

## **1. Overall Project Summary and Approach**

### **A. Description of GHG Reduction Measures**

The City of Bakersfield will implement 13 priority projects that will directly advance several measures listed in the EPA-approved Priority Climate Action Plan (PCAP). Each project is selected for its measurable GHG reductions, contribution to national climate goals, impact on low-income and disadvantaged communities (LIDAC), and replicability for other jurisdictions. Most of the project measures are within Southeast Bakersfield, an area which is heavily impacted by the legacy of historic reining practices and nearly a century's worth of underinvestment. These communities are EPA IRA Disadvantaged Communities and include census tracts that are among the most disadvantaged in California and the United States. Based on analysis provided by EJScreen, the project area scores in the 91st percentile for Particulate Matter compared to other areas in the United States, the 98th percentile for Ozone emissions, the 95th percentile for people qualifying as low-income, and the 90th percentile for low life expectancy. Furthermore, Kern County is the largest producer of renewable energy in California<sup>1</sup>. The following proposed GHG Reduction Measures will further expand this direction.

- 1. PCAP Measure BE-1.1. Address residential and nonresidential building energy efficiency and energy use:** The Bakersfield Climate Action Plan (CAP) quantified building energy emissions associated with electricity consumption and onsite combustion of natural gas, liquid propane gas, and diesel in homes and non-residential buildings. These emissions accounted for approximately 542,974 metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>e ), or 22% of the City's total GHG emissions in 2019. The projects proposed under this measure will address energy efficiency in residential and non-residential buildings to reduce GHG emissions in the most disadvantaged areas of the City. The proposed GHG Reduction Measures include:

- a. GHG Reduction Measure 1: Dr. Martin Luther King, Jr. Community Center: Energy Efficiency**

The City of Bakersfield's larger MLK Park Revitalization Project will revitalize the existing structurally poor community center into a state-of-the-art, energy-efficient community center within the historic Martin Luther King Jr Park (MLK Park). Measure 1 will focus on the energy efficiency and sustainability aspects of the center's construction that will lead to Silver LEED Certification. MLK Park, completed in 1936, is an important public space within the community named in 1983 in honor of the American Civil Rights leader who visited the City to deliver a speech in 1960 - marking the center as culturally and historically significant in the State's Central Valley due to the redlining of this community. Upon completion, the community center will serve as a vital community resiliency hub both during emergencies and year-round. The Community center is being built to be completely self-sustaining in the event of climate or other disasters, with the capability to maintain functionality without being powered by the grid. Completion of 30% of the design is expected by June 2024, with the construction unfolding over an anticipated two-year period. This timeline reflects careful planning but is also subject to adjustments based on construction plan finalizations, material availability, and unforeseen challenges. Moreover, securing the necessary permits and adhering to safety and performance standards are critical steps that could influence the project's timeline and effectiveness in achieving its GHG emission reduction targets. The City's Recreation and Parks Department supported by the City's previously contracted consulting firm, MIG, will steer the project.

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<sup>1</sup> <https://kernedc.com/wp-content/uploads/2023/11/Enrgy-Oil-GAs-Fact-sheets-together.pdf>

**b. GHG Reduction Measure 2: Solar on Low-Income Housing**

Since 1972, the Bakersfield Senior Center has served the community as a staple for seniors and residents. The existing center is currently being rebuilt into a new larger community service facility with 36 units of affordable senior housing. For this proposed measure, the City is partnering with the Housing Authority of the County of Kern and the Bakersfield Senior Center to enhance energy efficiency and support low-income tenants by installing solar arrays on the Bakersfield Senior Center's new construction and 36 affordable senior housing units. This project will significantly offset electricity usage for low-income tenants by at least 50% and will surpass the energy efficiency standards set by Title 24. The project's timeline includes completing solar designs by July 2025, constructing solar arrays, and installing them in December 2027. To ensure the success of this measure, third-party energy consultants will verify the installation's adherence to design capacities and the achievement of energy efficiency improvements post-construction. This will ensure the rehabilitation and new construction project meet and exceed established energy standards. Potential delays may primarily arise due to the complexities of the associated construction work. The Housing Authority of the County of Kern will be the project manager for this measure, ensuring minimized risk to the project's timeline by coordinating the solar projects' planning, construction, and commissioning phases.

**c. GHG Reduction Measure 3: Weatherization program for low income residents**

The City will partner with Community Action Partnership of Kern (CAPK) to implement an impactful initiative to weatherize 100 homes in Southeast Bakersfield over the next five years. This weatherization program is designed to boost energy efficiency in a variety of residential settings, including single-family homes and mobile homes, by integrating several energy-saving measures. These include the installation of low-flow showerheads, ceiling fans with LED lights, weatherstripping, comprehensive heating and cooling solutions, and the replacement of inefficient appliances. The program's major tasks are community outreach, processing client eligibility, thorough home assessments, and implementing weatherization measures, coupled with the distribution of client education materials to encourage energy-efficient practices among homeowners. A key component of this measure is its phased approach, with the program set to weatherize 20 homes in its first year and gradually increase its reach, targeting a total of 100 homes by the end of the fifth year. This incremental strategy ensures a manageable workload and allows for adjustments based on feedback and outcomes from the initial phases. CAPK's established processes for identifying and enrolling eligible households will streamline the project, ensuring efficient service delivery. While potential risks include delays or interruptions due to unforeseen challenges, CAPK's extensive experience and established methodologies in weatherization services are anticipated to mitigate these risks effectively. This confidence is backed by CAPK's over 40 years of expertise and a history of servicing more than 12,000 homes and ability to navigate similar challenges in the past, ensuring the smooth execution of the weatherization program without significant disruptions.

- 2. PCAP Measure IN-1.1. Increase production and use of clean electricity:** Carbon-dependent electricity consumption is a major contributing factor to the City's 542,974 MTCO<sub>2</sub>e total building energy emissions. This measure encourages residents and businesses to transition to 100% clean electricity by 2045. The GHG Reduction Measures include the following:

**a. GHG Reduction Measure 4: Citywide Solar PV Systems**

This measure will significantly enhance sustainability efforts by installing two ground-mount solar projects, each with a capacity of 5 MW AC, on City-owned land. Utilizing the Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) rate schedule provided by the local utility, Pacific Gas &

Electricity (PG&E), will allow the City to generate solar power at one location while offsetting electricity usage at 50 other sites, specifically targeting well pumps and lift station pumps. The two solar projects are designed to serve up to 50 pumps used in the City's water and wastewater operations. These installations will substantially reduce greenhouse gas emissions by reducing the electricity consumption of this critical water and wastewater management and contribute to local economic development by promoting green energy solutions within the community. Several key tasks include securing a qualified third-party contractor to design the solar installations and manage the interconnection application process with PG&E. Following the design phase, the contractor will be responsible for material procurement, the physical installation of the solar project, and their long-term maintenance, ensuring sustained energy savings and system efficiency. This project is expected to be completed within a two-year timeframe. Risks associated with this measure include the limited capacity available under PG&E's RES-BCT solar project program. Should this capacity be reached before the City secures the grant, the implementation of the solar projects could be jeopardized. To mitigate this risk, the City is proactively coordinating with PG&E on the details of this project.

**b. GHG Reduction Measure 5: Low-income Energy Efficiency Program**

The City of Bakersfield, in partnership with GRID Alternatives, a renowned nationwide non-profit organization, will provide low-income homeowners with access to solar energy. This collaboration will empower approximately 150 homeowners with solar photovoltaic generating systems over five years, marking a significant stride toward energy equity and sustainability by installing a total of 705 kW of solar power across all participating households. The benefits of these installations extend far beyond the immediate energy savings. The savings per system over the lifetime of an individual installation are projected at around \$20,407. Moreover, the environmental impact is profound, with an expected reduction of 76.14 metric tons of greenhouse gasses per system over its operational lifetime, alongside a total power production of 192,883 kW per system. Looking at the broader impact, the cumulative power installed through this program will reach 705 kW, translating to total savings of approximately \$3,061,050 over the lifetime of the installations. This effort will achieve a staggering total greenhouse gas reduction of 11,400 metric tons, coupled with an impressive total power production exceeding 28 million kW over the lifetime of all installations. Furthermore, Kern Community College District (KCCD) 21st Century Energy Center will partner with Grid Alternatives and Solar on Multi-unit Affordable Housing (SOMAH) to install solar on eligible homes and Multi-unit Affordable Housing Complexes. The 21st Century Energy Center will provide Solar Installer training and the GRID Alternatives and SOMAH installs will serve as work-based learning opportunities for Solar Installation students. This collaboration will result in 225 trained and 155 placed and retrained individuals aligned with Multi-craft Core Curriculum (MC3) resulting in certifications in OSHA 10, NFPA 70e, and NCCER that has been developed in cooperation with employers.

3. **PCAP Measure IN-2.1. Increase EV charging infrastructure:** According to Bakersfield's CAP, on-road transportation accounted for 63% of the city's total emission inventory in 2019. Measure IN-2.1 will significantly enhance the electric vehicle (EV) charging infrastructure to support a transition toward cleaner transportation. The objective is to ensure that 30% of all passenger vehicles in the city are electric by 2030 and to increase the number of medium- and heavy-duty EVs by 30% over current levels by improving the availability and accessibility of charging stations across the city. Measure IN-2.1 includes the following:

**a. GHG Reduction Measure 6: EV Charging Stations and Vehicles**

This measure supports the City of Bakersfield's EV Charger installation and transition to EV vehicle and heavy equipment fleet in compliance with California law, which mandates a transition to electric vehicles (EV) for approximately 40% of its 1,928-unit fleet within the next five years, with a goal of achieving 100% electrification by 2035. This initiative is focused on designing and constructing the necessary infrastructure to support this transition and procuring EV cars, trucks, and heavy equipment to convert a portion of the City's fleet over the next four years. The City plans to develop a Strategy and Phased Transition Plan to effectively manage this comprehensive shift. This involves procuring a consulting firm to conduct an in-depth analysis of the City's Municipal Fleet, craft a Facilities Master Plan, and plan for refueling/charging facilities across various City properties. The transition plan includes various vehicles and equipment, such as solid waste collection vehicles, loaders, excavators, dump trucks, police and fire vehicles, and a range of automobiles, compact cars, pickup trucks, utility trucks, and a bucket truck. In total, 124 vehicles are proposed through this measure for conversion to electric power - a major step towards achieving GHG reduction goals specifically outlined in PCAP Measure IN-2.1. The phased planning, design, and construction of EV stations will span four years.

- 4. PCAP Measure LU-1.1.Improve pedestrian and biking infrastructure, prioritizing investments in disadvantaged communities:** The overarching goal is to encourage walking and biking over car use, aiming to reduce vehicle miles traveled (VMT) by approximately 138 million annually by 2030. This initiative not only supports healthier, more sustainable modes of transportation but also addresses the economic burden of transportation costs for those in LIDAC areas, contributing to equitable community development and environmental benefits. The following GHG Reduction Measures are proposed to help achieve this goal:

**a. GHG Reduction Measure 7: Project E-Bike**

Project E-bike aims to promote sustainable alternative transportation among Bakersfield residents by providing voucher incentives for purchasing electric bikes (e-bikes), including cargo and adaptive models. This project will prioritize low-income individuals and those residing in disadvantaged communities or those with an annual household income at or below 225% of the Federal Poverty Level. By facilitating easier access to e-bikes, the program aims to enhance first- and last-mile connectivity to bus and rail transit options, thereby amplifying the impact of the City's GHG reduction. Additionally, a new high-speed rail station is being designed in downtown Bakersfield that will transform local transit dynamics significantly. The program is structured to offer various voucher amounts, ranging from \$500 to \$2,000 for 4,614 people, with the goal of reducing the reliance on 4,614 gasoline-powered vehicles by 40%. At the conclusion of the project, 4,614 Bakersfield residents will be equipped with e-bikes, supporting a shift towards more environmentally friendly transportation modes. The City's Economic & Community Development Department will collaborate with Bike Bakersfield, a local non-profit organization, for implementation following the model of the State's successful e-bike program. Residents will receive incentives in the form of vouchers, redeemable at authorized e-bike retailers. The voucher discount will be applied directly at the point of sale. In addition to financial incentives for e-bike purchases, the project dedicates a portion of its funding to bike safety and education training, which participants must complete as part of the application process. This educational component is crucial for ensuring new e-bike owners are well-informed about safe riding practices.

**b. GHG Reduction Measure 8: Complete Streets**

The proposed measure is part of the City's larger Complete Streets initiatives that will revitalize five key corridors to promote sustainable transportation and enhance community connectivity, contributing to GHG reduction. Among these include adding 7 miles of bike lanes, 0.2 miles of new sidewalks, and 60 new trees to the 34th Street Corridor; 2.4 miles of bike lanes, 0.8 miles of rebuilt sidewalks, and 65 new trees to 18th and 19th Streets; and 5.25 miles of class 4 cycle track, and rebuilding 3.5 miles of sidewalks to ADA standards, and adding 150 trees to the Niles and Monterey corridor. The project includes streetscape and greening improvements, reducing the urban heat island effect, creating a multimodal transportation environment that emphasizes safety and comfort for pedestrians, bicyclists, e-scooters, and lowering vehicle speed limits, connecting disadvantaged areas to more efficiently to Downtown Bakersfield and the anticipated High-Speed Rail Station.

- 5. PCAP Measure NU-1.1. Increase urban tree canopy and green spaces to reduce the heat island effect and improve air quality:** targeting the planting of 5,000 trees annually until 2045. This measure is designed to help mitigate the urban heat island effect and enhance air quality, contributing to GHG reductions of 885 MTCO<sub>2</sub>e by 2030 and 3,540 MTCO<sub>2</sub>e by 2045. A key benefit is providing relief from extreme heat for residents in low-income disadvantaged communities (LIDAC), who often lack resources to combat heat effects, thereby supporting environmental justice and improving community health. To help meet this goal, the following GHG Reduction Measures are proposed:

**a. GHG Reduction Measure 9: Enhanced Street Trees**

This measure will target the improvement of the City's tree canopy with a climate-appropriate tree palette that will thrive in Bakersfield's evolving climate conditions to help mitigate the forecasted increase in heat durations. By focusing on areas with high need and currently low tree counts across three specific census tracts, the project aims to promote healthier living, enhance walkability, and enhance shade equity throughout the city. Key areas identified for this project include Truxtun Avenue, Millcreek and Central Park, and the Monterey and Niles corridors. Truxtun Avenue, a major gateway into downtown Bakersfield, will see streetscape tree canopy improvements including the planting of new trees and the installation of irrigation systems across its broad medians. Millcreek and Central Park are set to become a citywide attraction with enhanced tree canopy in the park areas and along adjoining parkways, improving the connection to adjacent streetscape improvements. The Monterey and Niles area, a focus of the Public Works complete streets campaign, will benefit from the addition of new trees, shrubs, and permeable paving solutions where appropriate, supported by smart weather-based irrigation. The project will introduce 100 trees along Truxtun Avenue, and 82 trees in Millcreek and Central Park. The City's Recreation and Parks Department along with coordinated efforts with consultants will oversee the project's development. The project has an anticipated four to six-month timeline.

**b. GHG Reduction Measure 10: Tree Plantings and sod for 6 undeveloped parks**

The City of Bakersfield will develop 6 sites into green spaces by laying turf and planting trees. The 6 plots range from 3.2 to 16.5 acres and are designated for future parks and are situated near residential areas. The initiative to transform these vacant lands into vibrant green spaces is a strategic effort to catch up with the pace of residential development and improve the quality of life for Bakersfield's residents. The timeline for developing these parks is estimated to take between 18 to 36 months and includes design, bidding, and construction phases. This duration accounts for potential delays, including those related to

material availability, weather conditions, contractual negotiations, and the schedules of contractors involved in the projects. The City's Recreation and Parks Department will oversee this implementation.

**c. GHG Reduction Measure 11: Median Xeriscaping**

This measure will proactively address water conservation and sustainability through its Turf Replacement Program, which will revitalize fourteen medians across three locations by transitioning from high-water-use turf to drought-tolerant, California-friendly landscaping. This includes the removal of approximately 88,000 square feet of turf, expected to result in an annual water saving of approximately 3,520,000 gallons. In addition, the program involves replacing the existing pop-up spray irrigation systems with more efficient, point-specific drip irrigation systems. The estimated completion timeline is 6-8 months, and considers potential challenges, including material availability, weather conditions, contractual negotiations, and contractor availability. Overseeing this significant transformation is the City's Recreation and Parks Department.

- 6. PCAP Measure MW-2.1. Increase organic waste diversion citywide:** This Measure aims for an 80% waste diversion rate by 2030 and 90% by 2045, with the goal of reducing GHG emissions by 158,715 MTCO<sub>2</sub>e by 2030 and 319,625 MTCO<sub>2</sub>e by 2045. As part of the effort to achieve this goal, the following projects are proposed to boost compost production and minimize landfill waste, contributing to a more sustainable and environmentally friendly waste management system.

**a. GHG Reduction Measure 12: Organic Material Processing Equipment**

The City of Bakersfield operates an expansive Organics Recycling and Composting Facility spanning 96 acres, processing over 15,000 tons of organics in 2023. This measure will further enhance the facilities ability to process organic material by replacing gasoline and diesel powered equipment with EV versions. The proposed acquisition includes a shredder, compost bagger, and electronic trommel screen. This will enhance the facility's efficiency in organics processing operations to divert biodegradable urban organic waste from landfills by increasing the estimated annual tons processed by 2029. The City will implement the measure in phases over the five year period of performance and does not anticipate significant risks in the execution of this measure.

**b. GHG Reduction Measure 13: Recyclables Processing Equipment**

The City of Bakersfield has taken significant strides in advancing its recycling capabilities through the acquisition and subsequent upgrades of its Materials Recovery Facility (MRF) in 2019. Despite facing a series of operational challenges, including mechanical and electrical issues that rendered the sorting line inoperable for extended periods, the City is committed to enhancing the efficiency and environmental sustainability of its recycling operations. The reliance on temporary ground sorting, necessitated by the inoperability of the sorting line, resulted in the loss of up to 60% of recyclable materials—material that was unfortunately sent to landfills. To address these challenges and significantly improve the MRF's operational efficiency, the proposed measure will invest in necessary EV equipment and energy-efficient machinery to effectively divert recyclables from entering the landfill. The proposed acquisitions include one aluminum bailer, sorting line, and cardboard bailer. These investments are designed to revitalize the sorting line with the introduction of electrified and modernized energy-efficient sorting equipment. The City will implement the measure in phases over the five year period of performance and does not anticipate significant risks in the execution of this measure.

### ***B. Demonstration of Funding Need***

Despite the City's proactive efforts to secure a mix of federal and state grants and other financial instruments, the scale and complexity of the proposed GHG Reduction Measures exceed the financial and operational capacities these sources can offer. The proposed initiatives are integral parts of a broader strategy to significantly reduce GHG emissions in Bakersfield. Several funding avenues have been pursued to support the City's GHG reduction measures, with varying degrees of success. Awarded grants including a Strategic Growth Council's Transformative Climate Communities (TCC) grant, a \$10 million USDOT RAISE grant, \$5.19 million in local funds, a \$3.06 million Caltrans Clean California grant, and a \$5,000,000 Community Project Funding appropriation sponsored by Rep. David Valadao's Office, are earmarked for specific portions of the much larger complete streets and active transportation improvement projects. These directly contribute to Bakersfield's overarching PCAP Measures NU-1.1.- Increase urban tree canopy and green spaces to reduce the heat island effect and improve air quality; and LU-1.1- Improve pedestrian and biking infrastructure, prioritizing investments in disadvantaged communities. TCC funds and the pending EPA Community Change Grant submission will also be leveraged to further advance other GHG reduction measures under PCAP Measures BE-1.1 and IN-1.1. While some GHG reduction measure projects have successfully secured partial funding, these have proven insufficient to achieve the citywide comprehensive GHG reduction goals. CPRG funds will bridge this financial shortfall and enable the City to undertake projects of a scale and scope that can serve as models for other jurisdictions nationwide, thereby amplifying the impact of Bakersfield's climate initiatives beyond its immediate geographic boundaries. The need for CPRG funding stems from several critical factors surrounding the extensive infrastructural upgrades required to implement measures for energy efficiency in buildings, the expansion of the EV charging network, and the implementation of sustainable and alternative transportation options. Each of these measures, integral to achieving the City's most effective GHG reduction targets, demands substantial upfront investment, technical innovation, and extensive community engagement throughout the implementation process.

### ***C. Transformative Impact***

In 2005, the City of Bakersfield undertook the Thomas Roads Improvement Program (TRIP). This \$630 million federal investment provided critically needed improvements to Bakersfield's roads after years of neglect and a simultaneous rapid growth in population. Twenty years later, the City of Bakersfield turns its attention to the issue of climate action in a region characterized by some of the worst air quality in the United States. The proposed Climate Pollution Reduction Projects will continue Bakersfield's legacy of doing big things by delivering active solutions to address the urgent need for climate action while leveraging existing technologies to reduce pollution, introducing innovative mitigation approaches, and creating transformative opportunities for program replicability that will make Bakersfield a model for large communities in rural areas to facilitate additional GHG emission reductions on a significantly larger scale. This proposal is fueled by the kindling recognition that Bakersfield, a diverse community impacted by chronic poverty, poor health outcomes, and high levels of exposure to pollution, is a frontline community impacted by climate change.

#### ***Pioneering, Replicable, and Scalable Measures:***

By expanding EV charging infrastructure throughout the city, enhancing clean electricity production, and drastically improving energy efficiency in both residential and non-residential buildings, the City of Bakersfield is setting a precedent for pioneering, replicable, and scalable climate action strategies. The expansion of EV charging infrastructure addresses a crucial barrier to electric mobility—range anxiety,

experienced by EV owners about the availability of charging stations along their journey—while laying down a blueprint that other cities can follow, demonstrating the feasibility of creating a supportive ecosystem for EVs. Simultaneously, Bakersfield's push towards 100% clean electricity by integrating renewable sources provides a replicable framework for other entities to emulate. Furthermore, by implementing comprehensive retrofits and promoting energy efficiency standards in residential and nonresidential buildings, Bakersfield illustrates the potential for significant reductions in energy consumption across diverse building types, offering scalable solutions that can influence national and global energy efficiency practices. Collectively, these GHG reduction measures showcase Bakersfield's role as a leader in climate action, offering the framework model to catalyze the deployment of GHG reduction technologies and practices on a wider scale.

#### *Addressing Hard-to-Abate Sectors:*

The proposed organic and recyclable waste diversion projects will address emissions from the hard-to-abate sector in waste management, which is often challenging due to its intrinsic operational practices and regulatory frameworks. Diverting organic waste from landfills significantly reduces emissions in a sector where traditional GHG mitigation strategies, such as energy efficiency or fuel switching, are not applicable. In addition, composting organic waste and applying the resulting compost to agricultural lands can enhance soil health and increase carbon sequestration resulting in a greater capacity to absorb and retain carbon. This aspect of the waste diversion projects taps into the natural carbon cycle, addressing emissions from agriculture and land use—sectors that are also traditionally hard to abate. Furthermore, diverting recyclable materials from the waste stream reduces the demand for energy-intensive extraction and processing of raw materials, thus impacting the entire lifecycle of products and materials from production through disposal.

#### *Market Transformations:*

The proposed measures focus on transformative opportunities that leverage current technologies and innovative practices for substantial GHG emission reductions that will serve as exemplary replicable programs. Bakersfield aims to lead by example by demonstrating the feasibility and benefits of climate action strategies and inspiring similar initiatives in other jurisdictions. The proposed measures that will improve biking infrastructure and increase access to trails will transform the urban landscape, reducing reliance on personal vehicles and promoting a shift towards sustainable urban living. Bakersfield will become a model for these changes that will catalyze a broader acceptance and adoption of green urban planning principles, influencing market demand for sustainable transportation and housing options. Furthermore, expanding the City's urban tree canopy and accessible green spaces will not only contribute directly to GHG reductions through carbon sequestration but also encourage a market shift towards valuing green infrastructure in urban development, impacting real estate, local economies, and community health in a positive way. This in turn will increase the demand for similar transformative programs that expand GHG emission reductions. Additionally, enhancing the City's EV charging infrastructure to support a transition towards cleaner transportation will also significantly influence market transformations that accelerate the deployment and market adoption of emerging GHG emission reduction technologies and practices.

## **2. Impact of GHG Reduction Measures**

The proposed measures are prioritized for both their near-term and long-term cumulative GHG emission reductions. According to data and calculations provided in the PCAP for each emissions sector, the City's 2019 combined activity resulted in 2,551,089 MTCO<sub>2</sub>e. This MTCO<sub>2</sub>e calculation was made using the



global warming potential (GWP) factors that have been published in the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) which outlines that methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) have GWP factors of 27.9 and 273, respectively (IPCC 2021). The projected GHG emission reductions total approximately 11,049 MTCO<sub>2</sub>e by 2030 and extend to 60,823 MTCO<sub>2</sub>e by 2050. These figures represent the cumulative impact of the thirteen proposed measures, illustrating a significant contribution towards reducing the City's long-term overall GHG emissions while immediately responding with near-term considerable reductions in cumulative GHG emissions. For each of the thirteen GHG reduction measures, individual calculations, explanations, and documentation can be referenced in the Technical Appendix included in this proposal.

***a. Magnitude of GHG Reductions from 2025 through 2030; and from 2025 through 2050***

The City of Bakersfield's GHG reduction measures are estimated to reduce an estimated 11,049 MTCO<sub>2</sub>e from 2025 through 2030 and 60,823 MTCO<sub>2</sub>e from 2025 through 2050. Each measure will enhance energy efficiency and promote the use of sustainable renewable energy to reduce emissions in the near term and ensure that the durability and benefits of these initiatives extend well beyond the immediate future, contributing to long-term environmental sustainability and climate resilience. The durability and estimated MTCO<sub>2</sub>e reductions for the period 2025 through 2030 and from 2025 through 2050 resulting from each measure are as follows:

Measure 1: MLK Community Center: Energy Efficiency: GHG reduction by 565 MTCO<sub>2</sub>e (2025-2030); and 3,718 MTCO<sub>2</sub>e (2025-2050) - This measure's durability stems from the construction of an energy-efficient community center designed to LEED Silver standards, resulting in long-term energy savings and ongoing reduced GHG emissions for decades.

Measure 2: Solar on Low-Income Housing: GHG reduction by 47 MTCO<sub>2</sub>e (2025-2030); and 189 MTCO<sub>2</sub>e (2025-2050)- The installation of 144 KW solar arrays on 36 affordable housing provides durable energy savings (at least 50%) and ongoing emissions reductions, with solar systems typically lasting 25-30 years.

Measure 3: Weatherization for Low-Income Residents: GHG reduction by 243 MTCO<sub>2</sub>e (2025-2030); and 1,230 MTCO<sub>2</sub>e (2025-2050) - Weatherization improvements such as insulation, energy-efficient windows, and HVAC systems not only reduce emissions upon implementation but continue to provide energy savings and GHG reductions throughout the lifetimes of the installed measures.

Measure 4: Citywide Solar PV System: GHG reduction by 3,835 MTCO<sub>2</sub>e (2025-2030); and 10,962 MTCO<sub>2</sub>e (2025-2050)- This large-scale solar installation offers a significant and long-lasting reduction in GHG emissions, with a typical lifespan of 25-30 years, contributing to a sustainable energy supply for the city over decades to come.

Measure 5: Low-Income Energy Efficiency Program: GHG reduction by 324 MTCO<sub>2</sub>e (2025-2030); and 1,013 MTCO<sub>2</sub>e (2025-2050)- Installing 4.7 kW solar photovoltaic electrical generating systems in 150 single family low-income residential dwellings will have enduring effects by permanently reducing energy demand and associated GHG emissions over the long term. Per system over the lifetime of each Installation is estimated to result in a 76.14 MTCO<sub>2</sub>e reduction with an expected 192,883kW production over that same time period.

Measure 6: EV Charging and Vehicles: GHG reduction by 4,317 MTCO<sub>2</sub>e (2025-2030); and 35,046 MTCO<sub>2</sub>e (2025-2050) - The shift towards electric vehicles and the supporting charging infrastructure will fundamentally change the amount of transportation emissions over a long period of time. The durability of the reductions are directly tied to the useful life and extended use of EVs replacing gasoline and diesel vehicles.

Measure 7: Project E-Bike: GHG reduction by 1,266 MTCO<sub>2</sub>e (2025-2030); and 6,079 MTCO<sub>2</sub>e (2025-2050) - Promoting the use of e-bikes as a sustainable transportation alternative has a lasting impact by reducing reliance on fossil fuel-powered vehicles and encouraging healthier, low-emission mobility options.

Measure 8: Complete Streets: GHG reduction by 35 MTCO<sub>2</sub>e (2025-2030); and 283 MTCO<sub>2</sub>e (2025-2050)- Infrastructure improvements to support pedestrian, bicycle, and public transit use not only provide immediate GHG emissions reductions but also encourage a lasting shift in transportation behaviors towards more sustainable modes.

Measure 9: Enhanced Street Trees: GHG reduction by 24 MTCO<sub>2</sub>e (2025-2030); and 127 MTCO<sub>2</sub>e (2025-2050)- Planting trees contributes to long-term carbon sequestration and urban cooling, with mature trees continuing to absorb CO<sub>2</sub> and provide environmental benefits for many decades.

Measure 10: Tree Plantings and Sod for Undeveloped Parks: GHG reduction by 69 MTCO<sub>2</sub>e (2025-2030); and 368 MTCO<sub>2</sub>e (2025-2050)- Creating green spaces in undeveloped areas offers durable benefits by enhancing carbon sequestration, improving air quality, and reducing urban heat island effects.

Measure 11: Median Xeriscaping: GHG reduction by 6 MTCO<sub>2</sub>e (2025-2030); and 12 MTCO<sub>2</sub>e (2025-2050)- Replacing turf with drought-tolerant landscaping reduces water use and associated energy consumption for irrigation, providing enduring environmental benefits.

Measure 12: Organic Material Processing Equipment: GHG reduction by 295 MTCO<sub>2</sub>e (2025-2030); and 1,660 MTCO<sub>2</sub>e (2025-2050)- Investing in equipment for organic waste processing not only diverts waste from landfills, reducing methane emissions, but also supports the long-term sustainability of waste management practices.

Measure 13: Recyclables Processing Equipment: GHG reduction by 24 MTCO<sub>2</sub>e (2025-2030); and 135 MTCO<sub>2</sub>e (2025-2050)- Enhancing the City's recycling capabilities leads to sustained reductions in GHG emissions by diverting waste from landfills and decreasing the need for new materials production, contributing to a circular economy.

#### ***b. Cost Effectiveness of GHG Reductions***

The City of Bakersfield's proposed GHG reduction measures are structured to optimize both the environmental impact and financial efficiency of its GHG reduction efforts. A central aspect of assessing the viability and success of these initiatives is their cost-effectiveness in terms of estimated MTCO<sub>2</sub>e reductions achieved per dollar spent for the period from 2025 through 2030. Over this period, the cumulative GHG reductions attributed to the thirteen measures are quantitatively estimated to be 11,049 MTCO<sub>2</sub>e and the total requested CPRG funding \$188,009,473. Utilizing these figures, the cost-effectiveness of the GHG reductions is calculated by dividing the total requested funding by the sum of quantified GHG reductions. This results in a cost-effectiveness calculation as follows:

$$\underline{\$188,009,473 / 11,049 \text{ MTCO}_2\text{e} = \$17,016 \text{ per MTCO}_2\text{e (2025-2030)}}$$

This figure represents a quantitative benchmark to assess the financial investment required to achieve a one metric ton reduction in CO<sub>2</sub> equivalent emissions through the CPRG implementation grant funding from 2025 to 2030. It encapsulates the total requested CPRG funding and the anticipated GHG reductions over the initial five-year period. The cost per metric ton of CO<sub>2</sub> equivalent reduced through these measures reflect a substantial but necessary investment in long-term sustainability and climate action. It underscores the City's dedicated effort toward addressing climate change through practical, impactful projects that will not only reduce GHG emissions but also enhance the quality of life for its residents now and in the future.

### 3. Environmental Results – Outputs, Outcomes, and Performance Measures

#### a. Expected Outputs and Outcomes

GHG Reduction Measure	Outputs/ Outcomes	Outcomes/ Cumulative Metric Tons of GHG Emissions (2025- 2030)	Outcomes/ Cumulative Metric Tons of GHG Emissions (2025- 2050)
<b>1: Dr. Martin Luther King, Jr. Community Center: Energy Efficiency</b>	-Completion of energy-efficient community center - LEED Silver Certification - Community resiliency hub creation	565	3,718
<b>2: Solar on Low-Income Housing</b>	-Installation of 144 KW system solar panels on the Bakersfield Senior Center’s new construction of 36 affordable senior housing units with senior center - Significant offset in electricity usage for low-income tenants	47	189
<b>3: Weatherization program for low income residents</b>	- Installation of energy-saving measures in 100 homes - Increased energy efficiency and reduced energy bills for residents.	243	1,230
<b>4: Citywide Solar PV Systems</b>	-Installation of one 5 MW AC ground-mount solar project to offset electricity usage at 25 sites - Reduction in electricity consumption for 25 water and wastewater pumps	3,835	10,962
<b>5: Low-income Energy Efficiency Program</b>	- Provision of solar systems to 150 low-income homes - Training for 225 and placement of 155 individuals in solar installation jobs	324	1,013
<b>6: EV Charging Stations and Vehicles</b>	- Installation of EV charging stations - Conversion of 124 City fleet vehicles to EV	4,317	35,046
<b>7: Project E-Bike</b>	- Distribution of 4,614 e-bike vouchers - Increased use of sustainable transportation modes.	1,266	6,079
<b>8: Complete Streets</b>	- Enhancement of 5 urban corridors for non-motorized transportation - Creation of 14.65 miles of bike lanes, 4.5	35	283

	miles of new sidewalks, and 275 new trees		
<b>9: Enhanced Street Trees</b>	<ul style="list-style-type: none"> <li>- Increased tree canopy cover by adding 182 trees</li> <li>- Improved air quality and reduced urban heat island effect</li> </ul>	24	127
<b>10: Tree Plantings and sod for 6 undeveloped parks</b>	<ul style="list-style-type: none"> <li>- Addition of 530 trees across 6 new green spaces</li> <li>- Enhanced community wellbeing and environmental sustainability</li> </ul>	69	368
<b>11: Median Xeriscaping</b>	<ul style="list-style-type: none"> <li>- Xeriscaping of 14 medians to convert 88,000 square feet of turf</li> <li>- Reduced annual water usage by 3,520,000 gallons</li> </ul>	6	12
<b>12: Organic Material Processing Equipment and vehicles</b>	<ul style="list-style-type: none"> <li>- Provides 3 critical large energy efficient equipment</li> <li>-increased capacity for organic waste processing</li> <li>- Reduction in landfill waste and methane emissions</li> </ul>	295	1,660
<b>13: Recyclables Processing Equipment</b>	<ul style="list-style-type: none"> <li>-Provides 3 critical large energy efficient equipment</li> <li>- Enhanced recycling capabilities</li> <li>- Reduction in recyclable materials sent to landfill</li> </ul>	24	135

***b. Performance Measures and Plan***

The expected outputs and outcomes for each proposed GHG reduction measure will be tracked and measured through systematic data collection and analysis. Outputs will be quantified to assess program productivity, meanwhile, outcomes will be evaluated through client feedback, and quantified GHG emission reductions. Specifically, the plan for tracking and measuring progress toward achieving the expected outputs and outcomes for each measure will entail the following:

1. Dr. Martin Luther King, Jr. Community Center: Energy Efficiency: The City will utilize smart metering technology to monitor energy consumption before and after construction. Achievements towards LEED Silver Certification will also be documented as a benchmark for sustainability.
2. Solar on Low-Income Housing: Solar panel installation progress on 36 units will be phased to ensure completion of July 2027. The City will monitor the electricity generated by the installed solar arrays and compare it with the reduction in grid electricity usage. This data will be analyzed to estimate the GHG emission reductions and the impact on energy expenditures for low-income tenants.
3. Weatherization Program for Low-Income Residents: The number of homes weatherized and the installation of energy-saving measures will be quantified throughout the program to ensure 100

homes are served. Pre-and post-weatherization energy audits and surveys will be done to measure improvements in energy efficiency.

4. Citywide Solar PV Systems: The City will collect and analyze data from the 5 MW AC solar PV system, to assess the reduction in grid electricity consumption and estimate overall GHG emission reductions.
5. Low-Income Energy Efficiency Program: The City will document the number of solar systems installed for low-income homes and monitor the training and job placement in the solar installation sector. The City will evaluate the GHG emission reductions based on solar energy production data and the number of job placements.
6. EV Charging Stations and Vehicles: The City will monitor the usage of installed EV charging stations and track the conversion of the city fleet to electric vehicles. The GHG emission reductions from decreased fossil fuel consumption will be calculated using fleet fuel usage data.
7. Project E-Bike: The City will record the distribution of e-bike vouchers and assess their utilization. Surveys will be conducted with participants to estimate the reduction in car trips and corresponding GHG emission reductions.
8. Complete Streets: The City will monitor enhancements in the proposed 5 urban corridors and increased pedestrian-friendly paths. Traffic studies and community surveys will be used to measure changes in transportation modes and quantify GHG emission reductions.
9. Enhanced Street Trees: The City will track the number of trees planted and monitor their growth, utilizing forestry models to estimate carbon sequestration benefits and assess improvements in air quality and urban heat island effects.
10. Tree Plantings and Sod for 6 Undeveloped Parks: The City will document the development of the proposed new green spaces. Environmental benefits, including carbon sequestration and community wellbeing improvements, will be assessed.
11. Median Xeriscaping: The City will track the square footage of turf converted to xeriscaping. Water usage data will be analyzed to estimate water savings.
12. Organic Material Processing Equipment and Vehicles: The City will track the quantity of organic waste processed and diverted from landfills. Methane emission reductions from the diverted organic waste will be calculated using EPA models or equivalent methodologies.
13. Recyclables Processing Equipment: The City will measure increases in recyclable material recovery rates. Sorting data will be analyzed to estimate GHG emission reductions from reduced landfilling of recyclable materials.

**c. Authorities, Implementation Timeline, and Milestones**

GHG Reduction Measure 1: Dr. Martin Luther King, Jr. Community Center: Energy Efficiency		
<b>Responsible Parties</b>	City of Bakersfield	MIG - the City's previously contracted consulting firm for this project
<b>Roles &amp; Responsibilities</b>	City Recreation and Parks departments will facilitate securing the necessary permits and oversee the coordination of the overall project	MIG will deliver 30% design for construction, community engagement, and achieving Silver LEED certification
<b>Timeline &amp; Milestones</b>	Month 1-30	Achieve 30% design by June 2024; Construction anticipated over 2 years
GHG Reduction Measure 2: Solar on Low-Income Housing		
<b>Responsible Parties</b>	Housing Authority of Kern	Bakersfield Senior Center
<b>Roles &amp; Responsibilities</b>	Housing Authority will coordinate all activity related to the planning, construction, commissioning of the solar project on the property and provide community engagement and outreach throughout the project implementation	Senior Center holds site control of the property and will participate in the project design and implementation as well as participate in community engagement and outreach regarding the project
<b>Timeline &amp; Milestones</b>	Month 1-42	Solar design; Construction of solar arrays; and Complete installation of solar arrays on 36 affordable senior housing units
GHG Reduction Measure 3: Weatherization program for low income residents		
<b>Responsible Parties</b>	Community Action Partnership of Kern	
<b>Roles &amp; Responsibilities</b>	Community Action Partnership of Kern will weatherize 100 homes in the Southeast community during the five-year project term.	
<b>Timeline &amp; Milestones</b>	Month 1-12	Outreach and awareness campaign to engage the community and identify potential participants; Complete client eligibility and intake forms; Begin weatherization efforts for the first 20 homes;

		Initiate data reporting and sharing with Kern Community College District and Grid Alternatives, partners in the Solar Installation and Energy Efficiency collaborative.
	Month 13-24	Continue outreach efforts to expand program participation; Process client eligibility for additional homes; Weatherize an additional 20 homes; Share program data and progress reports with partners
	Month 25-36	Intensify outreach activities to reach more households; Process client eligibility for program; Weatherize an additional 25 homes; Continue data reporting and sharing efforts with partners
	Month 37-48	Sustain outreach efforts to maintain community engagement; Process client eligibility for program; Weatherize 25 more homes; Provide updated program data and progress reports to partners
	Month 49-60	Conduct a comprehensive evaluation of program outcomes and impact; Complete weatherization of the final 10 homes, meeting the target of 100 homes by the end of the year; Develop a sustainability plan to ensure long-term benefits and continued support for program participants; Share final program data and outcomes with the City and partners
<b>GHG Reduction Measure 4: Citywide Solar PV Systems</b>		
<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles &amp; Responsibilities</b>	The City will coordinate and oversee the procurement of a qualified contractor for design, procurement of material and installation. The City will also be responsible for filing an interconnection application with the local electric utility, Pacific Gas & Electricity (PG&E)	
<b>Timeline &amp; Milestones</b>	Month 1-6	Procure qualified contractor for solar project design and perform engineering for the solar projects, including filing the interconnection applications with PG&E
	Month 7-24	Procurement, construction, and utility interconnection of one 5 MW AC ground mount solar project
<b>GHG Reduction Measure 5: Low-income Energy Efficiency Program</b>		
<b>Responsible Parties</b>	GRID Alternatives Central Valley	Kern Community College District (KCCD) 21st Century Energy Center
<b>Roles &amp;</b>	Will install one hundred fifty (150) single	GRID Alternatives will partner with KCCD to provide its single-family solar

Responsibilities	family residential dwellings with solar photovoltaic electrical generating systems at no charge to the participants.		installation sites as training opportunities for KCCD students wishing to gain solar installation career opportunities, electrical trade apprenticeships, construction internships and apprenticeships, and certification in CPR and OSHA 10 training.
Timeline & Milestones	Month 1-60	-KCCD will recruit and enroll participants and conduct three Electrical Apprenticeship Readiness trainings per year; one EVSE charging station operations and maintenance training per year; and three solar installation trainings per year -GRID Alternatives will identify and recruit homeowners for the program; Conduct one client Energy Efficiency Workshop per quarter -GRID Alternatives will process homeowner client eligibility including design analysis and development, solar site plans, design, structural, electrical and site safety plan, pay and submit permit packets to City, and installation for 30 clients per year, completing all 150 installations	
GHG Reduction Measure 6: EV Charging Stations and Vehicles			
Responsible Parties	City of Bakersfield		
Roles & Responsibilities	The City will procure and oversee a consulting firm for a Municipal Fleet assessment, creation of a Facilities Master Plan, and develop a plan to install refueling/charging facilities at various City properties. Simultaneously the consultant will work on a Phase I design to be bid for construction in Year 1.		
Timeline & Milestones	Month 1-12	Planning, Design Phase 1, Construction Phase 1 Procure 25% of proposed EV vehicles and equipment	
	Month 13-24	Design Phase 2, Construction Phase 2 Procure 25% of proposed EV vehicles and equipment	
	Month 25-36	Design Phase 3, Construction Phase 4 Procure 25% of proposed EV vehicles and equipment	
	Month 37-48	Design Phase 4, Construction Phase 4 Procure 25% of proposed EV vehicles and equipment	
GHG Reduction Measure 7: Project E-Bike			



<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles &amp; Responsibilities</b>	The City's Economic & Community Development Department will administer the program by following the State's widely successful e-bike program. This includes promoting and recruiting eligible participants, conducting participant surveys, and administering e-bike safety training.	
<b>Timeline &amp; Milestones</b>	Month 1-48	Recruit and enroll eligible participants on a rolling basis distributing a total of 4,614 vouchers
<b>GHG Reduction Measure 8: Complete Streets</b>		
<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles &amp; Responsibilities</b>	The City will procure and oversee a consulting firm for the design and construction improvements of five key corridors that will promote sustainable transportation and enhance community connectivity	
<b>Timeline &amp; Milestones</b>	Month 1-12	Complete design and permitting
	Month 13-36	Construction improvements of the proposed corridors: 7 miles of bike lanes, 0.2 miles of new sidewalks, and 60 new trees to the 34th Street Corridor; 2.4 miles of bike lanes, 0.8 miles of rebuilt sidewalks, and 65 new trees to 18th and 19th Streets; and 5.25 miles of class 4 cycle track, rebuilding 3.5 miles of sidewalk, and adding 150 trees to the Niles and Monterey corridor
<b>GHG Reduction Measure 9: Enhanced Street Trees</b>		
<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles &amp; Responsibilities</b>	The City's Recreation and Parks Department will procure and oversee a consulting firm to design and install irrigation infrastructure and trees across identified areas with low tree counts.	
<b>Timeline &amp; Milestones</b>	Month 1-6	Procurement, design, and installation of irrigation infrastructure and 100 trees along Truxtun Avenue, 82 trees in Millcreek and Central Park area
<b>GHG Reduction Measure 10: Tree Plantings and sod for 6 undeveloped parks</b>		
<b>Responsible Parties</b>	City of Bakersfield	

<b>Roles &amp; Responsibilities</b>	The City's Recreation and Parks Department will procure and oversee a consulting firm to design and install irrigation infrastructure, trees, and sod across the six identified lots.	
<b>Timeline &amp; Milestones</b>	Month 1-36	Procurement, design, and installation of irrigation infrastructure, sod, and 10 trees per acre of the combined nearly 53 acres across the six sites, totaling 530 trees
<b>GHG Reduction Measure 11: Median Xeriscaping</b>		
<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles &amp; Responsibilities</b>	The City's Recreation and Parks Department will procure and oversee a consulting firm to design and install appropriate irrigation infrastructure and xeriscaping across the fourteen identified medians.	
<b>Timeline &amp; Milestones</b>	Month 1-8	Procurement, design, removal of approximately 88,000 square feet of turf, installation of irrigation infrastructure, and xeriscaping installation
<b>GHG Reduction Measure 12: Organic Material Processing Equipment</b>		
<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles &amp; Responsibilities</b>	The City will procure the proposed equipment in phases over the five year period.	
<b>Timeline &amp; Milestones</b>	Month 1-60	Acquire the proposed EV equipment including a shredder, compost bagger, and electronic trommel screen; increase the estimated annual tons of organic material processed by 2029
<b>GHG Reduction Measure 13: Recyclables Processing Equipment</b>		
<b>Responsible Parties</b>	City of Bakersfield	
<b>Roles/Responsibilities</b>	The City will procure the proposed equipment in phases over the five year period.	
<b>Timeline &amp; Milestones</b>	Month 1-60	Acquire the proposed EV equipment including an aluminum bailer, sorting line, and cardboard bailer; increase the estimated annual tons of recyclable material processed by 2029

#### **4. Low-Income and Disadvantaged Communities**

##### **a. Community Benefits**

The City of Bakersfield's approach to implementing GHG reduction measures is deeply rooted in addressing the chronic air quality issues and environmental injustices that disproportionately affect low-income and disadvantaged communities within the region. Bakersfield has faced many challenges, including, but not limited to, poor air quality, poverty, substandard housing, and unemployment, which collectively have hindered its progression, growth, and prosperity. The projects will impact census tracts that are among the most disadvantaged in California and the United States, based on indicators from the EPA's EJScreen tool. Based on an analysis provided by EJScreen, the project area scores in the 91st percentile for Particulate Matter compared to other areas in the United States, the 98th percentile for Ozone emissions, the 80th percentile for traffic proximity, the 77th percentile for People of Color, the 66th percentile for people qualifying as low-income, the 78th percentile for limited English, the 73rd percentile for unemployment, the 79th percentile for individuals with less than a high school education, and the 53rd percentile for low life expectancy. 52% of residents are Hispanic, 6% are African American, and 31% are White.

The City's unique history has significantly shaped its current identity. In the 1930s, many African American families moved to Bakersfield in search of work in the agriculture industry, mainly cotton harvesting. Largely banned from living in the city limits, many African American families settled in what later became known as the Sunset/Mayflower Tract. While the City of Bakersfield did not formally accept or adopt a redlining map, the area would have met the criteria for redlining since the overall socioeconomic impacts on the community were the same. Southeast Bakersfield continues to be one of California's most disadvantaged communities, still grappling with historically being unserved and the lingering impacts of discrimination, historic redlining practices, and nearly a century's worth of underinvestment.

Furthermore, the area's air quality is among the worst in the United States and is designated as a nonattainment area, according to the Environmental Protection Agency. Historically, the region's economy has relied on the agriculture, oil and gas production, manufacturing, and services sectors — high-emissions sectors that further contribute to the region's poor air quality. The proposed reduction measures are designed to significantly benefit areas that qualify as EPA IRA and Justice40 (CEJST) disadvantaged communities. According to data and calculations provided in the PCAP for each emissions sector, the City's 2019 activity resulted in 2,551,089 MTCO<sub>2</sub>e. As a result of these measures, an estimated cumulative of 60,823 MTCO<sub>2</sub>e will be reduced from 2025 through 2050, thus providing substantial long-term direct and indirect benefits to disadvantaged communities. These benefits include:

- **Mitigating Climate Impacts:** Bakersfield is at risk of extreme heat, drought, wildfires, and flooding — climate change-related hazards threatening the community's well-being and resilience. Average annual temperatures in the City are projected to rise between 5 and 8 °F by the end of the century, depending on the level of future GHG emissions. This increase in average annual temperatures correlates to a significant projected increase in the number of extreme heat events (e.g., extreme heat days, heat waves) the community will face. According to the Intergovernmental Panel on Climate Change (IPCC)<sup>2</sup> reducing GHG emissions is a central

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<sup>2</sup> Intergovernmental Panel on Climate Change (IPCC) <https://www.ipcc.ch/report/ar6/syr/>

mitigation strategy to reduce risks associated with wildfires, drought, extreme weather events, and other climate change-related hazards. Therefore, the proposed measures, such as enhancing urban green spaces, will reduce the urban heat island effect, thereby reducing the severity of extreme heat events that are becoming more common due to climate change.

- **Increased Resilience to Climate Change:** Expanding urban tree canopies and green spaces serve dual purposes. They not only capture CO<sub>2</sub> but also contribute to reducing the urban heat island effect by providing shade and cooling. This, in turn, also reduces energy demand for air conditioning, thus reducing GHG emissions. This dual benefit enhances the community's resilience to the adverse effects of climate change.
- **Improved Public Health:** Reducing emissions from sources such as transportation and industrial activities will simultaneously decrease the levels of harmful co-pollutants, including nitrogen oxides (NO<sub>x</sub>), ozone, and particulate matter (PM<sub>2.5</sub>). According to the Lancet Countdown on Health and Climate Change<sup>3</sup>, a “zero-carbon transition will not only avoid the worst health impacts of climate change but can simultaneously deliver major health and socioeconomic co-benefits.” The City of Bakersfield is doing its part to likely be the first jurisdiction in California to move toward zero-carbon within the next 25 years, leading the way toward significant public health improvements, such as significantly fewer new asthma cases and reductions in acute respiratory-related conditions.
- **Economic and Workforce Benefits:** The transition to clean electricity will forge high-quality jobs and new workforce training opportunities in the renewable energy, building retrofitting, and green infrastructure sectors. As previously mentioned, KCCD 21st Century Energy Center will partner with Grid Alternatives and SOMAH to install solar on eligible homes and Multi-unit Affordable Housing Complexes. The 21st Century Energy Center will provide Solar Installer training and the GRID Alternatives and SOMAH installs will serve as work-based learning opportunities for Solar Installation students, resulting in 225 trained and 155 placed and retrained individuals. The 21st Century Energy Center will partner with Kern County Electrical Apprenticeship to provide Electric Vehicle Charging Infrastructure training. Participants of both the Solar training and EV Infrastructure training will receive Electrical Apprenticeship readiness training preparing them to be strong candidates for acceptance in to the Electrical Apprenticeship program. These opportunities are pivotal in contributing toward paths to economic mobility and stability for individuals facing barriers to employment, especially those residing in historically low-income and disadvantaged communities.
- **Access to Services and Improved Quality of Life:** Although transitioning residential and non-residential buildings into clean energy offers significantly lower energy costs and long-term savings for residents and businesses, the initial cost can be a barrier for low-income households. The project includes offering financial incentives and subsidy programs to ensure these technologies are accessible and affordable to all community members. Furthermore, these measures will provide training opportunities to generate high-quality family-sustaining green jobs. The measures proposed will improve access to clean transportation alternatives, reduce energy costs through efficiency upgrades and renewable energy, and enhance community spaces through green infrastructure projects. These improvements contribute to a higher quality of life, including increased access to services and amenities, improved housing quality, and enhanced community beautification. Additionally, enhancing the EV charging network supports the shift

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<sup>3</sup> Lancet Countdown on Health and Climate Change <https://www.thelancet.com/countdown-health-climate>

towards cleaner transportation while increasing infrastructure supporting active transportation, further decreasing reliance on fossil-fuel-powered vehicles. This improved walkability and bike-ability enhances access to transportation alternatives and facilitates mobility and access to services.

In implementing these measures, Bakersfield recognizes the potential for indirect benefits, such as increased energy resilience, and indirectly supporting local food production systems by increasing the diversion of organic waste and recyclables from landfills. It is committed to continuously assessing, quantifying, and reporting on both the benefits and any avoided disbenefits to low-income and disadvantaged communities. This approach includes monitoring reductions in co-pollutants and evaluating the health and economic impacts of the GHG reduction measures to ensure that the initiatives deliver on their promise of creating more resilient, healthy, and equitable communities.

#### ***b. Community Engagement***

The projects proposed in this application are built upon a foundation of inclusivity, collaboration, and shared cultural pride. Although many of Bakersfield's challenges have been built up through nearly a century's worth of neglect, the vision for the proposed GHG reduction investments is part of a comprehensive community-led effort known as Southeast Strong. Over the past three and a half years, as part of local efforts to apply for the Strategic Growth Council's Transformative Climate Communities (TCC) program (awarded in 2023), the City engaged community members to collaboratively shape the vision for the Southeast Strong initiative. TCC requires applicants to work closely with residents and community-based organizations in the project area to develop a package of collective impact investments that will revitalize disinvested communities and catalyze sustained investment in these areas over time. This has created a strong foundation in which meaningful engagement with low-income and disadvantaged communities has been continuously included in the development and will continue to influence the implementation of the GHG reduction measures throughout the life of this grant.

Active participation and engagement of the local community in the planning and implementation process is crucial. Their input, insights, and support have been instrumental in developing the list of projects in this proposal, which are based on the community's needs, priorities, and aspirations. Recent community-led efforts, including the TCC outreach, the Reimagining Martin Luther King Jr. Park, and the 2045 General Plan update, show a city that intentionally plans towards a more sustainable future with reduced impacts from greenhouse gas and other harmful emissions and enhanced community health. This includes months of community meetings, surveys, and other information-gathering and community engagement efforts. From this visioning process project priorities were developed that include: (1) enhanced recreation amenities, facilities and green space; (2) improve quality of life by creating safe and vibrant social spaces; (3) inspire play, healthy activities, and fun; (4), involve partners to reduce health disparities in the community; (5) reduce the urban heat island effect with enhanced shading; (6) incorporate the community's history, culture, and identity; (7) revitalize the neighborhood and support local business. The City will continue to leverage the community partners' strengths to implement transformative projects that reduce GHGs, address historic underinvestment, and provide new opportunities and connectivity to low-income and disadvantaged residents.

#### ***5. Job Quality***

The City of Bakersfield will leverage its relationship with KCCD 21st Century Energy Center to generate high-quality, family-sustaining green jobs. KCCD will implement a workforce training component based

on solar installation education and career development in collaboration with GRID Alternatives, SOMAH, and Kern County Electrical Apprenticeship. This joint effort will introduce residents to clean energy and clean energy careers, including electrical apprenticeship readiness, solar installation, solar business development (sales and marketing), and a solar entrepreneurship program. A focal point is the Solar Array Installation project which will provide work-based learning opportunities to create high-quality green jobs that will conform to Davis-Bacon and requirements for federal labor standards for publicly funded projects. The cumulative efforts of project partners and project implementation will provide community members access to employment opportunities that will provide economic prosperity in the growing field of residential and non-residential building weatherization and energy retrofits.

### ***Programmatic Capability and Past Performance***

#### ***a. Past Performance***

Over the past three years, the City of Bakersfield has successfully managed various projects and programs funded by federal and non-federal assistance agreements. These have enhanced the community's infrastructure, environmental sustainability, and social services while adhering to federal and state standards. Noteworthy among these projects are the following:

**Rebuilding American Infrastructure with Sustainability and Equity (RAISE): Garces Memorial Circle Enhancements**, funded by the Office of the Secretary of Transportation under agreement number CCL 5109273 (CFDA: 20.933). This project significantly enhanced pedestrian and cyclist facilities around Chester Ave, improving urban infrastructure while adhering to federal labor standards. The project's contact, Colleen Vidinoff, Senior Transportation Engineer at CalTrans Local Assistance (District 6), can be reached at (559) 981-7312 or [Colleen.Vidinoff@dot.ca.gov](mailto:Colleen.Vidinoff@dot.ca.gov).

**Clean California: Kentucky Street Greening Project** (U29140-0), in collaboration with the California Department of Transportation. This project transformed Kentucky Street into a shaded, walkable corridor, providing much-needed green space in a historically disadvantaged community and creating sustainable and inclusive urban environments. Becki Abrams, Grants Administrator at the California Natural Resources Agency, is the contact for this project and can be reached at [becki.abrams@resources.ca.gov](mailto:becki.abrams@resources.ca.gov) or (916) 651-2482.

**Homeless Housing, Assistance and Prevention Program Round 3 (HHAP-3)**, under agreement number 22-HHAP-10021 with the California Interagency Council on Homelessness, prioritized housing solutions and supportive services for homeless and at-risk populations. Bakersfield's effective management of this complex program addresses critical social issues through coordinated services and support. The grant program is managed through the Cal ICH Grants Monitoring Unit, which can be contacted at [calichgrants@bcsh.ca.gov](mailto:calichgrants@bcsh.ca.gov).

**CaliforniansForAll Youth Workforce Development Program: Bakersfield Youth Jobs Program** (JP1008), funded by the California Office of Planning and Research, provided employment opportunities for 30 local youth. Bakersfield exceeded project milestones and reporting requirements while enhancing the local workforce's skills and opportunities. Josh Lord, #CaliforniansForAll Youth Jobs Corp Director, is the contact person and can be reached at (916) 261-6621 or [josh.lord@cv.ca.gov](mailto:josh.lord@cv.ca.gov).

**Land and Water Conservation Grant: Sports Village Project** (C8966016), awarded by the California Department of Parks and Recreation, involves the addition of five football fields to the Bakersfield Sports Village. This project is expanding the City's recreational infrastructure and is managed by Melinda

Steinert, Project Officer at the Office of Grants and Local Services, who can be contacted at Melinda.Steinert@parks.ca.gov or 916-204-9223.

***b. Reporting Requirements***

The City of Bakersfield has a track record of compliance with reporting requirements for all assistance agreements listed. This is achieved through a demonstrated consistent and thorough approach to monitoring, evaluation, and communication throughout each project's lifecycle. The descriptions below detail the City's reporting history, compliance duration, and progress achieved under each agreement.

**RAISE: Garces Memorial Circle Enhancements**

Period of Performance: May 15, 2022 - June 30, 2024

The City diligently submitted interim and final reports for this project, adequately detailing progress towards enhanced pedestrian and cyclist facilities around the Garces Memorial Circle. These reports have been accepted as meeting all requirements. The city effectively communicates achievements and any challenges encountered, ensuring transparency and accountability in project implementation.

**Clean California: Kentucky Street Greening Project**

Period of Performance: April 26, 2019 - April 1, 2023

For this project, the City of Bakersfield successfully provided regular updates about Kentucky Street's transformation into a shaded, pedestrian-friendly corridor. The reporting covered the project's outputs and outcomes that impacted local community livability and environmental sustainability. The city's reports were timely and comprehensive, reflecting the progress made in achieving the project's goals.

**HHAP-3**

Period of Performance: October 28, 2021 - June 30, 2026

Throughout the HHAP-3 project, the City has been proactive in submitting interim reports that accurately reflect the progress in providing housing solutions and supportive services for homeless and at-risk youth. The City's reports have been crucial in documenting the strides made towards addressing homelessness, providing mental health support, outlining successes, and addressing any setbacks with transparency.

**Bakersfield Youth Jobs Program**

Period of Performance: March 30, 2022 - September 30, 2024

In its reporting for the Youth Job Corps program, the City has shown exemplary compliance, detailing the implementation of its workforce development program. The reports communicate the City's progress in creating employment opportunities for 30 youth and successfully met and exceeded every project milestone and reporting requirements.

**Land and Water Conservation Grant: Sports Village Project**

Period of Performance: September 23, 2019 - June 30, 2023

The City's reports for the Sports Village Project consistently demonstrated adherence to reporting requirements throughout the project's milestones for the expansion of recreational facilities. The City provided detailed accounts of the project's progress, from groundbreaking to completion, accurately reporting on the outputs and outcomes during the project duration.

***c. Staff Expertise***

The City of Bakersfield is a full-service charter city with eleven departments, four special divisions, almost 2,000 FTEs, and numerous part-time, seasonal, and contract employees. The City operates under the Council-Manager form of government with an adopted FY 2023-24 annual operating budget of \$695,384,796. Policymaking and legislative authority are vested in the City Council, which consists of a Mayor and a seven-member Council.

The City's Economic and Community Development Department (ECD), comprising four divisions: Community Development, Economic Development, Affordable Housing and Neighborhood Vitality, and Community Revitalization, will serve as the project lead on the program and will coordinate activities between City departments and other community partners. ECD's experience and capacity are evidenced via the Community Development, Economic Development, and Affordable Housing and Neighborhood Vitality divisions that implement approximately \$6 million a year in entitlements from the Department of Housing and Community Development, administers \$2.5 million a year in housing entitlements from the Department of Housing and Community Development, local Public Safety and Vital Services (PSVS) sales tax funds, and one-time funds and competitive grants across multiple federal and state departments. The City will draw on its staff's decades of knowledge and expertise to facilitate successful outcomes and financial stewardship to successfully achieve the proposed project's goals and GHG reduction measures if awarded.

Park Construction and Facilities Planner Fidel Gonzalez is the Recreation and Parks Department's prime point of contact. Prior to his current role, Fidel worked as Park Supervisor administering the plan-checking and inspection division, which oversees the City's public streetscape and median landscape right-of-ways improvements, including public parks. He also worked as a Construction Inspector performing detailed inspections and project management of Public Works construction projects. Fidel interpreted plans and specifications to ensure contract compliance while also preparing and making recommendations for change orders and cost estimates. For the past 5 years as the Park Construction and Facilities Planner,, Fidel has developed parks and participated in short and long-range strategic plans, including the five-year Recreation and Parks master plan, feasibility studies, environmental assessments, and construction projects. He is responsible for project development, environmental document preparation and review, grant project administration, and preparing Request For Proposals (RFP) and bid management. He oversees the department's City Improvement Projects (CIP) budgets, prepares and monitors the planning division's budget, and supervises and trains staff. Fidel's knowledge of project management, horticultural practices and plant identification, landscape construction, standards, trends, and practices is crucial to the City's increasing open space development.

Park Superintendent Keith Howell has worked for the City of Bakersfield for 24 years and is going on his 6th year as the Park Superintendent for the City of Bakersfield. Prior to this, Keith worked as a Park Supervisor for 5 years. He Supervised and coordinated the daily horticultural operations and maintenance of public parks, facilities, landscaped medians and streets, City trees and street rights-of-way, which included constructs and repairs. He also helped with the planning and design of new parks/facilities. As a Park Supervisor, Keith participated in the budget process for staffing, equipment, supplies, and responded to citizens' questions and complaints. Keith's current role as Park Superintendent entails administering maintenance projects, repairs and construction of parks, streetscapes and medians, and recreation and aquatic facilities. He is responsible for assisting in the design, development and construction of new parks and facilities, tree management around the city as well as preparing and monitoring the yearly budget which includes all capital improvement projects. Keith also reviews work performance of all personnel and contractors, and ensures parks practices



adhere to current local, state, and federal regulations and laws. Keith Howell is currently overseeing the Recreation and Parks Turf Removal Program, which has been in process for the past 13 months. The program has required overseeing the redesign of 24 medians, 19 turf side pockets along city streetscapes, and 9 entry monuments totaling approximately 158,296 square feet of turf removed. After removal. Keith has organized and managed the installation of drought tolerant plants and landscaping as well as a new water conserving drip irrigation system.