Project Narrative: City of Fort Collins Smart Grid Electric Vehicle Charge Management Solution

a. Overview/Project Description

Accelerating vehicle electrification and distributed energy are creating new challenges for dynamically balancing grid resources and is driving significant utility investment costs while raising grid reliability concerns. The City of Fort Collins has a goal to advance vehicle electrification across the city, while providing reliable and affordable electric service. An advanced smart grid system that is aware of distributed vehicle charging needs and constraints, as well as local grid distribution bottlenecks is critical to supporting reliable electric service, without overbuilding new infrastructure. The City seeks to implement a smart grid electric vehicle (EV) charge management solution for the more than 40 EVs that it currently operates, including two battery electric buses (BEB), that will demonstrate effective load and demand balancing, and provide a path to minimizing rate-payer costs as the number of electric vehicles increases in the service area.

Given the City's position of directly owning and operating both the electric utility and the public transit agency, it has a unique opportunity to comprehensively address challenges it faces as it electrifies varied municipal fleets from both an electrical system and fleet management perspective. Managing charging of new EV fleets in the City allows the electric utility to increase energy usage through existing electrical infrastructure, creating downward rate pressure on electric utility rates and delivering benefit to community members.

Additionally, as the City expands the number of EVs in its varied municipal fleets, it has identified operational and managerial challenges unique to electric vehicles, which will continue to increase as it advances its electric fleet. The proposed project addresses these identified challenges for both the electric utility and fleet managers including grid impacts and infrastructure upgrades to support fleet charging, minimizing current and future energy costs for City fleet vehicles, vehicle charging cycles to ensure reliable operations and maximum asset life, and data collection for electric fleet operations to support capital and operations planning.

This project advances USDOT SMART Grant Program priorities in the following ways:

- **Safety and reliability:** Reliable access to low-carbon electricity is critical to the success of future EV deployments. Transit and other city vehicles play a vital role in emergency management services, and the ability to successfully electrify future critical municipal vehicles requires a reliable and managed grid.
- **Resiliency:** Vehicle electrification is expected to drive dramatically increased grid loading, and the ability to centrally manage charging across the city is needed to balance increasing renewable energy production with increasing vehicle charging loads. Grid management tools increase the resiliency of the utility infrastructure by providing tools to manage these growing and increasingly variable loads.

- **Equity and access:** Minimizing fuel costs for city run transit services increases the City's capacity to connect and expand access for underserved or disadvantaged populations, improving access to jobs, education, and essential services.
- **Climate:** Transportation is now the largest share of U.S. greenhouse gas production, and vehicle electrification combined with renewable energy production is the clearest way to reduce emissions from this sector.
- **Partnerships:** The City has operational needs that current market offerings do not provide. The City views this as an opportunity to collaborate with committed partners to develop new solutions that solve these needs and create local economic development.
- **Integration:** The ultimate goal of this project is to create a tight and dynamic connection between grid demands, energy production, vehicle users and local grid constraints to maximize the use of renewable energy production, minimize future grid upgrade costs and lower costs to Fort Collins utility customers.

The City seeks funding through Phase 1 of the DOT SMART grant to:

1. Conduct a demonstration project of managed charging software utilizing existing chargers to manage charging, reduce demand charges, and report charging sessions by vehicle by conducting a pilot at multiple charging locations through the city with up to 6 vehicles. The pilot will also explore how to utilize software to ensure on-time performance of fleet EVs and optimize charging for vehicle battery health.
2. Develop a municipal fleet electrification standards framework to minimize financial and operational risks as City fleets electrify. Study feasibility of integration of charging management into the existing Distributed Energy Resource Management System (DERMS) platform utilized by Fort Collins Utilities
3. Study value, including potential cost savings, to Fort Collins Electric Utilities' ratepayers created by managed fleet charging and other fleet activities that utilize City services and resources
4. Assess how to accelerate electrification plans utilizing grant funds and public/private partnership investments

The City has engaged with the Panasonic Smart Mobility Office and Center for Transportation and the Environment (CTE) to perform the studies, develop the plans, demonstrate the technical capacity of the software listed above, and provide overall project management and reporting.

Under a Phase 2 US DOT SMART grant, Fort Collins anticipates to:

- Deploy a charge management solution across all city owned charging locations and EVs
- Expand the solution to serve privately owned charging stations (i.e. "charge at home" and private fleets)
- Accelerate the adoption of EVs in all city fleets with a city-wide implementation of the municipal fleet electrification standards framework
- Upgrade city owned non-networked and non-OCPP (open charge point protocol) compatible Electric Vehicle Supply Equipment (EVSE) to enable charge management for all fleet vehicles
- Fully integrate the charging management solution into Fort Collins Utilities DERMS system for seamless operations

- Purchase BEBs to replace buses that are past their useful life, and purchase chargers/charging infrastructure to increase charging capacity at the bus maintenance depot

The desired outcomes of both Phase 1 and Phase 2 of the project will be:

1. A city-wide charge management system deployed across multiple municipal fleet depots and vehicle types to balance charging demand across the city, while considering grid constraints
2. A fleet electrification framework that establishes operational and procurement procedures and standards that the city will adhere to, minimizing potential challenges created by electrification
3. Enhanced reliability of the electric distribution system in Fort Collins creating downward pressure on electric energy rates with effective DERMS integration
4. Reduced TCO for current and future City EVs
5. Accelerated EV adoption across all City departments
6. Reduced emissions within Fort Collins in alignment with its Our Climate Future Plan
7. Greater data insights into City EV fleet operations
8. A city-wide solution for privately owned vehicles

Multiple Fort Collins municipal departments are engaged in the project, as this effort will provide benefits to all citizens. The following city departments are participating in this proposed program:

Transfort, the local transit agency, provides exceptional, customer-focused transit service that meets the Fort Collins community present and future transportation needs. Transfort currently operates 60 revenue vehicles (51 CNG, 7 LPG, and 2 depot-charged BEB). Transfort has plans to grow its electric fleet through multiple state and federal funding sources, with current funding to purchase nine (9) additional BEBs over the next two years. Transfort is also planning for procurement of additional charging infrastructure, including on-route charging at its downtown bus terminal.

Operation Services has the mission to professionally and economically provide and maintain City real property, fleet vehicles, and facilities to permit City personnel to accomplish their tasks. They currently have 38 EVs in its fleet and operates more than 20 level 2 charging stations throughout the city.

Utilities is a community-owned utility that provides light & power, water, wastewater, and stormwater services to over 75,000 customers.

Office of Equity & Inclusion provides oversight across all aspects of city government to closely examine policies, practices, budget allocations, and programs that may perpetuate institutional racism and systemic inequities for historically disadvantaged groups.

b. Project Location

The City of Fort Collins is located in northern Colorado, approximately 60 miles north of Denver. It is a midsized community with a population of 168,538, Transfort serves multiple areas within historically disadvantaged communities. The City of Fort Collins will execute Phase

1 of this project with the Panasonic Smart Mobility Office, which is located in Denver, CO, and has staff supporting the project located in the Fort Collins metropolitan area.

c. Community Impact

As municipal fleets electrify, the costs of electrical infrastructure upgrades necessary to support them are ultimately distributed among ratepayers. These rate increases typically have a disproportionate impact on low-income communities if not properly controlled. More intelligent electrical load management and infrastructure planning can limit cost impacts to ratepayers, with the greatest benefit to lower-income households, which are less equipped to absorb rate hikes. Moreover, fleet electrification benefits from tailpipe emissions reduction will disproportionately benefit lower-income individuals, especially from historically marginalized groups, who suffer the greatest impacts from noxious vehicle emissions and comprise the majority of transit bus ridership. Transfort runs multiple routes through low-income and environmental justice (EJ) communities and is in the process of transitioning all bus stops to be 100% ADA compliant to minimize disproportionately high and adverse environmental factors on these populations. Transfort is committed to pursuing EJ and providing safe access to bus stops and public transportation for persons with disabilities.

d. Technical Merit Overview

Identification and Understanding of the Problem to Be Solved

Fort Collins Utilities has a rate structure for large electric customers that includes coincident peak charges which typically account for 23% of their annual electric bill (can be much higher depending on a customer load profile)—yet are based on only 12 hours per year (the peak hour of each month). Transfort and other city fleets are exposed to these large coincident peak charges as they transition to EVs, but these costs can be avoided if properly managed.

Without any ability to monitor or manage charging load, utilities must build out electrical infrastructure to ensure reliability of the electrical system. This leads to expensive system upgrades, which are paid for by taxpayers and ratepayers in the City. Providing the electric utility with the ability to view EV fleet loads in real time and coordinate charging with fleet customers, they can defer or entirely avoid expensive infrastructure upgrades, limiting impacts to their taxpayers and ratepayers.

The City of Fort Collins has also found that managing EVSEs and EVs from multiple OEMs creates a challenge with operations and maintenance. Many OEMs provide software for charging and fleet management, but it is difficult, expensive, or not technically feasible to integrate software across multiple OEMs. As a result, Fort Collins is concerned about becoming locked into a single OEM to supply all of its EV and EVSE needs, exposing the city to pricing risks, or having to manage all of their assets through multiple disparate OEM dashboards, which is time consuming and difficult to maintain. As the City electrifies its fleet among all municipal departments it is critical to conduct proper transition planning and implement vendor agnostic systems to ensure the City avoids these challenges in the future, which will become more costly to resolve if not addressed now.

Appropriateness of Proposed Solution

A “smart grid” combines intelligence about both the supply and demand sides of the grid, and operates in a way that optimizes for reliability, affordability, and environmental impacts. This project will address and balance those considerations through a pilot of Panasonic’s eFleet Solutions of America (PEFSA). PEFSA is a tool used by both fleet operators and electric utilities to manage charging in a way that ensures maximum EVSE choice, cost-effectiveness, interoperability, vendor agnosticism, open standards, and data collection / standardization across Transfort, Ops Services, and Utilities. Through this approach, the City will be able to minimize the total cost of ownership (TCO) of EVs while simultaneously benefiting electric grid operations.

Coincident peak hours are determined each month as the highest peak load of the entire Platte River Power Authority service territory, which serves the Cities of Fort Collins, Loveland, Longmont, and Estes Park. Coincident peak hours and are notoriously difficult to predict, as they are heavily weather-dependent, which can shift rapidly in Colorado. Fort Collins Utilities utilizes advanced load forecasting methods to predict when coincident peak events are needed and has implemented a system to alert customers when those events are predicted utilizing OpenADR. PEFSA will work with this OpenADR system to intelligently manage the charging of City electric fleet vehicles to avoid coincident peak demand charges.

Expected Benefits

PEFSA is a vendor agnostic tool, meaning that it is able communicate with EVSEs from a variety of OEMs through OCPP (preferred) or through other proprietary protocols. This empowers the City to select the EVSE that best suits their budgets and operational needs, without the concern of vendor lock-in or O&M challenges.

Panasonic and CTE will also work with the City to explore integration of vehicle telematics and other fleet management systems into the PEFSA solution to understand where, when, and how much each vehicle will need to charge in order to meet the operational needs of both Transfort and Operation Services. By incorporating real time vehicle status information and future looking logistical requirements, the City seeks to be able to further optimize charging to minimize energy costs (including coincident peak charges and potential time of use costs), vehicle battery life, and on-time operations.

As a specific example, this solution can help Transfort avoid Coincident peak demand charges, which in the summer months are $15.90/kW. Transfort has plans for on route chargers rated up to 450kW, which if in use during this single hour of the month will incur a coincident peak fee of at least $7,155. The table below shows the coincident peak costs it can save annually if charging is avoided during this single hour each month during the entire year. Calculations factor in seasonal rate variations and Transfort’s current fleet electrification timeline.

Year	Potential Charging Demand	Exposure to Coincident Peak Charge	Potential Avoided Cost Per Vehicle/ yr
2023	450kW	$73,476	$24,492
2024	900kW	$146,952	$13,359
2025	1,800kW	$293,904	$26,719

Transfort and Operation Services look to avoid these charges by slowing, shifting, or stopping charging during coincident peak hours. These savings can then be utilized to accelerate adoption of electric vehicles and reduce operating costs for Transfort and other city fleets, providing benefit to the entire community through electric rates, taxes, and reduced emissions impacting the community directly from the operation of city fleets.

e. Project Readiness Overview

Feasibility of Workplan

PEFSA is relatively new to the market, but not untested. Panasonic has demonstrated the use of its software through a pilot with Portland General Electric (PGE) at its Electric Island demo site. For this pilot, PEFSA has been utilized to manage charging across multiple EVSEs from various OEMs and integrate the management of these chargers into the DERMS platform utilized by PGE. Panasonic has experience integrating with the ABB chargers utilized by Transfort, as well as OpenADR systems utilized by Fort Collins Utilities.

Screenshots from currently deployed PEFSA load management tools

The City of Fort Collins is uniquely positioned to be able to bring together two different fleet operators and the electric utility, all under City management with the same ultimate objectives serving the same community. The City is also not unfamiliar with pursuing and fostering innovation. The Smithsonian's National Museum of American History in Washington, D.C. recognized the city as "Place of Invention", highlighting its spirit of collaboration and communication, flexibility and adaptability, and a culture of risk-taking.

CTE uses a collaborative project management approach based on key principles having emerged from its experience with large, technical, multi-partner grants, contracts and cooperative agreements. CTE's project management approach includes project oversight, administration, communication and reporting. CTE's centralized, structured management of the work program enables team members to concentrate on exceeding project goals.

• Community Engagement and Partnerships

This project prioritizes the goal of serving the community. The Fort Collins Office of Equity and Inclusion recognizes the value of public transit to the community of Fort Collins and the importance of reducing emissions from fleet vehicles throughout the City.

CTE works closely with both the City of Fort Collins and Panasonic on their transportation electrification objectives. The organization's existing knowledge of City plans provides valuable insight to this project and will be a critical partner to ensure alignment of this project with other city efforts.

If awarded this grant, Transfort staff will bring an ordinance before City Council, who will appropriate the unanticipated grant revenue and grant a procurement exception for the partnerships included in this application if appropriate.

Leadership and Qualifications

In total, leadership committed to this project exceed 165 years of experience and include staff from a variety of departments through the City, Panasonic, and CTE. This team brings a diverse set of professional and academic backgrounds to ensure the necessary skill sets met all technical, managerial, and social objectives of this project. Below is a brief description of each team member on the leadership team. More detailed information can be found in Appendix I.

City Leadership:

- Pablo Bauleo- Fort Collins Utilities
    - Manager of Grid Flexibility programs, 14 years of experience
- Annabelle Phillips- Transfort
    - Transfort Project Manager, 7 years of experience
- Stu Reeve- Operation Services
    - City Energy Manager, 21 years of experience
- Tracy Ochsner- Operation Services
    - Director, 24 years of experience
- Claudia Menendez- Office of Equity and Inclusion
    - Director, 13 years of experience

Panasonic Leadership:

- Philip Tucker- Panasonic Smart Mobility Office
    - Manager of Finance and Operations, 13 years of experience
- Dexter Gauntlett- Panasonic Smart Mobility Office
    - Head of Utility Advisory, 16 years of experience
- Courtney Ehrlichman- Panasonic Smart Mobility Office
    - Head of Strategy, 16 years of experience

CTE:

- Erik Bigelow – Center for Transportation and the Environment
    - Director of Midwest Operations, 18 years of experience
- Kylie McCord - Center for Transportation and the Environment
    - Senior Engineering Consultant, 25 years of experience

a. Appendix I – Resumes

Pablo Bauleo

14 years of experience in the US utility sector plus 12 years of experience in data analytics and technology in academia. Education and certifications include a PhD in Astrophysics, Master in Nuclear Physis and CAPM. Co-Author of seminal IEEE publication on "Electric Energy Management in the Smart Home: Perspectives on Enabling Technologies and Consumer Behavior" and recipient of SGCC Customer Education Award for *"serving as a role model within the industry and […] innovative ways to save energy."*

2009-Current: Fort Collins Utilities, Sr Energy Services Engineer: Leader of grid flexibility programs including the planning and implementation of a growing portfolio of thermal storage (water heater, thermostats), grid-interactive buildings via open standards and battery storage.
2002-2008: Colorado State University, Physics Dept, Research Scientist II: Focused on instrumentation for astrophysics projects, including the design a 20,000 sq mile remote sensing astrophysics facility in southeast Colorado to run 100% via solar and wind energy.
1996-2002: Argentinean Atomic Energy Commission – Nuclear Physics Department, Staff Scientist: Due to Argentinean energy crisis of the '90s Pablo became a champion for energy conservation and grid optimization, leading education programs for the Atomic Energy Commission, in addition to his official work which was focused on nuclear instrumentation - including support for nuclear plants- and remote sensing.

Tracy Ochsner

24 years of experience, which includes managing the City fleet of approximately 2,000 vehicles. Founding member of Northern Colorado Clean Cities Coalition. Served on the Rocky Mountain Fleet Managers Association as National Executive Board and Colorado Chapter Chair. Recognized as a "Sustainability All-Star" by Green Fleet Magazine in 2014.

2022-Present: City of Fort Collins, Operation Services Director: Oversee all Fleet, Facilities, Real Estate and Capital Construction projects for the City of Fort Collins
2007 -2022: City of Fort Collins, Assistant Operation Services Director: Responsible for all maintenance operations for the City's fleet and facilities. Assisted in Project Management and Real Estate projects. Team accomplishments include #1 - Leading Fleet 2020, #1 - Green Fleet 2020, #10 - 100 Best Fleets in the Americas 2021.
2001- 2007: City of Fort Collins, Maintenance Superintendent: Assisted with maintenance operations for the City's fleet and facilities and the preparation of a $4.5 million Fleet Services annual budget. Implemented and promoted many alternative fuels and sustainable programs.
1998- 2001: City of Fort Collins, Fleet Analyst: Assisted Fleet Manager in operations and analysis of the City's Fleet. Responsible for the Department hardware and software computer support.

Annabelle Phillips

7 years of experience in public transit managing projects as well as compliance with state and federal grants. Education and certifications include MSW (Master of Social Work) and CAPM. Passionate about providing public transit as a vital service to the community and contributing to the acceleration of the adoption of zero emission technology within public transit.

2020 – Current: City of Fort Collins, Transfort: Project Manager
Manage transit projects in compliance with federal, state, and local regulations. Responsibility managing ongoing transit contracts and large projects, including the deployment of Transfort's first Battery Electric Buses. Maintain Transit Asset Management (TAM) system and oversee assets in compliance with FTA regulations.
2016 – 2020: City of Fort Collins, Transfort: Grant Compliance Specialist
Manage and monitor federal and state transit awards in compliance with all applicable regulations, including formula and discretionary funding. Develop and implement standard operating procedures as they relate to award management.

Dexter Gauntlett
16 Years at nexus of energy, mobility, and smart city strategy, project management, research, and implementation in Pacific Northwest, US, overseas. Founder of social enterprise water monitoring technology startup. Passionate about enabling utilities, cities to connect Grid Modernization and Decarbonization to social justice and health outcomes.

2018-Current: Panasonic: Head of Utility Advisory: Provide full-time strategic advisory, program management, and implementation services for utilities to design, implement, operationalize customer-focused electric mobility, smart city, and distributed energy products and services. Primary Clients: Portland General Electric, Tampa Electric, Colorado Springs Utility, Xcel
2011-2018 Navigant (Guidehouse): Director of Custom Research: Lead and manage 100+ custom research projects per year with staff of 40 analysts providing world class, detailed market research services for utilities, government, investors, clean-tech, electric mobility companies.
2007-2011 Clean Edge: Sr Market Research & Business Development Manager: Market research reports, analyses, and forecasts for cleantech companies, policymakers, Fortune 500s, investors.

Philip Tucker
13 years of experience in the utility and technology industries developing and managing products that solve real customer needs through innovative and sustainable solutions. Education and certifications include B.S. Mechanical Engineering, MBA, and PMP. Passionate about building the grid of the future by utilizing a unique blend of business, analytical, and technical skill sets.

2021-Current: Panasonic: Manager of Finance and Operations: Utilizing industry experience and in close collaboration with various Panasonic teams and leadership, execute on PEFSA objectives of developing new products that meet market demand and benefit society.
2019-2021: Xcel Energy: Contract Demand Management Program Manager: Managed multiple EV programs across service territories. Developed, implemented, measured, and reported on business strategies of programs. Provided vision and guidance for new products in development.
2016-2019: City of Fort Collins Utilities: Key Account Manager: Managed customer relationships and DSM projects with key accounts and developed strong understanding of Utility operations.

Courtney Ehrlichman
Over 15 years in the transportation technology space, ran 2 USDOT National University Transportation Research Centers and 1 USDOT Tier 1 UTC at Carnegie Mellon University Mellon focused on real-world deployment pilots and commercialization, cofounder of ai-powered road surface assessment startup, RoadBotics, recently acquired by Michelin, Connected

and Automated Vehicle advisor to multiple state DOTs, International NGOs, and lawmakers. Serves on the boards of Partnership for Responsible Technology and the Pittsburgh Task Force for Public Algorithms.

2020 – Current: Panasonic Smart Mobility Office, Head of Strategy: Lead market influence strategy focused accelerating the electrification transition in North America working with industry groups, industry leaders, and lawmakers. Manage corporate disruptive business strategy projects including deep market research and understanding needs of customer.
2018- Current: The Ehrlichman Group, CEO: Advise decision makers navigate fast-paced technology disruptions through strategic planning, partnerships, pilots; advising key actors on effective public policy that fosters innovation while increasing quality of life for everyone.
2016 – 2022: Co-founder, RoadBotics (acquired by Michelin): Established and led the spin out of ai-powered road surface assessment company from the Robotics Institute at Carnegie Mellon University after leading 4 years of research in partnership with real world transportation partners. Served as CEO & COO. Company acquired in 2022.

Erik Bigelow
Erik has over 18 years of engineering experience including 5 years of electronics packaging, and 13 years in implementing, deploying, and planning for zero emission vehicle including battery-electric and hydrogen fuel cell powered vehicles and infrastructure. At CTE he has had primary responsibility for many successful complex zero emission vehicle deployment projects ranging from $500k to $10M.

2009 – Current: Center for Transportation and the Environment, Midwest Director: Leads CTE's efforts in Analysis, Engineering and Key Performance Indicator reporting across CTE's portfolio of projects and is central to CTE's engineering analysis efforts for large-scale fleet deployment simulation and other analysis initiatives. Senior manager responsible for successful project implementation across varied and complex zero emission vehicle projects.
2003 - 2009: National Instruments, Staff Mechanical Engineer: Responsible for complete mechanical design, verification, PCB mechanical design and thermal management

Kylie McCord
Kylie has over 25 years of experience in project management, including zero-emission bus deployment and transition planning, construction management, and client service management. In addition to zero-emission bus deployment and transition planning, Mr. McCord has managed projects including environmental assessment, alternatives analysis, feasibility study development, environmental remediation and liability management, and design and construction services for multiple state and federal agencies.

2018 – Current: Center for Transportation and the Environment, Senior Engineering Consultant: Responsible for zero emission bus deployment projects with a focus on infrastructure; responsible for business development through proposals, grant management, and marketing. 2007 - 2018: Jacobs Engineering Group (Formerly CH2M Hill, Inc), Senior Project Manager/Design Manager: Provided environmental consulting and remediation services for major chemical manufacturers, pipeline and railway clients, and Federal agencies including EPA, NAVFAC, Army COE, and AFCAC.

Appendix II – Summary Budget Narrative

The City of Fort Collins has collected pricing from both Panasonic and CTE as shown below. The City of Fort Collins is not requesting funding for internal staffing but is committing to the staffing and management resources required to implement and manage this project. The requested funds total $1,059,037.

Panasonic costs are up to $812,500 and consists of:

Flat Fees:

- $487,500 technology demonstration, data collection and dissemination in accordance with Data Management Plan provided by the City, and advisory services (18 months)

Additional expenses to support project:

- Up to $100,000 Integration development with current systems
- Up to $200,000 Additional monitoring hardware
- Up to $25,000 team travel

CTE total costs are $246,537 and includes the following for the proposed 18-month project:

- Project Planning and Initiation
- Data Management Plan
- Draft Implementation Report
- Final Implementation Report
- Project Management and Administration
- Technical Advisory Services

Appendix III- Letters of Commitment

Please see the attached letters from:

- Panasonic Corporation of North America
- Center for Transportation and the Environment
- Colorado Energy Office
- Northern Colorado Clean Cities
- North Front Range Metropolitan Planning Organization
- Platte River Power Authority
- Xcel Energy

Panasonic

Panasonic Corporation of North America

Two Riverfront Plaza
Newark, NJ 07102-5490
www.panasonic.com

November 16, 2022

Letter of Commitment

Dear Secretary Buttigieg,

Panasonic Corporation of North America's Smart Mobility Office (Panasonic SMO) is dedicated to driving the mobility and energy industries forward to create a clean, resilient, equitable society. By 2050, the global Panasonic GREEN IMPACT initiative aims to create impact that reduces CO2 emissions by more than 300 million tons, or about 1% of the current total global emissions. In alignment with these goals, and the emission reduction goals of the City of Fort Collins, we support the City's application for a SMART Grant relating to its smart grid electric vehicle (EV) charge management project. The proposed relationship between City and Panasonic SMO would be subject to execution of a written agreement between them.

Panasonic SMO anticipates supporting the City's project and its stakeholders in the following ways:

- Working directly with the City to understand the challenges they face on their electrification journey in alignment with their carbon reduction goals.
- Piloting the Panasonic eFleet Solutions of America (PEFSA) software with the City to help the City learn how it can optimize its electric fleet vehicle operations while minimizing costs.
- Providing consulting services to the City through Panasonic subject matter experts to give insight into technical considerations and challenges of EV and Electric Vehicle Supply Equipment technologies.
- Training City staff to operate the PEFSA software.

If the City receives the SMART Grant award, Panasonic SMO's support would be new, specific, and measurable in the following ways:

- Formation of a new relationship between Panasonic SMO and the City of Fort Collins, creating an opportunity to develop solutions that will provide direct benefits to the local community.
- The relationship will aim to capture the full value of electrified transportation for the City, including measurable goals to avoid and reduce operating costs for municipal electric fleet vehicles and the City's publicly owned electric utility.
- Following the successful completion of the activities planned for Phase 1, Panasonic and the City would collaborate to deploy the PEFSA software for other fleet operators in the City to encourage electrification while maintaining high reliability of the electric grid.

The proposed relationship between City and Panasonic SMO would be subject to execution of a written agreement between the two parties.

Panasonic

Panasonic Corporation of North America

Two Riverfront Plaza
Newark, NJ 07102-5490
www.panasonic.com

We appreciate your consideration of the City's SMART Grant application, and we look forward to the opportunity to begin this important work as we seek to contribute to a better world for all.

Sincerely,

Kjell Persson

Kjell Persson (Nov 17, 2022 14:28 MST)

Nov 17, 2022

Kjell Persson
Head of Smart Mobility Office

November 15, 2022

The Honorable Pete Buttigieg
Secretary
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: City of Fort Collins Submission to USDOT FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Dear Secretary Buttigieg:

The Center for Transportation and the Environment (CTE) is pleased to join the City of Fort Collins in responding to the US Department of Transportation's FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program.

Founded in 1993, CTE is a national 501(c)(3) non-profit with a mission improve the health of our climate and communities by bringing people together to develop and commercialize clean, efficient, and sustainable transportation technologies. Through more than $1.1 billion in clean transportation demonstrations, commercial deployments, and planning projects to date, CTE has established itself as national leader in developing and commercializing these technologies.

Fort Collins' project addresses a critical need for cities across the US to simultaneously balance grid loads while ensuring charging reliability as electric vehicle fleets rapidly scale. As the demand for electric vehicle deployment increases across private and public fleets to meet emissions reduction targets, improving grid resiliency while smartly scaling infrastructure is a top concern. Low-income and other disadvantaged communities are disproportionately impacted by vehicle emissions, grid outages, and the increasing frequency of environmental disasters due to our changing climate.

Thank you in advance for your consideration of this project. I fully support Fort Collins in their efforts and look forward to the implementation of this project and the benefits it will bring to American communities.

Sincerely,

Daniel J. Raudebaugh
Executive Director
730 Peachtree Street, Suite 450
Atlanta, GA 30308

COLORADO
Energy Office

Dr. Robert Hampshire
Office of Research and Technology
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: City of Fort Collins Submission to USDOT FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Dear Dr. Hampshire,

I am writing to express my support for the City of Fort Collins' application submitted in response to the United States Department of Transportation's FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program.

The Colorado Energy Office is an office of the Governor, with the mission of reducing greenhouse gas emissions and consumer energy costs by advancing clean energy, energy efficiency, and zero emission vehicles to benefit all Coloradoans. We support this project and believe it contributes toward our vision of a prosperous, clean energy future for Colorado.

Fort Collins' project is an exciting opportunity for our community, and we look forward to seeing the benefits of utility-scale charge management as we accelerate electric vehicle adoption across our region. The broad scope of this project, including the transitioning the utility's own fleet to electric vehicles, helps to ensure the benefits of transportation electrification are fully realized. With the need to support a rapidly growing share of electric vehicles across private and public fleets, improving grid resiliency while thoughtfully scaling infrastructure is a top concern.

Some of the benefits of this project include a reduction of transportation-related emissions, which often disproportionately impact low income and other disadvantaged communities. We also understand these charging system capabilities may limit impacts on public finances from growing the electric vehicle fleet, and on ratepayers who often bear the burden of expensive electrical infrastructure upgrades.

Thank you in advance for your consideration of this project. I fully support Fort Collins in their efforts and look forward to the implementation of this project and the benefits it will bring to our community.

Sincerely,

Will Toor

Will Toor
Executive Director
Colorado Energy Office

Nov 16th 2022

Dr. Robert Hampshire
Office of Research and Technology
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: City of Fort Collins Submission to USDOT FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Dear Dr. Hampshire,

I am writing to express my support for the City of Fort Collins' application submitted in response to the United States Department of Transportation's FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program.

Northern Colorado Clean Cities is sponsored by the US Department of Energy's Clean Cities Program, with the purpose of supporting local actions to reduce the use of imported petroleum in transportation. This project, if supported by the SMART Grants Program, will align with our objectives of supporting adoption of alternative and renewable fuels and new transportation technologies.

Fort Collins' project is an exciting opportunity for our community, and we look forward to seeing the benefits of utility-scale charge management as we accelerate electric vehicle adoption across our region. With the need to support a rapidly growing share of electric vehicles across private and public fleets, improving grid resiliency while smartly scaling infrastructure is a top concern.

Low-income and other disadvantaged communities are disproportionately impacted by noxious vehicle emissions and the increasing frequency of environmental disasters due to our changing climate. We also understand these charging system capabilities may limit impacts on public finances from growing the electric vehicle fleet, and on ratepayers who often bear the burden of expensive electrical infrastructure upgrades.

Thank you in advance for your consideration of this project. I fully support Fort Collins in their efforts and look forward to the implementation of this project and the benefits it will bring to our community.

Sincerely,

Diego Lopez
Executive Director
Northern Colorado Clean Cities
Diego Lopez

North Front Range
Metropolitan
Planning
Organization

November 14, 2022

Dr. Robert Hampshire
Office of Research and Technology
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: City of Fort Collins Submission to USDOT FY2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Dear Dr. Hampshire,

I am writing to express support for the City of Fort Collins' application submitted in response to the United States Department of Transportation's FY2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program. Fort Collins seeks to implement a smart grid electric vehicle (EV) charge management solution, minimize current and future energy costs for EV charging, and collect data for electric fleet operations planning.

The North Front Range Metropolitan Planning Organization (NFRMPO) provides a long-range vision for the North Front Range regional transportation system. This project aligns with several goals of the NFRMPO, including air quality and advancing transportation technology.

Fort Collins' project is an exciting opportunity for the region, and we look forward to seeing the benefits of utility-scale charge management as we accelerate electric vehicle adoption across our region. With the need to support a rapidly growing share of electric vehicles across private and public fleets, improving grid resiliency while smartly scaling infrastructure is a top concern.

Low income and other disadvantaged communities are disproportionately impacted by noxious vehicle emissions and the increasing frequency of environmental disasters due to our changing climate. We also understand these charging system capabilities may limit impacts on public finances from growing the electric vehicle fleet, and on ratepayers who often bear the burden of expensive electrical infrastructure upgrades.

Thank you in advance for your consideration of this project. The NFRMPO fully supports Fort Collins in their efforts and look forward to the implementation of this project and the benefits it will bring.

Sincerely,

Suzette Mallette

Digitally signed by Suzette Mallette
Date: 2022.11.15 15:22:26 -07'00'

Suzette Mallette
Executive Director
North Front Range Planning Organization

419 Canyon Avenue, Suite 300
Fort Collins, Colorado 80521
(970) 800-9560
nfrmpo.org

Platte River Power Authority

Estes Park • Fort Collins • Longmont • Loveland

11/16/2022

Dr. Robert Hampshire
Office of Research and Technology
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: City of Fort Collins Submission to USDOT FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Dear Dr. Hampshire,

We are writing to express our support for the City of Fort Collins' application submitted in response to the United States Department of Transportation's FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program.

Since 1973, Platte River Power Authority has provided reliable, environmentally responsible, and financially sustainable energy and services to the communities of Fort Collins, Estes Park, Longmont, and Loveland. In 2018, we adopted a policy to work toward a 100% noncarbon energy portfolio while maintaining our commitment to reliability and affordability. Projects like this, that seek to make electric loads more responsive to the electric system are necessary to help us meet our shared goal.

Fort Collins' project is an exciting opportunity for our community, and we look forward to learning more about utility-scale charge management as electric vehicle adoption accelerates across our region. With the need to support a rapidly growing share of electric vehicles across private and public fleets, improving the responsiveness of electric vehicle charging to support grid reliability and financial sustainability while smartly scaling infrastructure is a priority.

Thank you in advance for your consideration of this project. We fully support the City of Fort Collins in their efforts and look forward to the implementation of this project and the benefits it will bring to our community.

Sincerely,

DocuSigned by:
Raj Singam Setti
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Raj Singam Setti
Platte River Power Authority
Chief Transition & Integration Officer

1800 Larimer Street
Denver, CO 80202

November 18th, 2022

Dr. Robert Hampshire
Office of Research and Technology
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: City of Fort Collins Submission to USDOT FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Dear Dr. Hampshire,

I am writing to express my support for the City of Fort Collins' application submitted in response to the United States Department of Transportation's FY 2022 Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program.

Xcel Energy was the first major U.S. power provider to announce a vision for delivering 100% carbon-free electricity to customers by 2050. Since then, we've expanded that commitment to other areas where we can lower carbon, including transportation with a goal to power 1.5 million electric vehicles in our service territories by 2030. Fort Collins' project is an exciting opportunity for our Colorado community, and we look forward to seeing the benefits of utility-scale charge management as we accelerate electric vehicle adoption across our region. With the need to support a rapidly growing share of electric vehicles across private and public fleets, improving grid resiliency while smartly scaling infrastructure is a top concern.

Low-income and other disadvantaged communities are disproportionately impacted by noxious vehicle emissions and the increasing frequency of environmental disasters due to our changing climate. We also understand these charging system capabilities may limit impacts on public finances from growing the electric vehicle fleet, and on ratepayers who often bear the burden of expensive electrical infrastructure upgrades.

Thank you in advance for your consideration of this project. I fully support Fort Collins in their efforts and look forward to the implementation of this project and the benefits it will bring to our community.

Sincerely,

Dan

Dan Clark
Key Account Manager, Xcel Energy
Dan.C.Clark@XcelEnergy.com