



# Sustainable Economy & Transportation Conference



# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

## Welcome!



# Sustainable Economy & Transportation Conference



**Eric Holthaus**  
**Sustainability Program Manager**  
**City of Cedar Rapids**



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# Sustainable Economy & Transportation Conference

## Conference Agenda



# Sustainable Economy & Transportation Conference



**Rob Wozny**  
**Senior Product Manager**  
**Alliant Energy**





# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

## Electrifying a Community's Transportation Network



# Sustainable Economy & Transportation Conference



**Michelle Barness**  
Regional Planner  
Upper Explorerland Regional  
Planning Commission



**Kristen Spina**  
Senior Electrical Engineer  
IMEG Corp.



**Jessica Hyink**  
Transportation Planner/  
Program Manager  
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# Sustainable Economy & Transportation Conference



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**2882 106th Street, Des Moines, IA**

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# ELECTRIFICATION OF FLEETS



MAY 24, 2022



## **Kristen Spina, PE**

Senior Electrical Engineer | [Kristen.I.spina@imegcorp.com](mailto:Kristen.I.spina@imegcorp.com)

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# The Process To Electrify Your Fleet

- Fleet assessment
- Infrastructure assessment
- Infrastructure design/upgrades
- Design/Hardware Implementation
- Management, Monitoring, Maintenance



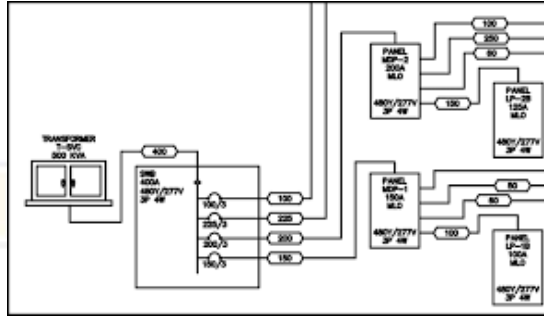
# Infrastructure Assessment

- Contact your electrical utility provider
- Review existing electrical gear
- Field verify space requirements for new equipment



# Design/Hardware Implementation

- Determine your new connected load
- Review peak loads of facility & determine quantity of EVs
- Design/Upgrade electrical distribution
- Verify any unique installations with EV manufacturers prior to installation
- Hire electrical contractor for installation



# Monitoring, Management, Maintenance

- Monitoring software of real time charging network usage for dynamic energy distribution
- Manage peak load demand charges due to charging
- Integration with renewable energy



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# EV READY COMMUNITIES

May 24, 2022

Jessica Hyink

Transportation Planner/Program Manager

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# Why EV-Ready Communities?

**Local governments are essential partners in creating a self-sustaining EV market**

- ✓ Shape how residents and businesses take actions
- ✓ Use tools to foster the community's transition to EVs
- ✓ Encourage EV market transformation via public and EV charging infrastructure



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# EV-Ready Action Categories

1. EV Policy, Goals & Metrics
2. Regulation
3. Utility Engagement
4. Education and Incentives
5. Public Sector Leadership
6. Shared Mobility

Equity  
y



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EV Policy, Goals and Metrics	Regulation	Utility Engagement	Education and Incentives	Public Sector Leadership	Shared Mobility
Address EVs and EVSE in Comprehensive Plan	Enable EV and EVSE in land use regulations	Joint programs with utility on education and marketing	Host public education events and campaigns	Electrify public fleet	Deploy electric transit, para-transit vehicles
Address EVs and EVSE in Specific-Area Plan	Incorporate EV and EVSE in parking standards	Work with utility on interconnection process	Create EV webpage for programs and standards	Provide public chargers	Deploy electric school buses
Address EVs and EVSE in Functional Plan	Incorporate EV and EVSE in the building code	Address EV charging issues	EV/EVSE education of commercial property owners	ROW charging deployment	Develop electric bike or scooter opportunities
Establish a deployment benchmark and set deployment goals	Incorporate EV and EVSE in permitting	Create or promote utility programs and rates	Financial incentives for EVSE installation	Install employee reserved EVSE	Develop car sharing program
	Require EVSE in or near to multi-family housing	Work with utility to integrate renewable energy	Financial incentives for purchasing EVs		



## EV, Policy, Goals and Metrics

Address EVs and EVSE in Comprehensive Plan

Address EVs and EVSE in Specific-Area Plan

Address EVs and EVSE in Functional Plan

Establish a deployment benchmark and set deployment goals

- ✓ Adopts policy for supporting EV market transformation in public and private sectors
- ✓ Sets EV deployment goals for entire community or market subsets (residential, commercial, public)
- ✓ Sets equity goals for EV access or deployment



## Regulation

Enable EV and EVSE in land use regulations

Incorporate EV and EVSE in parking standards

Incorporate EV and EVSE in the building code

Incorporate EV and EVSE in permitting

Require EVSE in or near to multi-family housing

- ✓ Permit Level 2 chargers as an accessory use to parking lots in all zoning districts
- ✓ Permit Level 3 (DCFC) chargers in selected districts or for specific land uses
- ✓ Develop DCFC standards for public facilities (design and circulation)



# Example Language for Land Use Regulation

## Des Moines, IA Zoning Code

Levels 1, 2, and 3 electric vehicle charging stations are allowed in all zoning designations

## Chelan, WA Zoning Code

Level 1 and 2 electric vehicle charging stations are a permitted use in all zoning districts... Level 3 electric vehicle charging stations are a permitted use in the Warehouse and Industrial (WI), Highway Service Commercial (C-HS),..., zoning districts





## Regulation

Enable EV and EVSE in land use regulations

Incorporate EV and EVSE in parking standards

Incorporate EV and EVSE in the building code

Incorporate EV and EVSE in permitting

Require EVSE in or near to multi-family housing

- ✓ Require EVSE/EVSE-ready in new multi-family parking standards
- ✓ Incorporate EVSE incentives into multi-family licensing or other regulatory permit
- ✓ Deploy EVSE in public rights-of-way or other public areas near multi-family housing.



# Example Language for Multi-Family Housing

## City of Chicago

17-10-1011-A. Residential Buildings. New construction of a multi-unit residential building containing five or more dwelling unit where on-site parking is provided shall install equipment so that at least 20%, and no less than one, of the parking spaces are either EV-Ready or EVSE-installed.



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## Utility Engagement

Joint programs with utility on education and marketing

Work with utility on interconnection process

Address EV charging issues

Create or promote utility programs and rates

Work with utility to integrate renewable energy

- ✓ Encourage EV owners to register with the utility
- ✓ Host or support EV readiness workshops with utility
- ✓ Collaboratively work with utilities to promote EVs at local dealerships
- ✓ Collaborate on promotion of programs and incentives with utility



## Education and Incentives

Host public education events and campaigns

Create EV webpage for programs and standards

EV/EVSE education of commercial property owners

Financial incentives for EVSE installation

Financial incentives for purchasing EVs

- ✓ Include EVSE in financing or grants for affordable housing
- ✓ Create EVSE loan program for workplaces
- ✓ Promote State and Federal financial incentives



# Electric-Vehicle-Ready Communities

## Education and Incentives to overcome market barriers

1. **Upfront cost** barrier (and lack of attention to lifecycle costs)
2. **Actual or perceived** performance issues with performance or use (i.e. vehicle range)
3. **Charging infrastructure** availability and visibility
4. **Lack of access** to EVs models or used car markets



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## Public Sector Leadership

Electrify public fleet

Provide public chargers

ROW charging deployment

Install employee reserved EVSE

- ✓ Complete assessment of EV conversion opportunities (FleetCarma, etc)
- ✓ Adopt EV conversion goals for public fleets with timelines
- ✓ Purchase EVs for fleet use to meet adopted goals
- ✓ Track EV metrics over time



## Shared Mobility

Deploy electric transit, para-transit vehicles

Deploy electric school buses

Develop electric bike or scooter opportunities

Develop car sharing program

- ✓ **Assess** opportunities for EV transit and para-transit conversion
- ✓ **Develop and adopt** EV transition plan with timelines
- ✓ **Purchase and deploy** EV buses, vans, and/or para-transit vehicles
- ✓ **Deploy EVs** purchased to meet adopted goals



# Electric-Vehicle-Ready Communities

## Shared mobility to ensure EV equity and expand alternative modes.

- ✓ Recognize and promote alternative modes of transportation to reduce vehicle miles traveled
- ✓ Incorporate all burgeoning forms of EV technology to expand transportation access
- ✓ Equity demands that we serve the most vulnerable,



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Photo credit: B.Ross,  
GPI





## How to Electrify Your Fleet: Lessons from Cities

### FLEET STUDY 101

Through the Cities Charging Ahead effort, the Minnesota cities of Bloomington, Faribault, Fridley, Hastings, Inver Grove Heights, St. Louis Park, White Bear Lake, Winona, and Woodbury completed fleet studies funded by Xcel Energy, and Coon Rapids completed a fleet study funded by Connexus Energy. Each city worked with a company called FleetCarma to install telematics devices in chosen fleet vehicles and analyze that data. The telematics devices tracked various vehicle usage statistics, including idle time, acceleration patterns, and daily miles of any given vehicle equipped with a device.

Following the FleetCarma analysis, each city received a report about which of their fleet vehicles were the best fit to be replaced with electric vehicles (EVs) based on the total cost of ownership savings over the life of the vehicle. FleetCarma calculated the difference in the cost to operate and maintain an existing vehicle in each fleet compared to a hypothetical EV replacement. The following are the major takeaways from those analyses.

#### LESSONS LEARNED

By analyzing data trends, we identified three key lessons when looking for vehicles to swap out:

1. More miles driven = more savings.
2. Look for vehicles that take many short trips.
3. Switch vehicles that idle a lot.

The lessons learned by several cities who completed FleetCarma fleet analyses that other cities who are looking to electrify their fleet can learn from!

[Link](#)



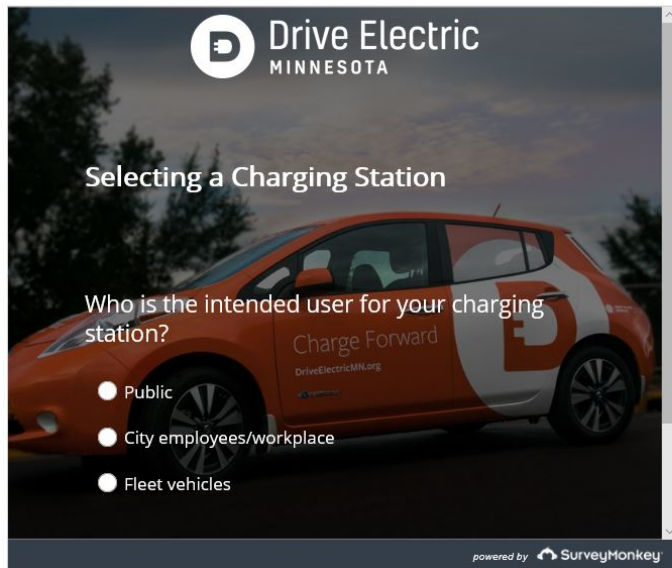
# Finding The Best Charging Option For Your Community

## CHOOSING THE RIGHT CHARGER

This guide is designed to walk you through the process of installing electric vehicle charging for public sites, fleets, and workplaces. If you are interested in installing charging in your home, contact your utility.

Choosing to install electric vehicle (EV) charging demonstrates leadership and a commitment to reducing the largest sector of greenhouse gas emissions in the United States. This tool is designed with communities in mind, but anyone who wants to install EV charging will learn from the information provided.

This guide will walk you through the major steps and help inform your decision-making process.



This tool helps walk you through the process of installing EV charging for public sites, fleets and workplaces.

[Link](#)





## Guide to Purchasing an EV Charging Station

Purchasing an electric vehicle (EV) charging station can be intimidating, given the wide variety of options. With this guide, you'll have the information needed to take steps toward purchasing a station, including common station features to consider, where to buy, and funding opportunities.

### COMMON STATION FEATURES

The most basic charging station is a Level 2, or dumb charger, that lacks data tracking, payment collection abilities, and numerous other features, and is less expensive (~\$400; unit only). Smart chargers offer a variety of features and come at an additional cost (~\$600-700 for residential application Level 2; \$1,000-\$2,000 for commercial grade Level 2). The third option is a DC fast charger, which can cost \$40,000 for the unit.

FEATURE	DESCRIPTION	APPLICABILITY		
		Smart Residential Level 2	Commercial Level 2	DC Fast Charger
Advertising Capabilities	Generate additional revenue by using the display screen for third-party ads.		Some	Some
Beacon Light	Increase visibility at the station, especially at night; reduce vandalism.		Some	Some
Access Management	Control use through apps, radio frequency identification, or other hardware and software features.	Some	X	X
App-Based Payments	Accept payment via a network-specific app. Less expensive than installing a credit card swipe but requires a network membership to operate.		X	X
Credit Card Swipe/ Chip Reader	Accept payment via a credit card swipe or chip reader. More expensive to install but does not require a network membership to operate.		X	X

This tool will guide you through topics to consider when purchasing an EV charging station such as common station feature to consider, where to buy and funding opportunities.

[Link](#)



# Electric Vehicle Resource Database

The database below, developed by Drive Electric Minnesota, categorizes educational resources on electric vehicles across various criteria, allowing you to easily filter resources to your needs. Some suggested uses:

- Find and share resources applicable to audiences you're communicating with
- Find and share resources applicable to rural and urban areas in Minnesota
- Find out how specific groups, like electric utilities, are educating people about electric vehicles
- Find resources that answer questions from your members, followers, or constituents
- And more!

<span>Hide fields</span> <span>Filter</span> <span>Group</span> <span>Sort</span> <span>...</span>				
<input type="checkbox"/>	Name	Owner	Description	Attachments
1	Alternative Fuels Data Center	US Department of Energy's Office of Energy Efficiency & Renewable Energy	The Alternative Fuels Data Center (AFDC) provides information, data, and tools to help fleets and other transportation decision makers find ways to reach their energy and economic goals through the use of alternative and renewable fuels, advanced ...	
2	Electric Vehicles	MnDOT	The MnDOT's website with information and updates on current EV planning efforts.	
3	Electric Vehicles in Minnesota	MnDOT	A brief summary sheet of EV related financial information in Minnesota covering national trends, impacts to transportation funding, current law, transportation revenue in MN, future transportation revenue implications from EVs, registration and ...	
4	Accelerating Electric Vehicle Adoption: A Vision for Minnesota	Great Plains Institute MnDOT Minnesota Pollution Control Agency	A 2019 report outlines a statewide vision for increasing EV use.	
5	Best Practice Action 23.5 - Install, assist with and	MN GreenStep Cities and Tribal Nations	The MN GreenStep Cities and Tribal Nations program is a challenge, assistance, and recognition program for Minnesota	

47 records

Airtable Download CSV View larger version

This resource compiles resources developed around EV's by state agencies and organizations, housed in one central location

[Link](#)



	A City	Charger	Charging Access	Charging Fee	Charger Ownership
	Apple Valley	L2	Public + Fleet	per kWh	City owned & operated
2	Eagan	L2	Public + Fleet	No Fee	City owned
3	Eden Prairie	L2 L1	Public Access Fleet Only	No Fee Hourly Rate	City owned & operated
4	Edina	L2	Public + Fleet Fleet Only		
5	Falcon Heights				
6	Faribault	L2 DCFC	Public Access Public + Fleet	per kWh	
7	Fridley	L1 L2	Public + Fleet	Limited Time No Fee	City owned
8	Golden Valley	L2	Public + Fleet	Hourly Rate	City owned
9	Grand Marais	L2 DCFC	Public Access	Hourly Rate Hookup Fee	City owned & operated
10	Hackensack				
11	Hutchinson	DCFC	Public Access	per kWh	City owned & operated
12	Inver Grove Heights				
13	Leech Lake Band of Ojibwe	L2 DCFC	Public Access		
	+ 29 records				

GPI collected progress resulting from the Cities Charging Ahead cohorts. Cities can view what EV Ready progress other cities have made.

[Link](#)



# What to keep an eye out for....

- **Fleet Electrification Toolkit**
- **Updated CCA Resources page**
- **EV Ready Pilot Program**
  - **Creating EV Ready Tribal Nations**
- **Three Equity related blogs**
  - **Pre-owned EVs**
  - **Multi-Unit Dwelling Charging**
  - **Right of Way Charging**



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## Summary of Best Practices in Electric Vehicle Ordinances

BY CLAIRE COOKE AND BRIAN ROSS

JUNE 2019



*This ordinance guide was developed based upon funding from the Alliance for Sustainable Energy, LLC, Managing and Operating Contractor for the National Renewable Energy Laboratory for the US Department of Energy.*

# City Tools for EV Transformation

## Summary of Best Practices in Electric Vehicle Ordinances

1. Electric Vehicle Charging Stations as Permitted Land Uses
2. Electric Vehicle Make-Ready Standard
3. Electric Vehicle Supply Equipment Standards
4. Electric Vehicle Parking Space Design and Location
5. Required EV Parking Capacity & Minimum Parking Requirements
6. Electric-Vehicle-Designed Parking Use Standards and Protections
7. Signage, Safety, and other standards



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**THANK YOU**

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## Panel Discussion



# Sustainable Economy & Transportation Conference



**Michelle Barness**  
Regional Planner  
Upper Explorerland Regional  
Planning Commission



**Kristen Spina**  
Senior Electrical Engineer  
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**Jessica Hyink**  
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Program Manager  
Great Plains Institute



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## Questions?



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## Thank you!



# Sustainable Economy & Transportation Conference

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Break/Exhibit Hall/EV Display  
See you back here at 10:20 a.m.!



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## Decarbonizing with Low- and No-Emission Vehicles



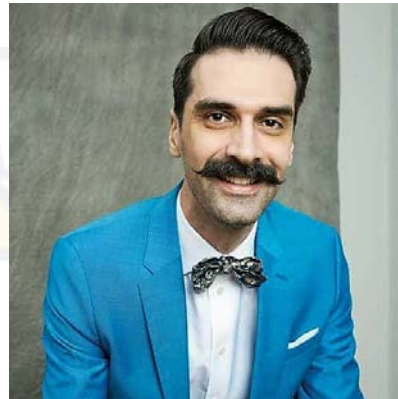
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Senior Product Manager  
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**Rich Iverson**  
Fleet Support Manager  
City of Ames, Iowa



**Mohammad Akhlaghi**  
CEO & Co-founder  
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# Sustainable Economy & Transportation Conference



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Pilot Project

Presented by Rich Iverson  
Fleet Support Manager

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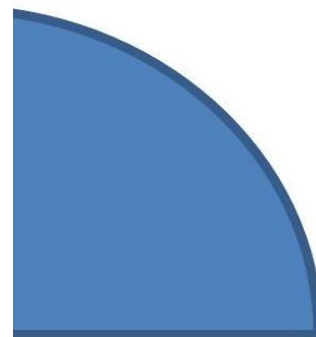
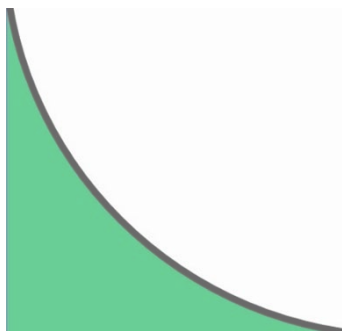
S - FLEET SERVICES

## City of Ames Fleet

- 21 Autos (2) Full Electric (5) Hybrid (5) E85
- 59 Pickups (29) E85 Gasohol
- 57 Vans and SUVs (11) hybrids (19) E85
- 44 Diesel Trucks (30)B20 **(12)B100** (2)B50
- 8 Fire Pumper/Ladder Trucks (7) B20
- 11 Light-duty Gas Trucks (all) E10 gasohol
- 10 Tractors (10) B20
- 4 Wheel loaders (2) B20 (2) Hybrid B20/Electric
- 75 Assorted equipment electric/gas/propane/diesel

**Pilot Group B100 Trucks added 7 trucks in 2021**

# Not all Climate Plans are Equal



Example, all 3 plans depict reaching net-zero by 2050.

**Blue plan leaves the most residual negative effects**

## Cool Cities - Fleet History

Fleet B20 since 1997  
E85 Program 2005  
Electric 2018

- 20 % biodiesel      April – September
- 5 % biodiesel      October – March
- 8 % biodiesel      5 pilot trucks avg.

# B100 Pilot Project

January 2020

3-year pilot project

equip 5 City trucks with  
technology enabling  
the use of 100%  
biodiesel during normal  
operations - even in  
winter conditions.



Possible through a unique partnership with REG & Optimus Technologies

Rich Iverson Fleet Support Manager - City of Ames, Iowa

## What do I need to begin using B100 year-round even in a cold climate?

- Diesel truck or Equipment
- New or Used
- B100 fuel source
- The right technology

Pictured: Diesel vehicle  
before being equipped with  
OptimusVectorSystem



Opportunity  
Solar Heating  
Underground Storage  
Increase Volume





Truck #967  
New in August 2016



Truck #967 in January 2020  
with new split tank and  
Optimus Vector being  
installed





5 trucks equipped with Optimus Technologies' Vector Systems just in time to plow snow in a **January blizzard.**

Temperatures fell to **-10°F.**

Used **90% biodiesel**, nearly 1,000 gallons in 3 days without issue.

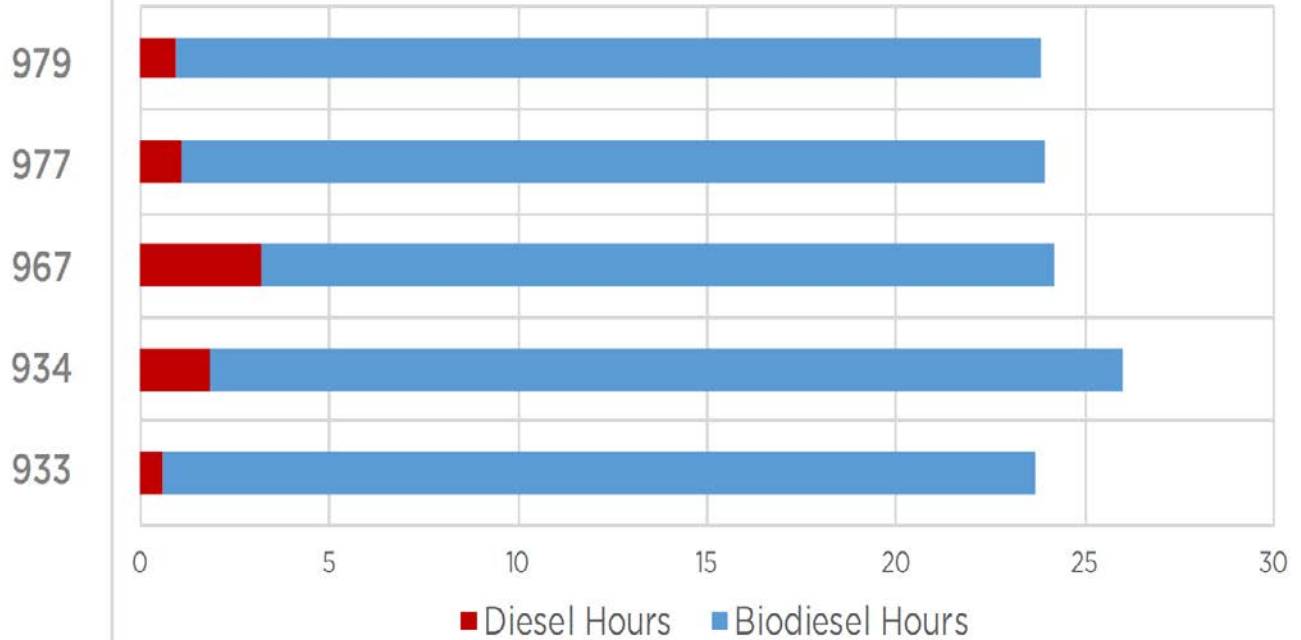
Operators reported normal power and performance.

## Pilot Project Begins January 2020



Truck #

### City of Ames Snow Removal Operations 1.17.20-1.18.20





## Pilot Project Midway Findings

- Biodiesel 84% avg.
- Fuel economy 7% lower MPG
- No performance issues
- Fuel heating cost 17 cents/gallon (above ground)
- 156 metric tons CO<sub>2</sub> offset

- Year 1 Actual: 5 trucks, 10,500 gal. B100 = 103 MT ↓
- Year 2 Actual: 12 trucks, 25,000 gal. B100 = 248 MT ↓

<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>





Thank you!

I encourage you to visit [CityofAmes.org](http://CityofAmes.org) and see what the City is doing

- Rich Iverson, Fleet Support Manager
- City of Ames, Iowa
- [Rich.Iverson@cityofames.org](mailto:Rich.Iverson@cityofames.org)

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<https://www.plugzio.com/>



2022



Make  
Charging  
Simple



**Mohammad Akhlaghi**  
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# Sustainable Economy & Transportation Conference

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## Thank you!



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## Keynote Address



# Sustainable Economy & Transportation Conference



**Suzanne Sobotka**  
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# *Vehicle Miles Traveled Reduction (VMTR) as a key component of sustainable transportation: Practice and policies*

*May 24, 2022*

Contact: Suzanne Sobotka  
Policy and Research Director  
[suzannes@move.mn.org](mailto:suzannes@move.mn.org)





## About us

- Transportation management organization for the City of St. Paul, Minnesota
  - Interact with employers, developers, residents, visitors on transportation options in the City
  - Receive grants for further transportation demand management work (Route-specific, population-specific)
- Leader of Transportation Forward coalition
  - Primarily state-level advocacy on how to pay for transit, biking, walking and rolling infrastructure, operations and maintenance; and how to make it better



# VMTR is hard work

- It requires behavior change that can be a significant shift for many.
- Sustainability arguments often focus on tailpipe emission reductions.
- A lack of corresponding land use or zoning changes can undermine the work.





## But the payoff is enormous.

- Given typical climate plan goals, you cannot reach transportation sector emission goals **WITHOUT** implementing VMTR strategies.
- A focus on mobility and access can unite uncommon/infrequent partners
- VMTR strategies are (at least in the short term) better at advancing equity than electrification (provided you involve the community in planning and executing!)



# The idea of the 15-minute city

- “The 15-minute city is a residential urban concept in which most daily necessities can be accomplished by either walking or cycling from residents’ homes.”
- In order to achieve a successful 15-minute city, you need to make people choose biking, walking, rolling (or transit) as a first option– not a passenger vehicle.
- You also need to make those modes connect better and explore innovative means to do so



# So, how do you achieve the 15-minute city?

- Land use
- Infrastructure
- Behavior change
- Policy advocacy



# Land use\*

\*More specifically– parking!



## Move Minnesota land use efforts with the City of St. Paul

- Elimination of parking minimum requirements, per City Climate Action Plan, adopted in August 2021
- Followed elimination of parking minimum requirements in Minneapolis in June 2021
- Use reduction versus elimination with caution– lessons learned in updated transportation demand management review
- No significant test yet– in part due to slowed down development starting in fall 2021



# ROI for developments

- Parking is not free-- the average surface space costs between \$5,000-\$10,000 to construct
- Structured parking can cost \$20,000 to \$50,000+ per space to build
- Property taxes, maintenance, lost land use opportunity



# Additional efforts aimed at parking

City of St. Paul climate action plan also recommended:

- Ordinances to require developers to “unbundle” parking from rent
- Reconsider the cost of parking rates in city-owned ramps and meters to capture the true cost of vehicle storage
- Ending monthly contracts (only charge daily)
- Shared parking agreements



# Infrastructure





# Safety and speed is critical: transit

- Dedicated bus lanes
- “Adopt a stop program”
- Connections at transit: car share, bike share, microtransit



# Safety is critical: biking

---

- Bike lanes– infrastructure matters, but so does the network
- Not every bike lane needs to look like this, but high priority routes should
- Creating a bike plan at the city, state level that is regularly revised



# Safety is critical: slowing down

- Lowering the speed limit
- Encouraging slower driving
- Raised crosswalks that double as speed bumps



# Behavior change



# Transit needs to be accessible

St. Cloud mobility training center:

- Assesses need for paratransit
- Familiarizes new riders: Seniors, students, non-English speakers



# Give riders to chance to try!

---

- Organized rides to highlight potential, new or existing routes or levels of service
- Bike rack simulation



Safety is  
critical:  
Respect  
the Ride  
campaign



# Employers and businesses: what can you do?

- Decisions start at the top: Management must be committed
- Messaging must be consistent
  - Do you have a sustainability plan or commitment?  
Does it include transportation? Shouldn't it?
- Human resources or sustainability staff must put policies and amenities in place to reflect commitment and values





# Employers and businesses: what can you do?

Concrete steps to take include:

- Infrastructure (Visibility of racks, security)
- Accommodations for those who use active transportation (Showers, changing rooms, make it clear where it is)
- Employer benefits (free transit passes or incentives to bike/walk/roll versus subsidized parking)
- Challenge events
- Make information readily available on transit and active transportation routes (real time monitors, maps)
- Organized rides/walks to orient employees, students, etc. with routes
- Organized car or van pool, car sharing



# Policy advocacy



# Sustainable Transportation Advisory Committee (MnDOT)

- Council was established in 2019 by the Minnesota Department of Transportation
- Membership in the Council is a mix of local government representatives, non-profit representatives, industry representatives, and citizens.
- The STAC includes two subgroups: *Fueling and Powering* and *VMT Reduction*.
- Adopt a statewide goal of reducing VMT by 20% by 2050 – MnDOT supports and legislature has attempted to put in statute



# Paying for transit and active transportation

Move Minnesota has advocated for increased revenue at the State Capitol through:

- Local option sales taxes
- Metro sales tax
- Increasing motor vehicle sales tax (partially constitutionally dedicated to transit)
- General fund
- Bonding
- Establishing active transportation account



# A safe and just transit system: Policy matters

- Fare non-payment as a civil infraction
- Transit ambassadors
  - National trend that has met resistance in Minnesota
  - Customer or social service focus
  - Ambassadors serve as champions for the transit system and riders



# How transit is offered matters

- Monthly passes offered by employers– declining in popularity
- Flexible passes (Pay for what you use)
- Student passes for high school and college students– new partnerships given shortage of school bus drivers
- Residential transit pass: A new pass with tremendous promise, but also difficulty
- Transit assistance program: What is your transit agency doing to help people sign up if they are eligible? (One step sign up)



*Thank you*

Contact: Suzanne Sobotka  
Policy and Research Director  
[suzannes@move.mn.org](mailto:suzannes@move.mn.org)



# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

## Questions?





# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

## Thank you!



# Sustainable Economy & Transportation Conference

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Lunch, Exhibit Hall & EV Display  
See you back here at 1:45 p.m.!





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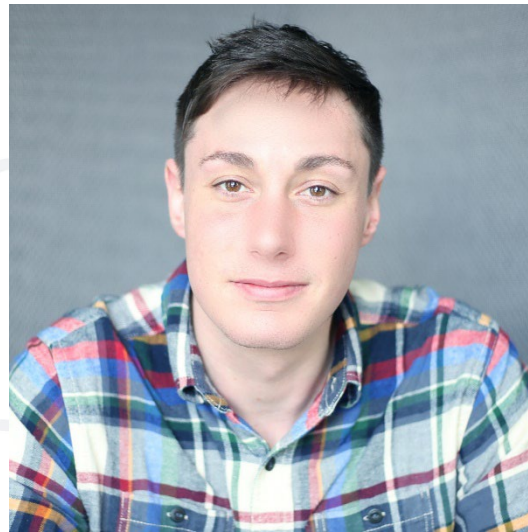
## Supporting Equity in Transportation Solutions



# Sustainable Economy & Transportation Conference



**Kelzye Bedwell**  
Director of Neighborhood  
Transportation Services  
Horizons Family Services



**Ben Kaplan**  
Cofounder  
Corridor Urbanism



**James Vierling**  
Head of Growth, Marketing &  
Communications  
HOURCAR



# Equity In Transportation Solutions

The Role of E-Bikes and Public Transit

Ben Kaplan May 24, 2022





- Corridor Urbanism is a group that advocates for Walkable Urbanism in the Cedar Rapids Metro
- Walkable Urbanism means designing places for people - not cars.
- We support improving public transit, “Complete Streets” policies, and zoning reform



- “An advanced city is not one where the poor can get around by car, but one where even the rich use public transportation.”

- Enrique Peñalosa, Mayor of Bogotá 1998-2001 and 2016-2019

# Improving CR Public Transit

- It's Time
- Increase Frequency
- Add Simplified Routes
- Invest in BRT along 1st Avenue
- Transit Investment replaces Sprawl Investment
- We've already done zoning code reform!



# BRT Works

- Look at Latin America!
- BRT Systems started in Brazil
- Cheaper than rail systems with much of the same benefits
- Dedicated infrastructure is the key to successful BRT



Bogota's BRT System carries 2.4 million passengers a day photo: Jason Margolis

- “seriously i’m convinced that e-bikes are the future of transportation”

- Jamelle Bouie - New York Times Opinion Columnist

# E-Bikes (Public and Private) Work

- Most trips in the US are short enough to use an e-bike
- The challenge for e-bikes is the lack of cycling infrastructure
- Services like Veo create easy entry for consumers into the benefits of micro-mobility
- Auto-dependence is a severe financial burden to low-income households

# Subsidize E-Bikes

- (It Works)
- Denver introduced an e-bike subsidy that reached capacity in *19 days!*
- *E-bikes are a car replacement, not a bicycle replacement*
- E-bikes come in a wide variety of styles, including bikes that can haul kids and cargo



Me on a rented e-bike on Washington Island, Wisconsin

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**651-400-2298**





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## Panel Discussion

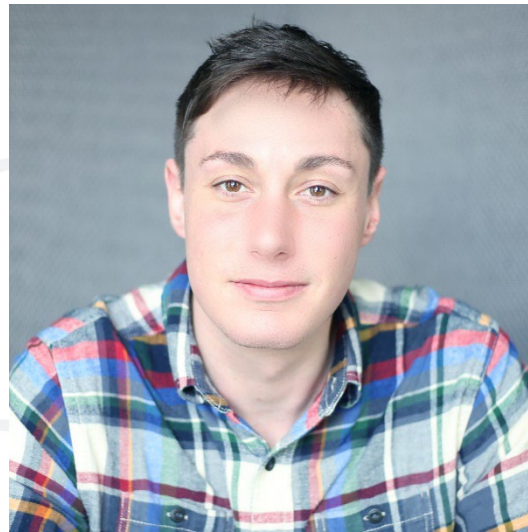




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# Sustainable Economy & Transportation Conference

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## Questions?



# Sustainable Economy & Transportation Conference

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## Thank you!





# Sustainable Economy & Transportation Conference

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## Resources & Funding for Sustainable Transportation



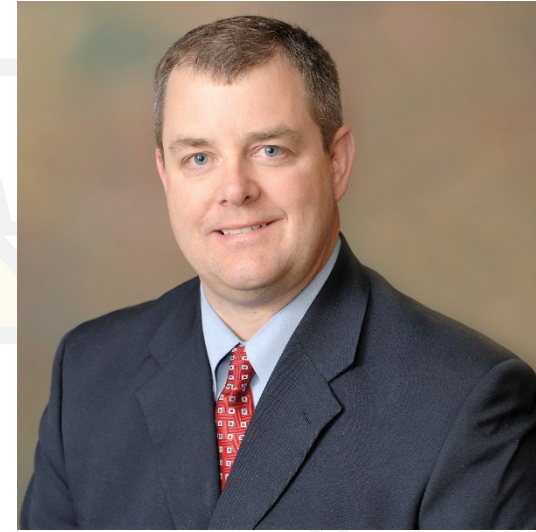
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**John Witt**  
**City Traffic Engineer**  
**City of Cedar Rapids**



**Mark Heckman**  
**Ethanol Services Director &**  
**Sustainable Farm Practices Expert**  
**EcoEngineers**



**Stuart Anderson**  
**Director - Transportation**  
**Development Division**  
**Iowa Dept. of Transportation**



# Sustainable Economy & Transportation Conference



**Mark Heckman**  
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**Practices Expert**  
**EcoEngineers**

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<https://www.ecoengineers.us/>





# Sustainable Transportation Resources and Funding

**Sustainable Economy & Transportation Conference**

May 24, 2022

## Presenter and EcoEngineers Expert



**Mark Heckman**  
Ethanol Services Director



**Daniel Ciarcia**  
EV Services Director



# Our History: Building the Clean Energy Economy

## History

Since 2009; Started in Des Moines, Iowa, with two employees; originally focused on fuels decarbonizing the transportation sector

## Vision

To be a global leader in developing solutions for a sustainable world

## Mission

To help build out a clean energy economy by providing in-depth knowledge of low carbon regulations, technologies and markets

## Future

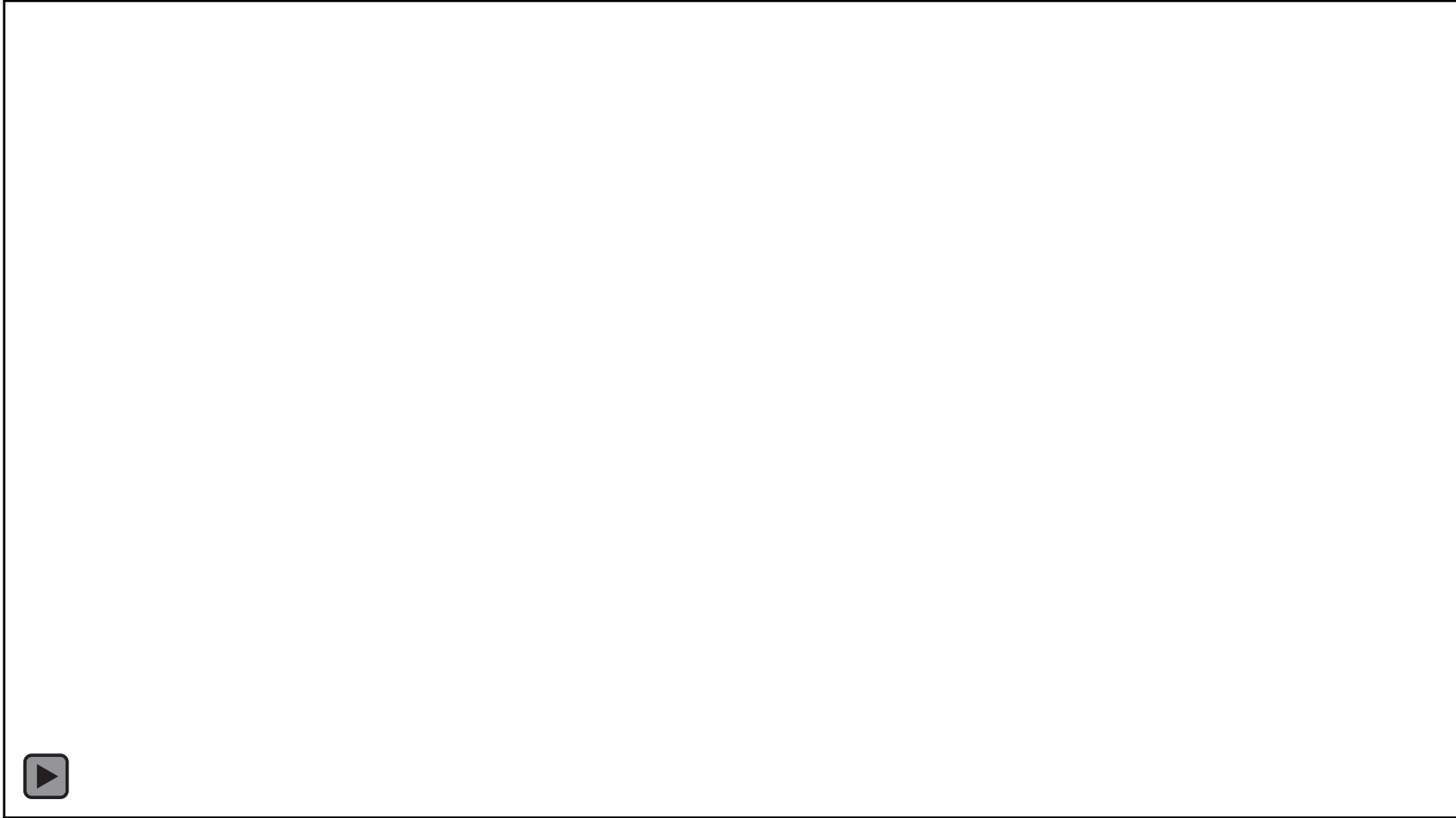
Transportation, farming, power, industry, buildings, Voluntary

## Values

Our people are the ambassadors of our brand. The trust they build with clients is the foundation of our success.



# Video



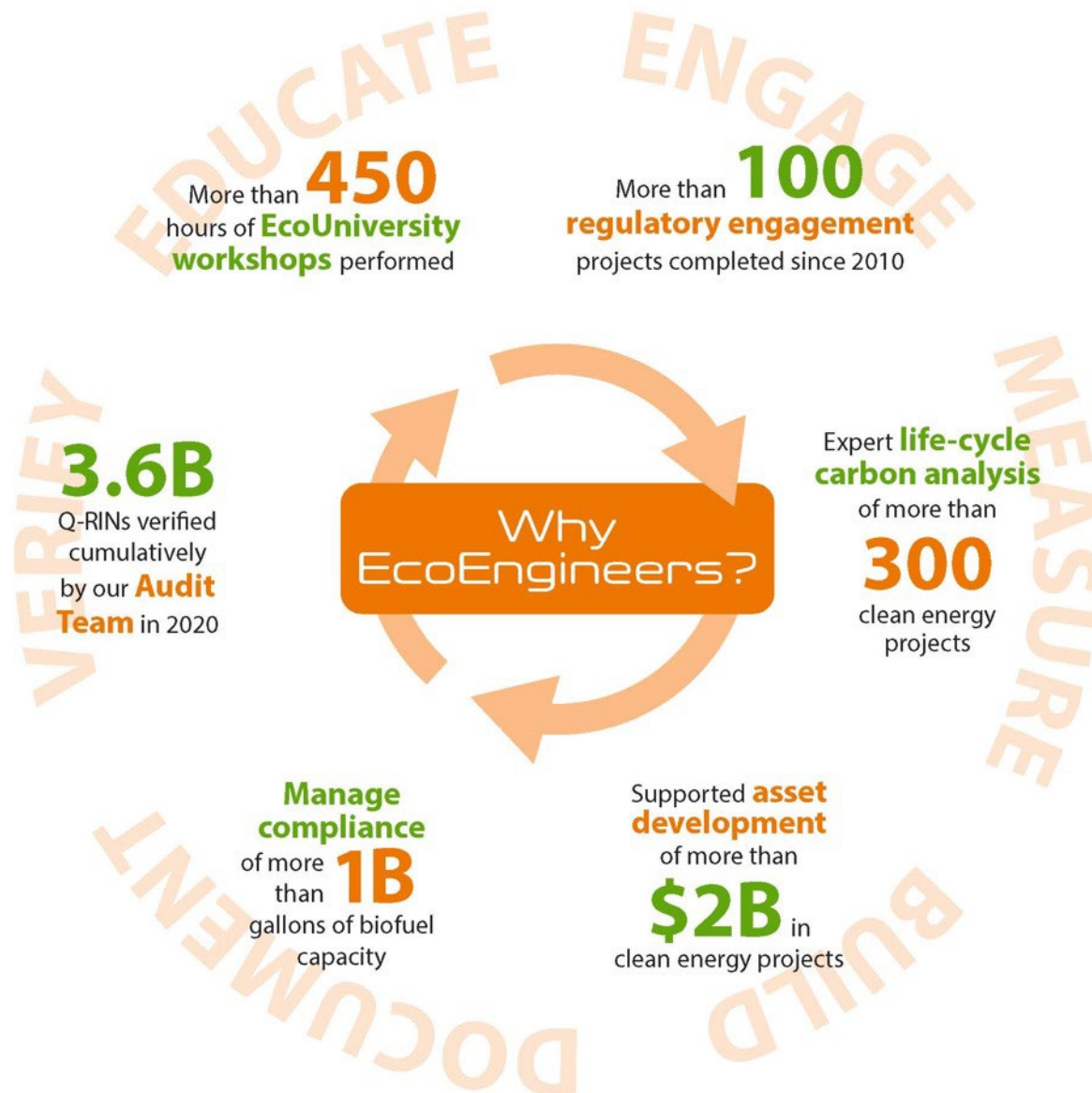
## Our Approach

### We are consistent across all service areas.

1. Fuel agnostic
2. Technology agnostic
3. National and international
4. Market-driven
5. Low-carbon
6. We don't participate in the value of products or credits



# Our Systematic Approach is Your Guide



All successful decarbonization efforts, clean fuel projects and sustainability programs must incorporate the following six items into their strategies:

1. **Training/education:** Regulations, technologies, and marketplace
2. **Carbon life-cycle analysis (LCA)**
3. **Regulatory, political engagement** and strategic internal policies
4. **Asset development:** Assess risks, redirect capital, monetize carbon
5. **Compliance management:** Making the carbon claim
6. **Third-party verification** of the claim



# Funding Options

# Economic Argument for E-Mobility

## Cost parity imminent by 2025-2027

- Battery prices have dropped 85% over past decade
  - 2020 \$150/KWh battery
- Purchase price incentives

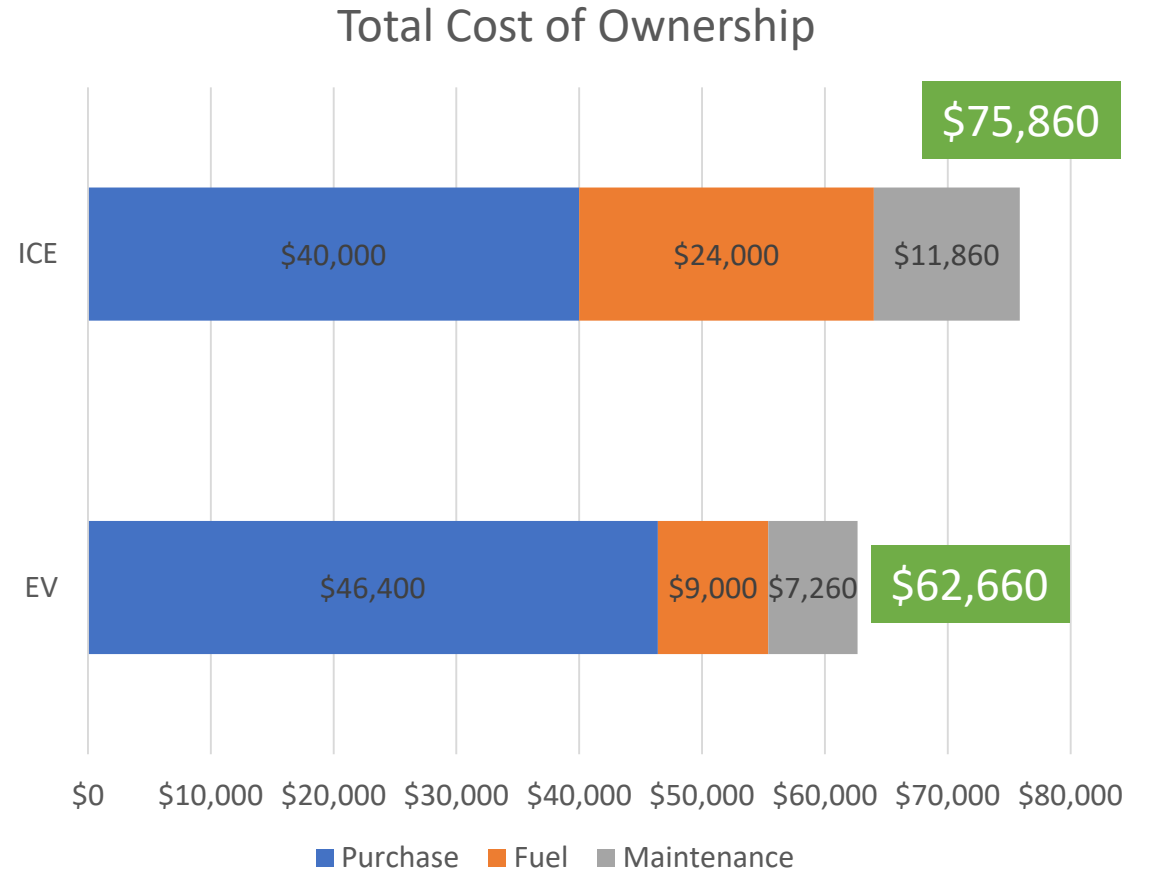
## 50% to 70% Lower fuel cost per mile

- \$0.10-0.12 for gas
- \$0.03-0.06 for electric

## Lower maintenance

- Tires and windshield wipers
- Mechanic skills training needed

## EVs 17% less than ICE Total Cost of Ownership





# U.S. Government Momentum Accelerating

## Biden Administration

- Buy America Plan
  - Convert ~645,000 vehicles federal fleet
  - All U.S. made buses are electric by 2030
  - 500,000 EV charging stations by 2030 (Six utilities to build seamless network )
- Agency chiefs to work with climate czars Gina McCarthy and John Kerry
- RFS and e-RINs?

## U.S. Congress

- Efforts to extend \$7,500 tax credit
- Bill to provide funding for USPS to convert fleet
- Infrastructure bill - \$15B in funding

## USDA / Iowa

- USDA Rural Energy – <https://www.rd.usda.gov>
- IEDA – <https://www.iowaeda.com>

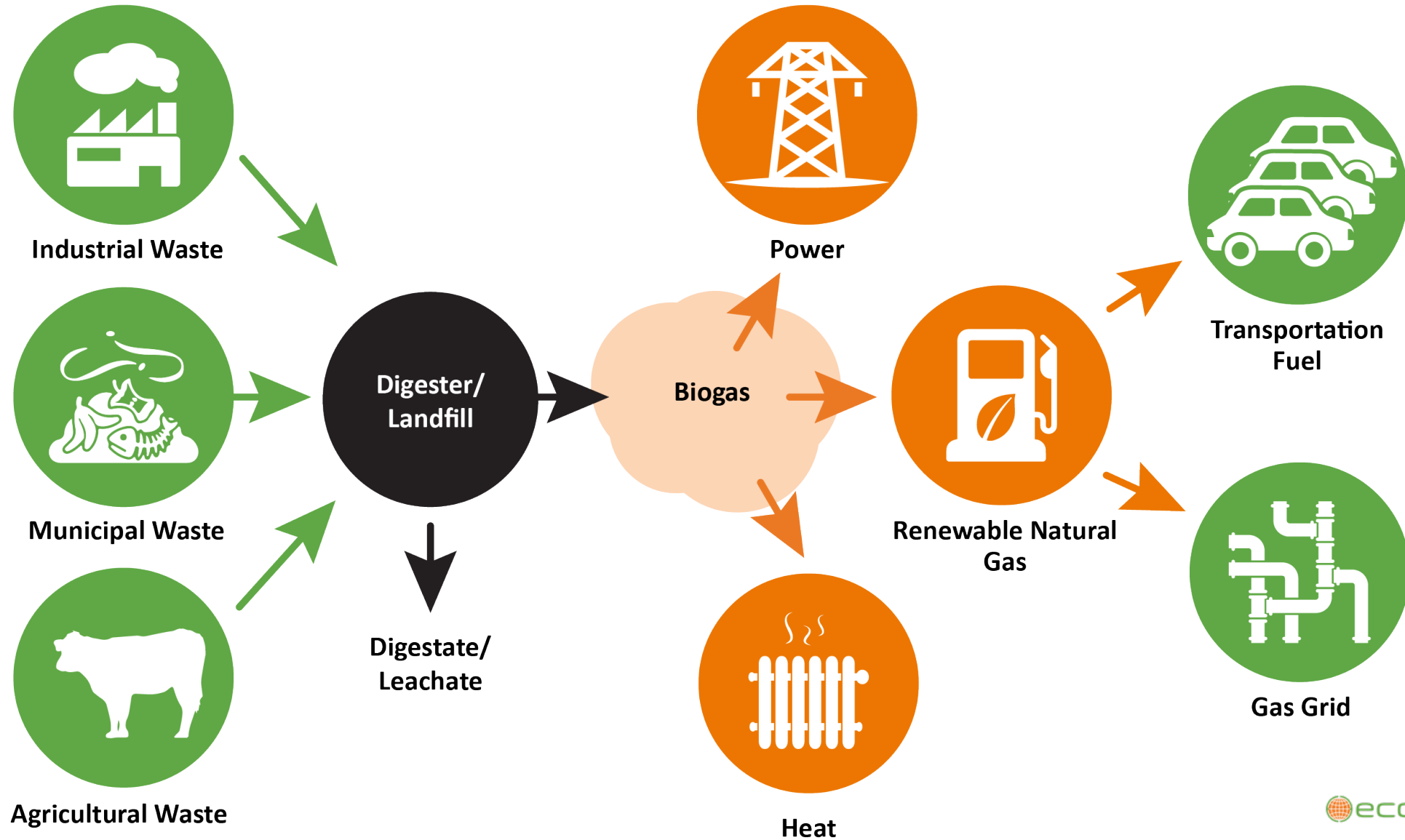






# eRINs and the Renewable Fuel Standard (RFS)

# Biogas and Renewable Natural Gas Basics



## Overview of the RFS Program

- USEPA Regulation created under the Energy Policy Act (2005, revised 2007)
- Replaces a growing portion of fossil fuels in U.S. transportation with lower-carbon biofuels
- Incentivizes the development of advanced biofuels for transportation
- Renewable Identification Numbers (RINs) are the virtual trading instrument that is created when low-carbon fuels are deployed in transportation



## What is an eRIN?

- eRIN is an unofficial term for a RIN that is created by charging an electric vehicle (EV) under the RFS
- The RFS has two existing pathways in the regulation for electricity today
- But, the USEPA has not approved any electric pathways
- RFS regulation sets 22.6 kWh equivalent to 1.0 RIN gallon, and generates 1 RIN

Pathway	Fuel Type	Feedstock	Production Process	D-Code
Q	Renewable Compressed Natural Gas, Renewable Liquefied Natural Gas, <b>Renewable Electricity</b>	Biogas From Landfills, Municipal Wastewater Treatment Facility Digesters, Agricultural Digesters, and Separated MSW Digesters; and Biogas from the Cellulosic Components of Biomass Processed In Other Waste Digesters	ANY	3
T	Renewable Compressed Natural Gas, Renewable Liquefied Natural Gas, <b>Renewable Electricity</b>	Biogas From Waste Digesters	ANY	5

Source: 80.1426 – <https://www.epa.gov/renewable-fuel-standard-program/approved-pathways-renewable-fuel>

## What's next for eRINs?

- No official announcement on approving eRINs
- Who will have claims to the eRIN?
- American Biogas Council estimates 501 million eRINs could be generated annually
- RVOs will likely need to be adjusted to accommodate the volume from eRINs

**Look for our recent eRINs and Voluntary Markets webinar at [ecoengineers.us](http://ecoengineers.us).**

D-Code	RIN Price	eRIN Potential	eRIN \$/mile
D3	\$3.13	\$1.57 billion	\$0.045
D5	\$1.50	\$752 million	\$0.021

# Decarbonize Transportation Planning

## Assess Fleet Needs

- Catalog use cases
- Current behavior
- Inefficiencies
- Range needs
- Available charging windows
- Present and future



## Determine Infrastructure

- Centralized depot
- Campus or distributed
- Large organization
- Public or shared charging options
- Present and future



## Develop the Plan

- Vehicle and fuel mix
- Charging strategy
- Run the economics
- Sustainability goals
- Measure, adjust, grow



# Project Spotlights

# Project Spotlight: Off-Airport Parking

## Key Performance

- Energy efficiency survey
- Converted lot lights to LED
- Freed up enough power supply for a dozen EV chargers

## Benefits

- Lower install costs
- Transformer upgrade not needed
- Operational cost neutral
- Added amenity to customers
- Potential to fuel their shuttle buses with the savings





# Project Spotlight: Taxi Fleet Results in Action

## Key Results

- EVs stored in city periphery not central hub
- Higher level of service – customers want to ride in the EV
- Measurable maintenance benefit
  - Reduced maintenance costs
  - Reduced vehicle down time
- Charging impact
  - A few 20-minute sessions per shift
  - Small reduction in service hours and revenue
  - Coincided with driver breaks
- Overall, reduced operating costs
  - Less than half cost per mile



# EcoEngineers Project Spotlight: Des Moines WRA

## Key Performance

- Conducted training and education around the RFS and LCFS, voluntary markets, financial risk analysis, and ongoing compliance obligations
- Provided a financial pro forma and revenue sensitivity analyses
- Reviewed records management and recommended best practices to fulfill compliance expectations
- Assisted with offtake options

## Key Results

- Registered the project under the RFS
- Performed LCA analysis of the fuel
- Secured offtake contract



Read more: [www.ecoengineers.us/portfolio-item/biogas-renewable-energy-consulting/](http://www.ecoengineers.us/portfolio-item/biogas-renewable-energy-consulting/)

# EcoEngineers Project Spotlight: Dane County Landfill

## Key Performance

- Led a multi-day training session on current clean fuels policy, compliance management, and reviewing pro formas
- Assisted county staff through the technology selection process, reviewing specifications, interviewing bidders
- Guided the offtake selection process
- Provided quality assurance program to verify the carbon reduction claim

## Key Results

- Engaged with the USEPA to obtain a rule interpretation that allowed the offloading station to operate
- Registered the project in record time under the RFS, zeroing out any projected impact on year-1 revenues from regulatory delays



Read more: [ecoengineers.us/portfolio-item/dane-county-innovative-pathway-regulatory-engagement/](https://ecoengineers.us/portfolio-item/dane-county-innovative-pathway-regulatory-engagement/)

# Get Help to Execute the Plan

## Achieve Municipality Goals

- ESG (Environment Social Governance)
- Reporting Requirements
- Zero-carbon goals
- Improve air quality
- Reduce fleet costs

## Identify Regulations

- Funding Opportunities
- Regulatory Requirements

## EV / Fleet / Infrastructure Studies

- Assess your vehicle fleet characteristics
- Evaluate technologies
  - ICE, EV, Hydrogen, CNG/RNG, Biofuels
- What Infrastructure Needed
- Cost-benefit analysis



**The time is now!**  
**Develop Plan to reach 2035!**



Creating sustainable solutions for a better tomorrow

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**Daniel Ciarcia**  
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# Sustainable Economy & Transportation Conference



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**Director - Transportation Development Division**  
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[www.iowadot.gov](http://www.iowadot.gov)



# RESOURCES AND FUNDING FOR CLEAN TRANSPORTATION SOLUTIONS

---

Sustainable Economy & Transportation Conference  
May 24, 2022



# Iowa's Clean Air Attainment Program

- Iowa's Clean Air Attainment Program (ICAAP) was created in 1994.
- Modeled after the federal Congestion Mitigation and Air Quality Improvement Program established in 1991.
- Available to cities, counties, public transit agencies, MPOs, RPAs, and state agencies. Private non-profit or for-profit entities when co-sponsored by an eligible public agency through an annual application program.
- Purpose is to award funds to projects with the highest potential for reducing transportation-related congestion and air pollution.
- \$4 million available annually with applications due October 1
- [https://iowadot.gov/systems\\_planning/Grant-Programs/Iowa-Clean-Air-Attainment-Program-ICAAP](https://iowadot.gov/systems_planning/Grant-Programs/Iowa-Clean-Air-Attainment-Program-ICAAP)



# Trail Programs

- State Recreational Trails
  - Anticipated \$2.5 million available for FY 2023 with applications due July 1
  - [https://iowadot.gov/systems\\_planning/Grant-Programs/-Federal-and-State-Recreational-Trails](https://iowadot.gov/systems_planning/Grant-Programs/-Federal-and-State-Recreational-Trails)
- Federal Recreational Trails
  - ~\$1.3 million available per year with applications due October 1
  - Motorized and non-motorized trails
  - [https://iowadot.gov/systems\\_planning/Grant-Programs/-Federal-and-State-Recreational-Trails](https://iowadot.gov/systems_planning/Grant-Programs/-Federal-and-State-Recreational-Trails)
- Transportation Alternatives Program
  - Federal program that supports trails, Safe Routes to School, and other activities
  - Funds available at the state and Metropolitan Planning Organization level
  - [https://iowadot.gov/systems\\_planning/Grant-Programs/Transportation-Alternatives](https://iowadot.gov/systems_planning/Grant-Programs/Transportation-Alternatives)

## New Programs – Carbon Reduction

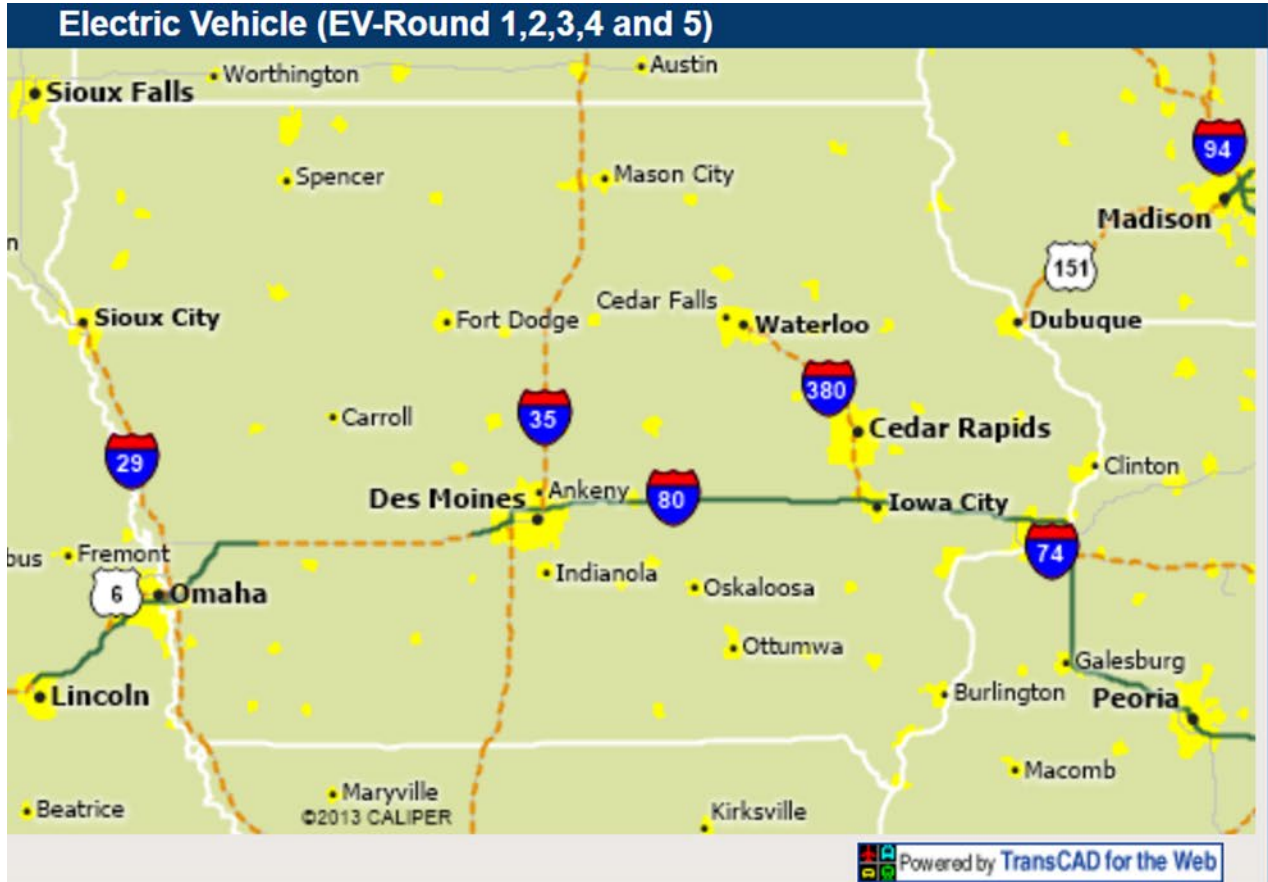
- New core program – about \$16 m per year
- 65 percent suballocated by population
  - **Over 200,000 population: \$2.2 million**
  - **50,000 to 200,000 population: \$2.1 million**
  - **5,000 to 50,000 population: \$1.9 million**
  - **< 5,000 population: \$4.1 million**
  - **Any area: \$5.6 million**
- Projects to reduce emissions
  - Traffic monitoring facilities/programs
  - Public transit
  - Trails
  - Congestion management
  - Advanced technologies
- Each state required to develop carbon reduction strategy by Nov. 2023

# New Programs – PROTECT

- “Promoting Resilient Operations for Transformative, Efficient, and Cost saving Transportation”
- New core program – about \$18 m per year
- Projects to improve resiliency of transportation infrastructure
  - Resilience improvement grants
  - Community resiliency
  - Evacuation routes
- Lower match if state develops resiliency improvement plan and/or incorporates within state transportation plan
- Also includes a discretionary grant component

# National Electric Vehicle Infrastructure

- New US DOT program from the Infrastructure Bill
- Iowa allocated \$51 million over FFY 2022-2026 – approximately \$10.3 m per year
- FFY 2022 allocation: \$7.6 m (after off-the-tops)
- Infrastructure within one mile of Alternative Fuel Corridor Routes



Sources Legend Data

#### Legend

- FHWA Adjusted Urban Area
- Alternative Fuel Corridors
  - EV - Corridor Ready
  - EV - Corridor Pending

0 33.3 66.7 100 Miles

[Go to Layers to turn on Fuel Stations](#)

For information and comments about this web site, Yoder

# National Electric Vehicle Infrastructure

- State Deployment Plan
  - Due August 1, 2022
  - Approved by September 30, 2022
  - Approval required to access funds
- Iowa DOT and IEDA will coordinate and seek input

# Public Transit and School Buses

- New Program – Clean School Bus Program
  - Federal EPA Program
  - \$5 billion over five years to replace existing school buses with clean and zero-emission models
  - <https://www.epa.gov/cleanschoolbus>
- Low or No Emission Vehicle Program – Public Transit
  - Federal discretionary program for public transit agencies
  - \$1.1 billion in FFY 2022
  - Applications due May 31

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## Panel Discussion



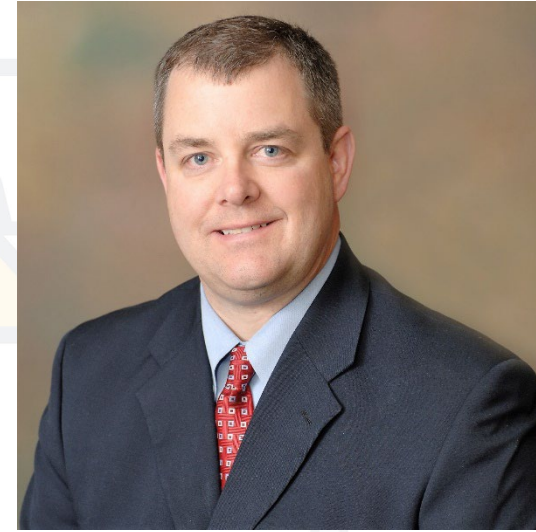
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## Questions?



# Sustainable Economy & Transportation Conference

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## Thank you!



# Sustainable Economy & Transportation Conference



**Eric Holthaus**  
**Sustainability Program Manager**  
**City of Cedar Rapids**



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The David Maier and  
Matthew McGrane Family

Presented By



# Sustainable Economy & Transportation Conference

## Conference Agenda





# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

**Expo Hall open until 5:15**  
**EV Display continues through 5:15**







# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

Join us for a Networking Reception at  
Iowa Brewing Company, 708 3rd Street SE

4:15-6 p.m.



# Sustainable Economy & Transportation Conference

Let's create a low-carbon future, together.

## Thank you!

