Good morning everyone, my name is Tim Davis, I am a transportation planner for the City of Frederick, and the MML rural representative of the EVIC.

May I have a show hands of people who have PEV, or have access at their work?

Leadership

Plan opens up ton of private sector inquires

The effort followed a conventional plan development

I will review the plans recommendations at the end of the presentation.
The City of Frederick Plug-in Electric Vehicle (PEV) Assessment and Infrastructure Implementation Plan
Came about as part of Sustainability Plan
Plan is On Line
City Adopted a Resolution

Plug-In Electric Vehicle Charging Infrastructure Implementation Plan for the City of Frederick

Prepared for:
The City of Frederick
Frederick, MD
Department of Public Works

Prepared by:
Energetics
Energetics
Columbia, MD
and
Vision Engineering & Planning, LLC
Columbia, MD
Today’s Discussion to Include the Route of the Plan

- Typical Procurement Process
- Selection of Vendor / Consultant
- BIG Data During the Assessment and Evaluation Stage
- How COG/TPB data was used to drive the EV Infrastructure plan
  - BMC Data would be equally as helpful
- MVA Data
- Successes During the Plan Investigation
- Challenges for the Future Regarding Implementation
Procurement and Selection
Evaluation Criteria
Selection of Vendor / Consultant
Total of Five Respondents
Proposals Ranged from $34K - $109K

<table>
<thead>
<tr>
<th>Selection Criteria</th>
<th>Possible Points</th>
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<tbody>
<tr>
<td>Understanding the Project</td>
<td>30</td>
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<td>Project Management</td>
<td>10</td>
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<td>Experience and Qualifications</td>
<td>30</td>
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<tr>
<td>Price Proposal</td>
<td>15</td>
</tr>
<tr>
<td>References</td>
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</table>
How COG / TPB data was used to drive the PEV Infrastructure Plan

And how it could be used for BMC Member Jurisdictions

2040 roadway volumes were developed by applying the growth factors derived from the MWCOG model to the existing traffic counts in Frederick County/City

The most impacted roadways in the City will be:

- US 15, Monocacy Boulevard, Opossumtown Pike, West Patrick Street (west of US 15), Market Street, 7th Street, Liberty Road, and Baughmans Lane.
PEV Plan

MWCOG BIG Data – but a sample of the total

Use MWCOG data to project: 1) population, 2) households (#people, # vehicles), 3) employment, 4) roadway volumes

- Shows where, and when, changes are projected to happen to focus efforts

Population change from 2016 to 2030

Potential Increased Garage Orphan Population
Roll of MVA and Data Access

- Just a short note that for Maryland, the big data for registration, etc is very easily attained
- Anyone working on or planning to develop a plan need two main resources for projections
  - Base line MVA registration data
  - MPO Population / Jobs / Etc Projections
PEV Plan

MVA BIG Data – this is a sampling of the total
Successes During the Plan Investigation

- In our community Staff Support was a challenge – but in the end it all worked out
- Ease of access to data
- Public interest and support
Snap Shot of Charges Around Town
PEV Plan

Heat Map for Future Infrastructure

Figure ES-12: Current and future potential public AC Level 2 and DCFC locations
Projections for PEV

Table ES-1: PEV Population Projections

<table>
<thead>
<tr>
<th>Case</th>
<th>2017</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
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</thead>
<tbody>
<tr>
<td>Low Oil</td>
<td>239</td>
<td>793</td>
<td>3,172</td>
<td>7,437</td>
<td>14,709</td>
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<td>Reference</td>
<td>239</td>
<td>793</td>
<td>3,612</td>
<td>8,709</td>
<td>18,133</td>
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<tr>
<td>High Oil</td>
<td>239</td>
<td>793</td>
<td>4,898</td>
<td>12,198</td>
<td>27,525</td>
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</tbody>
</table>

Table ES-2: Projected PEV Population Requiring Public Charging at City Garages for Daily Charging

<table>
<thead>
<tr>
<th>Case</th>
<th>2017</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Oil</td>
<td>6</td>
<td>20</td>
<td>80</td>
<td>186</td>
<td>368</td>
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<tr>
<td>Reference</td>
<td>6</td>
<td>20</td>
<td>91</td>
<td>218</td>
<td>454</td>
</tr>
<tr>
<td>High Oil</td>
<td>6</td>
<td>20</td>
<td>123</td>
<td>305</td>
<td>688</td>
</tr>
</tbody>
</table>
Plan Recommendations

- **Dedicated parking** *(Single-family house/townhouse [garage, carport, driveway])*  
  - Consider requiring charging infrastructure (electrical panel, conduit, wire, receptacle, etc.) at all/% of new construction, and major upgrade projects

- **Shared Parking** *(townhouse, multi-dwelling units)* – develop method for residents to install private charging on city right-of-way (supports garage orphans)
Plan Recommendations

- **Permits/Inspection** – If the permit/inspection process is inefficient, consider establishing an online residential PEV charging station specific permitting process and inspection self-certification (by electrician).

- **Zoning** – Consider supporting homeowners/business requests to install off-street driveways/parking when a PEV charging station(s) will be installed.
PEV Plan – Presentation Conclusion

The entire plan can be found here:
http://www.cityoffrederick.com/DocumentCenter/View/10005

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