

# Regional Air Quality Council and Colorado Energy Office Electric Vehicle and Charging Station Grant Application

Response ID: 103 Data

## 3. General Information and Contact

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### 1. Of which of the following are you applying for funding?

*Funding for electric vehicles is only available to projects in Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas and/or Jefferson Counties*

Electric Vehicle Charging

### 2. Please provide the following information for the primary contact on your application

#### First Name

Cindy

#### Last Name

Bosco

#### Title

Environmental Analyst II / Denver Urban Fellow

#### Organization Name

Denver Department of Environmental Health

#### Street Address

200 W. 14th Ave.

#### Apt/Suite/Office

Suite 310

#### City

Denver

#### Zip

80204

**Email Address**

cindy.bosco@denvergov.org

**Phone Number**

720.865.5426

**Organization or Company Website**

www.greenprintdenver.org

**3. Organization Type\***

Local government

**4. Please indicate the county in which the proposed electric vehicle will be registered and/or the electric charging station will be installed. Note the restrictions on eligibility provided in the previous question.**

DENVER

**5. Mandatory Criteria**

As the project applicant, I hereby certify and agree to the aforementioned mandatory criteria.

Please check the following box and enter your name

I agree

Name

Cindy Bosco

**6. Scope and Project Justification**

**1. Please describe why your organization is implementing this project and how your project addresses the eight goals listed on page 1 of this application. This should include the types of petroleum based vehicles being replaced and/or displaced (please describe), fuel savings and vehicle miles travelled (VMT) that will be changed from petroleum based mileage to electric mileage.**

Why is Denver Interested in Implementing this Project?

Denver has long been a leader in its Green Fleet Program, and is consistently ranked in the top 10 cities nationally for its fleet leadership and innovations. In 2012, Denver was awarded 4th place out of 93,000 fleets on Government Fleet Magazine's list of the 100 Best Fleets in North America. Alternatively fueled or powered vehicles currently make up 43 percent of the city's entire fleet. In 2013, up to seven trash trucks will be converted from diesel to compressed natural gas. Design/build of a CNG fueling station at the Central Platte Campus will also commence this year.

Denver's central purpose in pursuing this grant opportunity is to continue to advance its policies and operations in ways that will help to make the City a prosperous, world-class community as it fosters efficiencies in resource use and diversification, reduced environmental impacts, and expanded economic opportunities to improve quality of life. The vision and desired outcomes of the Moving People: Denver Strategic Transportation Plan (2008) includes development of a "Green & Sustainable Transportation System," which improves air and water quality, and provides alternatives to traditional energy sources.

Three major documents and policies are used to advance EV and EVSE in Denver. Of special note is Chapter 4 of The Mayor's Executive Order 123, which commits to Electric Vehicle Readiness.

1. Mayor's Executive Order 123 – Office of Sustainability and Citywide Sustainability Policy (see Attachment 3)

Chapter 3 - Green Fleet Program

- Increase the average fuel economy of the fleet
- Increase the number of hybrid, alternative fuel, and fuel-efficient vehicles in the fleet
- Minimize the total vehicle miles traveled by City employees using fleet vehicles

Chapter 4 - Electric Vehicle Readiness

- The City will support efforts to reduce dependence on liquid petroleum fuels and improve regional air quality through accelerated support and adoption of infrastructure needed to support electric drive vehicles and related charging equipment on City property.
- The City will participate actively in collaborative attempts to address how road infrastructure can be maintained if efforts to reduce vehicle miles traveled, increase fuel efficiency and move substantial numbers of vehicles away from operation on gasoline are successful.
- New parking lots with 100 parking spaces or more available for use by the general public constructed on City property will have at least one parking space exclusively for electric vehicles and equipped with an electric vehicle charging system located anywhere in the parking structure or lot.

2. Denver's 2007 Climate Action Plan <http://www.greenprintdenver.org/docs/DenverClimateActionPlan.pdf?phpMyAdmin=uw3Ctvhe640MfMtUoF1W%2CdvORDc>

- Decrease total community-wide CO<sub>2</sub>e emissions to below 1990 levels
- Provide City support for alternative transportation strategies

3. 2020 Sustainability Goals (Attachment 4)

- Attain all National Ambient Air Quality Standards.
- Reduce total community-wide CO<sub>2</sub>e emissions from Denver to below 11.8 million mtCO<sub>2</sub>e (below 1990 levels).
- Reduce energy consumed in city-operated buildings and vehicles by 20% over the 2012 baseline.
- Hold total energy consumed in Denver for buildings, mobility and industrial processes below the total consumed in 2011, while supplying at least half of that total from renewable sources.

This application requests reimbursement funding in the amount of \$37,560 to procure and install six (6) electric vehicle charging stations (EVSE) in the Central Business District (downtown Denver) and the Cherry Creek North District, two of the most popular destinations in Denver. Total project cost is estimated at \$71,101. Denver will provide approximately 47% matching funds to complete the project.

How Denver's Project Addresses the Eight Goals

Goal 1, 5 and 7 - Incentivize the diversification from petroleum operated vehicles in area public fleets by funding vehicle and infrastructure costs; Promote energy security by reducing petroleum usage and implementing cleaner, reliable alternative transportation; Advance fleet sustainability.

The Mayor's Executive Order 123 provides policy direction to ensure that, to the extent the City needs to use vehicles for its operations, the City procures and operates a fleet of vehicles that minimizes environmental impact, contributes to enhancing domestic energy security, reduces dependence on liquid petroleum fuels, enhances regional energy resilience, and maximizes fuel efficiency and diversification. The Order requires Electric Vehicle Readiness and Green Fleet programs. These policies have produced the following outcomes in alignment with the goals of this grant:

- The City currently has three electric vehicles in its fleet.
- Denver has installed two public charging stations at the Denver Performing Arts Complex, 1055 13th Street. Two additional public stations are in the Denver Cultural Center Garage, 65 West 12th Avenue.
- Charging stations are also situated at the Wellington Webb Municipal Building and the Judges Garage for City fleet vehicle charging.

Goal 2 - Promote the transformation of the region's transportation system by incentivizing the development of geographically dispersed EVSE charging infrastructure.

This project is part of a larger vision to help implement Denver Metro Clean Cities Coalition's "Colorado Electric Vehicle and Infrastructure Readiness Plan" to make our state a first tier market for plug-in electric vehicles. Denver has set a target to expand the network of publicly available electric vehicle charging stations in Denver from 10 in 2011 to 500 by 2020, as measured by the U.S. Department of Energy's Alternative Fuels Data Center. This application requests funding for the first phase of Denver's EVSE deployment strategy, recognizes the need for RAQC to balance infrastructure throughout the seven-county region, and helps advance Denver's plan to install up to four dozen locations for EVSE on City property in the future to aid and extend the range for PEV drivers (See Attachment 1: Potential EVSE Locations).

Goal 3 and 4 - Reduce harmful air pollutants; Reduce greenhouse gas emissions.

Regional air quality improvements are another major reason Denver is committed to electric vehicles. Emission Impact findings reported in the "Colorado Electric Vehicle and Infrastructure Readiness Plan" indicate: 1.) The "well-to-wheels" emissions of greenhouse gases, carbon monoxide, volatile organic compounds, and nitrogen oxides are consistently lower with PEVs than with comparable ICE (internal combustion engine) vehicles and 2.) PEVs require about 60% of the energy per mile than is needed by ICE vehicles. The report continues that "the estimated greenhouse gas emissions per mile for PEVs are about 55% of those for gasoline vehicles."

Goal 6 – Encourage technological innovation.

Denver's green and sustainable transportation policies have positioned the City as an early adopter of electric vehicles in its transformation to a lower carbon transportation system. From the two, all-electric Ford Transit Connect Vans, data are collected on charging and usage to measure fleet operational costs and performance compared to traditional and hybrid vehicles. The electric vans – which are branded and highly visible to the public -- have operated for over fourteen months without operational issues. The miles per gallon equivalent data being collected will benefit future adopters in making the business case.

Goal 8 - Promote greening government initiatives.

In addition to Executive Order 123, Denver's 2007 Climate Action Plan, and Denver's 2020 Sustainability Goals, provide additional greening government policy direction to advance Green Fleet leadership, policies and programs to reduce petroleum use, improve air quality and lower greenhouse gas emissions. Engines Off! Denver is another example of a City and County of Denver program working to improve air quality by reducing vehicle idling, a significant source of air pollution. Denver's electric vehicle leadership is demonstrated daily, by "walking the talk" using electric vehicles in the fleet and installing EVSE at highly visible, public locations to reduce "range anxiety" for the electric vehicle-driving public.

On April 22, 2013 Denver will host a large Earth Day event in downtown Denver on the steps of the City and County Building. Denver Metro Clean Cities will be a partner in the event and Mayor Michael B. Hancock will be in attendance. The focus of the event is to showcase electric vehicles and charging infrastructure to further inform the driving public of lower carbon alternatives. The event would be an excellent venue to announce with the RAQC the commitment to fund additional EV charging stations in Denver, and throughout the region.

**2. Please describe major phases of the project and the estimated completion date of each phase.**

Timeline for Procurement and Installation of Six (6) EVSE  
(See Attachment 2)

Activity Timeline

Notice to Proceed from RAQC Month One

Solicit Bids / Select Vendor Month One

Order Equipment Month One

Obtain Permits Month One

Engineered Drawings Month Two

30-Day Electrical Load Study Complete (if required by permit) Month Two

Plan Review Fee Month Two

Site Preparation, Concrete Pads Months Three - Five

EVSE Installation Months Three - Five

Finish Work, Signs, Bollards, Stall Paint Month Six

Permit Inspections Month Six

Submit Report to RAQC for Reimbursement Month Six

**7. Planning Criteria**

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**1. Has your organization received any interest from stakeholders/employees/owners/lessees that own EVs for EVSE installations at your location? Please describe.**

Denver has been approached by several individuals and entities inquiring about EVSE parking options. Most questions are sent to the Office of Sustainability e-mail and voice mailboxes. Inquiries come from EV car clubs, such as the Nissan Leaf Meets Club; from a resident seeking assistance with HOA issues; and from employees. Because Denver has already installed several EVSE, we are also contacted by EVSE manufacturing and networking vendors, and many express willingness to help with events. Denver also reached out to its partner, Denver Metro Building Owners and Managers Association, to assist Project FEVER with a survey to commercial building owners about their EVSE readiness capabilities. Denver joined ten other cities in the Urban Sustainable Directors Network seeking innovation funding to pilot test EVSE parking options for "garage orphans." Although not selected for funding, the application involved the Rocky Mountain Institute and U.S. Green Parking Council, and strengthened the City's partnerships with those non-profit organizations.

**2. Does your organization have specific or general planning documents related to EV or EVSE? For example, fleet implementation plans, Smart Charging plans, or sustainability plans.**

Yes

**If yes, please upload an electronic copy. After selecting a file, please click the "Upload" button. Please note that you may upload up to 3 files, and the maximum size per file is 10 MB.**

**If no, are you interested in learning more about developing EV/EVSE planning documents?**

Yes

**3. Is your organization partnering with other entities to complete this project? If yes, please provide a list of partners and describe how partners will improve this project. Otherwise, please type "N/A" in the box below.**

The application is a partnership between multiple City agencies, including:

- Denver Environmental Health
- Denver Public Works
- Denver General Services
- Colorado Convention Center – SMG Parking
- Denver Public Library
- Mayor's Office of Sustainability

These departments will work together to provide the EVSE stations in existing parking facilities in both downtown and the Cherry Creek area. Environmental Health will provide oversight of the grant, while the staff in Public Works Parking Operations will work with General Services and the other agencies for installation. The Office of Sustainability will assist with promotion and outreach to the community.

**4. Please describe any renewable energy or energy efficiency efforts that may reduce the overall environmental impact of your EVSE facility. If there are none, please type "N/A" in the box below.**

None of the EVSE will be powered with renewable energy at this time, however downtown City facilities currently produce 1.4 MW of solar power to help offset environmental impacts of City operations.

**5. Questions regarding matching funds:**

**Has your organization secured the matching funds for this project? Please indicate the amount of matching funds available to support this project. Please note that funds either directly or indirectly provided by the federal government are not eligible for consideration.**

37000

**Please indicate the source of the matching funds**

Internal Funds

**If other, please indicate the source of matching funds below**

**8. EVSE Application Planning Criteria**

**6. Please provide the address of the EVSE location (with zip code) and hours of access.**

EVSE stations will be provided at the locations listed below. All sites will be available to the public for use 24/7, 365 days a year. See Attachment 5 for the location map of stations and photo rendition of what the surface lot EVSE locations will look like.

- Justice Center Garage: 490 W 14th Ave., Denver, CO 80204
- Colorado Convention Center: 700 14th Street, Denver, CO 80202
- Firehouse Lot: 1322 Blake St., Denver, CO 80204
- Acme Lot: 1430 14th Street, Denver, CO 80202
- Bannock Lot: 1345 Bannock St., Denver, CO 80204
- Ross-Cherry Creek Branch Library: 305 Milwaukee St, Denver, CO 80206

**7. Questions regarding Public Access to EV Infrastructure:**

**Will all the EVSE be open to the public?**

Yes

**If not all EVSE, how many individual charging connections will have public access?**

**8. How will the parking queue be managed? (i.e., will there be a time limit for charging, will there be an attendant that monitors the queue?)**

The parking queues will be managed through purchase of the established parking lot time allocations when the vehicle driver parks and pays for the parking fees. Enforcement officers will also monitor the parking lot time restrictions and issue citation when appropriate. Time limits for charging will not be set, however parkers would have to adhere to all parking restriction time limits (i.e. time limits at Ross-Cherry Creek Library).

**Is your organization planning to charge parking/charging fees for users in the next three years?**

No

**If your organization is planning to charge parking/charging fees for users in the next three years, please explain how parking transactions will be handled. Otherwise, please type "N/A" in the box below.**

The EVSE locations were selected to provide charging opportunities in the Central Business District and Cherry Creek, where maximum usage is anticipated due to regional attractions and employment centers. There is no "free" parking in these areas. There will be no charge for use of the EVSE over the next three years; however the parking spot will be market-priced (i.e., no additional charge for electricity – just parking). The one exception may be at the Convention Center, where the privately-operated parking management company, SMG, may opt to charge \$1 additional for electricity per parking session in the future.

**9. EVSE Application**

**Please indicate the types of EVSE that will be publicly accessible and not publicly accessible with quoted costs below**

| Manufacturer | Model | Type (Level II or III) | Number of Units | Number of Vehicles that This Unit Can Charge at Once | EVSE Equipment Cost per Unit | EVSE Labor Cost per Unit | EVSE Construction Cost per Unit | Warranty Period | Expected Date of Purchase | Proposed Installation Date | Publicly Accessible (Yes or No) |
|--------------|-------|------------------------|-----------------|--|------------------------------|--------------------------|---------------------------------|-----------------|---------------------------|----------------------------|---------------------------------|
|              |       |                        |                 |  |                              |                          |                                 |                 | Approx. 30 days after     | Approx. 3-5 months after   |                                 |

|    |       |              |    |   |   |         |         |            |        |  |   |     |
|----|-------|--------------|----|---|---|---------|---------|------------|--------|--|---|-----|
| 1  | Eaton | SMR3BX000000 | II | 4 | 1 | \$2,384 | \$2,920 | \$7,242.50 | 1 year | days after<br>Notice to<br>Proceed               | months after<br>Notice to<br>Proceed                | Yes |
| 2  | Eaton | SKR3BX000000 | II | 2 | 1 | \$1,654 | \$2,643 | \$6,160.50 | 1 year | Approx. 30<br>days after<br>Notice to<br>Proceed | Approx. 3-5<br>months after<br>Notice to<br>Proceed | Yes |
| 3  |       |              |    |   |   |         |         |            |        |  |   |     |
| 4  |       |              |    |   |   |         |         |            |        |  |   |     |
| 5  |       |              |    |   |   |         |         |            |        |  |   |     |
| 6  |       |              |    |   |   |         |         |            |        |  |   |     |
| 7  |       |              |    |   |   |         |         |            |        |  |   |     |
| 8  |       |              |    |   |   |         |         |            |        |  |   |     |
| 9  |       |              |    |   |   |         |         |            |        |  |   |     |
| 10 |       |              |    |   |   |         |         |            |        |  |   |     |

**Installer Information**

**Please provide the following information for each EVSE installer for the above units**

Name : Denver will solicit the most cost effective bid from among its three electrical trades vendors currently on the City's Master Purchase Order #0767A: 1.) Conti Electric, Inc.

Address : 6547 S. Dexter St., Centennial, CO 80121

Telephone Number : 303.221.4776

EVSE Manufacturer and Model Being Installed : Eaton SMR3BX000000, SKR3BX000000

**Does this vendor have proof of insurance?**

Yes

**Is the installer a Female or Minority-owned Business?**

No

**Will you be using more than one installer for the above EVSE units?**

Yes



## 10. EVSE - Additional Installer Information

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### Additional Installer Information - 2

**Please provide the following information for each EVSE installer for the above units**

Name : Denver will solicit the most cost effective bid from among its three electrical trades vendors currently on the City's Master Purchase Order #0767A: 2) LEI Companies, Inc.

Address : 2017 Curtis Street, Denver, 80205

Telephone Number : 303.865.5202

EVSE Manufacturer and Model Being Installed : Eaton SMR3BX000000; SKR3BX000000

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**Does this vendor have proof of insurance?**

Yes

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**Is the installer a Female or Minority-owned Business?**

Yes

### Additional Installer Information - 3

**Please provide the following information for each EVSE installer for the above units**

Name : Denver will solicit the most cost effective bid from among its three electrical trades vendors currently on the City's Master Purchase Order #0767A: 3) Sturgeon Electric Company, Inc.

Address : 12150 E. 112th Ave., Henderson, CO 80640

Telephone Number : 303.286.8000

EVSE Manufacturer and Model Being Installed : Eaton SMR3BX000000; SKR3BX000000

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**Does this vendor have proof of insurance?**

Yes

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**Is the installer a Female or Minority-owned Business?**

No

### Additional Installer Information - 4

**Please provide the following information for each EVSE installer for the above units**

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**Does this vendor have proof of insurance?**

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Is the installer a Female or Minority-owned Business?

**Additional Installer Information - 5**

Please provide the following information for each EVSE installer for the above units

Does this vendor have proof of insurance?

Is the installer a Female or Minority-owned Business?

**11. EV Application**

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Please indicate the make, model and quantity of all vehicles that you seek to receive grant funding for.

|    | Quantity | Model Year | Make | Model | Incremental Cost per Vehicle* |
|----|----------|------------|------|-------|-------------------------------|
| 1  |          |            |      |       |                               |
| 2  |          |            |      |       |                               |
| 3  |          |            |      |       |                               |
| 4  |          |            |      |       |                               |
| 5  |          |            |      |       |                               |
| 6  |          |            |      |       |                               |
| 7  |          |            |      |       |                               |
| 8  |          |            |      |       |                               |
| 9  |          |            |      |       |                               |
| 10 |          |            |      |       |                               |

**14. RAQC Terms and Conditions**

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5. Please indicate whether or not you agree to the above terms and conditions.

Please check the following box and enter your name

I agree

**Name**

Cindy Bosco

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