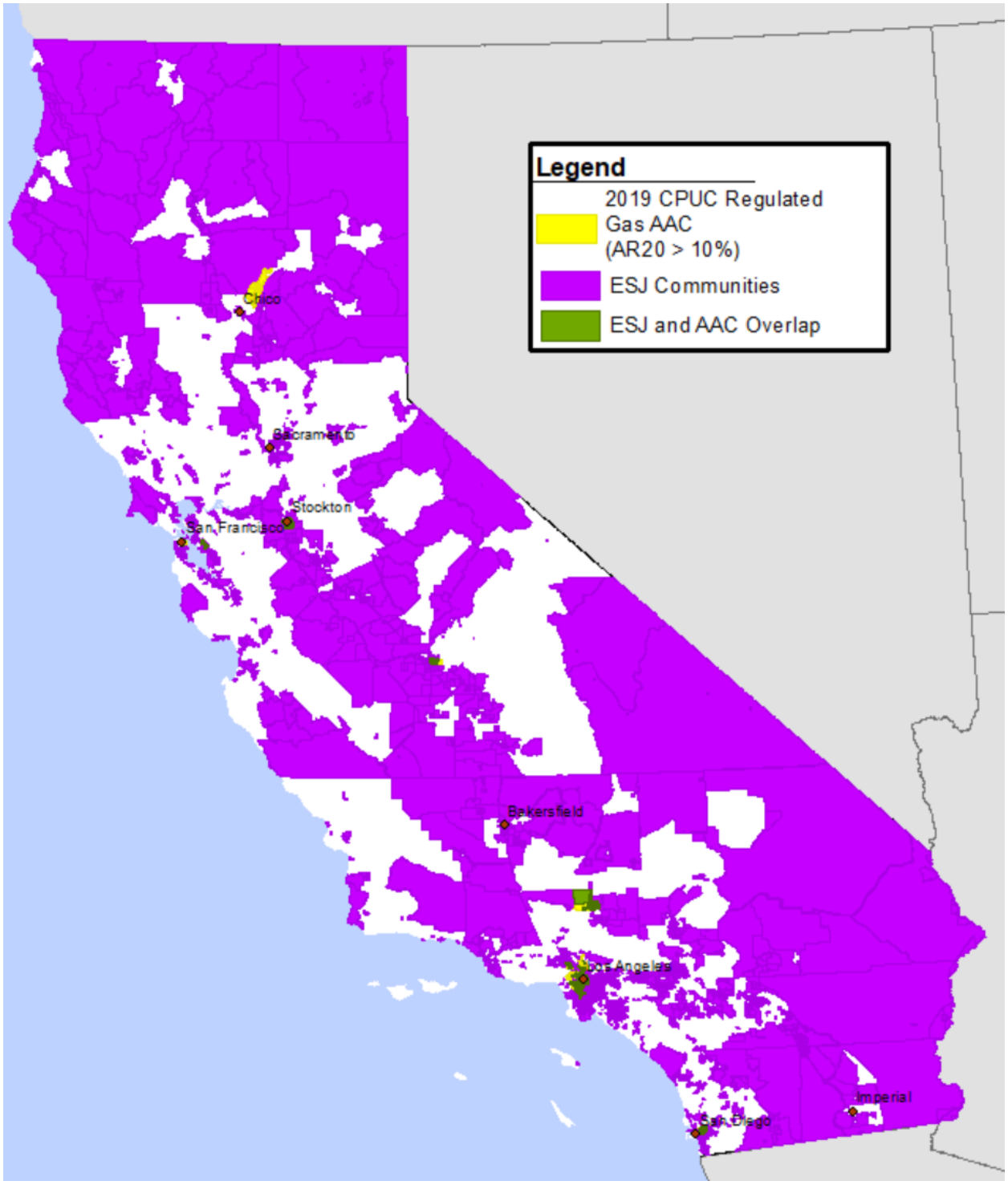

Figure 8: Gas AAC Against ESJ Boundaries

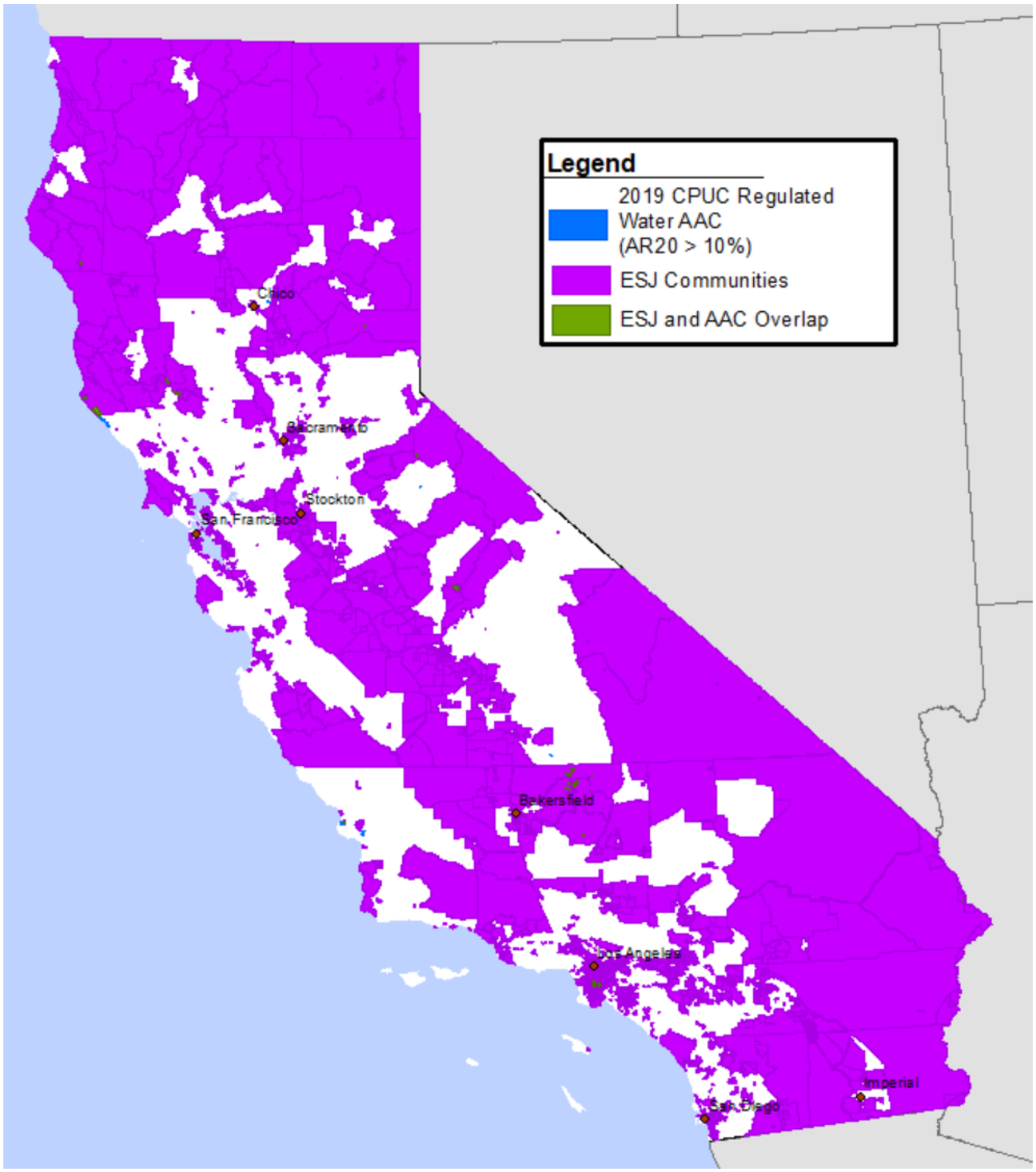

Figure 9: Water AAC Against ESJ Boundaries

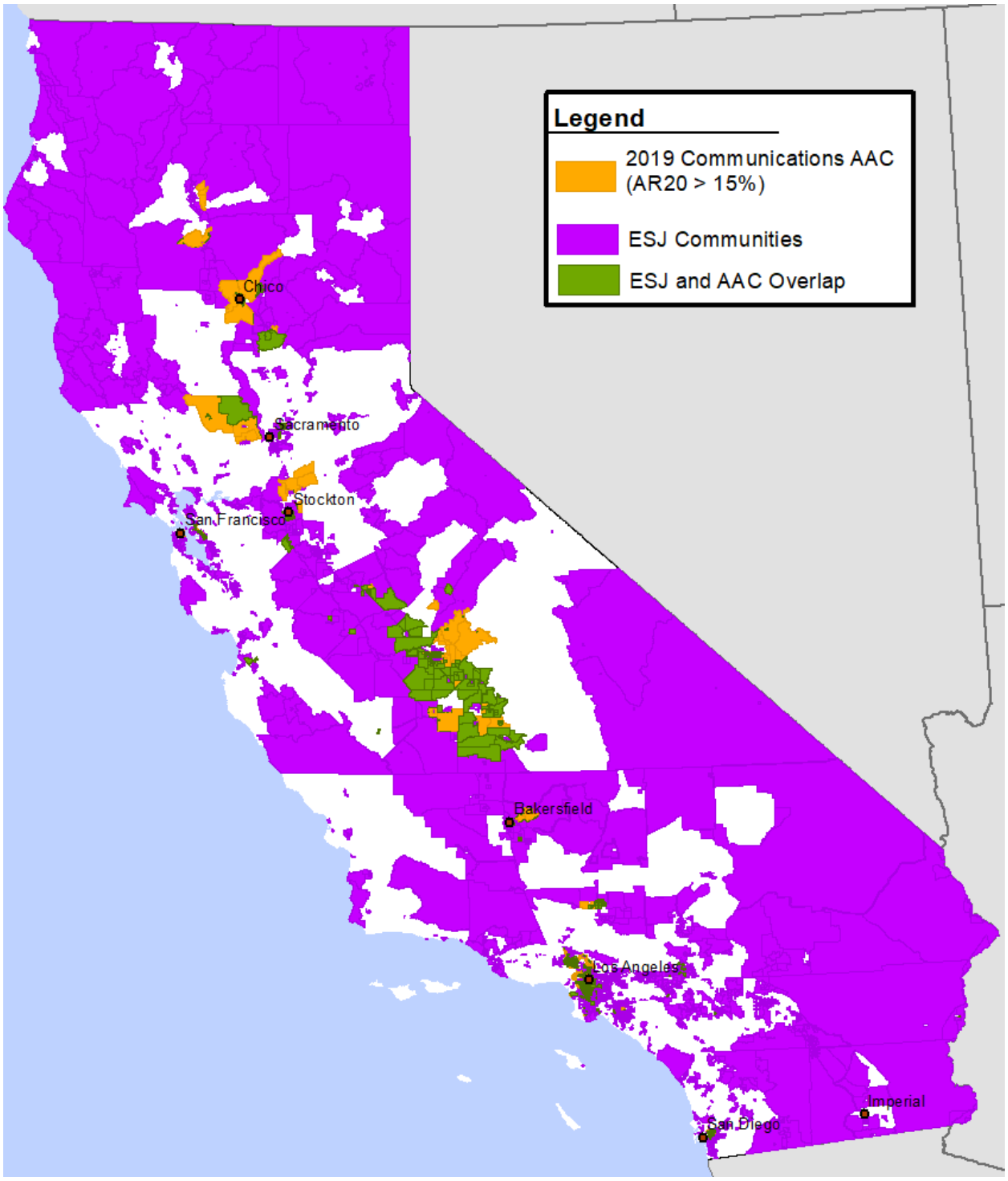

Figure 10: Communications AAC Against ESJ Boundaries

4. Implementation Strategy

In addition to establishing a methodology for forecasting future values of the affordability metrics and providing suggestions for interpretation of the metric values, this proposal provides a set of recommendations for how the metrics should be incorporated into CPUC decision-making. The recommendations provided in this proposal are specific to each industry, owing to the unique circumstances of each category of essential service provider and the situations in which the metrics are applicable for that service.

a. Energy

i) Use Case #1: Use of Affordability Metrics to Inform Decisions on Revenue Requirement Proposals

Ratemaking proceedings known as General Rate Cases (GRC) authorize CPUC-jurisdictional revenue requirements of the large energy IOUs on a four-year cycle.[26] GRC proceeding outcomes comprise a substantial portion of an IOU's total authorized revenue requirement.[27] In addition to GRC proceedings, Energy Resource Recovery Account (ERRA) Forecast ratemaking proceedings take place annually to review each large electric utility's fuel and power purchase forecast and other generation-related revenue requirements. Outside of GRC and ERRA Forecast proceedings, the CPUC periodically approves program budget proposals for public policy-related revenue requirements in specific proceedings.

A proceeding record is opened when a utility files an application for a utility request or program proposal and is the first opportunity for the utility to present and analyze the associated affordability metrics. For all GRCs[28] and when the revenue requirement request in a non-GRC[29] ratesetting application is subject to the rate classification disclosure of Rule 3.2(a)(3) of the CPUC's Rules of Practice and Procedure i.e., the proposed revenue requirement increase is greater than one percent,[30] staff recommends that affordability metrics data be included in the application request and testimony.[31]

The application request should present:[32]

- Current and proposed illustrative California Alternate Rates for Energy (CARE) and Non-CARE residential monthly full usage bills on an annual basis by climate zone, by basic and all-electric service,[33] as applicable.

[26] Proceedings in which revenue requirements are authorized are known as GRC Phase 1 proceedings. Proceedings in which the authorized revenue requirement is allocated among the different rate classes are known as GRC Phase 2 proceedings for electric; for gas, there are various gas cost allocation proceedings.
[27] Includes GRC-related revenue adjustment accounts known as balancing or memorandum accounts.
[28] Includes GRC Phase 1 and Phase 2 proceedings.
[29] Includes ERRA proceedings.
[30] Rule 3.2(a)(3) specifies if the proposed revenue increase is in excess of one percent, that rate classifications be shown.
[31] Applies to both the large energy IOUs and the Small and Multi-Jurisdictional Utilities (SMJU).
[32] Inclusion of SEVI data, which does not vary by request, may optionally be included.
[33] *See* Affordability Metrics Framework Staff Proposal R.18-07-006 issued January 24, 2020 (Revised Staff Proposal) for discussion of basic and all-electric service. Includes gas service as applicable.

- Current and proposed illustrative Non-CARE residential monthly essential usage bills on an annual basis by climate zone, by basic and all-electric service,[34] as applicable.
- Calculation in the Affordability Ratio Calculator of current and proposed AR_{20} and AR_{50} by climate zone.
- For climate zones with a current or proposed AR_{20} greater than the affordability demarcations in the most recent Annual Affordability Report, a breakdown by Public Use Microdata Areas (PUMA) of the AR_{20} values.[35]
- Calculation of current and proposed HM indicating the source of the minimum wage data.[36]

The requirement to include full usage bills is an expanded presentation for all climate zones of what the IOUs currently include as bill impacts in application requests for a typical Non-CARE and CARE residential customer, generally for one typical climate zone only. The expanded presentation should adhere to the Rate Case Plan Decision D.20-01-002 which requires the utilities to present estimated bill impacts for residential customers by climate zone in their GRC applications. Staff proposes that the Rate Case Plan Decision bill impact presentation apply to all cost recovery applications, GRC and non-GRC, subject to the rate classification disclosure of Rule 3.2(a)(3) previously referenced. An example of this presentation may be found in PG&E's 2023 GRC Application (A.)21-06-021, Attachment D.[37] This presentation at full usage level by climate zone provides context for the differences in bill impacts that customers may experience in different climate zones, coincident with examining the affordability metrics.

The essential usage bills and the affordability ratios requirements are related to the affordability metrics and may be prepared starting with the Cost and Rate Tracking (CRT) tool, an Excel workbook.[38] Ordering Paragraph (OP) 1 of the Affordability Phase 1 Decision ordered the large electric IOUs PG&E, SCE, and SDG&E to submit quarterly rate and bill tracker tool information to the CPUC's Energy Division and to work with staff during a second phase of the proceeding with respect to using the rate and bill tracker tool for evaluating affordability metrics' inputs and other ongoing support of the CPUC's work. An Assigned Commissioner's Third Amended Scoping Ruling in the Affordability Proceeding, issued after the Decision, brought the large gas IOUs under the same requirement.[39]

After the Decision, Energy Division changed the name of the tool from Rate and Bill Tracking tool to Cost and Rate Tracking tool. The CRT Hypothetical[40] calculation mode enables calculation of essential usage bills for any given revenue request and addresses the requirement in the Decision to use the CRT to

[34] Includes gas service as applicable.
[35] Breakdown by PUMA of the AR_{20} values need only be shown for values greater than the affordability demarcations in the most recent Annual Affordability Report.
[36] If multiple minimum wages are present within a given service territory, HM calculations should be presented for each individually.
[37] Attachment D, "Residential Impacts by Climate Zone;" Annual presentation only; Summer and Winter presentations not required.
[38] The CRT itself is not part of the application requirements. Certain CRTs have data marked confidential and are not publicly accessible. Inclusion of the essential usage bills as an application requirement ensures stakeholders have access to essential usage bills that may be generated by the CRT.
[39] "Furthermore, expressly including the development of an *energy* rate and bill tracker tool in the scope of this proceeding would harmonize the scope with the findings and orders of D.20-07-032" (emphasis added).
[40] For SCE, this is called Simple Bill Insert.

evaluate affordability metrics' inputs.[41] For practicality, the CRT uses the term "essential usage bill" instead of the term "essential utility service charge" used in the definition of affordability[42] as the CRT was developed around the concept of bills. However, the concept of an essential usage bill is the same as essential service charges described in previous staff proposals.[43]

An example of essential usage bills calculated in a CRT is shown in Figure 11.[44] Non-CARE[45] current (rates in effect 2/1/2021) and proposed essential usage bills, used as inputs to the Affordability Ratio Calculator, are highlighted for both basic and all-electric service.

Bundled Residential Monthly Average Bills					
	1/1/2021	2/1/2021	Proposed	% Change over 1/1/2020	% Change over Current
Essential Use (Basic) - Non-CARE	$ 90.74	$ 97.70	$ 101.40	11.7%	3.8%
Essential Use (Basic) - CARE	$ 61.55	$ 66.26	$ 68.77	11.7%	3.8%
Essential Use (All-Electric) - Non-CARE	$ 90.52	$ 97.47	$ 101.15	11.7%	3.8%
Essential Use (All-Electric) - CARE	$ 61.40	$ 66.10	$ 68.60	11.7%	3.8%

Figure 11: Example of CRT Essential Usage Bills

The large electric and gas IOUs should calculate the essential usage bills using the Hypothetical calculation mode of the Cost and Rate Tracking (CRT) tool when possible. Cases where this mode may not be appropriate include GRCs with multiple cost recovery years and ERRA proceedings, which may have special modeling considerations. In this case, the IOU should use internal modeling to produce current and proposed essential usage bills. The electric and gas Small Multi-Jurisdictional Utilities (SMJU)[46] should use internal modeling to produce current and proposed essential usage bills.

Affordability ratios should be calculated for single proceedings only.[47] There will be a considerable learning curve as the IOUs and other stakeholders learn how to use the Affordability Ratio Calculator which should not be compounded with use of multiple, cumulative[48] proceedings. The learning curve involves understanding how proceeding amounts and timing, census data, and economic forecasts all

[41] A second calculation mode that provides overall rate and bill trend projections is used internally by Energy Division in ongoing support of the CPUC's work.
[42] "It is reasonable for affordability to be defined as the degree to which a representative household is able to pay for an essential utility service charge, given its socioeconomic status," D. 20-07-032, COL 6.
[43] *See* Revised Staff Proposal, p. 7, "An essential service charge for each industry multiplies utility rates by that utility's essential service quantity, with the addition of any fixed (i.e. quantity-independent) charges intrinsic to the bill."
[44] Essential usage bill calculated using SCE Q1-2021 CRT and its 2021 GRC Track 3 requested revenue requirement, $497 million. Climate zone 9 results shown.
[45] While the CRT also produces CARE current and proposed essential usage bills, these may be optionally reported, as only the Non-CARE essential usage bills are used as affordability metric inputs.
[46] Southwest Gas, Liberty CalPeco, Bear Valley Electric Service, and PacifiCorp.
[47] Use of single proceeding is set at the time the request application is filed, when projected bill impacts (at full usage) are calculated on a stand-alone basis. There is no history at the CPUC of projected bill impacts (at full usage) calculated in the request application on a cumulative basis i.e. with all open proceedings.
[48] Cumulative here means all open proceedings.

come to together to produce affordability ratio data. It will be no small feat for other parties to proceedings to understand and engage meaningfully with the IOUs on this data.

An example of the presentation of the affordability ratio data in an application is provided using SCE's 2021 GRC Track 3 Request.[49] This is an additional request in its 2021 GRC application, made in March 2021 and expected to be recovered in 2022, to recover additional revenue related to costs and expenses made during 2020 for wildfire mitigation activities. SCE's request, $497 million, is subject to Rule 3.2(a)(3) rate disclosure by classification, as the proposed increase in revenues of 3.8 percent is greater than 1 percent as shown in Figure 12.

Table 2
Estimated Impact of This Track 3 Request on Customer Rates and Revenues

System Revenues ($000)				
Customer Group	**Current Revenues**	**Proposed Increase**	**Proposed Revenues**	**% Increase**
Residential	5,508,949	257,425	5,766,374	4.7%
Lighting - Small and Medium Power	4,416,687	156,906	4,573,592	3.6%
Large Power	2,043,710	57,589	2,101,299	2.8%
Agricultural and Pumping	507,999	15,996	523,995	3.1%
Street and Area Lighting	130,983	3,183	134,167	2.4%
Standby	362,803	5,722	368,524	1.6%
Total	**12,971,131**	**496,820**	**13,467,951**	**3.8%**

Bundled Average Rates (¢/kWh)				
Customer Group	**Current Rates**	**Proposed Increase**	**Proposed Rates**	**% Increase**
Residential	22.0	0.9	22.8	4.0%
Lighting - Small and Medium Power	21.4	0.7	22.1	3.4%
Large Power	14.7	0.4	15.1	2.7%
Agricultural and Pumping	17.2	0.6	17.8	3.2%
Street and Area Lighting	24.0	0.6	24.6	2.5%
Standby	12.1	0.2	12.3	1.8%
Total	**19.7**	**0.7**	**20.4**	**3.5%**

Residential Bill Impact ($/Month)						
Description		**Current**		**Proposed Increase**	**Proposed**	**% Increase**
Non-CARE residential bill	$	122.59	$	4.7	$ 127.27	3.8%
CARE residential bill	$	82.99	$	3.2	$ 86.16	3.8%

Figure 12: Excerpt of Table 2 from SCE's 2021 Track 3 Request, Rate and Revenue Impacts

Applying the presentation requirements, an appendix in the request should include current and proposed average non-CARE residential monthly essential service bills as shown in Table 3.[50]

[49] *See* SCE's 2021 Track 3 Request for Recovery of Wildfire Mitigation Memorandum and Balancing Account Balances Application (A.)19-08-013.
[50] Essential usage bills calculated using SCE's Q1-2021 CRT.

Baseline Terr Code	Basic		All-Electric	
	2021 Current Average Monthly Essential Usage Bill ($)	2022 Proposed Average Monthly Essential Usage Bill ($)	2021 Current Average Monthly Essential Usage Bill ($)	2022 Proposed Average Monthly Essential Usage Bill ($)
5	129.48	134.39	180.10	186.95
6	80.99	84.04	82.87	86.00
8	80.51	83.55	83.81	86.98
9	97.70	101.40	97.47	101.15
10	104.29	108.24	118.18	122.66
13	112.06	116.31	173.27	179.86
14	101.47	105.31	144.32	149.79
15	156.79	162.75	143.37	148.82
16	94.17	97.73	141.49	146.86

Table 3: SCE 2021 GRC Track 3 Illustrative Essential Usage Bills

The essential usage bills are then used as inputs to the Affordability Ratio Calculator.[51] An appendix in the request should also include calculation in the Affordability Ratio Calculator of current and proposed AR_{20} and AR_{50} by climate zone as shown in Table 4.[52]

Climate Zone	AR20		AR50	
	2021 Current	2022 Proposed	2021 Current	2022 Proposed
5	15.5%	15.7%	3.2%	3.2%
6	7.0%	7.0%	1.6%	1.7%
8	7.9%	7.9%	1.9%	2.0%
9	9.7%	9.6%	2.1%	2.1%
10	8.6%	8.6%	2.4%	2.4%
13	13.0%	13.2%	3.7%	3.7%
14	15.0%	14.9%	3.1%	3.1%
15	19.1%	19.0%	4.6%	4.6%
16	9.0%	9.0%	2.6%	2.6%

Table 4: SCE 2021 GRC Track 3 Illustrative AR_{20} and AR_{50}

[51] *See* Affordability Ratio Calculator section.

[52] Affordability ratios calculated using a draft version of the Affordability Ratio Calculator available on request. Note that some AR values decrease in 2022 even though SCE's essential usage bills will increase. This is a result of income growth outpacing the growth in essential usage bills and housing costs.

In Table 4, climate zones 5 and 15 are showing an AR_{20} value higher than the 15 percent affordability demarcation value in the 2019 Annual Affordability Report.[53] A breakdown by PUMA of these AR_{20} values should be included in the request as shown in Table 5.

Climate Zone	PUMA	County/City	AR_{20}	
			2021 Current	2022 Proposed
5	08303	Santa Barbara County--South Coast Region PUMA	16.6%	16.8%
15	06501	Riverside County (East)--Indio, Coachella, Blythe & La Quinta (East) Cities PUMA	25.6%	25.5%
15	02500	Imperial County--El Centro City PUMA	21.3%	21.5%
15	06515	Riverside County--Palm Desert, La Quinta (West) & Desert Hot Springs Cities PUMA	19.5%	19.5%
15	06502	Riverside County (Central)--Cathedral City, Palm Springs & Rancho Mirage Cities PUMA	18.3%	18.2%
15	07101	San Bernardino County (Northeast)--Twentynine Palms & Barstow Cities PUMA	16.8%	16.8%

Table 5 :SCE 2021 GRC Track 3 Illustrative AR_{20} Greater than 15 Percent Climate Zones by PUMA

In the Decision, the CPUC did not adopt an absolute definition of affordability but emphasized the assessment of the relative impacts of affordability over time to aid the CPUC in its decision-making as it evaluates utilities' requests with rate implications. Based on the affordability metric data provided in the request application, IOU testimony should include affordability metric discussion and analysis which provides other stakeholders and decision-makers with a basis on which to assess the relative affordability of the request. The utility should include in testimony a comparison of the current and proposed metrics with supporting contextualization and interpretation. Other parties to the proceeding may want to review IOU affordability testimony in their own testimony.

Significant changes in proposed revenue requirement[54] resulting from a Settlement Agreement or a Proposed Decision requires updated affordability metric calculations and interpretation analysis.[55] In the

[53] *See* "Interpretation of Results" chapter, "Affordability Demarcation and Areas of Affordability Concern" section.
[54] Generally defined as a proposed revenue change in excess of one percent.
[55] While the affordability analysis requirement is initially triggered by an *increase* in proposed revenue requirement in the application, subsequent *changes* to proposed revenue requirement in a Settlement Agreement or Proposed Decision are generally a decrease in proposed revenue requirement.

case of a Settlement Agreement, settling parties would provide the requested information in the motion proposing the settlement, and other stakeholders would have the opportunity to respond to this information in comments on the motion. In the case of a Proposed Decision, the IOU would provide the updated information in comments to the Proposed Decision, and other stakeholders would have the opportunity to respond to this information in reply comments.

A third instance[56] when an updated affordability analysis may be required may occur in certain proceedings[57] such as GRCs when there may be a need for Energy Division staff to work with IOU staff involved in revenue requirement modeling on a confidential basis *before* the Proposed Decision is issued. Establishing a confidential process before the Proposed Decision is issued brings the affordability metrics into the decision support process and importantly, allows the Proposed Decision to include the affordability metrics for changes proposed since the application request was filed. In these cases, the CPUC may establish procedures for advance release of portions of the Proposed Decision to a limited number of IOU technical staff for model runs or to perform operations necessary to produce new numbers.

ii) Use Case #2: Use of Affordability Metrics to Inform Decisions on Program Design and Targeting

The Decision concluded that the affordability metrics should measure the affordability of the essential utility services in general, not the effect of low-income subsidy programs on affordability.[58] However, staff has identified an Energy Division advice letter filing ordered by a recent decision[59] for program fund allocation that potentially could provide a model for other programs in mitigating cost for low-income communities as identified by the affordability metrics. This approach would not measure the effect of low-income subsidy programs on affordability, but rather provide another use of the metrics in prioritizing resources, such as deeper and more targeted program customer benefits based on targeting finances or geographies of priority communities.[60]

The advice letter filing was ordered as part of implementation of the recently approved Energy Savings Assistance (ESA) program which provides no-cost energy efficiency measures to income-qualified customers. D.21-06-015 (ESA Decision) approved the ESA applications of the large electric and gas IOUs and directed the IOUs use a segmentation approach to be more precise and effective in reaching specific customer segments or classifications. The purpose of this approach is to 1) gather data on the number of customers by segment, 2) determine which segments should be prioritized for treatment based on

[56] Not limited to only these specific three instances of when an updated affordability analysis may be required; Energy Division staff may request an updated affordability analysis at other points during the proceeding.
[57] Proceedings may be determined on a case-by-case basis and may include GRCs or other capital cost intensive stand-alone proceedings such as transportation electrification or wildfire mitigation proceedings.
[58] D. 20-07-032, COL 12.
[59] Discussion here is subject to change as Energy Division has not completed its review of the advice letter related to OP 58 of D.21-06-015.
[60] Other demographical targeting may be included beyond that indicated by the affordability metrics.

customer need, and 3) determine which combinations of customer segments and treatments/measures are effective in providing benefits and reducing hardship.[61]

OP 58 of the ESA Decision ordered that the IOUs detail in a joint Tier 2 advice letter what level of treatment measures are to be provided to which customer segments:

> *Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company and San Diego Gas & Electric Company must submit a joint Tier 2 advice letter compliance filing within 90 days after the approval of this decision to identify the common set of Energy Savings Assistance program measures within each treatment tier, and detail what level of treatment will be provided to which customer segments, per Attachment 3.*

The IOUs are to strive for alignment/conformity in how treatment levels are delivered to customer segments. Certain segments may then be eligible for basic, enhanced, or advanced measure packages under various treatment tiers. Treatment tiers include the "basic" package for most low-income households, the "plus" package for specialized needs, and the "deep" package of deep energy saving retrofits for the neediest. Marketing, Education, and Outreach (ME&O) related to the customer segments would similarly be targeted and tiered.

With additional "need" identified as a pre-requisite for the beyond-basic packages, the IOUs have been directed to consider financial, location, and health condition designations in defining specific customer segments. The ESA Decision outlined prioritization of customer segments for treatment, outreach, and education as shown in Table 6.[62]

By Financials[63]	By Location	By Health Condition
CARE	DAC	Medical Baseline
Disconnected	Rural	Respiratory
Arrearages	Tribal	Disabled
High Usage	PSPS Zone	
High Energy Burden	Wildfire Zone	
SEVI	Climate Zone	
Affordability Ratio	CARB Communities	

Table 6: Financial, Location, and Health Condition Customer Segments

How the Affordability Ratio (AR_{20}) and SEVI will fit into the implementation plans the IOUs file in their joint Tier 2 advice letter filing is unknown at this time, as Energy Division has not completed its review of the joint advice letter related to OP 58 of the ESA Decision. Yet the intent of the ESA Decision appears to be to provide multiple avenues for low-income customers to be eligible for different levels of treatment

[61] This approach is in contrast to the previous approach which focused more on treating as many households as possible.

[62] *See* D.21-06-15, p. 408. This table is similar to a table labeled Attachment 3 in the ESA Decision. The IOUs must file the joint Tier 2 advice letter in OP 58 based on Attachment 3.

[63] Inclusion of SEVI and Affordability Ratio in the above table resulted from party comments to Ruling questions issued in connection with an Energy Division Staff Proposal "Energy Savings Assistance Program Goals for Years 2021-2026" (June 2020). The question asked: How can areas with poor affordability metric scores be identified and prioritized for different Tiers of ESA treatments?

measures, with the Financials customer segment, including SEVI and the Affordability Ratio, aiming to directly address affordability concerns.

In combination with customer-level low-income qualified status (as indicated by CARE eligibility), community-scale AR_{20} and SEVI offer an opportunity to further refine low-income target areas to highly energy-burdened areas such as those indicated by high AR_{20} values and high socioeconomic vulnerability areas such as those indicated by high SEVI values as shown in Figure 13. As customers must first be low-income qualified, the intersect of this status with high AR20 or high SEVI values in the customer's community may provide opportunity to differentiate treatment measure levels.

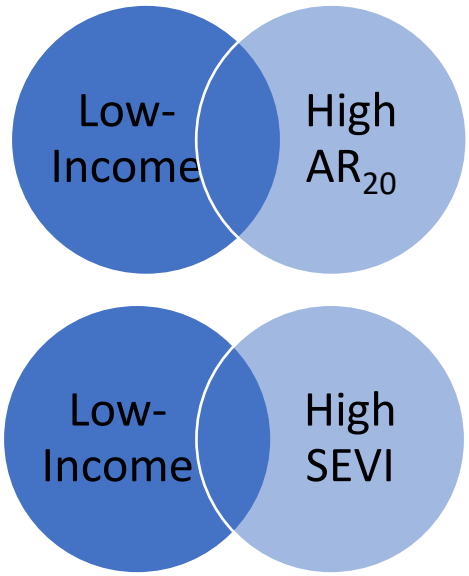

Figure 13: Intersect of Low-Income Customer Qualification Status with Select AR Metrics

The most recent Annual Affordability Report is a source for determining AR_{20} and SEVI values. The 2019 Annual Affordability Report details electric and gas AR_{20}s that exceed 15 percent and 10 percent, respectively, and offers a starting point for defining high AR_{20} and SEVI values, as shown in Table 7 through Table 9.

Electric and gas AR_{20} PUMAs that exceed 15 percent and 10 percent, respectively, have been chosen for representation as Areas of Affordability Concern, i.e. those areas showing the highest AR_{20} scores for each industry.[64] SEVI scores shown below are only the top 10 scores for brevity; similar to how the top 25 percent of CalEnviroscreen score areas are defined as disadvantaged communities (DAC), the top 25 percent of SEVI scores areas may be considered high SEVI scores.[65]

[64] *See* "Affordability Demarcations and Areas of Affordability Concerns using AR_{20} " section.
[65] *See* "Socioeconomic Vulnerability Index Disadvantaged Communities (SEVI-DACs)" section.

PUMA	County/City	Electric Climate Zone	Electric AR_{20}	20th Percentile Income ($/yr)	20th Income Percentile Housing Cost ($/yr)
07503	San Francisco County (Central)--South of Market & Potrero	PG&E T	35.5%	$ 17,986	$ 13,081
03703	Los Angeles County (North Central)--Lancaster City	SCE 14	29.5%	$ 16,207	$ 11,263
01903	Fresno County (Central)--Fresno City (East Central)	PG&E R	27.8%	$ 14,714	$ 8,246
03731	Los Angeles County (Central)--West Hollywood & Beverly Hills Cities	SCE 9	25.7%	$ 26,655	$ 20,306
00701	Butte County (Northwest)--Chico City	PG&E P	22.5%	$ 18,373	$ 10,014
06501	Riverside County (East)--Indio, Coachella, Blythe & La Quinta (East) Cities	SCE 15	22.1%	$ 17,241	$ 8,921
07702	San Joaquin County (Central)--Stockton City (South)	PG&E S	22.0%	$ 15,647	$ 8,642
07317	San Diego County (South Central)--San Diego City (Central/Mid-City)	SDG&E INLAND	21.4%	$ 19,506	$ 12,599
01904	Fresno County (Central)--Fresno City (Southwest)	PG&E R	20.8%	$ 15,779	$ 7,868
02500	Imperial County--El Centro City	SCE 15	18.9%	$ 16,390	$ 7,162
07317	San Diego County (South Central)--San Diego City (Central/Mid-City)	SDG&E COASTAL	18.6%	$ 19,506	$ 12,599
00104	Alameda County (North Central)--Oakland City (South Central)	PG&E X	18.2%	$ 19,192	$ 12,440
02903	Kern County (Central)--Bakersfield City (Northeast)	PG&E R	17.5%	$ 17,060	$ 8,005
01905	Fresno County (Central)--Fresno City (Southeast)	PG&E R	17.2%	$ 16,740	$ 7,665
00701	Butte County (Northwest)--Chico City	PG&E S	17.2%	$ 18,373	$ 10,014
07108	San Bernardino County (Southwest)--San Bernardino City (West)	SCE 10	16.3%	$ 17,272	$ 9,193
03300	Lake & Mendocino Counties	PG&E P	16.2%	$ 18,848	$ 8,040
06515	Riverside County--Palm Desert, La Quinta (West) & Desert Hot Springs Cities	SCE 15	16.1%	$ 20,898	$ 10,277
00701	Butte County (Northwest)--Chico City	PG&E Y	15.8%	$ 18,373	$ 10,014
07108	San Bernardino County (Southwest)--San Bernardino City (West)	SCE 16	15.7%	$ 17,272	$ 9,193
02903	Kern County (Central)--Bakersfield City (Northeast)	PG&E W	15.5%	$ 17,060	$ 8,005
06502	Riverside County (Central)--Cathedral City, Palm Springs & Rancho Mirage Cities	SCE 15	15.0%	$ 21,324	$ 9,957

Table 7: PUMA/Climate Zone Areas with Electric AR_{20} Values Greater than 15 Percent (2019)

PUMA	County/City	Gas Climate Zone	Gas AR_{20}	20th Percentile Income ($/yr)	20th Income Percentile Housing Cost ($/yr)
03746	Los Angeles County--LA City (Central/Univ. of Southern California & Exposition Park)	SCG 1	100.0%	$ 11,746	$ 13,533
03751	Los Angeles County (South Central)--LA City (South Central/Watts)	SCG 1	100.0%	$ 14,245	$ 11,850
03747	Los Angeles County (Central)--LA City (Central/West Adams & Baldwin Hills)	SCG 1	99.9%	$ 15,270	$ 12,257
03750	Los Angeles County (South Central)--LA City (South Central/Westmont)	SCG 1	99.9%	$ 14,223	$ 11,728
03744	Los Angeles County (Central)--LA City (East Central/Central City & Boyle Heights)	SCG 1	97.1%	$ 12,517	$ 10,179
03745	Los Angeles County (Central)--LA City (Southeast/East Vernon)	SCG 1	27.2%	$ 16,164	$ 11,493
07503	San Francisco County (Central)--South of Market & Potrero	PG&E T	26.1%	$ 17,986	$ 13,081
03732	Los Angeles County (Central)--LA City (East Central/Hollywood)	SCG 1	14.2%	$ 18,848	$ 12,991
03734	Los Angeles County--LA City (East Central/Silver Lake, Echo Park & Westlake)	SCG 1	12.9%	$ 17,524	$ 11,415
03703	Los Angeles County (North Central)--Lancaster City	SCG 2	12.8%	$ 16,207	$ 11,263
03733	Los Angeles County (Central)--LA City (Central/Koreatown)	SCG 1	12.7%	$ 19,192	$ 13,035
03703	Los Angeles County (North Central)--Lancaster City	SCG 1	12.2%	$ 16,207	$ 11,263
03721	Los Angeles County (North)--LA City (Northeast/North Hollywood & Valley Village)	SCG 1	12.2%	$ 20,360	$ 14,091
01903	Fresno County (Central)--Fresno City (East Central)	PG&E R	11.9%	$ 14,714	$ 8,246
03731	Los Angeles County (Central)--West Hollywood & Beverly Hills Cities	SCG 1	11.5%	$ 26,655	$ 20,306
03719	Los Angeles County (Central)--Glendale City	SCG 1	11.1%	$ 21,174	$ 15,594
00104	Alameda County (North Central)--Oakland City (South Central)	PG&E X	10.6%	$ 19,192	$ 12,440
00701	Butte County (Northwest)--Chico City	PG&E Y	10.0%	$ 18,373	$ 10,014

Table 8: PUMA/Climate Zone Areas with Gas AR_{20} Values Greater than 10 Percent (2019)

PUMA	County/City	Census Tract	Raw SEVI Score	SEVI Percentile
03766	Los Angeles County (South)--Long Beach City (Southwest & Port)	572800	99.8	100.0%
03746	Los Angeles County--LA City (Central/Univ. of So. Calif. & Exposition Park)	222700	99.6	99.7%
01903	Fresno County (Central)--Fresno City (East Central)	002502	97.2	97.3%
07316	San Diego County (So. Central)--San Diego City (Central/Centre City & Balboa Park)	003901	97.1	97.3%
03722	Los Angeles County (Northwest)--LA City (North Central/Van Nuys & No. Sherman Oaks)	128303	96.9	97.1%
01901	Fresno County (West)--Selma, Kerman & Coalinga Cities	008302	96.1	96.3%
07316	San Diego County (South Central)--San Diego City (Central/Centre City & Balboa Park)	003902	96.0	96.1%
07110	San Bernardino County (Southwest)--Fontana City (East)	002804	95.9	96.1%
03751	Los Angeles County (South Central)--LA City (South Central/Watts)	239601	95.8	95.9%
06501	Riverside County (East)--Indio, Coachella, Blythe & La Quinta (East) Cities	045303	95.8	95.9%

Table 9: Top 10 SEVI Value Census Tracts

By specifying customer segments that the IOUs should evaluate as part of complying with OP 58 of the ESA Decision requiring the IOUs to "detail what level of treatment will be provided to which customer segments," the CPUC signaled a desire to define more inclusive measures of defining low-income customers in considering different levels of program fund allocations. The census tract-level basis of AR_{20} and SEVI may provide additional insight into geographical targeting for deeper and more targeted ESA program customer energy savings.[66]

The ESA Decision provides a new model for looking at the customer segmentation process and explicitly considers that this model may be enhanced by the affordability metrics. The ESA Decision model may serve as a model for other programs such as Transportation Electrification or Building Decarbonization when considering different levels of program fund allocations or benefits for low-income customers.

iii) Use Case #3: Use of Affordability Metrics to Evaluate Options to Mitigate Electric Rate Growth

Staff will also evaluate how the metrics can be used to assess the effectiveness of proposals to make electric rates more affordable, such as those discussed at the En Banc hearing held on February 24, 2021 and subsequently summarized in the 2021 Senate Bill (SB) 695 (Kehoe, 2009) Report.[67] These proposals included options to offset volumetric rates with fixed charges, use income-based fixed charges to address potential equity issues associated with residential fixed charges, fund programs with societal benefits through taxpayer funds rather than ratepayer funds, and other options for mitigating rising volumetric electric rates.

Because many of these options require the implementation of fundamentally different rate designs than what is currently in effect, careful consideration will need to go into defining and estimating essential usage bills under those proposals. Some of these proposals will result in lower electric bills being offset

[66] Other non-IOU Load Serving Entities, such as Community Choice Aggregators, may also find useful the geographical targeting capability of the AR and SEVI metrics.

[67] "Utility Costs and Affordability of the Grid of the Future: An Evaluation of Electric Costs, Rates, and Equity Issues Pursuant to P.U. Code Section 913.1," CPUC, May 2021. https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/en-banc/senate-bill-695-report-2021_en-banc-white-paper.pdf

by other costs (such as higher tax bills), and this will require more holistic thinking about how to measure overall costs for representative households. Staff will continue exploring the application of the affordability metrics for this use case in Phase 3 of this proceeding.

b. Water

i) General Rate Cases and Other Rate Requests

Rates for CPUC-regulated water utilities are set primarily through the General Rate Case (GRC) process.[68] For the Class A utilities,[69] this process takes place in a recurring three-year proceeding cycle. Other rate changes take place more regularly through annual attrition filings, amortization of balancing and memorandum accounts, and offsets due to changes in supply costs that are passed through to customers.

Staff recommends that the Class As be required to include affordability calculations in instances where major rate impacts are expected. Thus, staff recommends that the affordability metrics be submitted in each general rate case, with each proposed acquisition or consolidation of water systems[70], and with all requests if a proposed revenue increase is in excess of one percent.[71] This includes both applications and advice letters.

Utilities should not be required to perform the affordability calculations for all minor revenue increases or revenue decreases, but staff encourages the utilities to do so, since utilities should always be cognizant of the affordability of their rates. The utilities should include a calculation of the affordability metrics for the proposed rate impact, specifically:

- Current and proposed residential monthly essential service bills by ratemaking area.
- Calculation of AR_{20} and AR_{50} for each ratemaking area, using the Affordability Ratio Calculator, for the present rates and each year of the proposed rate impact.
- Calculation of HM for each ratemaking area for each year of the proposed rate impact, indicating the source of the minimum wage impact. If multiple minimum wages are present within a given ratemaking area, the utility should present HM calculations for each individually.

In a formal proceeding, in its testimony the utility should include a supporting affordability analysis, containing discussion of the affordability data in addition to calculation of the metrics themselves. This discussion should allow the Public Advocates Office, Water Division, and other stakeholders to assess the affordability of the request by interpreting and contextualizing the proposed metrics. The analysis should discuss how affordability will change as a result of the request; compare metrics for current rates

[68] More information on the GRC process can be found at: https://www.cpuc.ca.gov/about-cpuc/divisions/water-division/water-rates-and-general-rate-case-proceedings-section/general-rate-case-process

[69] Class A utilities are those with 10,000 or more service connections.

[70] For acquisitions and consolidations, rate impacts are usually illustrative and not implemented until the following GRC. The hypothetical rate impacts, for customers of both the acquired and acquiring systems, should be used for the affordability analysis, understanding that the actual rate impacts may differ when implemented.

[71] Rule 3.2(a)(3) of the CPUC's Rules of Practice and Procedure requires additional rate disclosure by classification if a proposed revenue increase is in excess of one percent—for consistency with existing CPUC practice, the same benchmark is taken for use with the affordability framework.

to metrics after the proposed rate change; and justify the change in affordability in relation to the need for a rate increase.

As part of the affordability analysis, the applicant should discuss its AR scores in relation to the median AR among all similar service territories. That is, a Class A's affordability analysis should compare the AR_{20} and AR_{50} of the proposed rates to the median AR_{20} and AR_{50} of all Class A service territories. It is not incumbent on the applicant to calculate the AR values for other utilities: the AR values for comparison should be obtained from the most recently published Annual Affordability Report.

Additionally, the affordability analysis should include recommendations about how affordability of essential water service can be improved. These recommendations should include actions that can be taken by the utility as well as actions that can be taken by the CPUC. As these recommendations are collected, the CPUC should use them to determine how to improve the affordability of essential water service in a more systematic way. Determining how to improve the affordability of water service should be included in the future as an additional phase to this proceeding, or in the Water Low-Income proceeding (R.17-06-024).

In addition to the affordability calculations submitted with an application or advice letter, an updated calculation should be performed prior to the adoption of rates. Specifically, the calculation should be based on the rates issued with a given Proposed Decision or draft Resolution. Motions to adopt proposed settlements should also include this analysis.

However, in certain cases the utility will not know the final rates prior to the issuance of the Proposed Decision or draft Resolution. In this case, the calculation of the metrics may be performed by Water Division Staff as part of its advisory role. In a GRC, the utility should discuss the calculation of the affordability metrics with the Public Advocates Office and Water Division Staff as part of the Technical Conference in advance of the Proposed Decision. With other types of proceedings or advice letters, the CPUC may establish procedures for sharing technical information required for calculating the affordability metrics in advance of the Proposed Decision or draft Resolution.

As the utilities are ultimately responsible for the affordability analysis, they should coordinate with Water Division in the calculation of the metrics and verify Water Division's numbers. The utilities should also provide an analysis of the updated metrics in its Comments to the Proposed Decision or Resolution. The final affordability metrics, as well as the change from the metrics as originally proposed, should be noted in the Final Decision or Resolution.

At this time, affordability analyses of the rate changes for the small (Class B, C, and D)[72] water utilities should not be required. The affordability of water service for these utilities should first be analyzed through the review of Annual Reports and the gathering of the utility cost data required to understand more fully the underlying costs (fixed and variable costs, and capital expenditures) necessary for maintaining safe, reliable, and affordable water service as well as sustainable water systems. Through the Annual Affordability Reports, the CPUC may examine the systemic issues and challenges small water utilities may be facing in maintaining safe and affordable water service. Once a more comprehensive

[72] Class B utilities are those with between 2,000 and 10,000 service connections; Class C utilities are those with between 500 and 2,000 connections; and Class D utilities are those with less than 500 connections.

body of information has been collected through the Annual Affordability Reports, Water Division, the small water utilities, and other stakeholders should work together to analyze the affordability data. These groups should then develop a plan outlining the necessary strategies for improving affordability of essential water service for the small water systems.

ii) Rate and Bill Impact Tracker

The Assigned Commissioner's Scoping Memo, dated October 21, 2020, directed development of a rate and bill tracking tool for Class A water utilities, in response to the motion filed by the Public Advocates Office on September 10, 2020. This proposal recommends that the CPUC adopt the reporting template developed by the Public Advocates Office, included as Appendix D: Water Rate and Bill Tracker Template to this proposal, for use in parallel with the affordability metrics.

The "current bill" in the reporting template should be calculated based on the essential service quantity and should match the bill used in the affordability calculations. With this method, the rate and bill impact tracker may serve as an input to the affordability calculator, while providing greater insight to the source of each line item of the bill. This will allow the CPUC to better track the impacts of its decision-making process on affordability. By tracking each individual component of the essential service bill, the CPUC may review on a retrospective-looking basis the cumulative affordability impact of its decisions.[73]

We recommend that in their next General Rate Cases, each Class A water company should submit the rate and bill tracker, noting all active rate impacts from base rates, surcharges, and surcredits at the date of filing. The tracker should also include any pending rate changes (including the GRC in question), and any anticipated rate changes before the next rate case, such as purchased water offsets. In the case of an acquisition that has been approved but the rate impact is to be determined in the next GRC, an illustrative figure of the rate impact should be included as a pending rate change. For anticipated rate changes, we acknowledge that exact details may not be known in advance, such as the magnitude of a purchased water offset. However, the utility should provide as much detail as possible, with the understanding that additional requests for information from the Public Advocates Office or Water Division may follow.

The Class As should submit an updated rate and bill tracker with all future proceedings and advice letter filings with a rate impact. This will ensure that the CPUC has a continued understanding of how essential service bills are changing over time alongside changes in affordability. The CPUC does not intend for this requirement to be especially onerous, as after the rate and bill tracker template is filled out in one GRC, only one new input will be added with each subsequent rate increase request.

iii) Water Proxy Values

D.20-07-032 proposed a preliminary method for defining the cost of water service in areas not served by a utility or other water system. The method in question, based on a recommendation from the Utility

[73] While this proposal does not require any affordability analysis cumulative rate impacts on a forward-looking basis, the affordability calculator does support this functionality if the cumulative bill is used as the essential bill input.

Consumer's Action Network (UCAN), involved estimating the amount of electricity used by a domestic well to pump the essential service quantity of water. [74] [75] The energy would then be multiplied by the standard residential rates for each climate zone and essentially added to the essential service bill for electricity. Ultimately, the results for the annual costs were de minimis and well power usage is not included for future affordability analysis. While there could be value in considering these costs however small they might be, given the additional complexity required to integrate this method with the Affordability Ratio Calculator tool, CPUC staff deems it prudent to omit water costs in areas not served by water systems.[76] Additional details on the calculation performed can be found in Appendix B: Water Proxy Value Calculation.

c. Communications

The Covid-19 pandemic has further highlighted the importance of essential communications services, as millions of people shifted to working, learning, and receiving telehealth care at home. According to a recent Consumer Reports[77] survey, broadband service accessibility and affordability continue to be an issue among households in the United States. Twenty-three percent of households do not have access to fixed broadband service. For those who do not have fixed broadband, Thirty-two percent stated high cost as the reason.

Similar to the national results, the 2019 Annual Affordability Report concluded that the broadband component of essential communications services presents both accessibility and affordability challenges in California. In order to bridge the Digital Divide, the CPUC should utilize the affordability framework to evaluate what ratepayers are paying for essential communications services and whether its public purpose programs are addressing both accessibility and affordability issues – ultimately adhering to the goals as established by Public Utilities Code Section 709.[78] Staff recommends the CPUC adopt the affordability framework in the following efforts.

i) $6 Billion Broadband Initiative

In July 2021, the Governor, Senate, and Assembly have reached an agreement to allocate $6 billion over three years to invest in broadband infrastructure to provide high speed broadband network across the state. Included in the initiative is a $3.25 billion middle mile network component that the California Department of Technology, the CPUC, and Caltrans will jointly implement. Additionally, the CPUC, in collaboration with a third-party administrator, will fund and implement the last-mile connectivity, which accounts for about $2 billion of the initiative.

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[74] Comments of The Utility Consumer's Action Network on the Revised Staff Proposal in the Affordability Proceeding, February 21, 2020.

[75] D.20-07-032 established the essential service quantity for water as 600 cubic feet per household per month.

[76] No proxy values are required at this time for energy and communications services, and the methodology for gas proxy values was determined in D.20-07-032. Therefore, this recommendation for water proxy values resolves all remaining unavailable utility cost data issues.

[77] Consumer Reports survey (July 2021) https://advocacy.consumerreports.org/press_release/consumer-reports-survey-on-broadband-affordability-accessibility-and-quality-of-service-in-the-united-states/

[78] Public Utilities Code Section 709
https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=709.&lawCode=PUC

Senate Bill No. 156,[79] which recently passed in July 2021, requires fixed broadband service providers deploy a minimum speed of 100/20 to residential customers. While this is a step in the right direction, ensuring accessibility to essential communications services in and of itself is just one component of the affordability framework. The other component of the framework is to ensure essential communications services are affordable to the ratepayer.

The broadband initiative will play a crucial role in bridging the Digital Divide in the state of California. To that end, the CPUC's Communications Division is creating a separate branch to oversee the efforts of this broadband initiative. Staff recommends the branch to adopt the affordability framework[80] as a requirement in all proceedings, grant applications, and proposals involved with this initiative, with an aim to make available pricing plans[81] that can yield AR_{20} scores below the 15 percent affordability demarcation.

ii) CPUC Public Purpose Programs

The CPUC currently administers six universal service program funds which are funded directly from surcharges assessed on intrastate voice services.[82] Carriers collect these surcharges directly from ratepayers and remit the funds to the CPUC. The intent of these programs is to assure both the accessibility and affordability of essential communications services for all Californians, as well as close the Digital Divide.

In years past, the absence of any quantifiable affordability benchmarks made it difficult for the CPUC to measure the effectiveness of its public purpose programs in achieving affordability. With the affordability framework, however, the CPUC now has quantifiable metrics to assess both current and future projects and initiatives of these public purpose programs to ensure they are addressing their intent to bridge the Digital Divide. Specifically, the affordability framework provides an accessibility benchmark of 25/3 broadband service, as well as a quantifiable AR metric to measure the ability of the ratepayers, especially those in low-income households, to pay for essential communications services.

One public purpose program that is in prime position to utilize the affordability framework is the California Advanced Services Fund (CASF) program, which provides subsidies to build and expand broadband infrastructures to unserved areas of the state. The CASF program currently has an ongoing proceeding, R. 20-08-021,[83] which aims to implement programmatic changes and adopt rules that will maximize broadband infrastructure deployment and leverage multiple funding sources to better meet the goals of the program.

With regards to CASF program funding decisions that involve residential customers paying for essential communications services, staff recommends applying the affordability metrics to analyze the pricing plans that the infrastructure grant applicants plan to offer in the project area. The Affordability Ratio

[79] Available at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB156.
[80] The affordability framework applies to residential households, and their ability to access and afford essential communications services, which includes basic service (for voice) and 25/3 (for broadband).
[81] See discussion in iii) CPUC Public Purpose Programs for pricing plan development recommendation.
[82] Public Utilities Code Section 270, available at https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=270.&lawCode=PUC.
[83] R. 20-08-021, available at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K161/346161022.PDF.

Calculator has the capability to incorporate the project area's unique socioeconomic data and other essential utility services costs to impute the exact rate that can yield AR_{20} scores below the 15 percent affordability demarcation.

For example, please see Figure 14 below, which is taken directly from the Affordability Ratio Calculator, for the PUMA 10703 – Tulare County (Outside Visalia, Tulare & Porterville Cities). According to the data collected for 2019, the lowest rate for essential communications services for the 13 housing units serviced by this specific broadband provider – voice provider combination is $346.62 per month, which yields a AR_{20} score of 46.8 percent that is substantially above the 15 percent demarcation.

PUMA	PUMA_Name	Comm	Comm_Name	AR20_telco	AR50_telco	HU_telco
10703	Tulare County (Outside Visalia, Tulare & Porterville Cities) PUMA	283	unWired Broadband Inc, Ducor	46.8%	14.2%	13

Communication	Communication Provider Names (Broadband, Voice)	2019 Essential Usage Bill ($/month)
283	unWired Broadband Inc, Ducor	346.62

Figure 14: Example affordability analysis output without rate consideration (2019)

The Affordability Ratio Calculator enables users to analyze rates and their direct impact to the AR metric across specific geographies. As highlighted in Figure 15 below, for these 13 housing units located in PUMA 10703 – Tulare County, the rate for essential communications services needs to be below $111.10 in order to yield an AR_{20} score below the 15 percent demarcation.

PUMA	PUMA_Name	Comm	Comm_Name	AR20_telco	AR50_telco	HU_telco
10703	Tulare County (Outside Visalia, Tulare & Porterville Cities) PUMA	283	unWired Broadband Inc, Ducor	15.0%	4.6%	13

Communication	Communication Provider Names (Broadband, Voice)	2019 Essential Usage Bill ($/month)
283	unWired Broadband Inc, Ducor	111.10

Figure 15: Example affordability analysis output with rate consideration (2019)

Using the Affordability Ratio Calculator, the CASF program can impute the rate for essential communications services that can yield AR_{20} scores below the 15 percent demarcation for each project area. Staff recommends the CASF program to take that rate into consideration when reviewing the pricing plans the infrastructure grant applicants plan to offer in the project area.

In addition to the CASF program, staff recommends other public purpose programs[84] that are involved with providing essential communications services to residential customers to also incorporate the affordability framework in their program developments, including but not limited to program-related rulemakings. The most effective application of the framework is to utilize the affordability analysis to encourage and promote pricing plans that enable all ratemaking areas to yield AR_{20} scores below the 15 percent affordability demarcation. The programs can also prioritize efforts in AAC and SEVI-DAC geographies.

[84] Other public purpose programs include California High Cost Fund A, California High Cost Fund B, California Lifeline, and California Teleconnect Fund.

5. Conclusion

The CPUC serves all Californians. To do so effectively, the CPUC must acknowledge that some communities in California face more affordability challenges than others. This proposal offers a way to identify these areas using the Areas of Affordability Concern and SEVI-DACs, in conjunction with the CPUC's existing Environmental and Social Justice Communities. These geographic concepts help identify the areas of the state burdened by high costs for essential service and low incomes, as well as those with the greatest socioeconomic vulnerability. These definitions, including the inflection points used in defining the AACs, also help to contextualize the affordability metrics for their use in CPUC proceedings.

For use in proceedings and other rate requests, the Affordability Ratio Calculator tool allows IOUs, consumer advocates, and other stakeholders to easily see the affordability impact of any given rate proposal. It also standardizes the inputs and outputs of the affordability calculation, helping the CPUC develop a "common understanding" around the language of affordability. This proposal also recommends specific use cases where affordability analyses shall be performed by the appropriate parties, allowing the affordability framework to be integrated into existing CPUC practice. While the specifics of implementation may be unique to each industry, this proposal ensures that the CPUC can consider affordability both in ratesetting contexts and in program fund allocation.

The CPUC must consider affordability in all stages of its decision-making, from identifying communities to setting rates to administering programs. Recognizing this, the original Order Instituting Rulemaking set out explicitly to "develop the methodologies, data sources, and processes necessary to comprehensively assess the impacts on affordability of individual CPUC proceedings and utility rate requests."[85] This proposal both achieves that goal and furthers the goals of the CPUC's Environmental and Social Justice Action Plan. Continued support of the affordability framework by both the CPUC and its regulated utilities is critical to ensuring that all Californians can afford essential utility service and make ends meet.

[85] R.18-07-006, OIR, p.2.

Appendix A: Sample Areas of Affordability Concern and SEVI-DACs

This appendix contains data tables with sample lists of census tracts that have been identified as areas of affordability concern (AAC) based on the analysis from the 2019 Annual Affordability Report. The complete data tables can be found in a spreadsheet hosted on the CPUC website at the following address:

https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/affordability-proceeding/aac-tables.xlsx

This appendix also contains a sample of census tracts that have been identified as socioeconomic vulnerability index disadvantaged communities (SEVI-DAC) based on the analysis from the 2019 Annual Affordability Report. The full list of SEVI-DAC census tracts can be found in a spreadsheet hosted on the CPUC website at the following address:

https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/affordability-proceeding/sevi-dac-table.xlsx

Census Tract ID	PUMA	County/City Associated with PUMA	Electric Climate Zone	PUMA/CZ Weighted Avg Electric AR20
06037185310	03735	Los Angeles County--LA City (Mount Washington, Highland Park & Glassell Park)	Los Angeles Dep of Water & Power	15.2%
06045010802	03300	Lake & Mendocino Counties	PG&E P	15.5%
06045011800	03300	Lake & Mendocino Counties	PG&E P	15.5%
06037460800	03718	Los Angeles County (Central)--Pasadena City	Los Angeles Dep of Water & Power	17.8%
06045011700	03300	Lake & Mendocino Counties	PG&E P	15.5%
06037101300	03708	Los Angeles County (North)--LA City (Northeast/Sunland, Sun Valley & Tujunga)	Los Angeles Dep of Water & Power	25.4%
06037103101	03708	Los Angeles County (North)--LA City (Northeast/Sunland, Sun Valley & Tujunga)	Los Angeles Dep of Water & Power	25.4%
06037103102	03708	Los Angeles County (North)--LA City (Northeast/Sunland, Sun Valley & Tujunga)	Los Angeles Dep of Water & Power	25.4%
06037103400	03708	Los Angeles County (North)--LA City (Northeast/Sunland, Sun Valley & Tujunga)	Los Angeles Dep of Water & Power	25.4%
06065044405	06502	Riverside County (Central)--Cathedral City, Palm Springs & Rancho Mirage Cities	SCE 15	15.0%

Table 10: Sample of Electric Area of Affordability Concern Census Tracts

Census Tract ID	PUMA	County/City Associated with PUMA	Gas Climate Zone	PUMA/CZ Weighted Avg Gas AR20
06037191810	03732	Los Angeles County (Central)--LA City (East Central/Hollywood)	SCG 1	14.2%
06037192620	03732	Los Angeles County (Central)--LA City (East Central/Hollywood)	SCG 1	14.2%
06037301203	03719	Los Angeles County (Central)--Glendale City	SCG 1	11.3%
06037123205	03721	Los Angeles County (North)--LA City (Northeast/North Hollywood & Valley Village)	SCG 1	12.4%
06001410300	00104	Alameda County (North Central)--Oakland City (South Central)	PG&E T	11.3%
06073001600	07317	San Diego County (South Central)--San Diego City (Central/Mid-City)	SDG&E COASTAL	10.2%
06073001700	07317	San Diego County (South Central)--San Diego City (Central/Mid-City)	SDG&E COASTAL	10.2%
06001407500	00104	Alameda County (North Central)--Oakland City (South Central)	PG&E T	11.3%
06073002301	07317	San Diego County (South Central)--San Diego City (Central/Mid-City)	SDG&E INLAND	10.5%
06073002302	07317	San Diego County (South Central)--San Diego City (Central/Mid-City)	SDG&E INLAND	10.5%

Table 11: Sample of Gas Area of Affordability Concern Census Tracts

Census Tract ID	County	PWSID	Water AR20
06037139301	Los Angeles	CA1910067	27.8%
06037139302	Los Angeles	CA1910067	27.8%
06037139502	Los Angeles	CA1910067	27.8%
06037139600	Los Angeles	CA1910067	27.8%
06037139701	Los Angeles	CA1910067	27.8%
06037139801	Los Angeles	CA1910067	27.8%
06037143400	Los Angeles	CA1910067	27.8%
06037143500	Los Angeles	CA1910067	27.8%
06037181000	Los Angeles	CA1910043	19.1%
06037181500	Los Angeles	CA1910067	27.8%

Table 12: Sample of Water Area of Affordability Concern Census Tracts

Census Tract ID	County	Comm ID	Comm Providers	Comm AR20
06037192300	Los Angeles	33	AT&T Service, Inc., AT&T California	30.0%
06037195400	Los Angeles	33	AT&T Service, Inc., AT&T California	27.7%
06073003902	San Diego	148	GeoLinks, AT&T California	40.3%
06037403801	Los Angeles	149	GeoLinks, Frontier	19.0%
06089011300	Shasta	117	DigitalPath, Inc., AT&T California	18.5%
06089012000	Shasta	78	Com-Pair Services, AT&T California	18.6%
06065030103	Riverside	148	GeoLinks, AT&T California	30.4%
06093001000	Siskiyou	117	DigitalPath, Inc., AT&T California	17.9%
06037408212	Los Angeles	149	GeoLinks, Frontier	22.4%
06071001903	San Bernardino	148	GeoLinks, AT&T California	19.0%

Table 13: Sample of Communication Area of Affordability Concern Census Tracts

Census Tract ID	County	SEVI Score
06037183520	Los Angeles	81.5
06037183610	Los Angeles	84.0
06037183820	Los Angeles	88.9
06037185310	Los Angeles	81.6
06073003901	San Diego	97.1
06073003902	San Diego	96.0
06073004000	San Diego	87.4
06073008800	San Diego	79.0
06037533503	Los Angeles	94.1
06037570304	Los Angeles	81.5

Table 14: Sample of SEVI-DAC Census Tracts

Appendix B: Water Proxy Value Calculation

Staff tested the preliminary method of assigning proxy values for water costs by obtaining well depth data from the State Water Resources Control Board website.[86] The text file was imported to ArcMap and intersected with the energy shapefiles to assign a climate zone to each well. An average well depth was used for each climate zone to calculate the cost of well water. Well depths were used in equations to calculate Water Horsepower (WP), Electrical Power (EP), and Pumping Energy (PumpingEnergy).[87] Assumptions were made to perform the calculation such as the total dynamic head was set equal to the average well depth, and pump/motor systems had an efficiency of 0.40. The annual energy costs were converted to daily energy usage and the daily usages were inserted into the energy bill calculator for summer and winter months.

$$WP = \frac{TDHxGPM}{3960}$$

where:

WP = Annual average water power (hp)

TDH = Total Dynamic Head (feet)

GPM = Annual average flow rate of well (gallons per minute)

= Annual water consumption (gallons per year) ÷ 525,600 (min/year)

3960 = Unit conversion constant (feet · gallons/minute to horsepower)

$$EP = WP\ x\ 0.746\ x\ {}^{1}/_{eff}$$

where:

EP = Electrical power (kW)

WP = Water power (hp)

eff = Overall efficiency of pump and motor system (decimal value, 0 to 1)

$$PumpingEnergy = EP\ x\ 8760$$

where:

8760 = hours per year

[86] GAMA Ground Water (Updated May 2021): https://gamagroundwater.waterboards.ca.gov/gama/datadownload

[87] Home Energy Save & Score: Well-pump energy calculation method (beginning on equation 27): http://hes-documentation.lbl.gov/calculation-methodology/calculation-of-energy-consumption/major-appliances/miscellaneous-equipment-energy-consumption/well-pump-energy-calculation-method

Appendix C: Additional Industry Maps

Electrical AAC Against ESJ Boundary Details

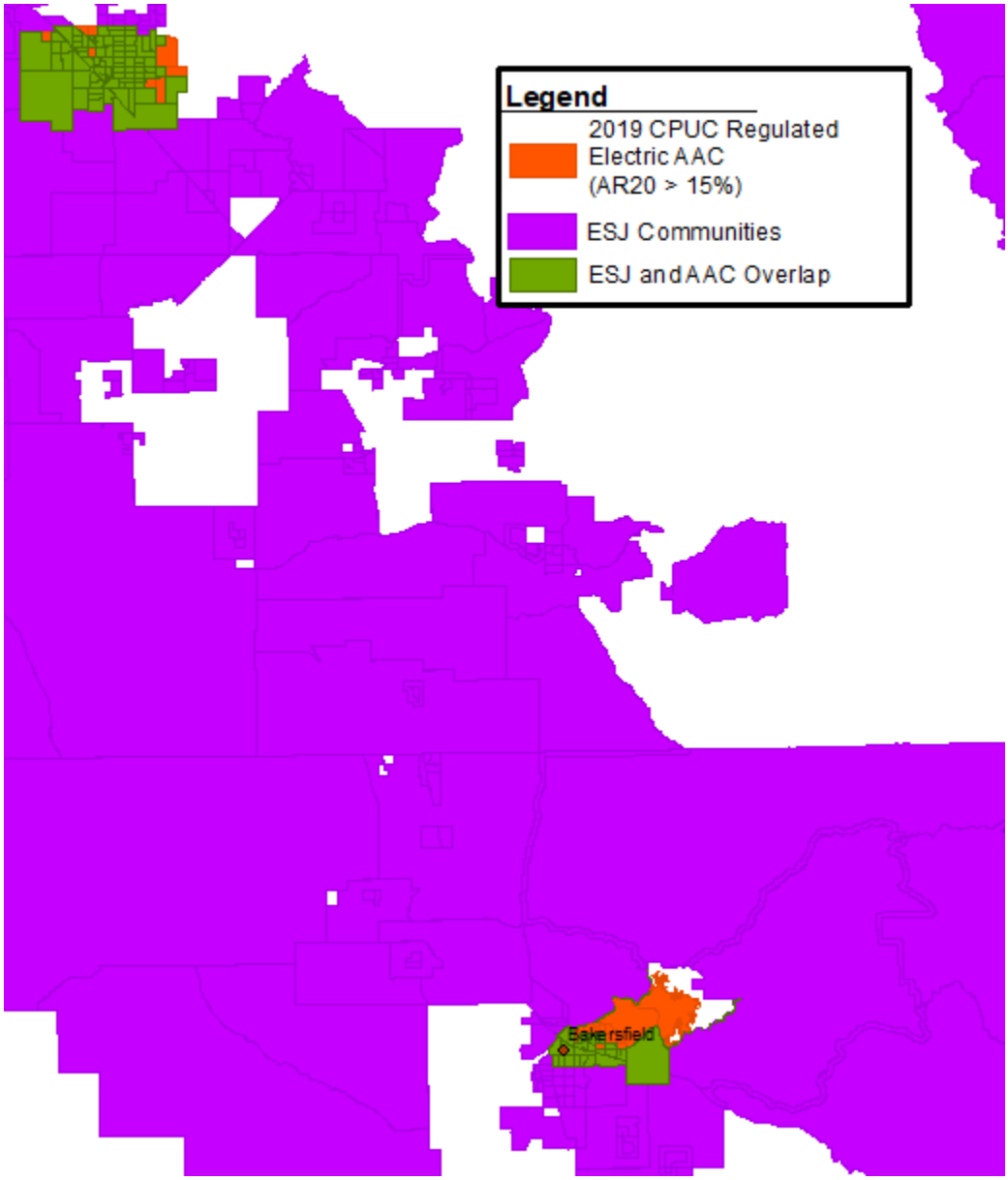

Figure 16: Electrical AAC Against ESJ Boundaries - Central California

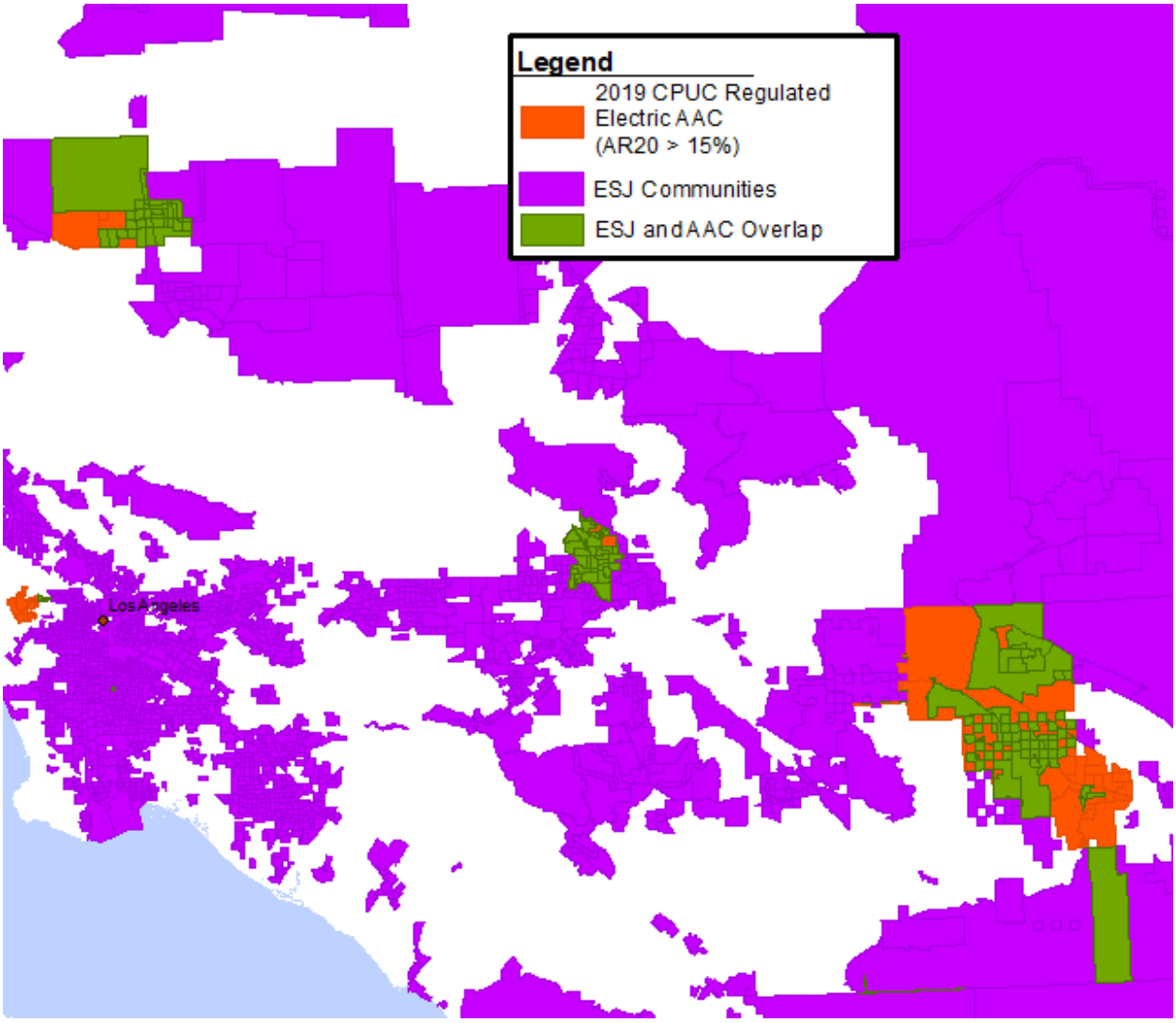

Figure 17: Electrical AAC Against ESJ Boundaries – Los Angeles Region

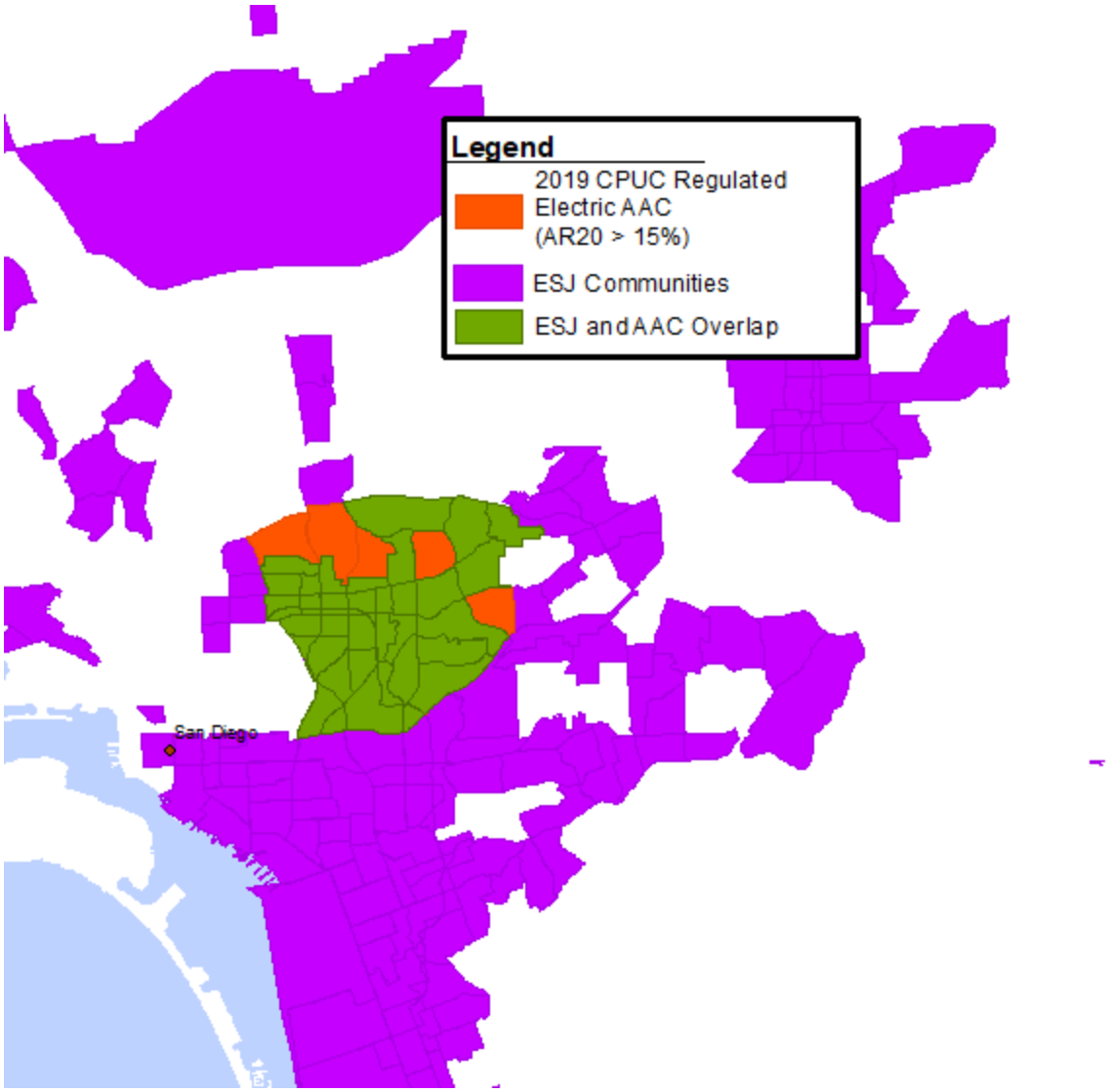

Figure 18:Electrical AAC Against ESJ Boundaries – San Diego Region

Gas AAC Against ESJ Boundaries Details

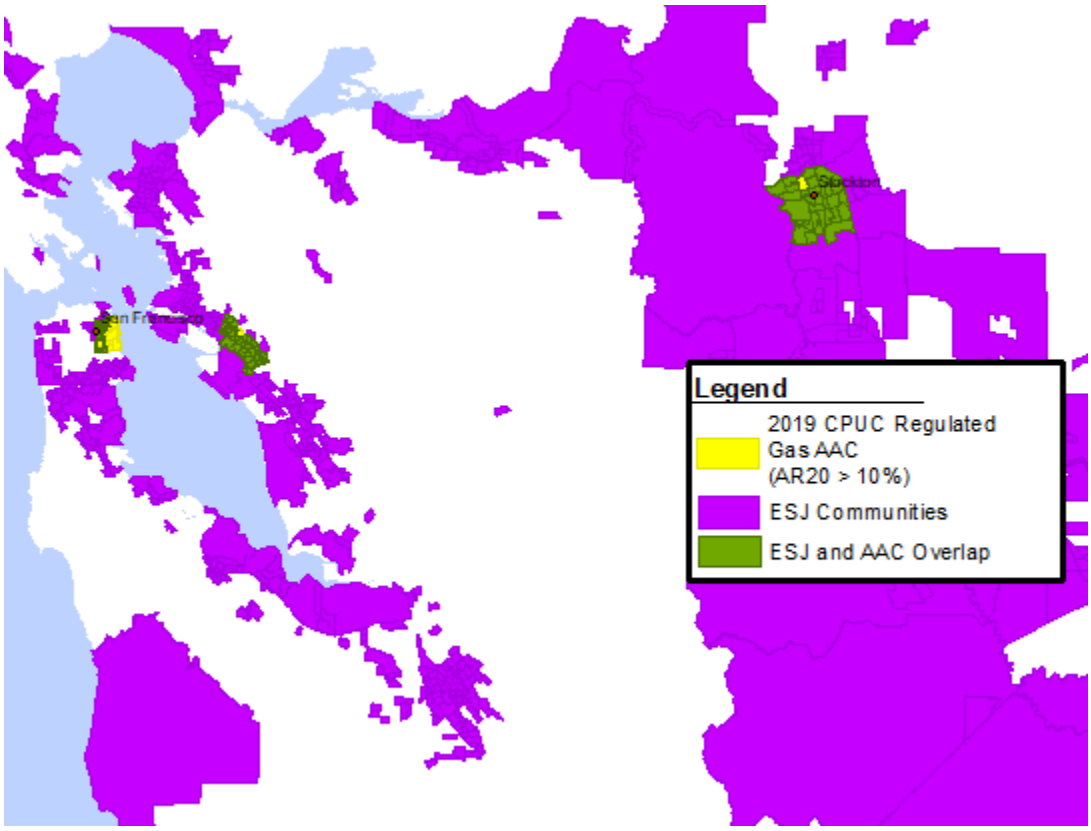

Figure 19: Gas AAC Against ESJ Boundaries - Bay Area/Stockton

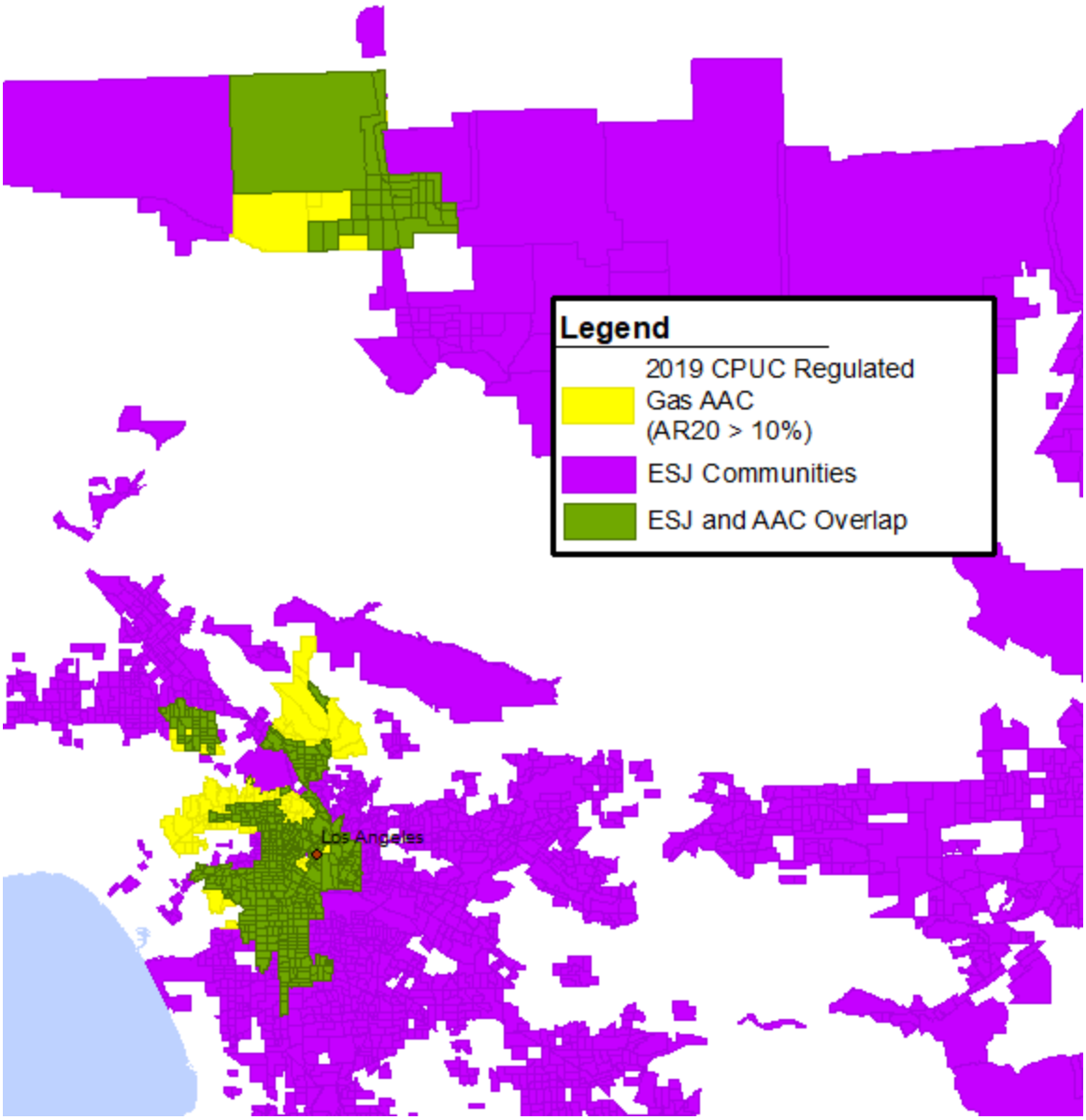

Figure 20: Gas AAC Against ESJ Boundaries – Los Angeles Region

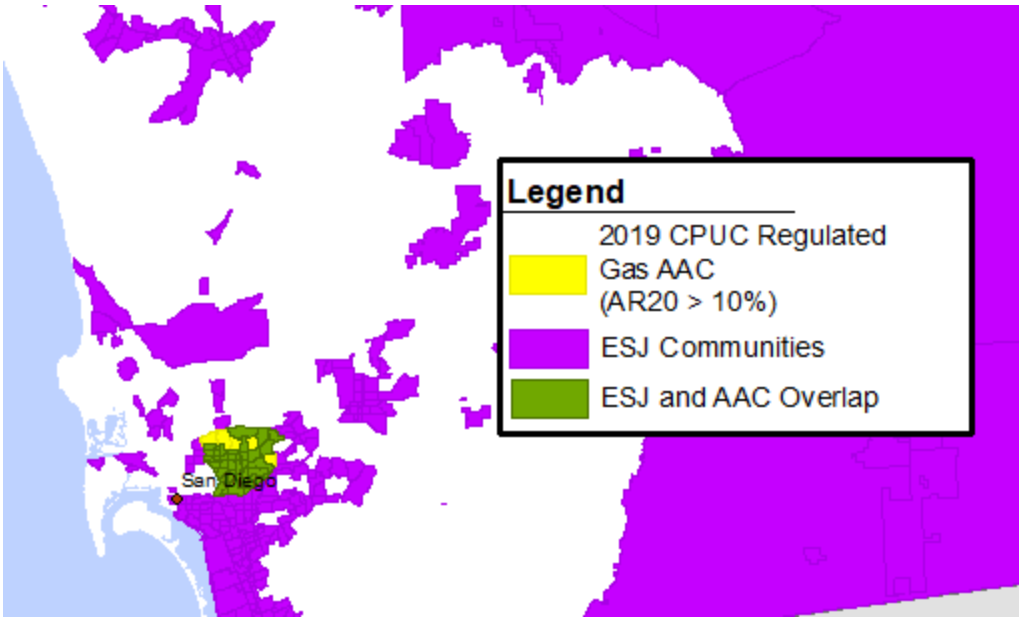

Figure 21: Gas AAC Against ESJ Boundaries – San Diego

Communications AAC Against ESJ Boundaries Details

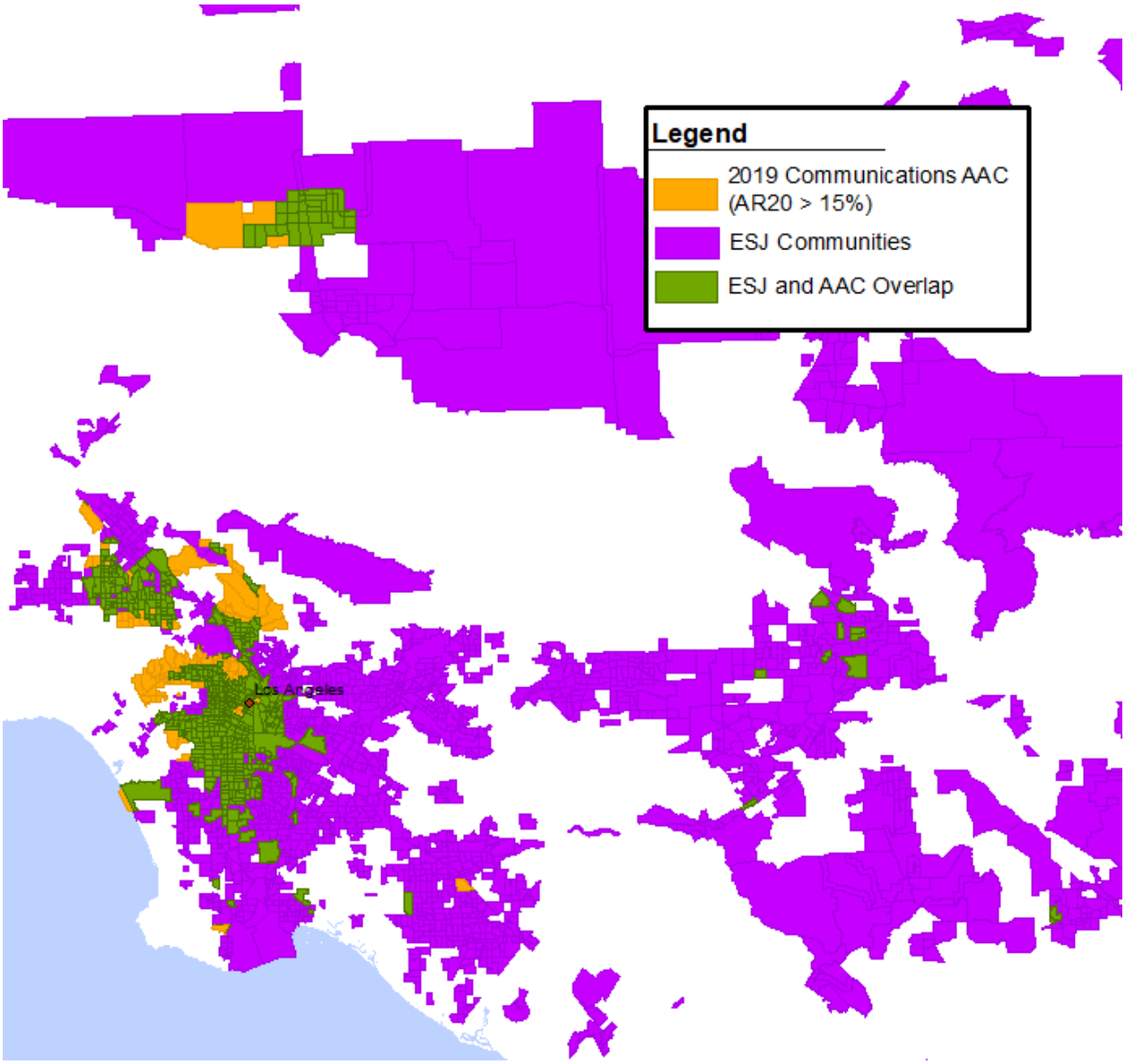

Figure 22: Communications AAC Against ESJ Boundaries –Los Angeles Region

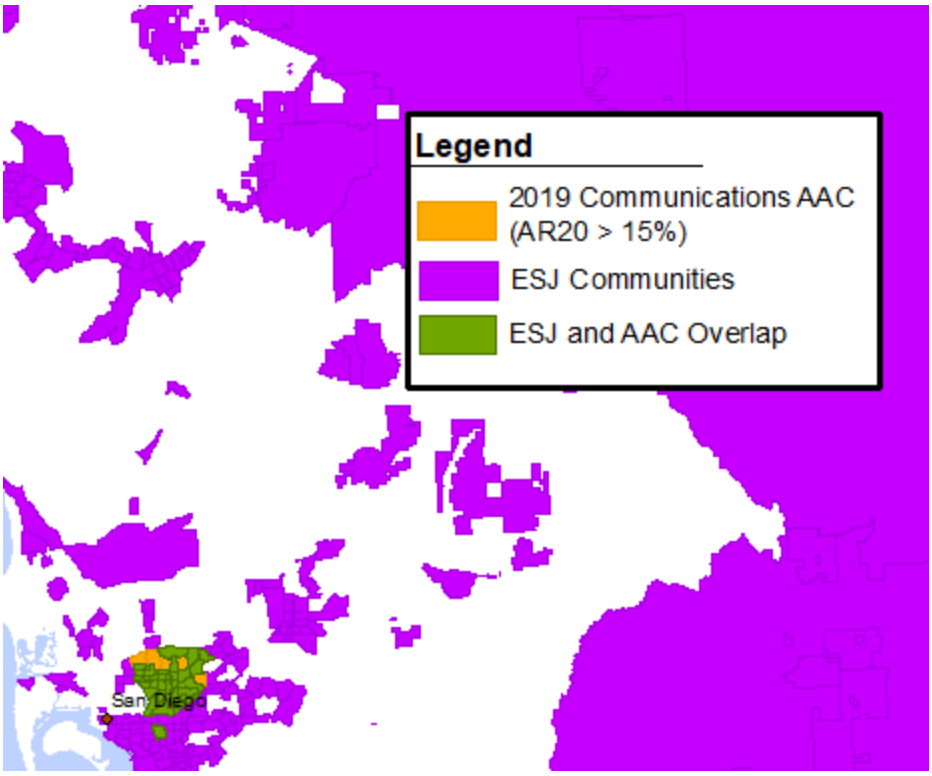

Figure 23: Communications AAC Against ESJ Boundaries – San Diego

Appendix D: Water Rate and Bill Tracker Template

The instructions included below are available on the CPUC website at the following address:

https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/affordability-proceeding/draft_reporting_template_instructions.pdf

The Rate and Bill Tracker included below is available in Excel form on the CPUC website at the following address:

https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/affordability-proceeding/draft_water_utilities_reporting_template.xlsm

The instructions, as well as sample sheets of the Rate and Bill Tracker, are also provided below.

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DRAFT: Proposed Water Utility Reporting Requirements

Each Class A water utility should include the following data in each filing that may cause impacts to the company's revenue requirement and/or customer bills. This is intended to allow the California Public Utilities Commission (Commission) to fully consider the cumulative customer bill impacts of all tariff changes under consideration at a given point in time. Further, it provides a common set of data for decision-makers, intervenors, and the utilities to review in considering each request.

INSTRUCTIONS

Please provide the following data in Excel format by ratemaking areas in conjunction with each relevant filing. Create a separate workbook for each ratemaking area. Leave intact formulas for values dependent on other values in the spreadsheet (i.e., all inputs should be linked with formulas intact to all relevant outputs). Some functionalities involve the use of macros, so please enable macros when prompted. Any notes should be listed at the bottom of the table under notes and assumptions; please reference cells by name as appropriate (e.g., A5).

1. **Table 1: Revenue Requirement Data – Please provide the following data in accordance with the format provided in the Table 1 Revenue Requirement tab.**
    a. Current company-wide number of connections and number of connections in ratemaking area.
    b. Latest adopted Revenue Requirement company-wide and by ratemaking area to serve as a reference benchmark, including filing number and adoption date.
    c. List or forecast the cost impacts (e.g., incremental or decremental change from the adopted ratemaking area Revenue Requirement) for the next 5 years associated with the following:
        i. All **Active** filings that affect the revenue requirement and/or show up in addition to the revenue requirement on customer bills (e.g., temporary surcharges).[1]
        ii. All other currently **Pending** (i.e., filed) requests that would result in Revenue Requirement and/or customer bill changes relative to the reference benchmark levels.[2]
        iii. The **Pending New Filing** that would cause the latest adopted Revenue Requirement and/or customer bills to change.
        iv. All **Anticipated** filings within the next 36 months that are expected to impact the Revenue Requirement and/or customer bills.[3] The company

[1] If a given filing does not affect the revenue requirement but does affect bills, please enter zero in the Revenue Requirement table.
[2] All information submitted should be based on information in the latest company filings (e.g., the Application or Final Decision work papers).
[3] See Footnote 2.

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should estimate dollar amounts associated with balancing accounts and escalation year requests based on Application or Final Decision work papers.

v. Note that if the company would like to add an additional **Active, Pending,** or **Anticipated** filing, the company should use the provided buttons to ensure that corresponding rows are added to the relevant areas in **Table 4.**

For each entry in Items i, ii, iii, and iv above:

- Provide the required data by ratemaking area.
- Include a description of the filing and indicate the Revenue Requirement recovery mechanism (e.g., amortization of balancing account, GRC base rate increase, etc.) through which the revenue would be recovered, as well as the effective or proposed effective date.
- For filings related to acquisition of other water systems, indicate the estimated incremental or decremental change from the adopted ratemaking area annual Revenue Requirement impacted with each filing.

vi. List the incremental or decremental change from the adopted ratemaking area annual Revenue Requirement associated with each filing. If a filing does not apply in a given year or it is not possible to provide a dollar estimate, select TBD or Not Applicable from the drop-down menu.

- Indicate customer classes, if any, that are exempt from revenue recovery in a footnote.

d. The total annual cost impacts associated with all Active, Pending, and Anticipated filings, in addition to the Grand Total of all filings, should calculate automatically. If the total costs impact associated with all Active, Pending, and Anticipated filings, in addition to the Grand Total, do not appear automatically, sum the totals vertically, not horizontally.

2. Tables 2-4: Bill Impact Data – Please provide the following data in accordance with the format provided in Table 2-Residential Average Usage, Table 3- Inputs, Table 3-Current Bill, and Table 4-Impact to Average Bill.

Note:
Cells with an orange background and blue text are user input cells, please enter values in these cells. For example: 3

Cells with a purple background and blue text are drop down menu cells: for example: CCF

a. **Table 2 – Residential Average Usage, Tier 1 Usage, and Current Residential Average Annual Bills – by ratemaking area, using data from the GRC filing**:

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i. Calculate the Residential Average annual usage per connection by dividing the total annual residential consumption[4] (in units used by the service area) by the end-of-year total number of residential connections.
ii. Repeat the same calculation for non-Customer Assistance Program (non-CAP) customers.
iii. Repeat the same calculation for CAP customers.
iv. Identify the Tier 1 maximum amount (in units used by the service area/month) and the residential usage associated with hypothetical year-round usage at the Tier 1 maximum amount.
v. List the Current Residential Average Annual Bill based on calculations in Table 3, outlined below in 2(b).

b. **Table 3 Inputs**
   i. This tab is an "Inputs" tab that collects data to calculate the average bill.
      1. Select the quantity basis for assessing the quantity charge/variable charge in the service area using the drop-down in cell D1.
      2. Enter the number of tiers in the service area in cell D4. If the service area assesses quantity charges on a uniform rate enter 1. This document supports up to ten tiers.
      3. Enter the end point for each break (e.g., if you have 3 volumetric tiers, and each tier is ten units, enter 10 for the end of Tier 1 and 20 for the end of Tier 2) in cells E7:E16.
      4. Enter the volumetric charge associated with each tier in cells G7:G16 for non-CAP customers and in cells H7:H16 for CAP customers. E.g., if non-CAP customers pay $1 per unit and CAP customers pay $0.90 per unit in tier 1, enter $1 and $0.90 in cells G7 and H7, respectively.
      5. Cells in column K and L will automatically calculate the average monthly payment in each tier. This is for informational purposes on this tab only.
      6. In cell D20, enter the size of your most common residential meter. Note: There are no calculations that result from this cell, this information can be entered as text.
      7. In cells D22 and E22 enter the monthly fixed charge that your Non-CAP and CAP eligible customers pay. Note that if your CAP customers receive a fixed credit amount off the service charge, reflect the credit amount in cell F25 under the section listing surcharges and credits.
      8. If you have additional surcharges, credits, fees and taxes, enter those in cells C25:F30.
         a. Type the name of each charge into cells C25:C30.

[4] For all residential customer calculations, please exclude multi-family residential units; only include residential single-family units.

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b. In cells D25:D30 select whether each charge is fixed or variable. Fixed charges are calculated on a per-month basis, variable charges on a per-unit basis.
c. In cells E25:30 and F25:30 enter the amount of each charge. Enter the charge for non-CAP eligible customers in the cells in column E, and enter the charge for CAP eligible customers in column F. Note that any credits should be entered as negative amounts.
d. In cells G25:30 enter the number of months each surcharge, credit, fee or tax will be in effect. If it a one-time payment or credit, enter 1, if it will be in effect for the whole year enter 12.
e. To add additional rows for surcharges, taxes or fees, click on button in cell C26. Adding a row will change the row references in the Table 3 section below, in subheading iv.

c. **Table 3-Current Bill**
   i. Much of the information for this table will automatically fill in after filling out the Table 3 Inputs worksheet.
   ii. Table 3 – Current Bill tab will automatically provide annualized and monthly bill calculations for non-CAP and CAP customers, at both average usage and Tier 1 usage amounts. The table will show each applicable rate, charge, surcharge, credit, fee, and/or tax, and include the start and expiration dates as appropriate. Should you need to calculate the annualized bill, apply monthly prorating consistent with the relevant start and expiration dates of all rates, charges, surcharges, credits, fees, and/or taxes that are applicable in the calendar year, as of the form submission date.
   iii. For Pending or Anticipated filings, manually include relevant calculations for any Pending or Anticipated filings on this tab, as indicated with the example for escalation year requests. This can be done in the tables labeled "Estimated Incremental Annual Bill Impact" and "Estimated Incremental Monthly Bill Impact". You may use escalation factors to estimate rates in out years by multiplying escalation factors by the outputs of the automatically calculating tables.

d. **Table 4 – Impact to Residential Average Annual Bill:** List annualized customer bill amounts by filing.
   i. List all Active, Pending, and Anticipated filings provided in response to Table 1.
   ii. List annualized customer bill amounts associated with each proceeding/filing, starting with non-CAP customers at the residential average annual usage amount. Show bill reduction as a negative number. Ensure all bill amounts are appropriately prorated for each year. If a filing

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does not apply in a given year or it is not possible to provide a dollar estimate, select TBD or Not Applicable from the drop-down menu.

iii. Sum the total annual bill amounts associated with all Active, Pending, and Anticipated filings.

iv. Calculate the CPUC fee associated with the sum of the Total Active, Total Pending, and Total Anticipated bill amounts.

v. Calculate the Total Estimated Annual Bill, by summing the CPUC fee and the Total Active, Total Pending, and Total Anticipated bill amounts. Totals sum vertically, not horizontally.

vi. Calculate the incremental change in the Total Estimated Annual Bill as compared to the Total Estimated Annual Bill in Year 1 by subtracting the Total Estimated Annual Bill in Year 1 from the Total Estimated Annual Bill in each of Years 2-5.

vii. Repeat steps 2(c)(i)-(vi) for the three additional customer classes (i.e., LIRA customers at the average CAP usage amount, and both non-CAP and CAP customers at the Tier 1 annual usage amount).

Definitions

Term	**Definition**
Revenue Requirement	Latest adopted California Public Utilities Commission Revenue Requirement.
Active	Any proceeding or advice letter approved by the California Public Utilities Commission and currently in effect that changes the base rate in the Latest Adopted Revenue Requirement and/or changes customer bills (e.g., permanent or temporary charges, surcharges, credits, fees, taxes, etc.).
Pending - Filed	Any proceeding or advice letter waiting for the California Public Utilities Commission that will impact the Latest Adopted Revenue Requirement and/or customer bills.
Pending New Filing	The proceeding or advice letter being filed that would cause the Latest Adopted Revenue Requirement and/or customer bills to change.
Anticipated	Any proceeding or advice letter anticipated to be filed with the California Public Utilities Commission in the next 36 months that will impact the Latest Adopted Revenue Requirement and/or customer bills. The company should estimate dollar amounts

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	associated with balancing accounts and escalation year requests based on Application or Final Decision work papers.
Residential Average Annual Usage (in units used by service area) Per Connection	Residential Total units used in 12 Months (last calendar year), divided by the Total Residential Connections (at the end of the last calendar year) for each ratemaking area. (This calculation is to be calculated and included for all residential connections, non-LIRA, and LIRA customers.) For all residential customer calculations, please exclude multi-family residential units; only include residential single-family units.
Tier 1 Annual Usage Amount	The residential usage amount associated with hypothetical year-round usage at the Tier 1 maximum amount.
Residential Average Annual Bill	Follow instructions 2(a) and 2(b) to complete the residential average annual bill for the four customer classes outlined therein.
Residential Average Annual Bill Impact	The difference between residential current average annual bill and the approved/proposed/planned bill.
Customer Assistance Program (CAP) Residential Customers	Follows CAP/CARE program income guidelines (see CARE income guidelines below).

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Qualifications

If your total household income is at or below the income limits below, you are eligible for the CARE program. Income limits are effective June 1, 2021 to May 31, 2022.

CARE Income Guidelines

Household Size	Income Eligibility Upper Limit
1-2	$34,840
3	$43,920
4	$53,000
5	$62,080
6	$71,160
7	$80,240
8	$89,320
Each Additional Person	$9,080

Table 1 - Annual Revenue Requirement
(By Ratemaking Area)

Company:		**Filing Date:**		**Company-Wide Number of Connections (As of 12/31/2020)**	
Ratemaking Area:		**Filing Year:**	2021	**Number of Connections in Ratemaking Area (As of 12/31/2020)**	

							Annual Revenue Requirements (End of Year)				
	Latest Adopted Company-Wide Revenue Requirement (Adopted on XX/XX/XXX Per Filing #)		**Latest Adopted Ratemaking Area Revenue Requirement (Adopted on XX/XX/XXX Per Filing #)**				**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
	$		$								
Status	**Proceedings**	**Footnote Reference**	**Description of Filing**	**Revenue Recovery Mechanism**	**Effective Date or Proposed Effective Date**	**Expiration Date or Proposed Expiration Date**	**2021**	**2022**	**2023**	**2024**	**2025**
Baseline Revenue Requirement (Ratemaking Area)							$	$	$	$	$
Active	A.18-XX-XX; D.19-XX-XXX		(e.g. Bal. Acct., IRMA, WRAM)	(e.g., amortization of balancing account, GRC base rate increase, etc.)							
Active	A.18-XX-XXX; D.19-XX-XXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
	USE THIS BUTTON TO ADD ACTIVE FILINGS										
Total Active							$ -	$ -	$ -	$ -	$ -
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	A.XX-XX-XXX										
Pending - Filed	A.XX-XX-XXX										
Pending - New Filing	AL # XXXX										
	USE THIS BUTTON TO ADD PENDING FILINGS										
Total Pending							$ -	$ -	$ -	$ -	$ -
Anticipated	Advice Letter		IRMA (as appropriate)	No change to stated rev. req.							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Rate base offsets (ALPs)	Base rate increase							
Anticipated	Advice Letter		Cost of capital	Base rate change							
Anticipated	Application		20XX GRC	Base rate change							
	USE THIS BUTTON TO ADD ANTICIPATED FILINGS										
Total Anticipated							$ -	$ -	$ -	$ -	$ -
Total Changes to Ratemaking Area Revenue Requirement, Not Including TBD Amounts							$ -	$ -	$ -	$ -	$ -
Total Estimated Ratemaking Area Revenue Requirement, Not Including TBD Amounts							#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Footnotes and Assumptions:

Table 2 - Residential Average Usage and Current Residential Average Annual Bill (By Ratemaking Area)

Company: **Filing Date:**

Ratemaking Area: **Filing Year:** 2021

	All Residential Customers	Non-Customer Assistance Program (CAP) Customers	CAP Customers	Tier 1 Usage (up to XX Units/month) for Non-CAP Customers	Tier 1 Usage (up to XX Units/month) for CAP Customers
Total Residential Usage (in units used by service area) in 12 Months (from last GRC filing)				N/A	N/A
Total Number of Residential Connections (from last GRC filing)				N/A	N/A
Residential Average Annual Usage (in units used by service area) Per Connection, or Tier 1 Annual Usage Amount	-	-	-	0.00	0.00
Current Residential Average Annual Bill	**N/A**	**-**	**-**	**$0**	**$0**

Notes and Assumptions:

Quantity Basis	CCF

Variable Charge Calculation

						Non-CAP Average Use		CAP Average Use			
Number of Tiers	2					0		0			
	Tier Start	Tier End (CCF)	Tier Width	Non-CAP Tier Rate	CAP Tier Rate	Non-CAP Average Consumption In Tier		CAP Avg Consumption in Tier		**Average Monthly Bill in Tier**	**Average CAP Monthly Bill in Tier**
				(A)	(B)	(C)		(D)		**(E) = (A) * (C)**	**(F) = (B) * (D)**
Tier 1	0 CCF to		0				0.00		0.00	**$0.00**	**$0.00**
Tier 2	Over CCF						0.00		0.00	**$0.00**	**$0.00**
										$0.00	**$0.00**

Monthly Fixed Charge Calculation

Most Common Residential Meter	5/8" x 3/4"	
	Non-CAP Fixed Charge	CAP Fixed Charge (prior to credit or discount)
5/8" x 3/4" Fixed Charges		

Surcharges, Credits, Fees and Taxes	Type of Charge	Charge (Non-CAP)	Amount of Charge (CAP)	Number of Months in Effect
CAP Credit	Fixed			
CAP Surcharge	Variable			
Temporary Surcharge 1	Variable			
Temporary Surcharge 2	Variable			
…	Fixed			
…	Fixed			

Table 3 - Residential Bill Calculations
(By Ratemaking Area)

Company: **Filing Date:**

Ratemaking Area: **Filing Year:** 2021

Average Annual Bill Calculation for Residential 5/8" x 3/4" Meter as of the filing date:					
	Average Usage		**Tier 1 Usage**		**Appropriate Rate**
	Non-CAP	**CAP**	**Non-CAP**	**CAP**	
Usage (Ccfs/Year)	-	-	*0.00*	*0.00*	***(Incl. Start and Expiration Date as Appropriate)***
Service Charge	$0.00	$0.00	$0.00	$0.00	*$XX.XX per month or bimonthly*
Quantity Charge	$0.00	$0.00	$0.00	$0.00	*$XX.XX per CCF*
Subtotal:	*$0.00*	*$0.00*	*$0.00*	*$0.00*	
Relevant Surcharges, Credits, Fees and Taxes					
CAP Credit	$0.00	$0.00	$0.00	$0.00	*$ per month*
CAP Surcharge	#VALUE!	#VALUE!	$0.00	$0.00	*$ per CCF*
Temporary Surcharge 1	#VALUE!	#VALUE!	$0.00	$0.00	*$ per CCF*
Temporary Surcharge 2	#VALUE!	#VALUE!	$0.00	$0.00	*$ per CCF*
…	$0.00	$0.00	$0.00	$0.00	*$ per month*
…	$0.00	$0.00	$0.00	$0.00	*$ per month*
Subtotal:	*#VALUE!*	*#VALUE!*	*$0.00*	*$0.00*	
CPUC Fee	#VALUE!	#VALUE!	$0.00	$0.00	*1.23%*
Total Avg. Annual Bill for 2021:	#VALUE!	#VALUE!	$0.00	$0.00	

Table 3 - Residential Bill Calculations
(By Ratemaking Area)

Average Monthly Bill Calculation for Residential 5/8" x 3/4" Meter as of the filing date:					
	Average Usage		**Tier 1 Usage**		**Appropriate Rate**
	Non-CAP	**CAP**	**Non-CAP**	**CAP**	
Usage (Ccfs/Month)	-	-	*0.00*	*0.00*	***(Incl. Start and Expiration Date as Appropriate)***
Service Charge	$0.00	$0.00	$0.00	$0.00	*$XX.XX per month*
Quantity Charge	$0.00	$0.00	$0.00	$0.00	*$XX.XX per CCF*
Subtotal:	*$0.00*	*$0.00*	*$0.00*	*$0.00*	
Relevant Surcharges, Credits, Fees and Taxes					
CAP Credit	$0.00	$0.00	$0.00	$0.00	*$ per month*
CAP Surcharge	#VALUE!	#VALUE!	$0.00	$0.00	*$ per CCF*
Temporary Surcharge 1	#VALUE!	#VALUE!	$0.00	$0.00	*$ per CCF*
Temporary Surcharge 2	#VALUE!	#VALUE!	$0.00	$0.00	*$ per CCF*
…	$0.00	$0.00	$0.00	$0.00	*$ per month*
…	$0.00	$0.00	$0.00	$0.00	*$ per month*
Subtotal:	*#VALUE!*	*#VALUE!*	*$0.00*	*$0.00*	
CPUC Fee	#VALUE!	#VALUE!	$0.00	$0.00	*1.23%*
Total Avg. Monthly Bill for July 2019:	#VALUE!	#VALUE!	$0.00	$0.00	

Table 3 - Residential Bill Calculations
(By Ratemaking Area)

Estimated Incremental Annual Bill Impact for Residential 5/8" x 3/4" Meter with 2020 and 2021 Rate Escalation related to 2019 GRC:					
2020	**Average Usage**		**Tier 1 Usage**		
	Non-CAP	**CAP**	**Non-CAP**	**CAP**	
Service Charge					*From $X.XX to $X.XX per month*
Quantity Charge					*From $X.XXX to $X.XXX per CCF*
Increm. Ann. Impact	$0.00	$0.00	$0.00	$0.00	

2021	**Average Usage**		**Tier 1 Usage**		
	Non-CAP	**CAP**	**Non-CAP**	**CAP**	
Service Charge					*From $X.XX to $X.XX per month*
Quantity Charge					*From $X.XXX to $X.XXX per CCF*
Increm. Ann. Impact	$0.00	$0.00	$0.00	$0.00	

Estimated Incremental Monthly Bill Impact for Residential 5/8" x 3/4" Meter with 2020 and 2021 Rate Escalation related to 2019 GRC as of the filing date:					
Month/Year	**Average Usage**		**Tier 1 Usage**		
	Non-CAP	**CAP**	**Non-CAP**	**CAP**	
Service Charge					*From $X.XX to $X.XX per month*
Quantity Charge					*From $X.XXX to $X.XXX per CCF*
Increm. Ann. Impact	$0.00	$0.00	$0.00	$0.00	

Notes and Assumptions:

CPUC User Fee of 1.23% corresponds to the most recent resolution setting the User Fee (i.e., Resolution M-4839). Update as necessary.
Current Residential Average Annual Bill based on most common residential meter size for RMA, which is 5/8" x 3/4".
Average annual bill calculated with all surcharges, fees, etc. active as of form submission date.
Average annual bill above does not include any pending or anticipated filings.
City tax on water utility services (percentage of bill amount) ranges from __% to __ % within the RMA, no city tax amount included in average bill above since most areas are not assessed a tax on water services.

Table 4 - Annual Bill Impacts for Non-LIRA and LIRA Customers at Average and Tier 1 Usage Levels
(By Ratemaking Area)

Company: **Filing Date:**
Ratemaking Area: **Filing Year:** 2021

Non-CAP Residential Customers - Average Usage							Annual Bill Impacts (For Both Non-CAP and CAP Customers at Average and Tier				
Status	**Proceedings**	**Footnote Reference**	**Description of Filing**	**Revenue Recovery Mechanism**	**Effective Date or Proposed Effective Date**	**Expiration Date or Proposed Expiration Date**	**2021**	**2022**	**2023**	**2024**	**2025**
Baseline bill (incl. service & quantity charges)	**D.XX-XX-XXX/A. or AL**						**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Active	A.18-XX-XX; D.19-XX-XXX		(e.g. Bal. Acct., IRMA, WRAM)	(e.g., amortization of balancing account, GRC base rate increase, etc.)							
Active	A.18-XX-XXX; D.19-XX-XXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Total Active							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	A.XX-XX-XXX										
Pending - Filed	A.XX-XX-XXX										
Pending - New Filing	AL # XXXX										
Total Pending							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Anticipated	Advice Letter		IRMA (as appropriate)	No change to stated rev. req.							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Rate base offsets (ALPs)	Base rate increase							
Anticipated	Advice Letter		Cost of capital	Base rate change							
Anticipated	Application		20XX GRC	Base rate change							
Total Anticipated							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
CPUC Fee		1					**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Estimated Annual Bill, Not Including TBD Amounts							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Change in Estimated Annual Bill, as Compared to Year 1							***n/a***	***$0.00***	***$0.00***	***$0.00***	***$0.00***

Table 4 - Annual Bill Impacts for Non-LIRA and LIRA Customers at Average and Tier 1 Usage Levels
(By Ratemaking Area)

CAP Residential Customers - Average Usage

Status	Proceedings	Footnote Reference	Description of Filing	Revenue Recovery Mechanism	Effective Date or Proposed Effective Date	Expiration Date or Proposed Expiration Date	2019	2020	2021	2022	2023
Baseline bill (incl. service & quantity charges)	**D.XX-XX-XXX/A. or AL**						**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Active	A.18-XX-XX; D.19-XX-XXX		(e.g. Bal. Acct., IRMA, WRAM)	(e.g., amortization of balancing account, GRC base rate increase, etc.)							
Active	A.18-XX-XXX; D.19-XX-XXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Total Active							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	A.XX-XX-XXX										
Pending - Filed	A.XX-XX-XXX										
Pending - New Filing	AL # XXXX										
Total Pending							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Anticipated	Advice Letter		IRMA (as appropriate)	No change to stated rev. req.							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Rate base offsets (ALPs)	Base rate increase							
Anticipated	Advice Letter		Cost of capital	Base rate change							
Anticipated	Application		20XX GRC	Base rate change							
Total Anticipated							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
CPUC Fee		1					**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Estimated Annual Bill, Not Including TBD Amounts							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Change in Estimated Annual Bill, as Compared to Year 1							***n/a***	***$0.00***	***$0.00***	***$0.00***	***$0.00***

Table 4 - Annual Bill Impacts for Non-LIRA and LIRA Customers at Average and Tier 1 Usage Levels
(By Ratemaking Area)

Non-CAP Residential Customers - Tier 1 Usage

Status	Proceedings	Footnote Reference	Description of Filing	Revenue Recovery Mechanism	Effective Date or Proposed Effective Date	Expiration Date or Proposed Expiration Date	2019	2020	2021	2022	2023
Baseline bill (incl. service & quantity charges)	**D.XX-XX-XXX/A. or AL**						**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Active	A.18-XX-XX; D.19-XX-XXX		(e.g. Bal. Acct., IRMA, WRAM)	(e.g., amortization of balancing account, GRC base rate increase, etc.)							
Active	A.18-XX-XXX; D.19-XX-XXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Total Active							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	A.XX-XX-XXX										
Pending - Filed	A.XX-XX-XXX										
Pending - New Filing	AL # XXXX										
Total Pending							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Anticipated	Advice Letter		IRMA (as appropriate)	No change to stated rev. req.							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Rate base offsets (ALPs)	Base rate increase							
Anticipated	Advice Letter		Cost of capital	Base rate change							
Anticipated	Application		20XX GRC	Base rate change							
Total Anticipated							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
CPUC Fee		1					**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Estimated Annual Bill, Not Including TBD Amounts							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Change in Estimated Annual Bill, as Compared to Year 1							***n/a***	***$0.00***	***$0.00***	***$0.00***	***$0.00***

Table 4 - Annual Bill Impacts for Non-LIRA and LIRA Customers at Average and Tier 1 Usage Levels
(By Ratemaking Area)

CAP Residential Customers - Tier 1 Usage

Status	Proceedings	Footnote Reference	Description of Filing	Revenue Recovery Mechanism	Effective Date or Proposed Effective Date	Expiration Date or Proposed Expiration Date	2019	2020	2021	2022	2023
Baseline bill (incl. service & quantity charges)	**D.XX-XX-XXX/A. or AL**						**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Active	A.18-XX-XX; D.19-XX-XXX		(e.g. Bal. Acct., IRMA, WRAM)	(e.g., amortization of balancing account, GRC base rate increase, etc.)							
Active	A.18-XX-XXX; D.19-XX-XXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Active	AL # XXXX										
Total Active							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	AL # XXXX										
Pending - Filed	A.XX-XX-XXX										
Pending - Filed	A.XX-XX-XXX										
Pending - New Filing	AL # XXXX										
Total Pending							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Anticipated	Advice Letter		IRMA (as appropriate)	No change to stated rev. req.							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX Estimated Escalation Year Increase, Pending Earnings Test	Base rate increase (est.)							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		20XX WRAM/MCBA	Amort. of balancing acct.							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Supply Cost Offset	Base rate change							
Anticipated	Advice Letter		Rate base offsets (ALPs)	Base rate increase							
Anticipated	Advice Letter		Cost of capital	Base rate change							
Anticipated	Application		20XX GRC	Base rate change							
Total Anticipated							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
CPUC Fee		1					**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Estimated Annual Bill, Not Including TBD Amounts							**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Change in Estimated Annual Bill, as Compared to Year 1							***n/a***	***$0.00***	***$0.00***	***$0.00***	***$0.00***

Footnotes and Assumptions:

1. CPUC User Fee of 1.23% corresponds to the most recent resolution setting the User Fee (i.e., Resolution M-4839). Update as necessary.