

Climate Pollution Reduction Grants – Implementation Grants City of Stockton Workplan for General Competition

1. OVERALL PROJECT SUMMARY AND APPROACH

a. Description of GHG Reduction Measures

I. Measure 1: Hybrid Electric Bus Acquisition; Sector: Transportation

This proposed measure is classified within the transportation sector and was selected to be in line with the State of CA PCAP dated 3/1/24 Transportation Measure 1: Create a Holistic, Heavy-Duty Zero-Emissions Vehicle Buydown Program. Our proposed measure and project will include assisting the San Joaquin Regional Transit District (SJRTD) with upgrading their existing vehicles fleet with approximately eleven hybrid electric vehicles as part of their 'Zero Emission Transition project'.

The Stockton 2018 General Plan (GP) also supports RTD's proposed Zero Emission Transition project by providing supportive goals that include transportation mobility and sustainability including improving air quality.

The major feature and task of this project is to enable SJRTD to purchase the eleven hybrid electric vehicles. The major milestone of this project will be the purchase of the vehicles. The City of Stockton (City) plans to coordinate and maintain regular check-in's with SJRTD to confirm timelines and progress.

The main challenges with purchasing these vehicles will include the availability of the equipment and possible cost escalations due to economic conditions and product demands. As soon as funding becomes available it will be vital for SJRTD to proceed with urgency to order the equipment.

To further ensure successful completion of this project, SJRTD plans to work with a committed manufacturer with extensive experience in the design, manufacture, deployment, and service of heavy-duty transit buses including low emission buses to ensure the efficient and effective deployment of buses as well as to reduce harmful emissions as part a long-range fleet plan.

Although the hybrid electric buses are not zero emissions, they will provide a significant reduction to CO2 within a 5-year period of approximately 1,272.70 metric tons of CO2. This aligns with the program goals and objectives of the CPRG grant by reducing hazardous air pollution in Lower Income and Disadvantaged Communities (LIDAC) with is over 65% of Stockton. The buses that RTD plans to buy will significantly reduce GHG emissions compared to their predecessors. These improvements include being 30% more effective in reducing Oxides of Nitrogen (NOx) and 71% more effective at reducing Particulate Matter (PM) addressing the "harmful emissions reduction" requirement. The new hybrid bus's system computer decides the charging amount and length for best efficiency and fuel economy, between electric vehicle (EV) sessions. The system will never let the batteries go below 20% state of charge (SOC) while in route. Also, it is the transmission that recharges the batteries during this charging time. The full EV mode runs up to 10 miles straight, the bus will recharge the batteries before the next

full EV mode is needed. For example, if the route is a 20-mile loop, with four 2-mile increments of EV mode within the route, the system will recharge in between each EV mode section. That puts the total zero-emission length at 8 miles or 40% of the route.

II. Measure 2: Hydrogen Bus Pilot; Sector: Transportation

This proposed measure is classified within the transportation sector and was selected to be in line with the State of CA PCAP dated 3/1/24 Transportation Measure 5: Support Mobility Projects Uplifted by Communities. Our proposed measure and project will include assisting the San Joaquin Regional Transit District (SJRTD) with expanding their pre-existing hydrogen fuel cell bus services. SJRTD has launched a Hydrogen FCEB Pilot Project as the first step towards a zero-emission's fleet. SJRTD leads zero-emission vehicle (ZEV) adoption in the region, having adopted electric buses 11 years ago, with 17 electric buses currently in operation. SJRTD has a history of successful project performance, meeting deadlines, reporting feedback, and completing projects on time and within budget. SJRTD has committed to completely transitioning its Stockton metropolitan area bus fleet to zero-emission by 2040, it has learned that the range between charges of battery-electric buses (BEB) is not adequate due to battery degradation. Fuel Cell Electric Bus technology is a zero-emission alternative that provides a solution with a greater range (300 miles). The Zero Emission Transition project allows for smoother zero-emissions fleet transition by funding the purchase of two Hydrogen Fuel Cell Electric Buses (FCEB), one Hydrogen Fueling Trailer, and the retrofit of their existing maintenance shop with all the necessary sensors, alarms, and equipment necessary for safely working on FCEBs. The City of Stockton was able to purchase one electric bus for SJRTD through the Transformative Climate Change (TCC) project and this measure including measure 1 will serve as an extension to that.

This project will assist SJRTD in supporting and improving existing services in Stockton's many economically distressed LIDAC neighborhoods. The major features of this project will be to purchase two new Hydrogen Fuel Cell Electric Buses for SJRTD, one mobile fueling station and upgrading their existing maintenance shop with all required equipment and components to service hydrogen fuel cell electric buses. There are no hydrogen fueling stations within reach for RTD's fleet, therefore, these new vehicles will be supported with a portable hydrogen fueling trailer.

We will participate in the coordination of all elements of work and monitor progress. SJRTD will perform all the required coordination, ordering of equipment, design and engineering as well as coordination with any and all agencies and jurisdictions to achieve the desired outcome. The City of Stockton will conduct regular check-in meetings with SJRTD to manage schedule and track deliverables. Within our check-in meetings SJRTD will be required to provide a progress schedule. While SJRTD will perform all of the required coordination, contracting and purchasing for this measure, the City of Stockton will provide oversight and conduct regular check-ins to confirm progress and budget monitoring.

The major milestones of the project will include the design and permitting for the retrofit for the FCEB maintenance shop, purchase of the mobile fueling station, initiation of the competitive bidding process and award of contractors to start the work. Once

work begins, the contractors will be monitored to ensure that they maintain their schedule requirements and purchase of all required materials and equipment on-time. SJRTD will perform a competitive bidding process to identify qualified contractors and vendors to perform the project functions including all design and engineering. The anticipated challenges will be the competitive bidding process and ensuring proper time for solicitation to receive an adequate bid response, weather impacts, possible material availability and material and labor cost escalations.

SJRTD and the City of Stockton plan to work together to incorporate workforce development, training existing SJRTD staff on the new technology as well as exposing members of the community to zero-emissions training and education programs.

This measure is in direct alignment with the CPRG program goals to achieve significant GHG reductions as well as providing substantial benefits to the community. The City of Stockton has reported high asthma rates. Hydrogen propulsion has been around for a long time. Vehicles powered by hydrogen are propelled by a fuel cell that produces zero pollution. This technology is fast becoming a viable option for vehicles to replace gasoline and diesel in the fight to mitigate the effects of climate change, which addresses the “direct carbon emissions reduction” requirement. Hydrogen buses require much less electricity from the grid than all-electric buses and this addresses the “energy consumption reduction” requirement. Since hydrogen-powered buses use stored hydrogen to generate power, they can operate even during a power outage.

This project will also help to reduce local transit-related emissions and support program priorities that include reducing greenhouse gases and preventing transit-related air-pollution; advancing racial equity; maintaining and creating jobs with a free and fair choice to join a union; and connecting communities.

III. Measure 3: Community EV Charging Hub(s); Sector: Transportation

This proposed measure is classified within the transportation sector and was selected to be in line with the State of CA PCAP dated 3/1/24 Transportation Measure 6: Allow for Local Deployment of ZEV Infrastructure and Low-Income ZEV Support.

Under this measure, the City of Stockton will collaborate with a contractor to install zero-emission vehicle (ZEV) charging stations for resident’s benefit. The City will survey the LIDAC areas to determine the most suitable areas based on proximity to shopping, health services, entertainment etc. The City’s projects will include the installation of an EV charging station hub centrally located near the downtown Stockton area with a possible second hub located at a strategic location within Stockton. While we don't have exact calculations available to determine the estimated extent of GHG reductions, by offering EV charging hubs throughout the community, we intend to encourage the transition to EV by providing accessible charging locations for those who are unable to install charging ports at their home or are otherwise not homeowners.

The City Manager's office will work in collaboration with the internal public works, community development and economic development departments to determine the locations, scope and extent of the charging hubs. We also plan to collaborate with the San Joaquin Valley Air Pollution Control District (APCD) and PG&E to complete our work.

To encourage and incentivizes residents to transition to ZEV including Fuel Cell Electric Vehicles (FCEVs) and Plug-In Hybrid Electric Vehicles the City of Stockton will also assist residents with the application to the CARB's Clean Cars 4 All program and provide them with high value gift cards for swapping out their old vehicles. We will use the services of a community-based organization to help residents through the Clean Cars 4 All application process which is currently being administered through the San Joaquin Valley Air Pollution Control District (APCD). The Clean Cars 4 All program provides financial incentives to retire older, more polluting vehicles and replace them with newer and cleaner, hybrid, plug-in hybrid, or zero-emission vehicles, or alternative mobility options. Buyers of plug-in hybrid and battery electric vehicles are also eligible for home charger incentives or prepaid charge cards if home charger installation is not an option. The program provides maximum incentives to the lowest income participants purchasing or leasing the cleanest technology vehicles that reside within and near priority populations. The program gives residents up to \$12,000 to scrap and replace older, polluting cars with cleaner alternatives, or will offer additional assistance through up to \$7,500 in vehicle purchase grants for car buyers not scrapping an older vehicle, in addition to affordable financing options¹. This reduces health risks and transportation costs, and provides greater, more reliable mobility and increased access to clean transportation to priority populations.

As of February 2022, the overall program had 13,000 vehicles implemented, 98,700 MTCO₂e GHG reductions, 104 tons of NO_x reductions, 17.4 tons of ROG/HC reductions, 4.17 tons of PM reductions. As residents transition to EV overtime this will result in exponential reduction to vehicle emissions for the City of Stockton. This is aid in the City's efforts in reducing greenhouse gas emissions within the local transportation sector.

The major milestones of this project include selection of the desired hub locations which will involve community engagement to ensure community awareness and participation in the locations, design and engineering or the charging hubs which will involve coordination with public works and PG&E, completion of the competitive bidding process for contractors to perform the work, ground breaking, ordering all required equipment, completion of underground utility work and installation of charging stations. The challenges of this project include, coordinating with all required entities and agencies, determining the locations quickly, completion of design documents, competitive bid response, weather impacts and availability and cost of equipment.

This is an ambitious measure for the City of Stockton that will significantly impact the community and increase awareness of on-going programs. The design of the charging hub can be reused at any applicable location throughout the San Joaquin Valley. While there are charging ports scattered throughout the City of Stockton and San Joaquin Valley at some retailers, they are often at businesses and restricted for employees, or at gas stations.

IV. Measure 4: City Hall Solar Installation & Energy Efficiency Upgrades; Sector: Energy

This proposed measure is classified within the energy sector and was selected to be in line with the State of CA PCAP dated 3/1/24, Energy Measure 1: Expand Decarbonization through the Energy Conservation Assistance Act.

The projects for this measure will include the installation of solar panels and battery storage at new city hall as well as energy efficiency upgrades to city municipal buildings. The City of Stockton is currently renovating Weber Towers into new administrative offices for the city and plans to occupy and transition employees and operations by the end of 2024 and early 2025. The renovation of the new buildings includes a parking lot. The solar project will involve the installation of solar shade structures at the new city hall parking lot as well as the existing city hall parking lot. The objective of this project is to reduce the city's annual electricity costs significantly with the goal of achieving net zero and operating off of energy produced by the solar panels.

Additionally, to further reduce the city's annual electricity costs significantly, the City of Stockton plans to conduct and implement suggested energy efficiency upgrades through energy audit activities. The City performed an energy audit on the new city hall facility back in 2019 that suggested numerous measures that would improve building performance. These types of audits will be expanded to as many Stockton city municipal facilities as possible. The City manager's office will work with other internal departments to identify the highest priority facilities and complete a competitive bidding process to hire a consultant to perform the audits and work in collaboration with Stockton facilities and public works department and/or hired contractors to purchase any recommended equipment and make weatherization improvements to elements such as the building envelope, windows, heating and cooling equipment, finish material etc.

Comparable to residential solar, but with a larger capacity this solar installation at the new city hall parking lot will reduce GHG emissions in excess of 180 metric tons of CO₂e within a 5-year period. The design of the parking lot has already been completed with a footprint for the photovoltaic solar structures. However, the design and engineering of the solar infrastructure has not been completed. With the design and engineering being the first milestone, the next step will be to perform the competitive bidding process to identify a qualified contractor to perform the work and obtain all required permitting and coordination with PG&E and Stockton public works department. Once hired the contractor's construction schedule will be closely monitored to ensure project success and to avoid any potential delays. The critical milestone will be the ordering of all required infrastructure, materials and equipment, inspections and then installation. The major challenges of this project will include weather delays, material cost escalation and the competitive bidding process.

V. Measure 5: Household Appliance Decarbonization; Sector: Energy

This proposed measure is classified within the energy sector and was selected to be in line with the State of CA PCAP dated 3/1/24, Energy Measure 5: Deploy Equitable Building Decarbonization. This project will have a goal to impact at least 500 single family, multi-family, and/ or mobile homes with the replacement of fossil burning equipment with high efficiency electrical appliances for no costs for residents living

within LIDAC geographies in Stockton. These decarbonization appliance installs include heat pump water heaters, heat pump space heating and cooling, heat pump dryers, and induction cooktops. This project will be implemented through a competitive bidding process with the possible assistance of a community-based organization to bolster awareness and administer a community engagement campaign. The bidding process will evaluate contractors based on experience, price and local presence in the community. The community-based organizations (CBOS) will also be competitively selected to perform canvassing, outreach to build trust in the community and program to ensure optimal participation, determine resident eligibility requirements, needs assessments, required infrastructure upgrades, and conduct final appliance installation.

This measure provides a direct benefit to residents of LIDAC here in Stockton and is somewhat of an extension to the service that are being offered through the Transformative Climate Change (TCC) grant that the City of Stockton is currently implementing. The TCC grant has a restrictive boundary that limits the area of service to a particular region within South Stockton. This project will enable the City of Stockton to provide these excellent services and upgraded appliances to all qualifying residents of the City, which will present a very significant impact to the reduction of GHG emissions throughout the city.

The City plans to utilize youth workforce to aid in the canvassing of qualifiable residents, collecting data and ensuring eligibility, the initial assessment. The project will be inclusive of all required engineering, design and permitting fees at no cost to participating residents. Youth workforce will be trained, and local vendors will be used as much as possible to complete all elements of the work. To bolster the workforce development component, hired contractors will be required to include apprentices within their workforce. The City of Stockton will perform a competitive bidding process to identify 1-2 contractors to provide the installation and equipment upgrades. The contractors will be required to provide details on how the old equipment will be recycled and will be responsible for assisting residents with any associated electrical work that may be required. The program will be limited in scope to perform any additional repairs that may be required in order to complete the installation.

The major milestones of this project will include a community engagement campaign, competitive bidding process and executed contract agreement for services, development of action plan, neighborhood canvassing and initial assessment of residents and needs determination, residential contracts, design and/or permitting as needed (which is executed independently for each resident), ordering of equipment, installation and equipment certification. The largest challenge of this measure will be to ensure that community awareness is maximized in order to reach as many households as possible. The city of Stockton will stay in constant communication and administer regular progress meetings and check-ins with the project participants to ensure that all efforts are tracking as intended, review costs, schedule and to discuss updates.

This project has the potential to reduce in excess of 300 metric tons of CO₂e emissions within a 5-year period.

b. Demonstration of Funding Need

The City of Stockton is an urban area of inland California, sandwiched between the Bay Area and rural agrarian regions. In this context, the San Joaquin Valley has an abundance of natural resources: including waterways, arable land, and a deep-water inland Port – alongside connected infrastructure like the I-5 interstate, freight connectivity, and a regional airport. Like most US cities, areas of Stockton have experienced devastating disinvestment due to intentional, discriminatory investment policies that stripped opportunity from specific neighborhoods as well as racial, cultural, and socio-economic groups.

In 2015 a county grand jury investigation focused on South Stockton, underscoring the need for place-based initiatives by citing historic disinvestment in this area. The report concluded that the future of Stockton can only ever be as promising as the investment in neighborhoods like South Stockton. The need for additional investment has spurred action from community-based organizations and political leaders who have primed South Stockton to build its own capacity to absorb and leverage large-scale investments. This need is not only recognized in South Stockton as there are a plethora of LIDAC recognized geographies identified from Climate and Economic Justice Screening Tool (CEJST) in Stockton that can also benefit from the proposed projects and measures.

Because of limited economic resources and poverty, which can be underscored by several different factors, many residents in Stockton simply do not have the income to upgrade into the new century with the latest technology and energy efficient lifestyle. Without programs such as this these residents would go overlooked and continue to suffer in poverty, enduring negative impacts of commercial activities within close proximity to where they live and raise their children. The residents of Stockton deserve to be surround by a healthy environment and breathing clean non-toxic air.

Stockton is the center of the San Joaquin Valley and is surrounded by multiple interstate highways and is also home to the port of Stockton. GHG emissions from consumer vehicles, transit vehicles and port activities are a major contributor to accumulated health issues such as asthma and heart disease.

c. Transformative Impact

The proposed projects will reduce emissions, stimulate the local economy, and cultivate a healthier environment. Stockton is committed to purposeful transformational investments in our community's public health and the resiliency of our City's infrastructure will yield benefits for generations to come. The City of Stockton proposes projects that are designed to make foundational investments to create a healthy, thriving, and accessible Stockton. By focusing on sectors with high emissions, this project will have a cumulative impact on not only Stockton's communities, but the surrounding communities in San Joaquin County.

The implementation of the proposed measures in the transportation sector will accelerate the deployment and market adoption of emerging GHG emission reduction

technologies, expand the local economy, bolster pre-existing workforce with new technologies, and support the introduction of new industries in Stockton. This will drive the face of Stockton's sustainable urban development that is backed by a local public transportation system that is dedicated to heading towards a zero-emission future. The implementation of the proposed measures in the energy sector will increase participation and access to sustainable energy sources, ultimately supporting the community in the transition to a more efficient energy infrastructure. These measures aim to lower resident energy usage and hopefully open doors for additional investment in community and governmental infrastructure improvements to align with the City's commitment to lower GHG emission and creating a healthier environment.

2. IMPACT OF GHG REDUCTION MEASURES

a. Magnitude of GHG Reductions from 2025 through 2030

See GHGcalcs_City of Stockton for detailed calculations.

Measure 1: Hybrid Electric Bus Acquisition; Sector: Transportation

Metric tons of CO₂ emission reductions for 11 hybrid-electric buses during the period 2025 through 2030 is estimated to be 1,272.67 metric tons of CO₂.

- The durability of this reduction is supported by the average life expectancy of hybrid-electric buses, which is estimated to be 12 years. 12-year lifetime emission reductions for 11 hybrid-electric buses are estimated to be 3,366.95 short tons of CO₂ which is equal to 3,054.42 metric tons of CO₂. Therefore, within the 5-year period, 11 hybrid-electric buses are estimated to have a reduction of 1,272.70 metric tons of CO₂.

Other criteria pollutant GHG emission reductions within the 5-year period for 11 hybrid-electric buses are estimated to have a reduction of:

- Carbon Monoxide (CO): 0.089 metric ton
- Nitrogen Oxides (NO_x): 0.443 metric ton
- Particulate Matter 10 Microns or Less (PM₁₀): 0.042 metric ton
- Particulate Matter 2.5 Microns or Less (PM_{2.5}): 0.017 metric ton

Measure 2: Hydrogen Bus Pilot; Sector: Transportation

Metric tons of CO₂ emission reductions for 2 hydrogen fuel cell buses estimated to be 3,380 tons which is also equal to 3,066.28 metric tons of CO₂. Under a 5-year period, CO₂ reductions would be 1,277.62 metric tons of CO₂.

- The durability is supported since hydrogen fuel cell buses emit only water vapor and warm air and have a 100% reduction of petroleum emissions.¹ According to

¹ [Alternative Fuels Data Center: Fuel Cell Electric Vehicle Emissions \(energy.gov\)](https://www.energy.gov/alternative-fuels-data-center/fuel-cell-electric-vehicle-emissions)

the U.S. Department of Transportation, a single zero emission bus has a reduction potential of 1,690 tons of CO₂e over its 12-year lifetime².

Other criteria pollutant GHG emission reductions within the 5-year period for 2 hydrogen fuel cell buses are estimated to have a reduction of:

- Carbon Monoxide (CO): 0.497 metric ton
- Nitrogen Oxides (NO_x): 1.462 metric ton
- Particulate Matter 10 Microns or Less (PM₁₀): 0.003 metric ton
- Particulate Matter 2.5 Microns or Less (PM_{2.5}): 0.002 metric ton
- Volatile Organic Compound (VOC): 0.052 metric ton

Measure 4: City Hall Solar Installation & Energy Efficiency Upgrades; Sector: Energy

Metric tons of CO₂ equivalent emission reductions for solar installation in Stockton, CA is estimated to be 37 metric tons/year. Therefore, over the 5-year period, there is an estimated CO₂ reduction of 185 metric tons/year.

Measure 5: Household Appliance Decarbonization; Sector: Energy

Metric tons of CO₂ equivalent emission reduction on an average of 100 households served each year has an estimated CO₂ reduction of 77 metric tons/year. Therefore, over the 5-year period, there is an estimated CO₂ reduction of 385 metric tons/year.

Sum of All GHG Reductions During 2025-2030

GHG Emissions	Amount (Metric Tons)
CO ₂	2,550
CO ₂ e	570
CO	0.587
NO _x	1.905
PM ₁₀	0.045
PM _{2.5}	0.019
VOC	0.052
Total GHG Emissions	3,123

b. Magnitude of GHG Reductions from 2025 through 2050

See GHGcalcs_City of Stockton for detailed calculations.

Measure 1: Hybrid Electric Bus Acquisition; Sector: Transportation

Metric tons of CO₂ emission reductions for 11 hybrid-electric buses during the period 2025 through 2050 is estimated to be 3,054.45 metric tons metric tons of CO₂.

- The durability of this reduction is supported by the average life expectancy of hybrid-electric buses, which is estimated to be 12 years. Annual 12-year lifetime

² <https://www.transportation.gov/sites/dot.gov/files/docs/R2ZE-Zero-Small.pdf>

emission reductions for 11 hybrid-electric buses are estimated to be 3,366.95 short tons of CO₂ which is equal to 3,054.45 metric tons of CO₂. Therefore, within the 25-year period, 11 hybrid-electric buses are estimated to have a reduction of 3,054.45 metric tons of CO₂.

Other criteria pollutant GHG lifetime emission reductions within the 25-year period for 11 hybrid-electric buses are estimated to have a reduction of:

- Carbon Monoxide (CO): 0.214 metric ton
- Nitrogen Oxides (NO_x): 1.063 metric ton
- Particulate Matter 10 Microns or Less (PM₁₀): 0.102 metric ton
- Particulate Matter 2.5 Microns or Less (PM_{2.5}): 0.040 metric ton

Measure 2: Hydrogen Bus Pilot; Sector: Transportation

The metric tons of CO₂ emission reductions for 2 hydrogen fuel cell buses in the period 2025 through 2050 is estimated to be 3,380 tons which is also equal to 3,066.28 metric tons of CO₂.

- The durability of this project is supported as the introduction of 2 hydrogen buses will have no contribution to GHG emissions and a single zero emission bus having an estimated reduction of 1,690 tons of CO₂e over its 12-year lifetime.

Other criteria pollutant GHG lifetime emission reductions within the 25-year period for 2 hydrogen fuel cell buses are estimated to have a reduction of:

- Carbon Monoxide (CO): 1.193 metric ton
- Nitrogen Oxides (NO_x): 3.509 metric ton
- Particulate Matter 10 Microns or Less (PM₁₀): 0.007 metric ton
- Particulate Matter 2.5 Microns or Less (PM_{2.5}): 0.005 metric ton
- Volatile Organic Compound (VOC): 0.125 metric ton

Measure 4: City Hall Solar Installation & Energy Efficiency Upgrades; Sector: Energy

Metric tons of CO₂ equivalent emission reductions for solar installation in Stockton, CA is estimated to be 37 metric tons/year. Therefore, over the 25-year period, there is an estimated CO₂ reduction of 925 metric tons.

Measure 5: Household Appliance Decarbonization; Sector: Energy

Metric tons of CO₂ equivalent emission reduction on an average of 100 households served each year has an estimated CO₂ reduction of 77 metric tons/year. Therefore, over the 25-year period, there is an estimated CO₂ reduction of 1,925 metric tons/year.

Sum of All GHG Reductions During 2025-2050

GHG Emissions	Amount (Metric Tons)
CO₂	6,121
CO₂e	2,850
CO	1.408

NOx	4.573
PM10	0.108
PM2.5	0.045
VOC	0.125
Total GHG Emissions	8,977

c. Cost Effectiveness of GHG Reductions

See GHGcalcs_City of Stockton for detailed cost effectiveness calculations.

Using the provided Cost effectiveness of GHG reductions calculator, (Requested CPRG funding) / (Sum of Quantified GHG reductions from CPRG funding from 2025-2030). The following cost effectiveness of GHG reductions for each proposed measure is as follows:

- **Measure 1: Hybrid Electric Bus Acquisition; Sector: Transportation: 5,716.43**
- **Measure 2: Hydrogen Bus Pilot; Sector: Transportation: 3,026.63**
- **Measure 4: City Hall Solar Installation & Energy Efficiency Upgrades; Sector: Energy: 3,781.91**
- **Measure 5: Household Appliance Decarbonization; Sector: Energy: 2,538.89**

Cost Effectiveness of GHG Reductions

	Transportation Measure 1	Transportation Measure 2	Energy Measure 4	Energy Measure 5
Requested CPRG Funding (Dollars)	\$17,851,858	\$9,451,857	\$11,810,521	\$7,928,714
Sum of Quantified GHG Reductions From CPRG Funding From 2025-2030 (Metric Tons)	3,123	3,123	3,123	3,123
Cost Effectiveness of GHG Reductions	5,716.43	3,026.63	3,781.91	2,538.89

Several factors that may affect effectiveness of the measures are inaccuracies in projected costs for the requested CPRG funding, prevailing costs in the implementation areas, unforeseen challenges with implementation, and fluctuations in sector dynamics such as changes in market prices and accessibility.

- d. **Documentation of GHG Reduction Assumptions – Up to 10 additional pages as an appendix to the workplan (see Appendix C of the NOFO)**

See GHG calculation document titled: Techappx_City of Stockton.

3. ENVIRONMENTAL RESULTS – OUTPUTS, OUTCOMES, AND PERFORMANCE MEASURES

a. Expected Outputs and Outcomes

The City of Stockton expects that these measures and projects are continued steps toward healthier environmental conditions for its residents. With the completion of the proposed projects, we expect that air quality will continue to improve and the rate of new asthma patients in the City will decrease. All of our projects will have a significant reduction to the use of fossil burning activities and equipment and will improve the quality of life for residents. We intend to educate residents on the direction of climate change and the goals and objectives that the State of California has for the future of the environment. We hope that given all the incentives and access to charging that exceedingly more residents will transition to EV's and that we can match the State goal of being carbon neutral by 2040.

Measure 1: Hybrid Electric Bus Acquisition; Sector: Transportation

Outputs: Acquisition of 11 hybrid-electric buses

Outcomes: 3,054.45 MTCO₂

Measure 2: Hydrogen Bus Pilot; Sector: Transportation

Outputs: Acquisition of 2 hydrogen fuel cell buses

Outcomes: 3,066.28 MTCO₂

Measure 3: Community EV Charging Hub(s); Sector: Energy

Outputs: At least one new public EV charging station

Outcomes: Reduced emissions; increased EV ownership

Measure 4: City Hall Solar Installation & Energy Efficiency Upgrades; Sector: Energy

Outputs: Solar PV system installed at New City Hall

Outcomes: 925 MTCO₂

Measure 5: Household Appliance Decarbonization; Sector: Energy

Outputs: 100 homes per year upgraded with energy saving, emission reducing appliances.

Outcomes: 1,925 MTCO₂

b. Performance Measures and Plan

The City staff funded by the grant will be primarily responsible for collecting, analyzing, and reporting all data collected for each measure. The City currently has to collect large volumes of data for its existing grant-funded projects, such as number of appliances installed,

number of trees planted, square footage of bike paths constructed, and size & number of solar systems installed at single- and multi-family residences. The City intends to apply the same approach for this grant as it does for its existing grants, which is to require monthly or bi-monthly reporting and/or collecting of data for all projects. Any and all data that is required to complete any monthly, bi-monthly, quarterly, semi-annual, or annual reports will be collected, safely stored, and analyzed per the requirements of the CPRG grant agreement. If there is any complex GHG, CAP, or HAP analysis that City staff are unable to complete, the City will outsource that work to a professional consultant.

c. Authorities, Implementation Timeline, and Milestones

Measure 1: Hybrid Electric Bus Acquisition; Sector: Transportation

Project Lead: SJRTD is the sole provider of public transportation for the San Joaquin Valley. They will take the lead on all required coordination and procurement for the purchase of the hybrid electric buses.

Partners (sub-awardees, subcontractors, etc.): Gillig is the hybrid bus manufacturer with SJRTD. SJRTD has an on-going trusted relationship with Gillig.

Timeline/Milestones: The buses have a 3–6-month manufacturing lead time. The orders for the buses will be placed as soon as the agreement with SJRTD is finalized. We anticipate this project will take 1-2 years to complete.

Measure 2: Hydrogen Bus Pilot; Sector: Transportation

Project Lead: SJRTD is the sole provider of public bus transportation for the San Joaquin Valley. They will take the lead on all required coordination and procurement for the purchase of the hydrogen fuel buses.

Partners (sub-awardees, subcontractors, etc.): None identified.

Timeline/Milestones: Upon execution of the contract agreement SJRTD will determine the best procurement method for the acquisition of the buses. The timeline and milestones include, determination of manufacturer for hydrogen fuel buses; execute contract agreement for buses; prepare RFP and bid solicitation for mobile fueling trailer and contractor for maintenance shop retrofit; Purchase buses; purchase mobile trailer; execute maintenance shop agreement; begin construction work; receive buses; receive mobile trailer; complete maintenance shop; testing & acceptance; training; begin use. We anticipate that this project will take 2-4 years to complete.

Measure 3: Community EV Charging Hub(s); Sector: Energy

Project Lead: City of Stockton City Manager's Office; Public Works and Community Development Department, hired contractor.

Partners (sub-awardees, subcontractors, etc.): None identified.

Timeline/Milestones: This project will be competitively bid for both the design/engineering services as well as the construction work. The first milestone will be the competitive bidding process for a design consultant who can coordinate and assist the City in the final determination of the best location. Once the location is finalized the design and specification documents can also be finalized. We project that the competitive bidding

process for a contractor will take about 6-8 weeks. Once a contractor is hired work can begin within 2 to 3 months. The contractor will need to order all of the equipment at the start of the project. Current lead times for commercial EV charges are about 6 –12 months. However, all of the underlying work can be performed and completed while the chargers are on order. We anticipate that the parking lot work, underground utilities and flatwork can be completed in about 3-4 months or less given good weather conditions. With construction work underway the next milestone will be pouring concrete and/or asphalt, striping, installation of charging stations and testing and acceptance. We expect this project to take 2-3 years to complete.

Measure 4: City Hall Solar Installation & Energy Efficiency Upgrades; Sector: Energy

Project Lead: City Manager's Office, Public Works Department, PG&E, hired contractor

Partners (sub-awardees, subcontractors, etc.): None identified.

Timeline/Milestones: This project will be competitively bid to hire a contractor to provide and install the solar panels and shade infrastructure for the city hall parking lot. The layout of the parking lot has already been complete, and the construction of the project will be mostly completed prior to the start of solar portion. Once a contractor is hired to perform the work, there will be coordination required with Stockton public works department. The solar photovoltaic panels will need to be designed and engineered which will take at least 6 months to complete. Once the design is finalized the contractor can proceed with the next milestone to order the solar equipment and infrastructure as lead times are likely 3-6 months. After coordination the contractor can begin installing the electrical standards for the solar panels and performing and coordination with PG&E. There will be trenching, cutting and patching for the conduit pathways, structural/ seismic testing and then installation of the panels and structures.

The energy assessment and audits will be performed under a separate contract and will take approximately 1-3 months to complete. Upon completion the City of Stockton will receive a report upon which to implement the most efficient upgrades. City departments will perform a thorough review of recommended energy upgrades and determine which to implement. The city will hire a contractor and/or contractors through a competitive bidding process to perform the adopted energy upgrades. Once under contract the contractor will work with the City to order required materials and equipment and coordinate the best times to perform work at each selected location. We anticipate that this work will take 1-4 years to complete depending on the extent of the energy upgrades and the lead times for equipment and materials.

Measure 5: Household Appliance Decarbonization; Sector: Energy

Project Lead: Stockton City Manager's Office; Hired contractor and/or CBO.

Partners (sub-awardees, subcontractors, etc.): None identified.

Timeline/Milestones: This project will span the entire performance period of the grant. The City of Stockton has a goal to install at approximately 100 households per year. The milestones include a community engagement and awareness period of approximately 3 months. The city will perform a competitive bidding process to hire both a CBO for

community engagement and neighborhood canvassing as well as a contractor to perform the actual work. The bidding process will take about 3-4 months. Once the contractor is hired it will be an on-going process to identify qualified residents within the identified LIDAC, perform individual assessments and order, remove old appliances and replace/install the new equipment. This process could be anywhere from 1-3 months per address. The goal is to have a stock of equipment so that the lead times do not play a factor in the timeliness to complete a project. Some appliances will require a permit for work to begin. Once the equipment is installed there will be a testing and acceptance period and training for the residents.

4. LOW-INCOME AND DISADVANTAGED COMMUNITIES

a. Community Benefits

The data is clear and stark: South Stockton is home to some of the most disadvantaged neighborhoods in all of California. Some of the census tracts within the Project Area are in the 100th percentile of most pollution burdened per CalEnviroscreen data. This data was the strongest driver in determining the focus area for this investment.

The American Community Survey (ACS), an ongoing survey of the population conducted by the U.S. Census Bureau that includes more information on socioeconomic factors, reports the median household income throughout the Project Area is extremely low – one census track reported only \$15,527 per household – compared to California (\$75,277) and Stockton (\$51,318).

Historically, residents within the Project Area have been politically and economically marginalized, which has significantly contributed to the public health, environmental, and economic disparities in South Stockton. Discriminatory housing policies, including redlining and the displacement of historic neighborhoods, such as Little Manila, are a few examples of how this marginalization has manifested and produced negative outcomes for residents.

Health indicators, such as the rate of emergency department visits for asthma and heart attacks, and the percent of low-weight births and cardiovascular disease, are at dangerously high levels in the South Stockton. Studies have linked health indicators with environmental conditions, such as particulate matter, ozone, and diesel exhaust. Parts per million of particulate matter and diesel emissions are above average and contribute to negative health outcomes. South Stockton is proximate to industrial parks, rail lines, major highways, and a local airport, all of which exacerbate environmental conditions.

The projects selected for the City of Stockton's application are specifically intended to address these dire trends. First and foremost, reducing the emissions from vehicles throughout Stockton is a top priority to reduce both greenhouse gas emissions and PM2.5 emissions, which are directly linked increased rates of asthma and cardiovascular

disease. That is why the City is proposing the purchase of hybrid electric and hydrogen buses, in partnership with San Joaquin Regional Transit District, to reduce the local emissions from public transportation. Furthermore, the City seeks funding to construct an EV Charging station to encourage faster adoption and use of electric vehicles, further reducing local emissions. Paired with an ambitious solar project at New City Hall & a household appliance decarbonization program, these measures will reduce local emissions and statewide emissions by lowering electricity demand. Additionally, co-benefits include reduced energy costs for residents & the City of Stockton, reduced noise pollution from older vehicles, and increased access to transportation alternatives.

b. Community Engagement

Community engagement and leadership is central to the success of the proposed measures. Opportunities for resident and stakeholder feedback, participation, and leadership development will be cultivated across all measures. Extensive community engagement focused on environmental justice has been conducted over the past five years and will continue into the foreseeable future.

In October 2019, Stockton's City Council adopted the SNP, a framework for sustainable development in Central and South Stockton grounded in community concerns and recommendations. Residents identified these top seven priorities for future community development: energy, health, parks, safety, transportation, waste and water. The SNP is the first community-led plan to address the unique, intersectional challenges facing South Stockton. This plan is currently serving as a bridge between the City's 2014 Climate Action Plan and the upcoming 2025 Comprehensive Climate Action & Adaptation Plan.

Input by low-income and disadvantaged communities has been incorporated into this proposal through the selection of projects that align with the City's 2019 Sustainable Neighborhood Plan, as well as ongoing community engagement efforts. Increasing access to clean and affordable public transportation was a community priority identified in the SNP and has been echoed in surveys and interviews since then. Acquisition of hybrid electric and hydrogen buses, and expanding access to public EV charging, is directly aligned with that priority. The community has also called for projects that will increase energy efficiency and/or reduce energy costs. The proposed solar project at New City Hall and the household appliance decarbonization project both support this priority.

If awarded grant funding, the City would apply many of the same community engagement strategies it currently uses for grant-funded projects. For example, the City currently hosts regular Community Coalition meetings for its Transformative Climate Communities Implementation Grant. The CC, an advisory body open to the general public, is foundational to the City's collaborative stakeholder structure, and convenes bi-monthly to share information, education and updates regarding TCC implementation,

involve residents in CEP activities, receive community feedback, and participate in decision-making. Resident concerns are addressed during community coalition meetings, and any concerns may be referred for further action. A similar model would be employed for the purposes of this grant opportunity, ensuring ongoing accountability and engagement.

5. JOB QUALITY

Measures 1 & 2:

RTD and the Amalgamated Transit Union Local 256 (ATU) will incorporate ZEB technology training into its RTD/ATU Bus Mechanic Apprenticeship Program with the assistance of our local educational partner, San Joaquin Delta College. The training required from the OEM (original equipment manufacturers) should be included as a part of the vehicle procurement process and contract. This should cover training hours, materials, special tools, and diagnostic equipment.

CALSTART will conduct a Needs-Gap Analysis to identify retraining and professional development needs, internal advancement tracks, new positions, and possible restructuring opportunities. CALSTART will work with RTD, local labor parties and the California Training Consortium to develop a strategy for training new and existing workforce. CALSTART will serve as an advisor to the curriculum development team.

Measures 3, 4, and 5:

The City of Stockton is committed to generate high quality, family sustaining jobs through its proposed measures in this application. Aside from the proposed administrative positions, the City is not directly employing individuals to complete these projects. Rather, the City intends to identify skilled community-based organizations, contractors, and/or professional firms through an open and competitive process to complete the proposed measures. Per the City's municipal code, "Preference shall be given to the purchase of supplies, materials, equipment, and contractual services from local merchants, quality and price being equal. Local merchants who have a physical business location within the boundaries of San Joaquin County, and who have applied for and paid a business license tax and registration fee pursuant to Stockton Municipal Code Title 5, Chapter 5.08, License Taxes, shall be granted two (2) percent bid preference. Local merchants who have a physical business location within the boundaries of the City of Stockton, and who have applied for and paid a business license tax and registration fee pursuant to Stockton Municipal Code Title 5, Chapter 5.08, 17 License Taxes, shall be granted five (5) percent bid preference. This section is intended to provide preference in the award of certain City contracts in order to encourage businesses to move into and expand within the City. (Ord. 2014-03-18-1601 C.S. § 1; prior code § 3-106.1)"

In addition to policies that support local businesses during formal procurement opportunities, the City also has a Community Workforce Training Agreement. City Council adopted the CWTA for Stockton in 2016. The Agreement specifies conditions contractors and employers the City awards public works or improvement contracts valued at \$1 million or more to must follow. The CWTA further specifies conditions that the City must follow. These conditions include:

- Limitations on work delays and stoppages,
- Arbitration procedures and arbitrators,
- Preconstruction conferences for coordination,
- Prohibitions on discrimination,
- Recognition of union(s) as the sole bargaining representative,
- Requirements for contractors and employers to utilize union referral systems,
- Agreement to pay wages and benefits as specified by the union,
- Grievance processes,
- Apprentice programs to develop adequate numbers of competent workers, including that 50% of apprentices employed on the project are from Stockton or San Joaquin County,
- Programs to transition from the military to the trades,
- Drug and alcohol testing requirements, and
- Local hiring goals, including that Stockton or San Joaquin County residents work 50% of project hours.

The prevailing wage is determined by the California Department of Industrial Relations (DIR). DIR regulations state that the “prevailing rate shall be the single rate paid the greatest number of workers in a particular craft in a locality.” It is typically a collectively bargained / union rate. The DIR maintains extensive lists of rates for various crafts for various locations in the state. All information is available on the DIR website. The City utilizes these wage rates in the bid documents for contracts that require prevailing wage, which includes construction projects that are over \$25,000, as well as contracts for alteration, demolition, repair or maintenance that are over \$15,000. In addition to these threshold requirements, there are other factors that must be applied to each project to make a final determination on whether a project may exempt a contractor from paying prevailing wages.

6. PROGRAMMATIC CAPABILITY AND PAST PERFORMANCE

a. Past Performance

The City of Stockton’s Environmental & Sustainability Division is currently managing grants totaling \$40,005,097 and is in the process of accepting an additional \$11,106,060. This large portfolio comes from a variety of State and Federal sources, demonstrating the Division’s ability to manage large-scale, long-term, and complex grants. The largest grants within this portfolio are mentioned below:

- a. Stockton Rising – Transformative Climate Communities (TCC) Implementation Grant
 - i. Agreement Number: SGC23113
 - ii. Funding Agency: California Strategic Growth Council
 - iii. Brief Description: The City of Stockton is the Lead Grantee for this \$24.2M TCC Implementation Grant, which includes 9 subgrantees. The projects funded by the TCC grant include a park renovation, tree planting, asthma mitigation outreach, zero emission bus acquisition, community engagement, and workforce development.
 - iv. Contact: Sarah Newsham, Program Associate, Sarah.Newsham@SGC.CA.GOV, (916) 758-0480
- b. Stockton Climate Action Plan – Adaptation & Planning Grant Program (APGP)
 - i. Agreement Number: OPR23131
 - ii. Funding Agency: Governor’s Office of Planning & Research (OPR)
 - iii. Brief Description: The City of Stockton was awarded \$650K from OPR to update its Climate Action Plan, which has not been reviewed since it was approved in 2014. The City intends to use these funds to hire a professional consultant to lead the update, as well as identify two to three trusted community organizations to assist with community engagement throughout the update.
 - iv. Contact: Abby Edwards, ICARP Adaptation Planning Grant Program Manager, Abby.Edwards@opr.ca.gov, (916) 758-0597
- c. Stockton Youth Workforce Development – CaliforniansForAll (CFA) Grant
 - i. Agreement Number:
 - ii. Funding Agency: California Volunteers
 - iii. Brief Description: The State of California awarded the 13 largest cities (by population) funding through the CFA program to create career opportunities for youth (ages 16-30). The City is using it’s CFA grants (totaling \$6M) to fund external agencies who specialize in youth workforce development, as well as funding an internal Stockton Youth Employment Summer Success (YESS) that employs 100 high school-aged students at the City every June.
 - iv. Contact: Josh Lord, CaliforniansForAll Youth Jobs Corps Director, Josh.Lord@cv.ca.gov, (916) 261-6621

The City of Stockton is still in the process of administering all of the aforementioned grants. To date, the City has successfully managed all of its sub agreements, achieving the deliverables required by each grant and working with relevant agencies to adapt when unexpected challenges have arose. For example, the TCC grant was awarded to the City in June 2020 – when the application was drafted in 2019 there was no indication a global pandemic was on the horizon. City staff worked with all non-profit partners involved in the TCC grant to reconfigure each project to accommodate safety needs and deliver results in a completely new landscape. This is one example of how the City continues to demonstrate

its ability to implement significant investments, such as the Climate Pollution Reduction Grant.

b. Reporting Requirements

The City is routinely required to submit invoices and progress reports for all grants it currently manages. Both interim and final reports are also required, and the City has completed and submitted those reports as required. Timely submission of invoices and progress reports is absolutely critical for the City's nonprofit partners, as the length of time for reimbursement can often be lengthy and challenging. For that reason, the City has been committed to the timely submission of all reporting requirements.

c. Staff Expertise

The City's Environmental and Sustainability Division is housed within the City Manager's Office to ensure its citywide mission can be fulfilled. The Division has 6 full-time equivalent (FTE) positions who are responsible for overseeing all grant-funded initiatives. The team is headed by the Environmental & Sustainability Officer who reports to the Deputy City Manager – this position is currently grant-funded but is slated to shift onto the City's General Fund over the next few years. As new grants are awarded, the City either hires or offsets a Program Manager to directly manage all aspects of the grant, such as reporting requirements, sub agreements, and budgeting. Currently, there are three Program Managers within the ESD, one of whom oversees two additional employees. The City intends to apply this same model for the CPRG Grant by hiring a new Program Manager to lead the implementation, as well as additional support roles to ensure successful delivery of projects.

The current team consists of a group with various experience and expertise managing state and federal grant programs, with backgrounds in geological and environmental sciences, political science and construction and project management. Any new additions to the team would also compliment this expertise and an equivalent area.

7. BUDGET (OPTIONAL BUDGET SPREADSHEET AND UP TO 10 ADDITIONAL PAGES MAY BE ADDED IF NEEDED AS AN APPENDIX TO THE WORKPLAN)

a. Budget Detail

See attached budget spreadsheet excel document titled: Budgetcalcs_City of Stockton.

b. Expenditure of Awarded Funds

The City of Stockton's approach to ensuring the timely and efficient expenditure of awarded funds within the grant period involves budget planning, procurement management, and methods that track progress towards completion of deliverables. The

City of Stockton leveraging its experience with high-level implementation grants, already has established internal systems to mitigate risks, monitor contract compliance, process payments in a timely manner, follow proper procurement procedures to conduct vendor selection, and provide final reporting documentation. Additionally, the proposed 3 FTE positions will ensure direct supervision over these processes and foster community engagement throughout the performance period, enhancing accountability and stakeholder involvement in the project's achievements.

c. Reasonableness of Costs

See budget narrative word document, Budget_City of Stockton for detailed budget calculations and description of every itemized budget item.