AGENDA

Electric Vehicles North Texas (EVNT)
Stakeholder Meeting

North Central Texas Council of Governments
Transportation Council Room
Tuesday, December 16, 2016
10:00am – 11:00am

1. Introduction
   Rachel Linnewiel, NCTCOG

2. 2016 Ozone Season Recap
   Jody Loza, NCTCOG

3. EVNT Update
   Rachel Linnewiel, NCTCOG
   Includes updates on regional statistics, summary of annual activities, proposals for upcoming activities and strategic planning.

4. Other Items
   All

5. Adjourn
   Rachel Linnewiel, NCTCOG
EVNT Goals, 2015-2016

1. Increase EV registration in the 10-county nonattainment area by 100% over September 2015 levels by the end of September 2016.

2. Coordinate with EVNT stakeholders to host one National Drive Electric Week event between September 10-18, 2016, with an overall goal of increasing attendance to 200 EVs and 400 total attendees.

3. Develop region-specific outreach materials with emphasis on economic benefits in addition to air quality/environmental benefits. Materials may include region-specific fact sheets; an infographic on financial return on investment, job creation through EV development and sales; and updated website resources.

4. Produce at least one video for educational/marketing purposes.

5. Identify and disseminate best management practices related to integrating EV-Ready guidelines into building codes for both residential and commercial properties, with particular focus on multifamily residential properties, with a goal of hosting at least one workshop/meeting on the topic.

6. Assess infrastructure “gaps” and coordinate with industry partners to identify solutions, with data to be presented by GIS map and a white paper addressing EV-based business case studies. This may be completed by conducting geographic information system (GIS) analysis of EV registration data versus existing EVSE sites; target analyses include evaluating the locations of major employment centers and typical EV range. Integrate feedback from EV-based businesses. DFWCC has established a goal of 2 DC fast charger EVSEs being installed at or adjacent to the airports.

7. Engage local businesses in the Workplace Charging Challenge with a goal to sign up 5 additional business, for a total of 12 partners from the DFW area. Maintain momentum on the topic in follow-up to the July 30, 2015, Workshop.

8. Establish partnerships with rental car facilities and service centers to incentivize use of EVs as rental/loaner vehicles and increase driver exposure and, consequently, adoption.

9. Identify barriers to EV adoption among regional fleets and document EV adoption among 5 local fleets. Reach out to 3 fleets that already use EVs to engage in helping relay best practices.

10. Attend at least one North Texas Electric Auto Association meeting each quarter to provide updates on EVNT activities as well as to receive feedback from members on critical issues, barriers, and opportunities and engage with other local interest groups as appropriate.

11. Goals for the next three-to-five years are: develop multiple videos for educational and marketing purposes, develop an intracity electrification network between the DFW, Houston, and Austin-San Antonio urban centers, pursue additional infrastructure deployment if needed, and engage transit agencies and universities in future infrastructure/rental/car loan projects. Additional goals will be developed as 1 year goals are completed and analysis indicates areas of additional needs.
Meeting Summary
Electric Vehicles North Texas

North Central Texas Council of Governments (NCTCOG)
Transportation Council Room
Tuesday, December 6, 2016
10:00 a.m. – 11:00 a.m.

Attendees:

Dave Aasheim – Chargepoint
Kenny Bergstrom – DFW Clean Cities
Rick Bollar – EV Owner
Pamela Burns – DFW Clean Cities
Lori Clark – NCTCOG
Yarcus Lewis – City of Plano
Rachel Linnewiel -- NCTCOG
James Orenstein – Independent
Tim Slifka – City of Southlake
Jay Squyres – EV Owner
Stanton Zeff – North Texas Electric Auto Association

Agenda Items:

1. Introduction
2. 2016 Ozone Season Recap
3. EVNT Update and Discussion
4. Conclusion

Action Items:

1. Distribute meeting presentations and National Drive Electric Week video by posting to EVNT website and distributing to email list – NCTCOG Staff
2. Draft strategic plan outline for 2017 for review and feedback from stakeholders – NCTCOG Staff
3. Review strategic plan outline for 2017 and provide feedback -- Stakeholders

Additional Notes:

• Question posed: What do Stakeholders see as the added value of EVNT? Stakeholders see EVNT as adding value in providing connection to local, State, and federal initiatives (particularly
regarding workplace charging and relationships with municipalities around the region). It was also expressed that EVNT acts as a bridge between different activist/interest groups and is valuable in connecting them to industry and local government agencies. Likewise, EVNT is seen as an important partner in building public awareness due to more extensive resources and capacity than other interest groups. Participants also expressed that networking with other stakeholders and sharing best practices between industry, local government, and individual representatives is a primary motivator for attending the EVNT meetings.

- EVSE-ready residential construction was identified as a topic of top priority.
- The DFW Clean Cities website, and with it the EVNT webpage, will be undergoing some revision and migration over the next few months. Please forgive delays or snags as we work through this transition!
Registration by Electric Vehicle (EV) Model in North Texas

Total EV Registration:
Texas: 8459
DFW Area: 3286
38.8% of TX total
(As of November 2016)

*NCTCOG staff plans to include additional models including: Cadillac ELR, Chevrolet Spark, Fiat 500e, Honda Accord Plug-In & Fit EV, Toyota Plug In Prius, & RAV4 EV
EV Registration Density by ZIP Code with EV Recharging Station Locations

Legend
- 2008 Eight-Hour Ozone Nontattainment Area
- EV Density by ZIP Code
  - 1 - 6
  - 7 - 15
  - 16 - 26
  - 27 - 42
  - 43 - 78
- EV Charging Stations
- Near Nonattainment Counties

November 2016
Source: NCTCOG
Economics-Focused Fact Sheet

- Comparison of maintenance needs/cost for ICE vs EV in first 100,000 miles
- Statistics about job creation resulting from EV market
- Information about battery replacement technology and cost
Fixing America’s Surface Transportation (FAST) Act Section 1413 Alternative Fuel Corridor Recommendations

Comparison of FHWA* Designated Electric Vehicle Corridors with Corridors Nominated by NCTCOG

Legend
- Nominated and Designated -- Signage Ready
- Nominated and Designated -- Signage Pending
- Nominated Interstate -- Not Designated
- Nominated US/State Highway -- Not Designated
- Counties Proposed to Be Designated Ozone Nonattainment Under 2015 Revised Ozone Standard
DFW National Drive Electric Week (NDEW) Event Video
# DFW National Drive Electric Week (NDEW) Event Statistics/Ranking

<table>
<thead>
<tr>
<th>Rank:</th>
<th>1&lt;sup&gt;st&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt;</th>
<th>4&lt;sup&gt;th&lt;/sup&gt;</th>
<th>5&lt;sup&gt;th&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendees by State</td>
<td>CA</td>
<td>TX</td>
<td>NY</td>
<td>FL</td>
<td>WA</td>
</tr>
<tr>
<td>Attendees by Event</td>
<td>San Diego (1122)</td>
<td>Los Angeles (922)</td>
<td>Cupertino (487)</td>
<td>DFW (404)</td>
<td>Delmar, NY (317)</td>
</tr>
<tr>
<td>Vehicles by Event</td>
<td>San Diego (165)</td>
<td>Cupertino (135)</td>
<td>DFW (128)</td>
<td>Los Angeles (118)</td>
<td>Poolesville, MD (91)</td>
</tr>
<tr>
<td>Tesla Model S by State</td>
<td>CA (93)</td>
<td>TX (88)</td>
<td>FL (55)</td>
<td>WA (31)</td>
<td>NY (26)</td>
</tr>
<tr>
<td>Tesla Model S by Event</td>
<td>DFW (47)</td>
<td>San Diego (20)</td>
<td>Austin (18)</td>
<td>Oldsmar, FL (16)</td>
<td>Houston (15)</td>
</tr>
</tbody>
</table>
Plug-In EV Readiness Scorecard

Overall Score
On the Right Track
Based on 97% of questions answered

Score

- Long-Term Vehicle and Infrastructure Planning
- Plug-In Vehicle Market Conditions
- Utility Involvement
- Education and Outreach
- Laws, Incentives, and Financing
- Electric Vehicle Supply Equipment (EVSE) Permitting and Inspection Process
Plug-In EV Readiness Scorecard

Scorecard Comparison

Excellent
Great Job
On the Right Track
Needs Improvement

Overall Score
Long-Term Vehicle and Infrastructure Planning
Plug-In Vehicle Market Conditions
Utility Involvement
Education and Outreach
Laws, Incentives, and Financing
EVSE Permitting and Inspection
Plug-In EV Readiness Scorecard

City A

Overall Score
Needs Improvement
Based on 100% of questions answered.

Scorecard Comparison

Excellent
Great Job
On the Right Track

Needs Improvement
Overall Score
Long-Term Vehicle and Infrastructure Planning
Plug-In Vehicle Market Conditions
Utility Involvement
Education and Outreach
Laws, Incentives, and Financing
EVSE Permitting and Inspection

Long-Term Vehicle and Infrastructure Planning
Plug-In Vehicle Market Conditions
Utility Involvement
Education and Outreach
Laws, Incentives, and Financing
Electric Vehicle Supply Equipment (EVSE) Permitting and Inspection Process
Plug-In EV Readiness Scorecard

City B

Scorecard Comparison

Excellent

Great Job

On the Right Track

Needs Improvement

<table>
<thead>
<tr>
<th></th>
<th>Overall Score</th>
<th>Long-Term Vehicle and Infrastructure Planning</th>
<th>Plug-In Vehicle Market Conditions</th>
<th>Utility Involvement</th>
<th>Education and Outreach</th>
<th>Laws, Incentives, and Financing</th>
<th>EVSE Permitting and Inspection</th>
</tr>
</thead>
</table>
Fleets for the Future

- **National** partnership between regional councils, Clean Cities coalitions, and industry leaders.

- **Dedicated** to advancing fuel-efficient vehicle technologies through targeted outreach, education, and deployment of best practices.

- **Coordinates** regional and national scale procurement initiative designed to consolidate bulk orders of alternative fuel vehicles.

- **Focuses** on reducing the incremental costs of alternative fuel vehicles and supporting infrastructure.

- **Creates** best practices and templates on vehicle procurement strategies and policies.
Fleets for the Future

Approach
- Regional-scale Cooperative Procurement
- Best Practices and Templates

Technologies of Focus
- Propane
- Electric
- Natural Gas
- Bio-diesel/Ethanol
- Related Infrastructure
• What is the added value of EVNT?
• Stakeholders vs Audience
• Focus on Local Government
  • One-on-One Meetings with City Staff
  • Region-Specific Templates
  • Municipal Fleet

• Stakeholder Guidance
  • Establishment of Strategic Priorities
  • Technical Guidance

• Best Management Practices
• Best Management Practices
  • EVSE in Zoning/Ordinance
    • Incentives
    • Parking
  • Codes
  • Streamline Permitting Processes
  • EVSE Partnerships and Procurement
  • Fleet Procurement
Alternative Fuel Vehicle
Preferred Parking Signs Available
Other Items?
Contact Information

Rachel Linnewiel
Transportation Planner
rlinnewiel@nctcog.org
(817) 608-2329

Lori Clark
Principal Air Quality Planner
lclark@nctcog.org
(817) 695-9232

www.dfwcleancities.org/evnt
END OF 2016 OZONE SEASON & 2015 OZONE NAAQS UPDATES

EVNT Stakeholder Meeting

Jody Loza, Senior Air Quality Planner
December 6, 2016
Exceedance Level indicates daily maximum eight-hour average ozone concentration and are based on Air Quality Index (AQI) thresholds established by the EPA for the revised ozone standard of 70 ppb.

= Additional level orange exceedance days under the revised 70 ppb standard. (AQI level orange = 71-75 ppb)

^2016 data not certified by the TCEQ.
Source: TCEQ, [http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl](http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl)
ppb = parts per billion
According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 75 parts per billion (ppb).
According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the Design Value (three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is less than or equal to 70 parts per billion (ppb).

1997 Standard < 85 ppb (Revoked)

2008 Standard ≤ 75 ppb (by 2017)

2015 Revised Standard ≤ 70 ppb (TBD; Moderate by 2023)

Source: NCTCOG TR Dept

^2016 data not certified by the TCEQ.
Design Value (DV) - three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration is less than or equal to 70 parts per billion (ppb).

*2017 DV based on 2016 data. Not certified by the TCEQ.
END OF OZONE SEASON

Historical Emission Factors – Cars and Trucks

VOC (g/mi) vs Analysis Years

- Cars - VOC
- Trucks - VOC
- Trucks - NOx
- Cars - NOx

g/mi = grams per mile
Impacts of Meteorological Data

- Precipitation ✅
- Temperature ✅
- Humidity ✅
- Wind Speed and Direction

Background Levels

Daily and Site Specific Comparisons

Potential to Develop Dynamic, Targeted Control Strategies
<table>
<thead>
<tr>
<th>Action</th>
<th>Planned Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCEQ Submitted Nonattainment Designation Recommendations to EPA</td>
<td>October 2016</td>
</tr>
<tr>
<td>Final Designations, Classifications, and Nonattainment Area SIP Rules/Guidance</td>
<td>October 2017</td>
</tr>
<tr>
<td>Update to Transportation Conformity Guidance</td>
<td>November 2017</td>
</tr>
<tr>
<td>Nonattainment Area Attainment Dates (Marginal – Extreme)</td>
<td>2020-2037</td>
</tr>
</tbody>
</table>
Jenny Narvaez
Principal Air Quality Planner
jnarvaez@nctcog.org
817-608-2342

Jody Loza
Senior Air Quality Planner
jloza@nctcog.org
817-704-5609

Air Quality Policy and Regulations:  www.nctcog.org/trans/air/policy/
NCTCOG Ozone Updates:  www.nctcog/ozone