

State and Local Government Experiences with Workplace Electric Vehicle Charging

Poll 1

- We will start in a few minutes
- Two audio options: (1) Listen via computer (2) Call in to 1-833-799-1917



State and Local Government Experiences with Workplace Electric Vehicle Charging

March 12, 2018
2:00 – 3:00 PM Eastern


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1. Listen via computer
 2. Call in to 1-833-799-1917



How to Participate

Question and Answer

- Enter your question in the Q&A box
- Questions will be moderated at the end
- EPA will post responses to unanswered questions on the [State and Local Webinar Series page](#)

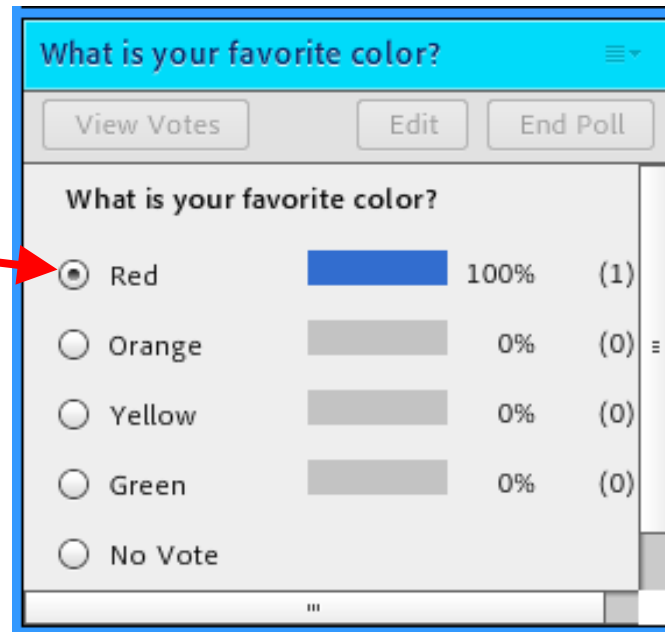


The screenshot shows a web interface for a Q&A session. At the top, there is a blue header with the text "Q & A" and icons for a printer, a user profile, and a menu. Below the header is a text input field containing the question "Question: What is a heat island?". At the bottom of the interface, there is a white text input field and a grey button with a speech bubble icon. A red arrow points to this button, indicating it is the submit button for the question.

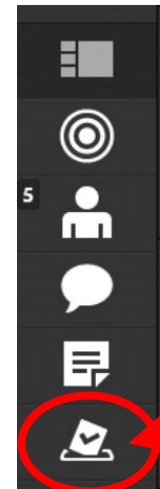
How to Participate

Polling

- We'll ask several poll questions during the webinar
- On mobile devices or tablets
 - ▶ Exit full screen mode
 - ▶ Tap the Poll icon



Color	Percentage	Count
<input checked="" type="radio"/> Red	100%	(1)
<input type="radio"/> Orange	0%	(0)
<input type="radio"/> Yellow	0%	(0)
<input type="radio"/> Green	0%	(0)
<input type="radio"/> No Vote		



Today's Agenda

- **Peter Banwell**, Senior Manager
U.S. Environmental Protection Agency
- **Maria DiBiase Eisemann and Zachary Owens**
Transportation Fuels and Technology, Colorado Energy Office
- **Michelle Finchum**, Lead Sustainability Specialist
City of Fort Collins
- **Question and Answer Session**

The views expressed by speakers on this webinar are solely those of the participants and EPA does not endorse any products or commercial services mentioned in this webinar.

Peter Banwell
Senior Manager
U.S. Environmental Protection
Agency

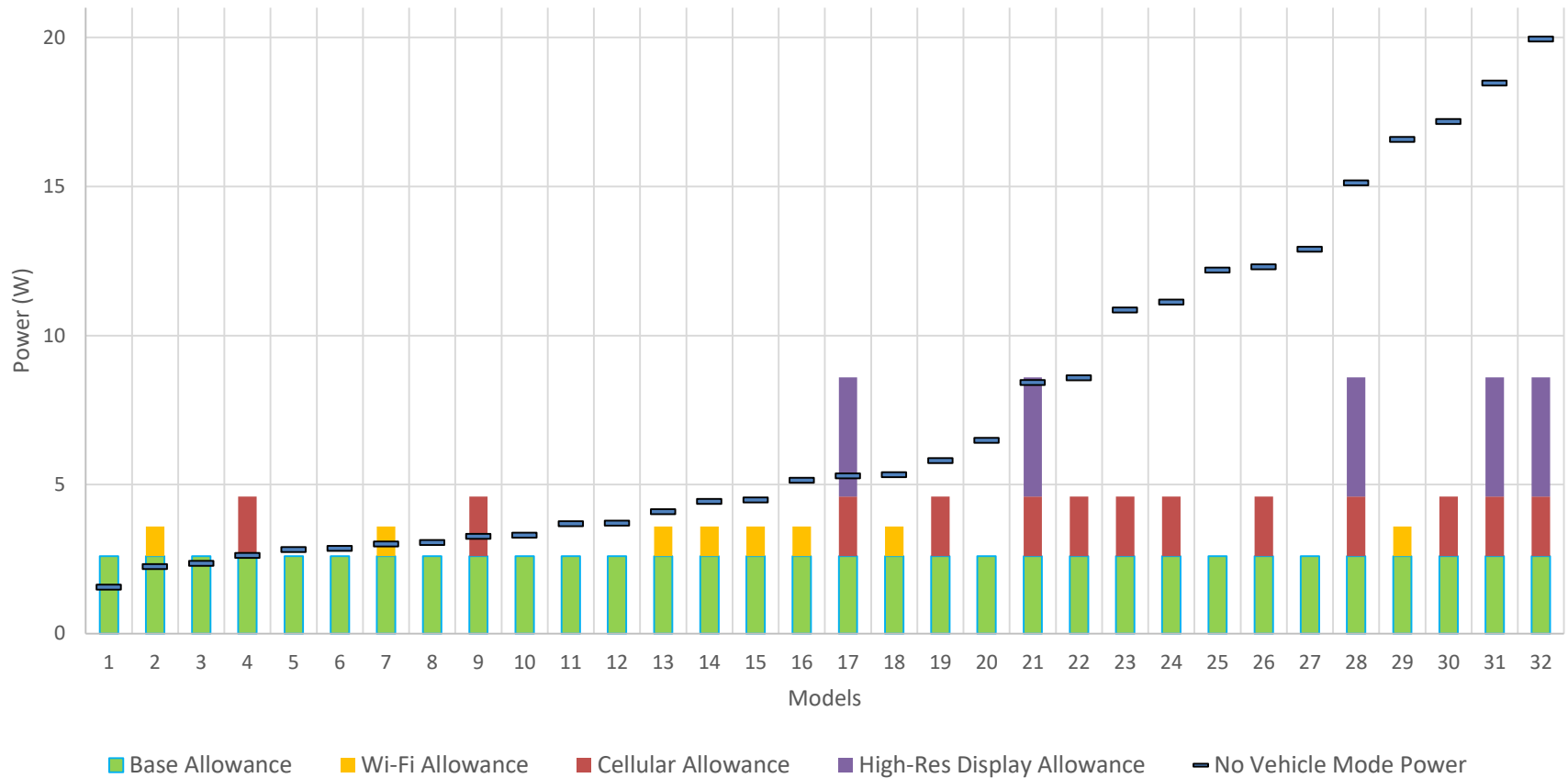




ENERGY STAR Certified Electric Vehicle (EV) Charging Stations



Efficiency Opportunities in Alternating Current (AC) Charging



ENERGY STAR Specification Today

Key Features:

- Energy Savings, 40% in Standby Modes
- Safety
- Open Communications

Communications Details:

- Grid Communications
- Open Access
- Consumer Override





ENERGY STAR Charging Partners

• **A P T I V** •

blink[®]

-chargepoint+[™]

 **eMotorWerks**

EVBOX

 **LIQUIDSKY**
TECHNOLOGIES


SemaConnect

 **Webasto**

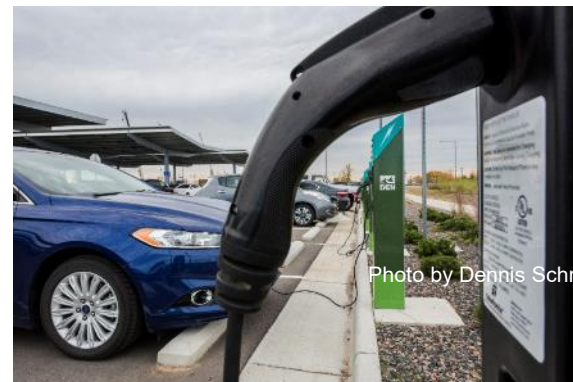
ENERGY STAR Version 1.1 Specification

- Key topics that will be addressed in the specification:
 - **Criteria to recognize energy efficiency in Direct Current (DC) chargers:**
 - ▶ Active charging % efficiency
 - ▶ Minimizing heating and cooling
 - ▶ Standby losses – display, lighting, network
 - **Allowances for features:** EPA will develop appropriate allowances for features based on data produced from the ENERGY STAR



Collaboration Opportunities

- **Educate Customers about ENERGY STAR EV Chargers**
 - link to resource, [qualified products list](#)
- **Incorporate the ENERGY STAR into EV Programs**
 - procure ENERGY STAR EV chargers
 - highlight ENERGY STAR certified equipment on vendor lists, Requests for Proposals
- **Inform Program Developments**
 - Version 1.1 DC Electric Vehicle Supply Equipment (EVSE) stakeholder process

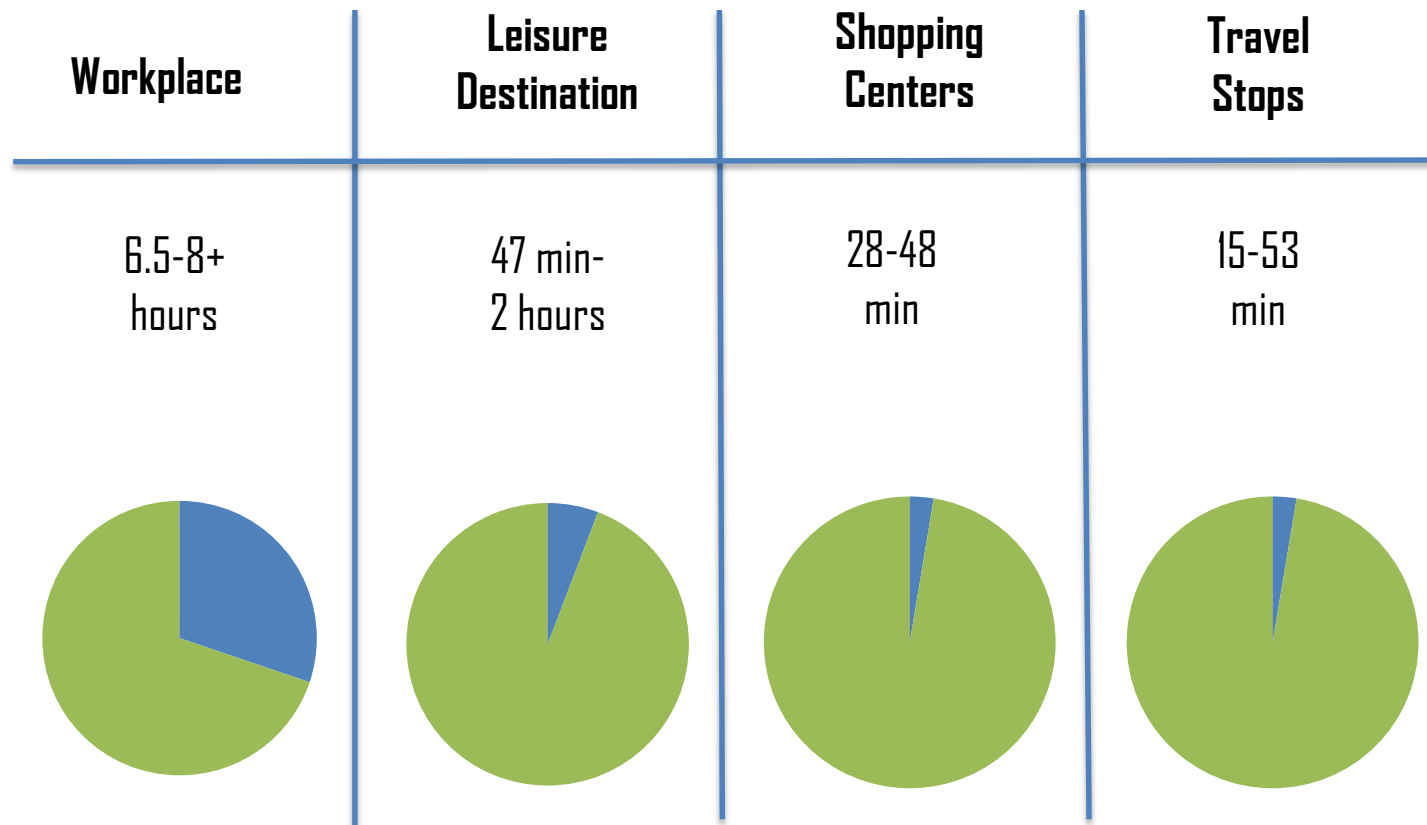




Introduction to Workplace Charging

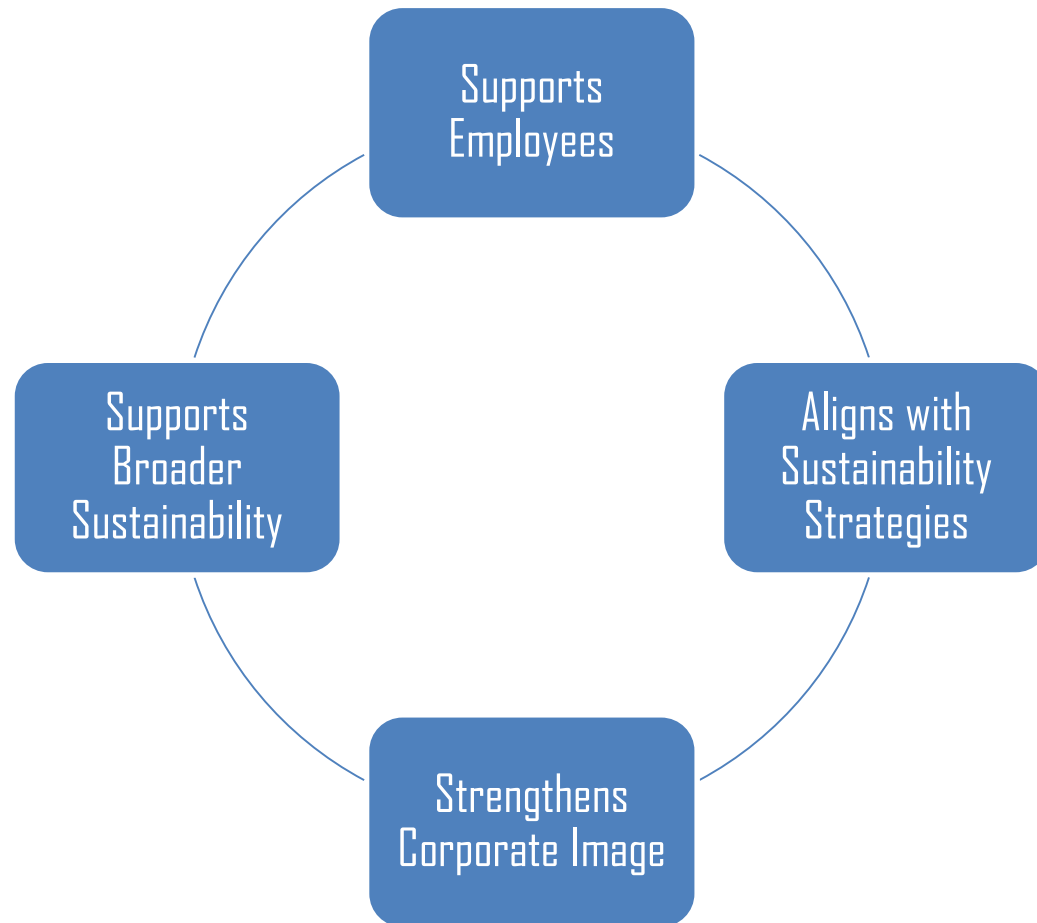


A Day in the Life of an Average Car (...after leaving home)





The Value of Workplace Charging



Employees & Workplace Charging



Peer Effect



Current EV Drivers

- Increased range confidence
- Increased electric vehicle miles traveled

Potential EV Drivers

- Increased EV awareness and education

Contact the ENERGY STAR Team with Questions

- Questions related to ENERGY STAR collaboration marketing/promotion:
 - [Peter Banwell](#)
- Questions related to ENERGY STAR specification development
 - [James Kwon](#)
 - [Emmy Feldman](#)



Photo by Kendall Septon, NREL 45635

Maria DiBiase Eisemann

Zachary Owens

Transportation Fuels and Technology

Colorado Energy Office





Colorado's Experiences with Workplace EV Charging

Maria DiBiase Eisemann, Policy Analyst
Zach Owens, Program Manager
Transportation Fuels and Technology
March 12, 2019



COLORADO
Energy Office

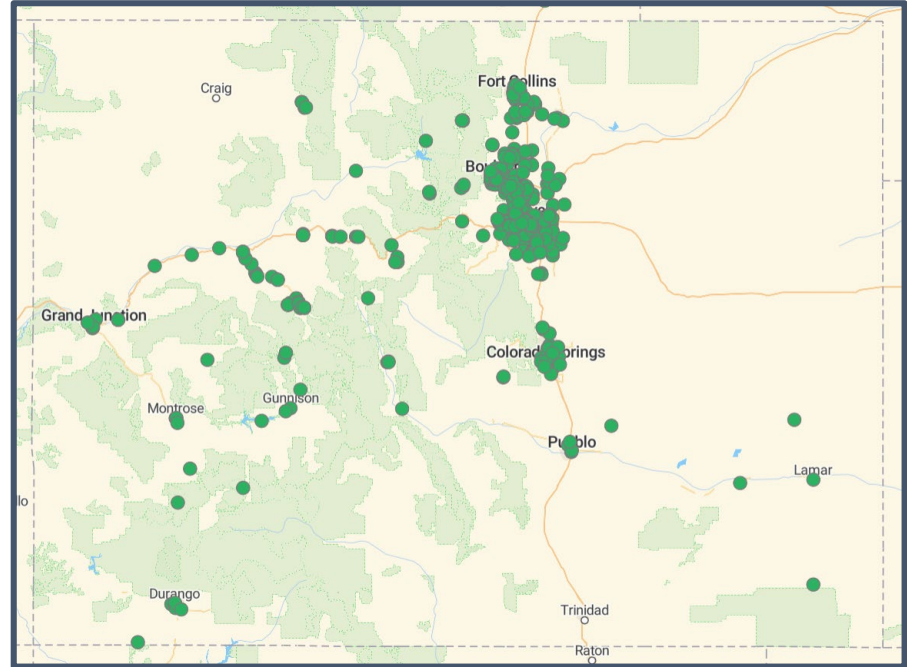
Transportation Fuels and Technology

Colorado Energy Office's (CEO) Transportation Fuels and Technology Team works to accelerate adoption of alternative fuel vehicles through:

1. Program Management - administer grant programs that reduce the upfront cost of installing fueling and charging infrastructure.
2. Policy and Planning - make Colorado an attractive place to own and operate an alternative fuel vehicle (AFV) and make investments in AFV fueling and charging infrastructure.
3. Outreach and Education - provide information and technical support to fleets and consumers on the costs and benefits of owning and operating AFVs.

Background: Charge Ahead Colorado

- Partnership between CEO and Regional Air Quality Council.
- Grants for community-based Level II and DC fast-charging stations across the state.
- Grants for EVs in 7-county metro area - public/non-profit fleet owners.
- Grants for 782 stations awarded to date.



Source: Alternative Fuels Data Center



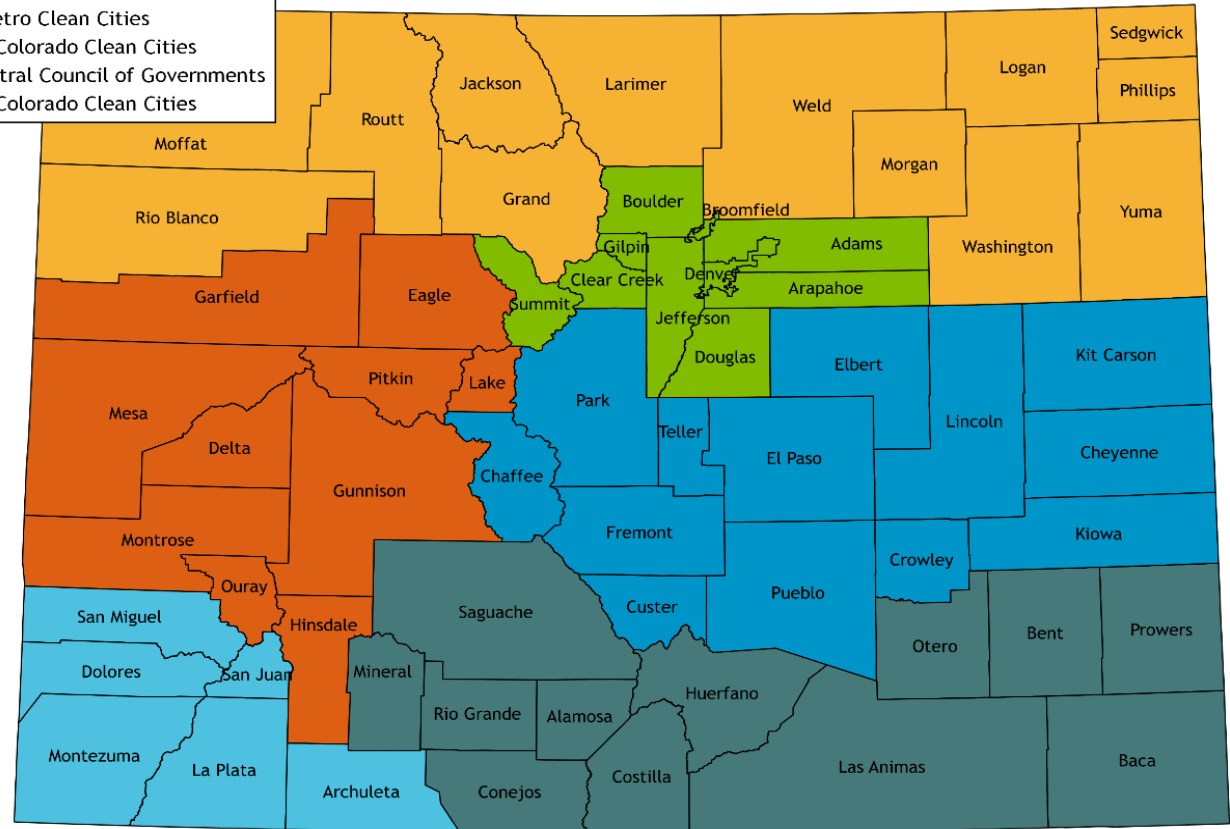
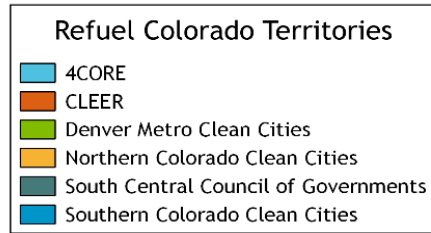
Charge Ahead Colorado

- Eligible applicants include local governments, school districts, State agencies, and non-profits.
- Apartment/condo complexes and private businesses are also eligible. Workplaces are a priority!

Charge Ahead Colorado

	Regional Air Quality Council			CEO	
Funding Source	Federal Highway Administration - Congestion Mitigation and Air Quality and Volkswagen settlement			EV Fund and Volkswagen settlement	
Geographic Area	7 County Denver Metro Area			Outside the 7 County Denver Metro Area	
Eligible Equipment	Level 2, DC fast-chargers, EVs			Level 2 and DC fast-chargers	
Funding Level	Level 2	DC Fast-Chargers	EV	Level 2	DC Fast-Chargers
80% up to:	\$9,000	\$30,000	\$8,260	\$9,000	\$30,000

Background: Refuel Colorado - Education and Outreach



Alternative Fuel Experts

- Understand EV
- Chargers
- Work with Fleets
- Resource for Wired Workplaces

Refuel Coaching

Background: Wired Workplaces

- Recognition Program started in 2015.
- Applicants, with the assistance of a Refuel Coach, signed on to the U.S. Department of Energy's (DOE's) Workplace Charging Challenge, followed a set of best practices, installed charging stations (funded through Charge Ahead Colorado), held a ceremony with plaque signed by Governor
- DOE's program ended in 2017
- CEO incorporated requirements of that program into Wired Workplaces and program continued until fall of 2018
- Program on hold while CEO attempts to evaluate value of recognition part of program

Background: Award Program Steps

Contact a Refuel Coach

- Conduct a survey of your employees

Install a Charging Station

- Consider Charge Ahead Grant

Take the Pledge

- Commit and submit to CEO

Award and Celebrate!



COLORADO
Energy Office

[Workplace Charging](#)

Colorado Wired Workplace Awardees (15)

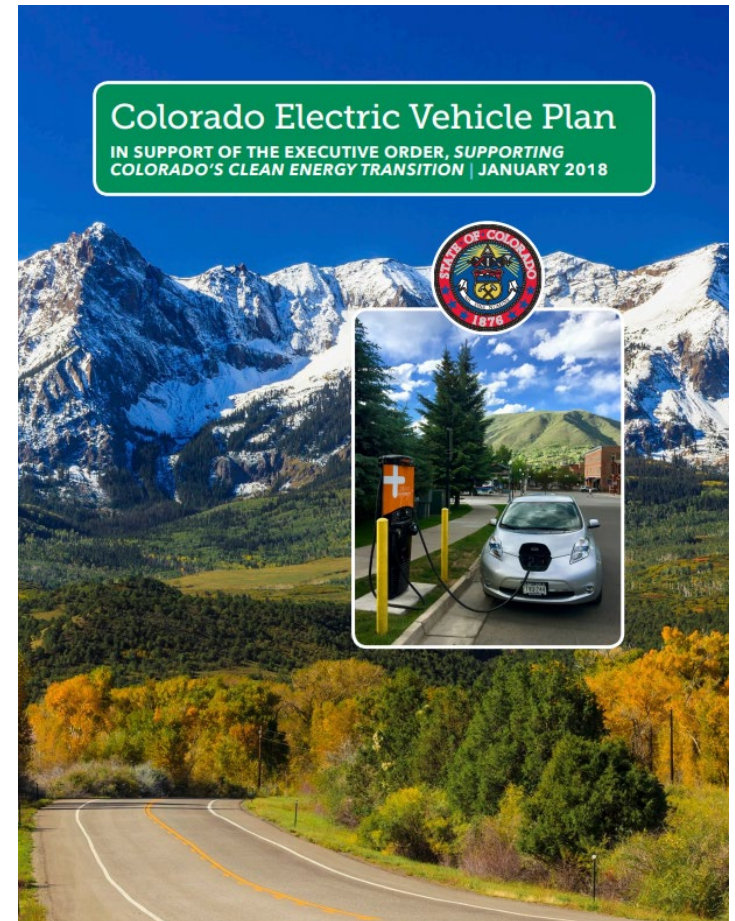
- ALIO Industries
- The Alliance Center
- American Lung Association
- Colorado State University
- City of Aurora
- Colorado Department of Transportation - Headquarters and Region 1
- Colorado School of Mines
- Eagle River Water and Sanitation District
- E-470 Public Highway Authority
- La Plata Electric Association
- University Corporation for Atmospheric Research
- Xcel Energy
- Conscience Bay Company
- Walking Mountain Science Center
- University of Colorado

Colorado Wired Workplace Awardees



Background: Colorado Electric Vehicle Plan

- Build out key charging corridors that facilitate economic development, boost tourism, and reduce harmful air pollution.
- Accelerate adoption of EVs and ensure Colorado remains a leader in the EV market.
- **Goal #3:** Increase the number of public and private employers in Colorado that provide workplace charging to employees.



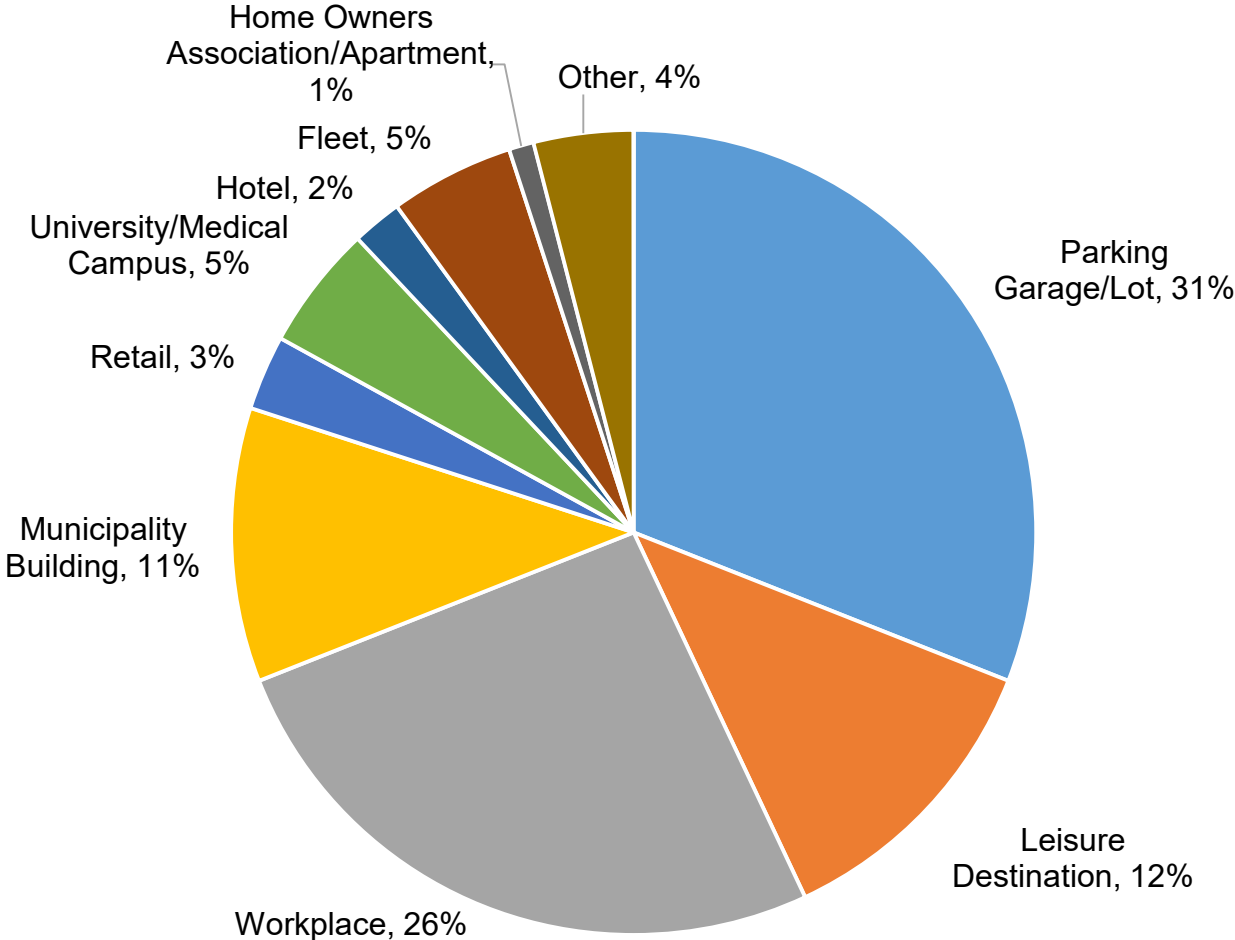
Charge Ahead Colorado Data

Top ten performing stations and their averages for 2018 (Jan. through Oct.):

1. Hewlett Packard, Fort Collins workplace lvl 2: 1119 kWh per a month
2. Mountain Valley Development Services, Glenwood Springs workplace lvl 2: 1064 kWh per a month
3. Broadcom, Fort Collins workplace lvl 2: 1021 kWh per a month
4. Eagle County Government, Eagle municipality building lvl 2: 926 kWh per a month
5. City of Colorado Springs, Colorado Springs parking garage lvl 2: 918 kWh per a month
6. Powdr-Copper Mountain, Copper Mountain leisure destination lvl 2: 899 kWh per a month
7. City of Aspen, Aspen leisure destination lvl 3: 741 kWh per a month
8. City of Colorado Springs, Colorado Springs parking garage lvl 2: 715 kWh per a month
9. City of Glenwood Springs, Glenwood Springs parking garage lvl 2: 701 kWh per a month
10. Town of Carbondale, Carbondale municipality building lvl 2: 688 kWh per a month

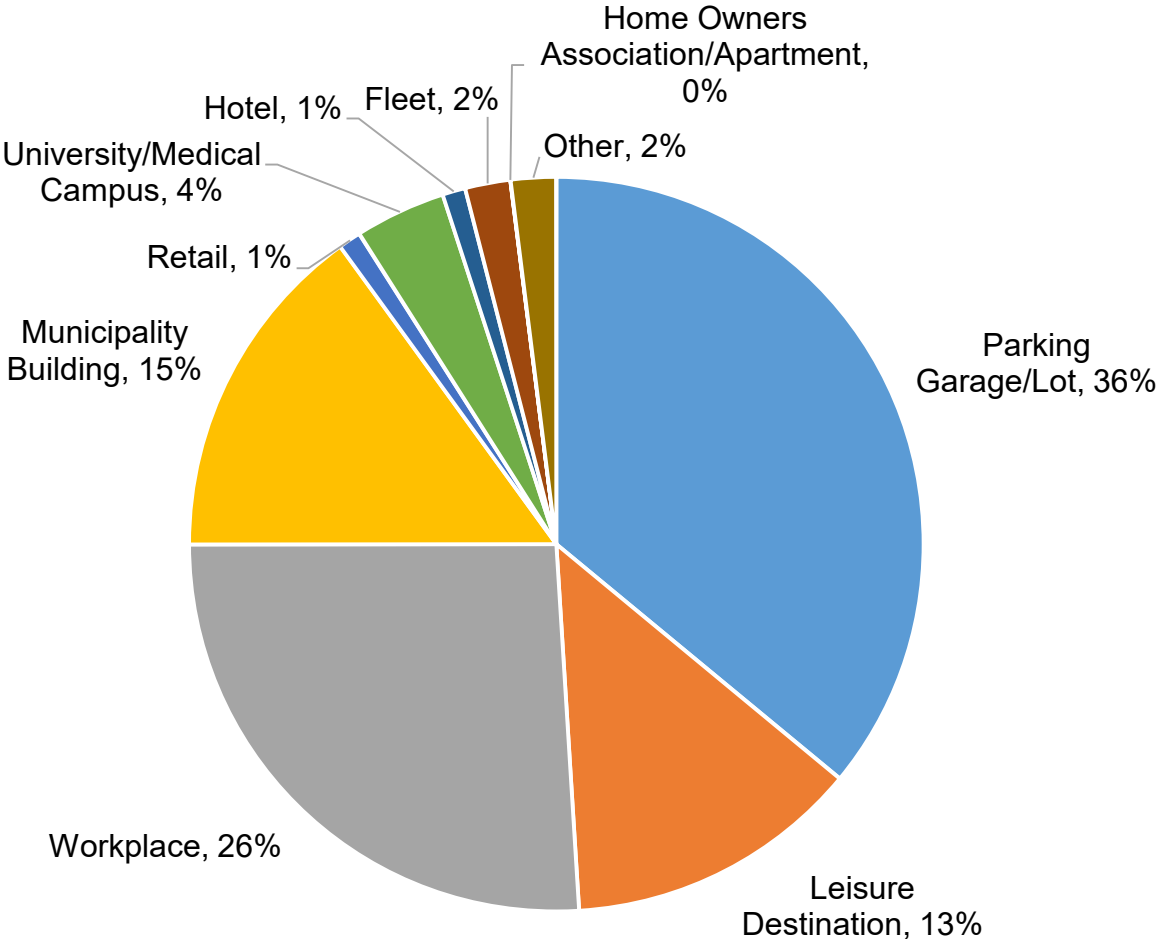
Charge Ahead Colorado - Data

Number of Charging Stations



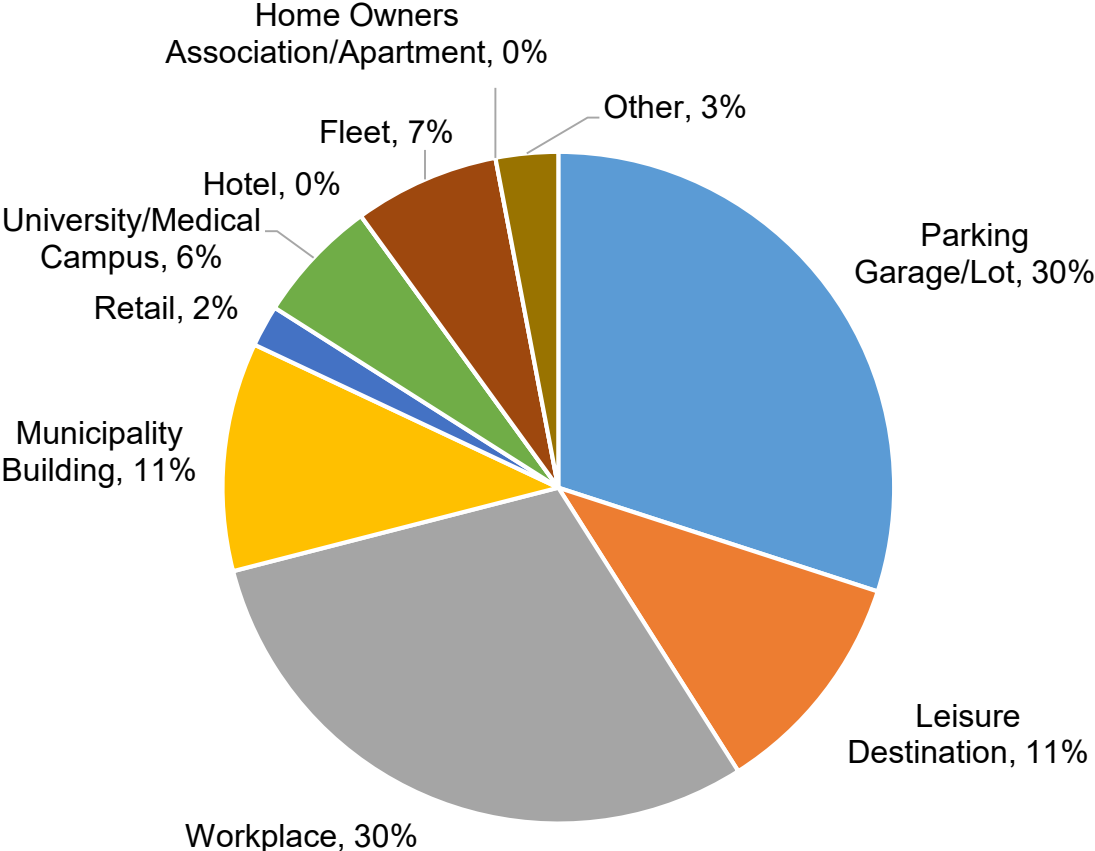
Charge Ahead Colorado - Data

Number of Charging Events



Charge Ahead Colorado - Data

Electricity Consumed (kWh)



EV Wired Workplace Evaluation

CEO saw the need to evaluate the value of the Award given the resources required to implement and paused the Program.

Snapshot of results at Awarded Workplaces:

- + 10 EVs at a state agency
- + 4 EVs at a non-profit center, another -2 EVs
- + 49 EVs and +25 EVs at two universities

Initial evaluation found it is difficult to separate impact of Award from other efforts (e.g., EVSE installation, EV incentive programs, access to EV fleet vehicles)

Looking Forward

- Workplace charging remains a priority for the State and our Charge Ahead Colorado and Refuel Colorado Programs.
- Do we continue issuing Wired Workplace Awards? If we continue, how can we leverage it for greater education/awareness opportunities?
- We are in the process of strategic planning and determining how to proceed.
- We welcome feedback from webinar participants.



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Colorado Energy Office



@COenergyoffice



COLORADO
Energy Office

Michelle Finchum
Lead Sustainability Specialist
City of Fort Collins





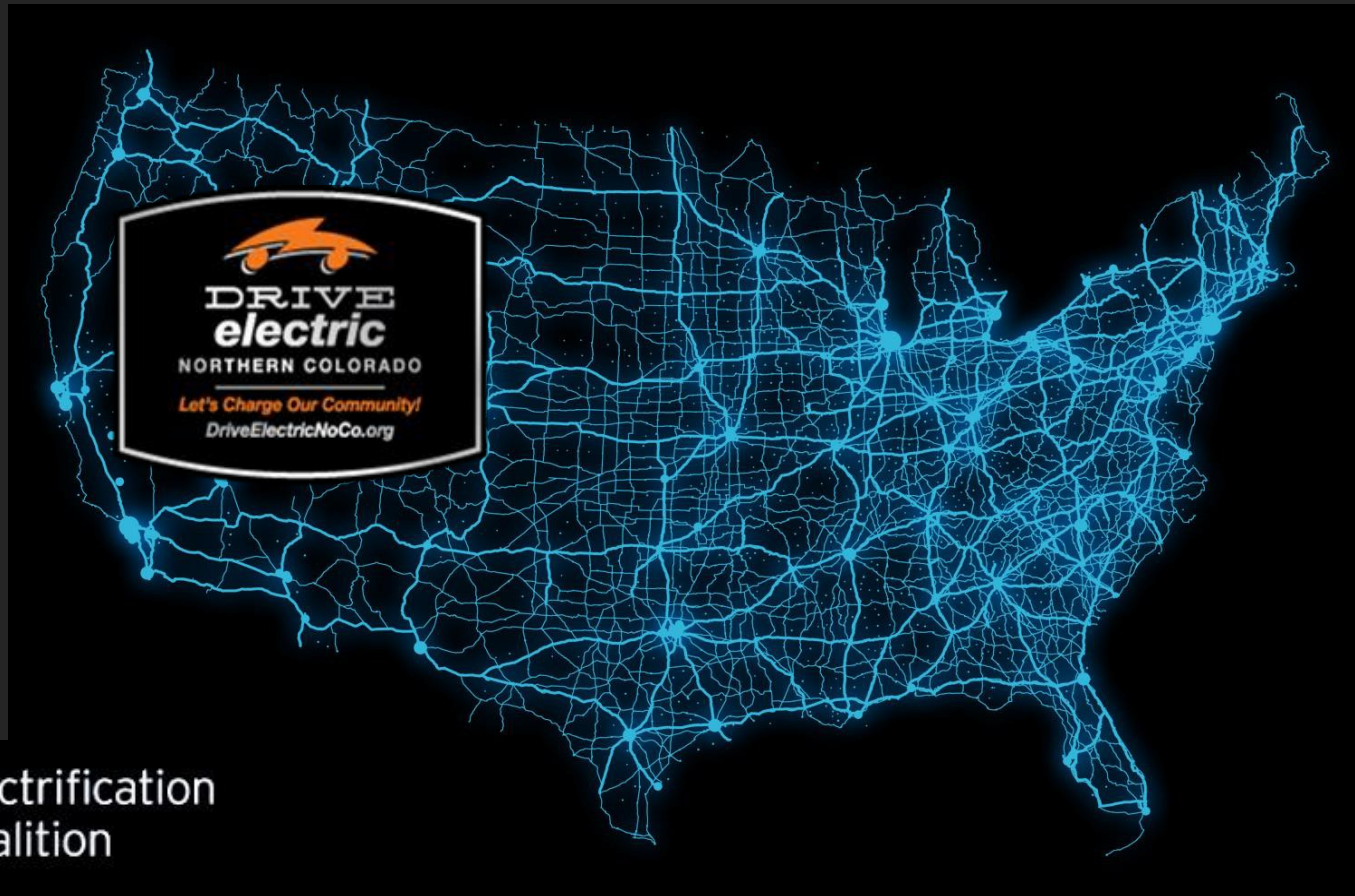
Summary and Lessons learned from 2015

The City of Fort Collins, CO participated in the Workplace Charging Challenge.



Drive Electric Northern Colorado

Creating a Model Deployment Community

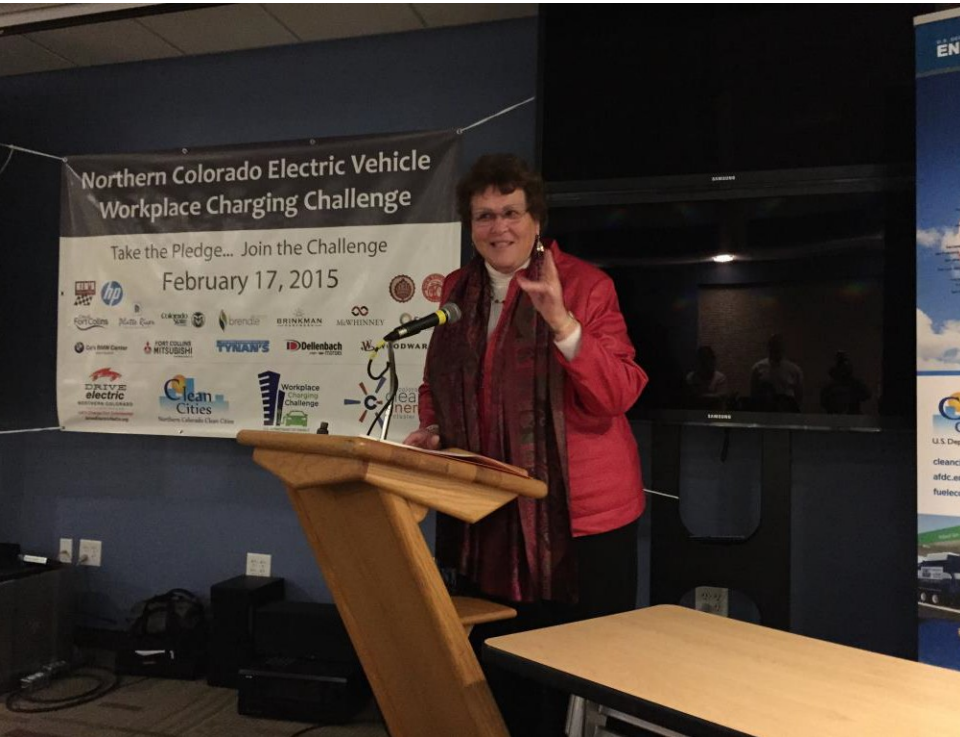


Electrification
Coalition

World Class City
Climate Action Plan
Energy Policy
High Performing Government

Values: Innovation, Collaboration

Formal Agreement Workplace Charging Challenge



Mayor Karen Weitkunat



Deputy City Manager, Jeff Mihelich

Home » Plug-in Electric Vehicles & Batteries » Workplace Charging Challenge » Workplace Charging Challenge: Partners

WORKPLACE CHARGING CHALLENGE: PARTNERS

Vehicles Home

About the Vehicle Technologies Office

Plug-in Electric Vehicles & Batteries

Batteries

Electric Drive Systems

Workplace Charging Challenge

Join the Challenge

Meet Challenge Partners

Install Workplace Charging

Engage Employees

Promote Workplace Charging

Fuel Efficiency & Emissions

Alternative Fuels

Modeling, Testing, Data & Results

Education & Workforce Development

Success Stories

Financial Opportunities

News

Events

Contact Us



Use the interactive map and list below to learn more about employers who have joined the U.S. Department of Energy's Workplace Charging Challenge. These employers are providing workplace charging for their employees who drive plug-in electric vehicles. Partners receive assistance from DOE to help them establish and expand workplace charging while **ambassador organizations** work to promote and support partners' workplace charging efforts across the country. Learn more in the [Workplace Charging Challenge Progress Update 2014](#). You can also learn how to [become a partner in the Workplace Charging Challenge](#).

WORKPLACE CHARGING CHALLENGE PARTNERS

- 200 Market Associates
- **3M**
- **ABB Inc.**
- Fuji Electric Corp. of America
- **Genentech**
- General Electric
- PSE&G (Public Service Electric and Gas Company)
- Public Service Company of New Mexico

Provide Infrastructure (charging stations)

Examine Policy

Educate and Engage



EV Pool Cars – 17
Staff with an EV – 5
Workplace Charging Stations – 1



- Pre/Post employee survey
- All Supervisors Memo
- Executives presentation
- Intranet site
- All Supervisors presentation
- Video (spotlight)
- Employee video blog
- Internal newsletter article

The screenshot shows a web browser window with the URL `cityofcollins.com/sustainability/chargefc.php`. The page content includes:

- Get Involved** sidebar with links: Events, Challenges, Electric Vehicle Workplace Charging Challenge.
- Sustainability Program** sidebar with links: Home, Sustainability Goals, Internal Recycling Program, Local Food, Resources, Contact Us, Suggestion Box, Sustainability Assessment.
- Electric Vehicle Workplace Charging Challenge for City employees** header.
- A row of three photos showing people with electric vehicles.
- What is the Workplace Charging Challenge?** section: "The City of Fort Collins is joining 14 other northern Colorado employers and 175 employers across the nation to take on a 2015 Workplace Charging Challenge in partnership with Drive Electric Northern Colorado. The purpose is to get YOU behind the wheel of an electric vehicle (EV) and promote the use of personal and fleet EVs through education, policy, and recognition."
- How can I get involved?** section with three numbered points:
 - Attend an EV event to learn more about EVs and test drive a Leaf, Volt, or even a Tesla!
 - Tell us about your driving experience to be entered into monthly prize drawings for DBA gift cards.
 - Spread the word! Take a photo of yourself driving an EV and post it on Instagram using #chargefc.
- Goal statement: "Our goal is for 200 City employees to drive an EV in 2015. 19/200 employees have driven an EV to date."
- A green call-to-action box: "Did you drive an EV in 2015? Tell us about your driving experience to be entered into a monthly drawing for a DBA gift card!"
- Drive an EV** section: "Check out these events for a chance to drive an EV and win prizes! Remember, the best place to check for Ride and Drive Events and get more information on owning an EV is on the Drive Electric Northern Colorado website."
 - Heritage Home Ride and Drive**
 - July 18, 11 a.m. – 2 p.m., corner of Tilden and Spruce Creek Drive, Fort Collins, CO 80528.



Utilities employee



Streets employee

Drive Leadership – City Council



Mayor Wade Troxell
BMW i3

Councilman Bob Overbeck
Chevy Volt



Councilwoman Kristin Stephens
BMW i3

Promote understanding of EVs through extended (3-5 day) drive opportunity. Thank you local car dealerships!!!

Drive Leadership – Executive Leadership

Darin Atteberry
BMW i3



Jeff Mihelich
BMW i3



Mike Beckstead
BMW i3



Kelly DiMartino
Chevy Volt



Jacqueline Kozak-Thiel
Mitsubishi iMiEV



Kevin Gertig



Coffin Break Halloween EV event

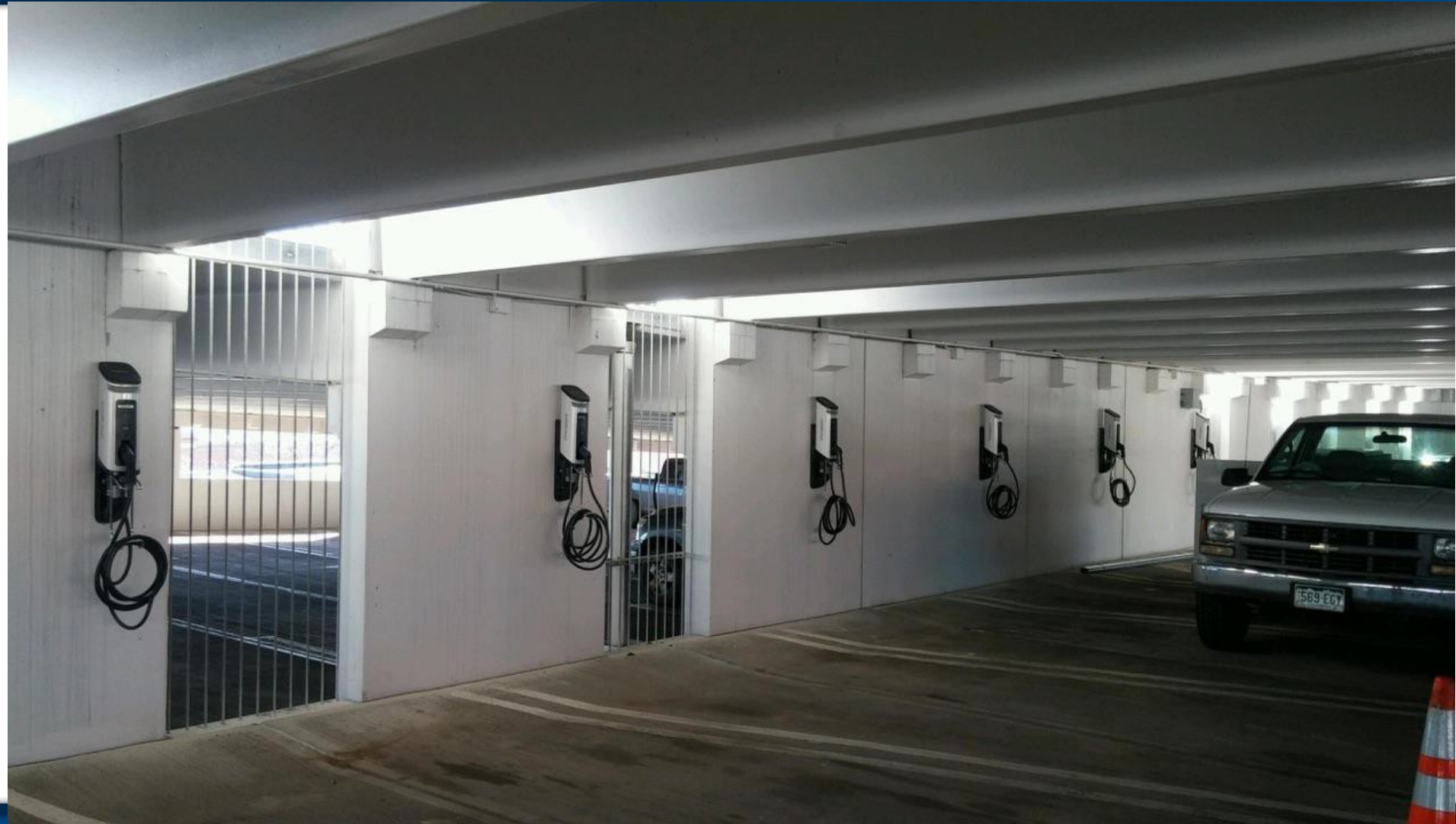


Drive a City pool car

- Full Circle Show – Cable 14
- Radio interview Jimmy Lakey
- Article in Biz West (by Mayor Troxell)
- Social Media
- Colorado State University panel
- Flickr photos



6 new employee charging stations in parking garage



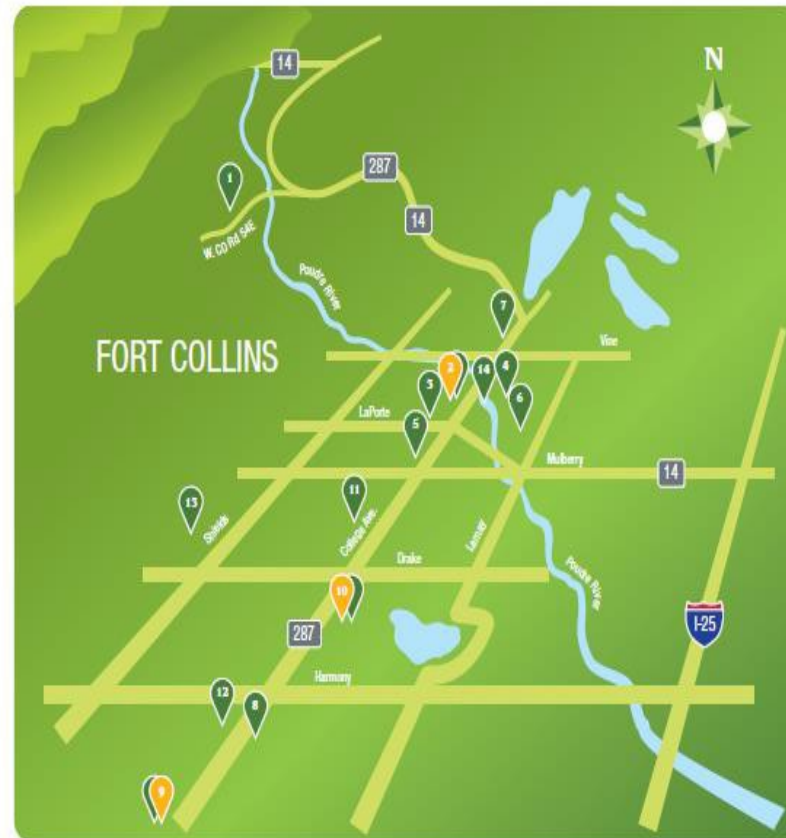
Help employees know other 2015 Infrastructure

There are 16 businesses on track to offer workplace charging soon.



Public Charging Station Locations

- DC Fast Charging Stations
- Level 2 Charging Stations



Fort Collins

- 1 Morning Fresh Dairy
5821 W. County Road 54E, Bellvue
- 2 Fort Collins Museum of Discovery
408 Mason Ct., Fort Collins
- 3 Fort Collins Utilities Administration
700 Wood St., Fort Collins
- 4 New Belgium Brewing
500 Linden St., Fort Collins
- 5 Civic Center Parking Structure
144 N. Mason St., Fort Collins
- 6 Odell Brewing
800 E Lincoln Ave., Fort Collins
- 7 Ken's Muttler Shop
1219 N College Ave., Fort Collins
- 8 The Body (Gym)
4848 South College Ave., Fort Collins
- 9 Tynan's Nissan
5811 S College Ave., Fort Collins
- 10 Foothills Mall
215 E Foothills Pkwy #220, Fort Collins
Planned for Future
- 11 USDA Forest Service
240 W Prospect Rd., Fort Collins
- 12 Fort Collins Transit Center
Address, Fort Collins
Planned for Future
- 13 Fort Collins Senior Center
1200 Raintree Dr., Fort Collins
Planned for Future
- 14 Colorado State University Engines Lab
430 N. College Ave. Fort Collins

Provide Infrastructure (charging stations)

Examine Policy

Educate and Engage



Awesome:

- Paved the road for **EV Readiness Roadmap 2018**
- Awareness
- Enthusiasm by staff
- Leadership inclusion
- Perception
- Employee charging stations
 - 2015 = 1
 - 2019 = 6

Issues:

- Policy
- Employee charging stations
- Parking code (enforcement)
- Signs
- Staff resources

Michelle Finchum

Lead Sustainability Specialist
City of Fort Collins, CO



Poll 2



Question and Answer Session



Connect with the State and Local Energy and Environment Program

 [Webinar Feedback Form](#) 

Andrea Denny
U.S. Environmental Protection Agency
Denny.Andrea@epa.gov

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