**Issues and Recommendations**

**EV Planning Workgroups**

| Outline Location | Issues Identified | Consideration | Preliminary Regional EV Report Recommendation Options |
|---|---|---|---|
| **Anticipated Markets for EV** | | | |
| 3a | How many EVs may we expect in the region and when? | COG can develop projections using historical purchases of hybrid vehicles as a proxy.<br><br>There are available projections - US DOE, MEA, Project Get Ready<br><br>Can attempt to collect additional data from OEMs, major employers, and fleet owners, public and private. | |
| **EVSE Deployment Needs** | | | |
| 3b | How many EVSE charging systems will be needed? | Future market penetration of EV is highly uncertain.<br><br>Hybrid fleet penetration can be used as a proxy. COG has data. Need to extrapolate to EV ramp up.<br><br>Industry may take it slow at first, then ramp up deployment. Interest to drive demand, reduce costs, improve technology.<br><br>MEA has released estimates for MD.<br><br>There are best practice recommendations for ratio of EVSE/Total # of spaces.<br><br>Lack information on total number of parking spaces in the region. | |
| 3b | Interest in how to plan for future EVSE needs before vehicles are deployed. | May not make sense to invest in full EVSE infrastructure initially. (Mitre Report) | Plan for additional capacity in advance to reduce costs.<br><br>Invest only in conduits and pads necessary to facilitate installation of full EVSE once demand is there. |

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| | | | Does this warrant requirements for developers for new construction? Refer to policy and processes group. |
| **EVSE Deployment Strategies** | | | |
| 3c | Where should EVSE charging stations be located?<br><br>Where are the best locations for charging stations? | Most charging will likely occur at home.<br><br>Second most likely place is workplace charging.<br><br>Public charging should be provided in locations with the following _____.<br><br>Level 2 should be in locations with high turnover.<br><br>Inside/below grade not good for smart chargers that use wifi.<br><br>Park and Ride Lots not ideal.<br><br>COG can determine the top vehicle trip destinations for work (Ft. Meade, PAX River, Tysons, TAZ 702- Bethesda)<br><br>Market forces may compel. | |
| 3c | Home Charging | Home owners wishing to install EVSE will simply handle with an electrician/permit/inspection.<br><br>Possible fire risks of unpermitted self-installed systems.<br><br>Need for outreach/communications. | Streamline processes, refer to policy and processes group.<br><br>Support outreach communication efforts by _____. |
| 3c | Workplace Charging | Workplace charging may be the second most used approach to charge EVs, behind home charging.<br><br>Lack of information on employers plans.<br><br>New private/private partnerships - Deploy EV at corporate locations, allow use on hourly basis. Have corporate partners agree to provide charging or provide | Through COG Commuter Connections, reach out to employers to learn more.<br><br>Consider encouraging new partnerships to promote workplace charging. |

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| | | fleet vehicles. | |
| 3c | Desire to understand best locations for public EVSE infrastructure investments. | Ecotality lessons learned is generating valuable information.<br><br>Some models may involve 3rd party/membership to EVSE network in a metropolitan area. This may require utility law exemption. | Collect and share best practice examples from around the US. |
| 3c | Possible introduction of a membership network of charging resources. | State utility laws impact whether a 3rd party can sell electricity for EV charging. | |
| 3c | Interest in having public charging available on public streets. | Governments can grant special use permits for parking spaces.<br><br>Installing systems for on-street charging is very expensive. Vehicle access is not ideal for on-street.<br><br>Whether EVSE can be incorported into existing utility electric lines (e.g., street poles) is not known<br><br>Possible revenue model? | Develop guidance for non-governmental entities seeking permitting for on-street public charging. |
| **Addressing Challenges** | | | |
| 3d | Need solutions for multifamily housing. | Charging installations must address safety issues related to potential upgrades or modifications to the building.<br><br>Some developers are already incorporating EVSE into new multifamily developments.<br><br>See San Diego Sample Ordinance. | Collect best practice examples and share. |
| 3d | Interest in facilitating easier access to short term 110 volt charging. | EV owners suggest municipalities issue EV Charging Passes at low monthly charge that allow EV owners to use a network of simple 110V charging outlets.<br><br>Could be a revenue model for municipalities. | |
| 3d | Interest in accommodating multiple cars with varying levels of charging requirements. | Consider one load control device for a garage that controls multiple parking spots, give control to utility. | |
| 3d | Turnover of EVSE parking spots. | Level 2 charging is complete very quickly, so now the car is blocking the spot for the remainder of the day. | |

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| | | Valet services? One load control for multiple spots? | |
| **Additional EVSE Deployment Considerations** | | | |
| 3e | Need for EV owners to know locations of charging stations. | There are a variety of ways to get this information, but there is no one application that provides comprehensive information. | Consider developing a one-stop shop app that will deliver information on EVSE locations. |
| 3e | How display pricing (charging fee) information? | Is the charge for parking or for the electricity?<br>Jurisdictions may subsidize at first.<br>Possible monthly fixed price membership plans. | |
| 3e | What is best method of protecting equipment? Tripping, vandalism, accidents | Bollards<br>Tire stops<br>Security camera<br>Lighting | |
| **EV Policy Planning** | | | |
| 4a | Ensure that government requirements aren't an obstacle to expeditious charging installations. | | Develop rapid (online and in-person) permitting application process with same day to 48 hour turnaround time for public and private charging installations. |
| 4b | Ensure that government requirements aren't an obstacle to expeditious charging installations. | Public stations may require a longer inspection time due to potential construction considerations. | Develop streamlined inspection turnaround process with a 24 to 48 hour turnaround process for public, non-construction and private (residential) charging installations. |
| 3c | Multifamily unit housing | May require coordination with HOAs. | Develop solutions for multifamily housing charging installations that address safety issues related to potential upgrades or modifications to the building. |
| 4c & 3c | | | Outfit all new commercial construction in advance with the necessary technology-enabling |

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| | | | infrastructure (e.g., run conduits and transformer pads). |
| 4c | ADA requirements | | Incorporate ADA accessibility requirements in the design of and installation of commercial charging stations. |
| 3d | Enforcement of non-electric vehicles parking in EV parking spaces | Local government installed EV charging station in METRO stations. | Develop standard signage for public charging stations. |
| **Utility Planning** | | | |
| 5a | State utility laws impact whether a 3rd party can sell electricity for EV charging. | See comparative matrix for 3 states. | |
| 5b | Neighborhood Clustering of Level 2 Charging can pose issue with overloading of utility feeders and transformers. | EV OEM dealers are sharing information on EV purchases with utilities.<br>COG access to registration data on hybrid vehicle purchases does not include street address, only zip code. | |
| 5b | Preparing for Level 3 Charging | Level 3 charging will require more voltage, different cables, larger conduit. | |
| 5c | Linking EVSE to renewables and smart grid. | EVs may be able to help with intersecond balancing of the system, and for energy storage. | Preliminary recommendation -- V2G issues are not a near term issue for local governments to be concerned about. |
| 5c | Deployment of "Smart" EVSE | Some EVSE being sold into the market is not capable of 2-way communication with grid and is not smart-grid ready. Unsure if this should be a priority with utilities, OEMs, govts, etc. | Do not interfere with market, allow sale of EVSE that is not smart grid ready. |
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