Clean Communities
EVs & Municipalities
National Drive Electric Week Webinar Series

- For Audio, dial:
- 1-800-250-3900
- Participant PIN: 55197039#
Thursday, September 14, 2017

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National Drive Electric Week Webinar Series

- Justin Brightharp, Electrification Coalition
- Jed Greenfield, City of Houston
- Duy Vu, City of Cedar Hill
- Steven Patrick, City of Lewisville
- Bailey Muller, North Central Texas Council of Governments
Electrification Coalition
Agenda

• Mission
• Introduction
• Electrification Coalition Programs
  – Drive Electric Northern Colorado
  – Rochester EV Accelerator
  – Energy Secure Cities Coalition
  – City of Atlanta Partnership
• Benefits to Municipalities
The Electrification Coalition (EC) is a nonpartisan, non-for-profit group of business leaders committed to promoting policies and actions that facilitate the deployment of electric vehicles on a mass scale in order to combat the economic, environmental, and national security dangers caused by our nation’s dependence on oil.
Welcome and Introduction

Justin Brightharp, The Electrification Coalition

Technical Advisor based in Atlanta, Georgia
Assist the City of Atlanta on alternative fuel goals and overall strategy while furthering the Electrification Coalition mission
Electrification Coalition Programs

- Drive Electric Northern Colorado
- Rochester EV Accelerator
- Energy Secure Cities Coalition
- City of Atlanta Partnership
Drive Electric Northern Colorado

- Community-wide initiative that focuses on the mass deployment of electric vehicles
- Utilizes public-private partnerships to encourage widespread adoption of plug-in electric vehicles (PEVs)
- Launched in February of 2013
- [http://driveelectricnoco.org/](http://driveelectricnoco.org/)
- 20+ businesses, universities, municipalities provided workplace charging for 15K individuals
- Led almost 100 ride and drive events
- City of Fort Collins and Loveland have employee workplace charging now
Rochester EV Accelerator

• Partnership between the Electrification Coalition, City of Rochester, Genesee Region Clean Communities, & Energetics Incorporated
• Widespread EV adoption to achieve Rochester’s sustainability goals
• Innovative partnerships with public & private sector for outreach, infrastructure, and coordination
• Provide assistance and expertise on the transition towards plug-in electric vehicles
  – EV readiness (policy)
  – EV education/awareness
  – EV experience
  – Fleet transition
  – Consumer purchasing
Energy Secure Cities Coalition

• Goal: Unite 25 cities, retire 50,000 petroleum vehicles, save 500,000 barrels of oil every year
• Current cities: Indianapolis, Atlanta, Sacramento, San Diego, Oakland, Charlotte, West Palm Beach, Rochester
• Cities seeing the benefits of PEVs to taxpayers, environment, and national security
City of Atlanta Partnership

- Memorandum of Understanding (MOU) entered in Summer of 2016
- Created Technical advisor position within the Electrification Coalition housed at City of Atlanta
  - Assist in achieving the City’s alternative fuel vehicle goals
  - Create opportunities for public outreach and awareness on PEVs
  - Identify policy opportunities and barriers to transitioning towards PEVs
• Developed a document on the EV infrastructure experience in Atlanta
• Described experience of installing electric vehicle supply equipment (EVSE) and barriers encountered
• Available for other municipalities to utilize
Benefits to Municipalities

• Data-driven information for best options for transitioning to electric vehicles
• Access to a network of cities for best practices and policy solutions
• Consistent information on federal activity on electric vehicles and national programs
• Connections to manufacturers and organizations in new technologies/innovation and electric vehicles
Contact

• Justin Brightharp, The Electrification Coalition
• Email: JABrightharp@atlantaga.gov
• Phone: (404) 330-6510
City of Houston EV’s
Transportation by the plug

Electrification Coalition
September 14, 2017

Jedediah Greenfield, MPA
Fleet Management Department
City of Houston
Vision from the past
Vision of the future
Overview of City of Houston Alt. Fuel

- **EV’s**
  - 27 - Nissan Leafs

- **PHEV’s**
  - 15 Toyota Prius (Hymotion)

- **Hybrid**
  - 757
    - Prius, Escape, Malibu, Tahoe
    - 2 Recycling trucks

- **CNG**
  - Refuse truck (Pilot)

- **Propane**
  - 3 Ford F series
  - 20 mowers

**Approximate Total Vehicles – 12,000**
Electric Vehicle Supply Equipment (EVSE)

The City of Houston has a total of 110 EVSE’s at City facilities

- Blink Network and GridBot Network
- DC Fast Charger
- 37 are dedicated for FleetShare vehicles
City of Houston EV’s

FleetShare
• Online reservation vehicle pool managed by the Fleet Management Department
  • Fast Fleet by Zipcar

EV Management Best Practices
• Ownership
  • Central Fleet Department
• Monitoring
  • Car attendant
  • Carwings app used to ensure full charge
• Education (leading by example)
  • Training class and videos
  • Analyze driving behavior and offer corrections
  • Ride alongs
Vehicle Utilization
Fuel vs. EV
Monday to Friday – 8 a.m. to 5 p.m.
City of Houston
600 Square Miles
Jedediah Greenfield, MPA
Fleet Management Department
City of Houston
Email:  jedediah.greenfield@houstontx.gov
Office:  832-393-6910
Mobile:  281-830-7181
Fax:  832-393-6909
A City within a Park

Duy Vu
Environmental Manager
Population 46,500
Established 1846

Elevation 880 ft
Green Space 34%

Tree Canopy 7,938 acres
Number of Parks 19
Cedar Hill is Diverse

- 54% African American
- 22% White
- 4% Hispanic or Latino
- 20% Other Race

Color Key:
- Blue: African American
- Red: White
- Green: Hispanic or Latino
- Purple: Other Race
Growing Green

- Comprehensive sustainability program through the Environmental Division
- Sustainability Action Plan, 2011
  - Urban conservation
  - Water conservation and management
  - Transportation
  - Green infrastructure
  - Renewable energy
- Currently being updated
Vision

We envision Cedar Hill as a regionally engaged sustainable community that manages resources wisely, conserves natural beauty, and promotes open space.

Mission

The City of Cedar Hill’s Mission is to invest in practical planning today for a sustainable community tomorrow.
Renewable Energy

- **Solar PV System**
  - 152.64 kW PV system
  - 210,030 kWh annually
  - **Grant funding**
    - $952,000 SECO funds
    - $164,500 ONCOR program
    - $26,000 City
Yes, even a wind turbine

- 4.335 kW vertical axis
- Grant funded
  - $50,000 SECO funds
  - $1,500 ONCOR incentive
  - $12,500 City budgeted
Green Infrastructure

- Four EV stations installed at Government Center
  - 2 for City vehicles
  - 2 for public use - operated by Blink
- 100% Grant funded
- Powered by solar and wind
Electric Vehicles

- Purchased two all electric Leafs in 2011
- Both vehicles wrapped
- Powered by solar and wind
- Assigned to Neighborhood Services (Code Enforcement) and the Recreation Center (Parks)
Leafs by the Numbers

- ~22,000 miles driven combined
  - Almost always driven within the City limits
  - Strategically driven when outside City limits
  - Never had a case where the Leaf ran out of batteries

- Low maintenance
  - One battery replacement ($125)
  - Tires, wipers

- Not affected by fuel shortages
Future Wishes

- Highly encourage the purchase of all electric vehicles
- Electric powered truck
  - Increased clearance for inspection staff
  - Haul capacity
- Expanded range
  - 150+ miles more ideal
  - Drive to destination is usually fine
  - Drive back to Cedar Hill always the concern
SolSmart Designation

- National solar designation program
- Working with NCTCOG
- Bronze designation pending with the intention to be Gold designated
• As part of Lewisville 2025 Big Move Initiative, Sustainability is considered as a priority.
• In 2014 Sustainability auditors conducted Citywide audit of City facilities and fleet.
• The report recommended the City to explore ways and invest in alternative energy, including Solar, wind, Brite white roofing, electric and hybrid vehicles.
ELECTRIC & HYBRID VEHICLES

Pushback from the departments:
• None of the departments needed electric vehicles or Hybrids
• Requested Nissan to provide us two electric vehicles for a week to test run
• All departments, including Police had the Nissan Leaf for a few days
• After the test run, a few departments showed interest in these vehicles
ELECTRIC & HYBRID VEHICLES

Departments using the electric/Hybrid vehicles:

- Sustainability Office: 1 Electric Vehicle
- Neighborhood Services: 1 Electric/1 Hybrid
- Sanitarian: 3 Electric
- Fleet Pool Vehicles: 1 Hybrid
- Police/CID: 7 Hybrids
- Engineering: 2 Chevy Colorado (4 Cylinders)
- Public Works: 1 Chevy Colorado (4 Cylinders)
- Facilities: 2 Ford Transit Vans (4 Cylinders)
- ECS/Fleet: 2 LPG Forklifts
ELECTRIC & HYBRID VEHICLES

- Total Electric Vehicles: 5
- Total Hybrids: 9 (Prius, Fusion and Camry)
- Colorado Trucks: 3 (4 cylinders)
- Transit Vans: 2
- LPG Forklifts: 2

FY 17-18 Purchase:
- Action Step has been initiated for 2 more electric vehicles for Environmental & Health Services and replacing F150’s with 4 cylinder trucks.
- Replace Diesel/Gas landscape equipment's with Propane landscape equipment.
- Police Admin: 5 Hybrids sedans
Nissan Contribution to Electric Vehicle Infrastructure:

• For every two Nissan Leafs, Nissan Donated 2 Level II charging stations - 4 Hour Charge
• Nissan pledged to donate DC Fast charging station at the end of this fiscal year (80% capacity charge in less than 30 minutes)
SUSTAINABILITY 2025
CITY’S ELECTRIC FLEET
AVERAGE MPG

Miles Per Gallons:
- Hybrids – 42.7 mpg
- Ford F150 – 10.37 mpg
- Chevy Colorado – 14.8
- Transit Vans – 15.5 mpg
- Nissan Leaf MPGe – 94 MPGe =36kWh =$4.32
BENEFITS OF ELECTRIC VEHICLES AND WHY THEY WORK FOR THE CITY

• Reduced maintenance workload
• Big savings on gas
• Zero emissions
• 90% battery charge will cost around $4.00
• In 2015, City was awarded Bronze Fleet Award
CITYWIDE FUEL USAGE

<table>
<thead>
<tr>
<th>Year</th>
<th>Fuel Usage Gallons</th>
<th>Fuel Usage Cost</th>
<th>Equipment Count</th>
<th>Average Gallons/Equipment</th>
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<tr>
<td>FY 10 -11</td>
<td>302,082.06</td>
<td>$895,141.28</td>
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<td>1367</td>
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<td>FY 11 - 12</td>
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<td>$957,156.90</td>
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<td>FY 12 - 13</td>
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<td>$944,448.83</td>
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<td>1198</td>
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<td>FY 13 - 14</td>
<td>308,844.58</td>
<td>$927,677.75</td>
<td>303</td>
<td>1019</td>
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<td>FY 14 - 15</td>
<td>304,424.00</td>
<td>$584,125.00</td>
<td>321</td>
<td>948</td>
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<td>FY 15 - 16</td>
<td>294,220.00</td>
<td>$463,527.00</td>
<td>325</td>
<td>905</td>
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<tr>
<td>FY 16 - 17</td>
<td>169,100.00</td>
<td>$295,912.77</td>
<td>326</td>
<td>519</td>
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</table>

Fuel usage reduction from 2013 - 2016: 14,624 gallons

FY 16-17 = Up to May 3rd 2017
FUEL USAGE REDUCTION

• All City vehicles have GPS
• Modified City working hours
• Electric Vehicles
• Hybrid Vehicles
• Fuel efficient 4 cylinder trucks
QUESTIONS

• Overall, we think that EVs are a good investment for the city
  – contributes to clean air
  – saves $$$ on gas
  – reduces the workload for fleet shop

• Any Questions?
Air Quality Funding Opportunities

Bailey Muller, Air Quality Planner
North Central Texas Council of Governments (NCTCOG)
Infrastructure Funding Opportunities
TERP Alternative Fuel Facility Program (AFFP)

Grants For The Construction Or Expansion of Alternative Fuel Fueling Stations That Will Provide New Fueling Service Or Capacity Within The Clean Transportation Zone

- Electric Charging; Natural Gas (CNG and/or LNG); Biodiesel; Hydrogen; Methanol; or Propane

Project Requirements:

- Projects Must be Accessible and Available to the Public at Times Designated by the Grant Contract
- Located Not More Than One Mile From An Interstate Highway System Within The Eligible Counties

Expected to Open Spring 2018
Qualified EVSE must be within 5 miles of the highway, open to the public (no Tesla), and may include DCFC and Level 2 charging stations. No more than 50 miles may be between stations.
Volkswagen Settlement: Coming Soon

National ZEV Investment Plan

$1.2 Billion Commitment Nationwide (Excludes California) over 4 Cycles, Ending in 2026

$300 Million for Cycle 1, from 2017-2019
- ~$250 Million of Cycle 1 allocated for Charging Infrastructure Installation
  - Long Distance Highway Network ~$190 Million
  - Community Charging ~$40 Million
Volkswagen Settlement: Coming Soon

Environmental Mitigation Trust

$2.7 Billion Designated to be Distributed to States

- Texas Share: $210 Million
- States Must File to Become a Beneficiary and Select a Lead Agency to Administer Funds

10 Eligible Mitigation actions:

- Action 9: Light-Duty ZEV Supply Equipment
- Other Actions include: Replacing/Repowering of Class 4-8 Freight and Buses, Freight Switchers, Airport Ground Support Equipment, Forklifts, and others.

Vehicle Funding Opportunities
Federal Tax Credit

The Federal Internal Revenue Service (IRS) Tax Credit Is For $2,500 To $7,500 Per New EV Purchased For Use In The U.S

- Size Of The Tax Credit Depends On Size Of The Vehicle And Battery Capacity
- Specific Tax Credit Amounts For Individual Vehicles, Can Be Found On Fueleconomy.Gov’s Tax Credits For Electric Vehicles

For Tax Exempt Agencies (Public Fleets):

- Vehicle Seller Entitled To The Tax Credit, But Only If The Seller Clearly Discloses The Tentative Credit Amount Allowable For The Vehicle In Writing To The Purchaser
- IRS Form 8936, Qualified Plug-in Electric Drive Motor Vehicle Credit, for further detail
TERP Light-Duty Motor Vehicle Purchase or Lease Incentive Program (LDPLI)

- Incentives For The Purchase Or Lease Of New Light-duty Vehicle Powered By Electricity, Compressed Natural Gas (CNG), Propane, Or Hydrogen.
- Electric Drive Vehicles Powered By A Battery Or Hydrogen Fuel Cell Are Eligible For A Rebate Of $2,500
- One Rebate Will Be Available Per Eligible Vehicle.

Anticipated Grant Round Opening In Spring 2018

For More Info, Visit: www.terpgrants.org
Fleets for the Future (F4F)

Purpose:

- Achieve Volume Discounts Beyond List Prices On Existing Purchasing Cooperatives (E.G. HGAC Buy, Buyboard)
- Deliver Value-added Through Infrastructure, Monetized Incentives, And/Or Other Service Offerings

Who’s Eligible:

- All Public Fleets
Fleets for the Future:
NCTCOG Vehicles of Focus

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Description *or equivalent</th>
<th>BEV/EV</th>
<th>PHEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedans</td>
<td>SUB-COMPACT Sedan</td>
<td>Ford Focus Electric, Chevy Bolt, Nissan Leaf*</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMPACT Sedan</td>
<td>Ford Fusion Energi, Chevy Volt, Prius Prime*</td>
<td>✔️</td>
<td></td>
</tr>
</tbody>
</table>
Fleets for the Future: National Opportunities

- Battery Electric Vehicles
- Electric Vehicle Supplies and Equipment
- Hybrid Electric Vehicles
- Plug In Electric Vehicles

F4F National Team Opportunities

Metropolitan Area Planning Council (MAPC) Opportunities

Point of Contact: Megan Aki, maki@mapc.org

Point of Contact: Philip Kreycik, philip.kreycik@mc-group.com
Justin Brightharp
Electrification Coalition
jstnbrightharp@gmail.com

Jed Greenfield
City of Houston
Jedediah.Greenfield@houstontx.gov

Duy Vu
City of Cedar Hill
duy.vu@cedarhilltx.com

Steven Patrick
City of Lewisville
spatrick@cityoflewisville.com

Bailey Muller
North Central Texas Council of Governments
bmuller@nctcog.org

www.DFWCleanCities.org/EVNT  #texasEV
Questions & Discussion