MARYLAND

Zero Emission Vehicle Infrastructure Plan (ZEVIP)

Webinar #2

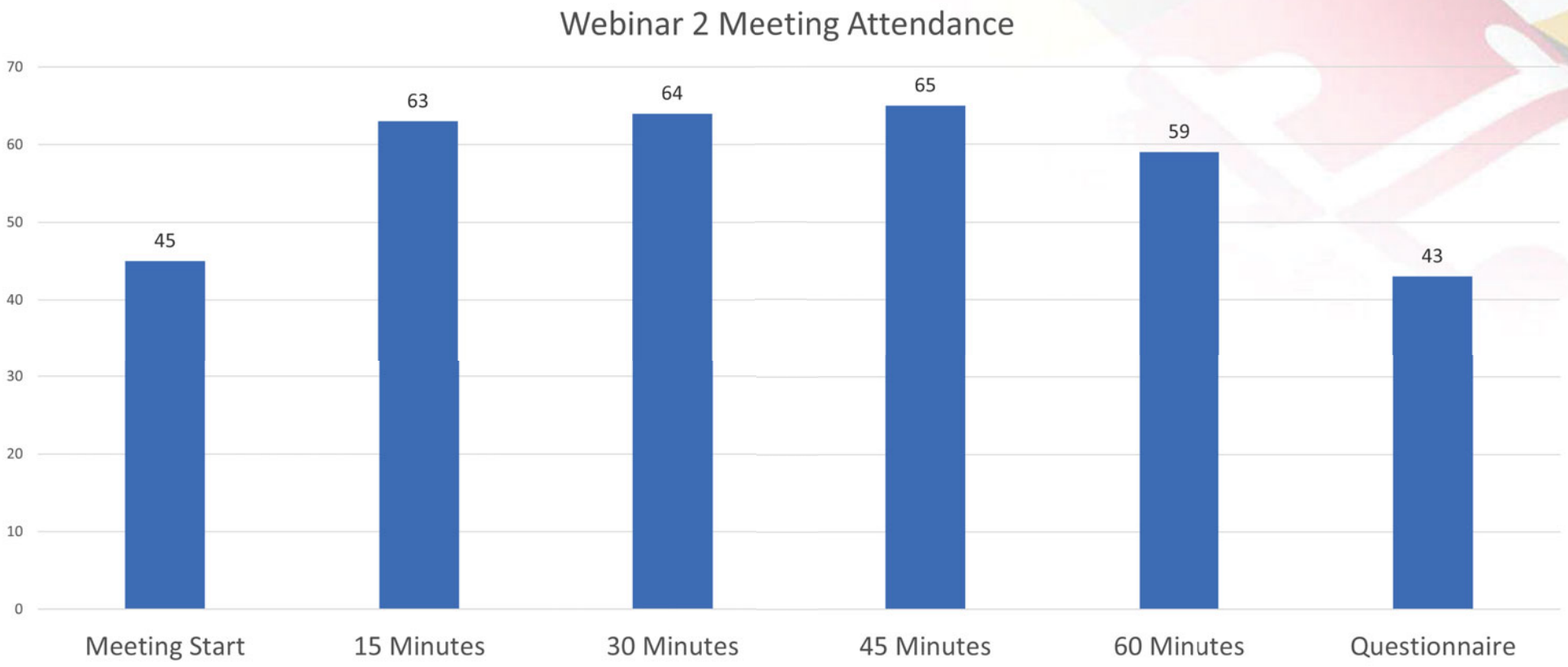
April 28, 2022

Welcome

MARYLAND DEPARTMENT OF TRANSPORTATION

Maryland Energy Administration

Meeting Attendance



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Housekeeping

General:

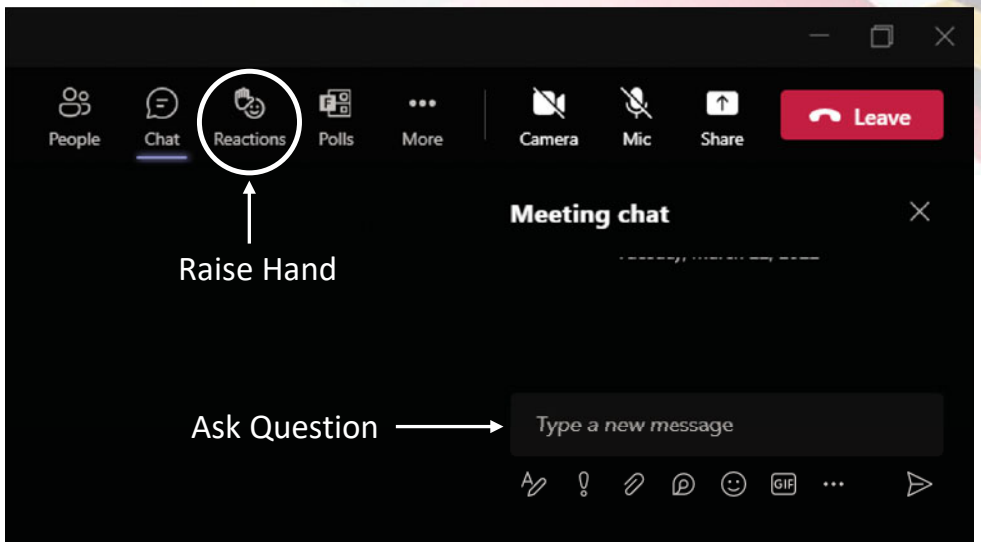
- This meeting is being recorded
- Slides and polling results will be made available on the ZEVIP website within 1 week

Menti Survey

- Go to: www.menti.com
- Enter code: 8823 7518

Comments/Questions:

- Comment or ask questions in the chat box
- Raise Hand during Q&A Session



Tech difficulties:

- Contact us via EVPlan@mdot.Maryland.gov

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Agenda

- Introductions
- NEVI Overview
  - NEVI
  - FAQs
  - Schedule
- MetroQuest Survey Results
- Initial Analysis
- Mentimeter Polling Questions
- Q&A

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Introductions

- R. Earl Lewis, Deputy Secretary, Maryland Department of Transportation
- Dan Janousek, Maryland Department of Transportation
- Rebecca Bankard, Maryland Department of Transportation/Michael Baker International
- Colleen Turner, Michael Baker International

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Opening Remarks

- R. Earl Lewis, Deputy Secretary, Maryland Department of Transportation

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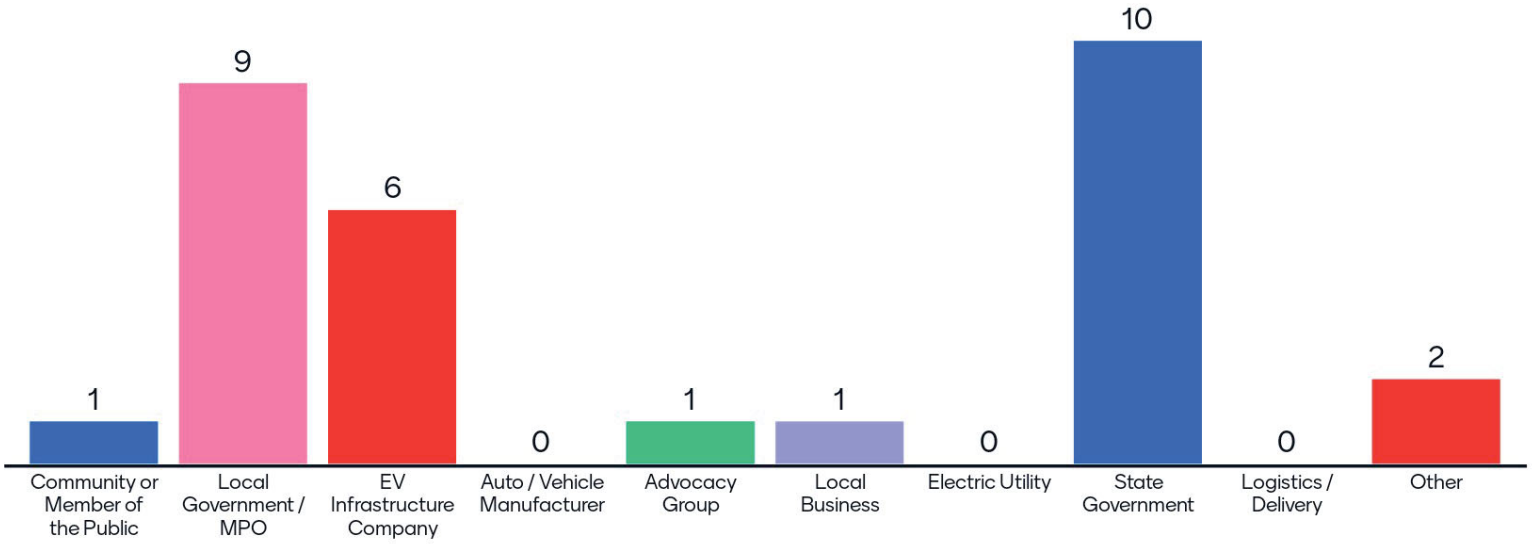
What organization are you with?

Mentimeter



Responses Entered in Meeting Chat

- Non-Profit Clean Transportation Program Administrator (1)
- Private Cooperative Organization (1)
- Urban Integrated UI, LLC (1)

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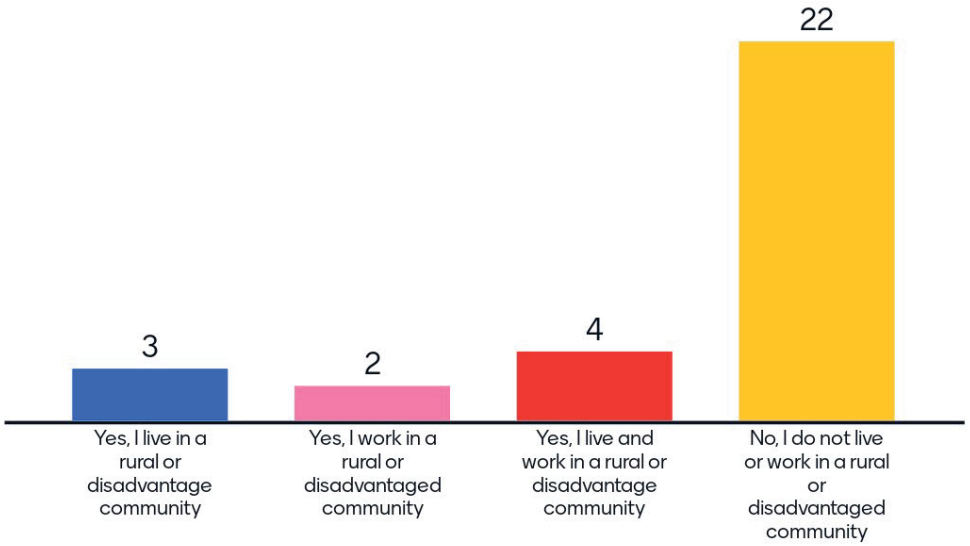
Do you live or work in a rural or disadvantaged community?

Mentimeter



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Is there enough information publicly available about EV infrastructure?

Mentimeter

yes	no	no
yes	not yet	no
No	yes	Don't know. Not driving an EV yet.

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Is there enough information publicly available about EV infrastructure?

Mentimeter

yes

Yes

no, not yet.

no people still think their townhouse community or rental community won't allow it but haven't thought to ask them to install chargers

Yes but people just don't pay attention. It needs to be on tax bills, utility bills, etc.

not yet

Not consistent information

Kind of, there is a ton of information, but it is all over the place and hit or miss as to applicability and usefulness..

Its out there for someone proactively looking for it. Even some EV drivers aren't educated on how the infrastructure works outside of their preferred charging method.

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Is there enough information publicly available about EV infrastructure?

Mentimeter

No. The public needs to be educated about the benefits of EVSE. PSAs would be great. Billboards, etc. A traditional marketing campaign.

nope

Yes, but it feels limited to people who are actively looking for the information

Yes, but you need to seek it out

Feels political now

Need more support on education and outreach. Maryland potential EVSE host sites have been resistant

Yes

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How would you define a rural or disadvantaged community?

Mentimeter

- Lack of access to resources
- General store and a post office
- Rural zoning / lower income census tract
- limited public utility and infrastructure access
- area where public transportation is limited or not availible at all
- An area that lacks infrastructure or the resources to provide proper infrastructure to those that live in that community
- State legislation for the Climate Solutions Now act, I think, just did that. Let's not reinvent the wheel.
- unable to afford a car and don't have easy access to public transportation
- Generally low-income community.

Resource Entered in Meeting Chat

https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/

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How would you define a rural or disadvantaged community?

Mentimeter

City, Town, Public

Disadvantaged- one that is more impacted by air pollution, lacks adequate infrastructure

Low EJ Index

Certain percentage low income, zero vehicle households, limited English proficiency, minorities, etc

Low population, poor, remote, removed from the rest of the state geographically and politically

Disadvantaged is one in which there is a spike in COPD outside the normal levels, where the education levels are lower than normal

Disproportionately affected by pollution and socioeconomic background. Governments should be defining these terms if want to incorporate into their EV plans/grant programs

Rural = low density in an agricultural setting.Disadvantaged = extreme low income based on AMI

Rural is rural, ag, nature, not urban and heavily developed. Disadvantaged are areas with high poverty, former redlined, historically underinvested, poor access to community needs like quality grocery stores, etc.

Clarification Entered in Meeting Chat

An EJ Index is a way of combining demographic information with a single environmental indicator – such as proximity to traffic – that can help identify communities that may have a high combination of environmental burdens and vulnerable populations.

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How would you define a rural or disadvantaged community?

Mentimeter

A place where you do not get many grants or funding awarded. Limited amount of resources than a city would have.

Rural - A highly dispersed population, largely undeveloped or agricultural area. Disadvantaged - Lacking in economic and physical infrastructure

Prideful communities that lack the resources seen in urban/metropolitan areas

typically, rural zoning and low income areas

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NEVI Overview

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NEVI

Address National Electric Vehicle Infrastructure (NEVI) Program – AFC Focus

- Rural Charging Toolkit Issued Early February
- Initial Guidance Issued February 10th
- Critical Technical Guidance is Expected on May 13th
- State ***EV Infrastructure*** Plan Required by August 1st
  - Joint MDOT and MEA Lead

Maryland will receive approximately $60 million over 5 years

DOT Funding and Financing Programs with EV Eligibilities*

	FY 2022[1] AMOUNT						
FORMULA PROGRAMS							
National Highway Performance Program (NHPP)	$28.4 B[2]	✓	✓				✓
Surface Transportation Block Grant Program (STBG)	$12.5 B[2,3]	✓	✓		✓	✓	✓
Congestion Mitigation & Air Quality Improvement Program (CMAQ)	$2.5 B[2]	✓	✓	✓		✓	✓
National Highway Freight Program (NHFP)	$1.4 B[2]			✓	✓	✓	
State Planning and Research (SPR)	$983.3 M[4]				✓		
Metropolitan Planning (PL)	$438.1 M[2]				✓		
Carbon Reduction Program	$1.2 B[2,5]	✓	✓	✓	✓	✓	✓
National Electric Vehicle (NEVI) Formula Program	$685 M[2,5,6]	✓	✓		✓	✓	✓
DISCRETIONARY PROGRAMS							
Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (formerly known as BUILD)	$1.5 B	✓			✓	✓	✓
Infrastructure for Rebuilding America (INFRA) Grant Program	$1.64 B[2,7]	✓			✓	✓	
Advanced Transportation and Technologies and Innovative Mobility Deployment	$60 M[2]	✓					✓
Discretionary Grant Program for Charging and Fueling Infrastructure	$300 M[2,5]	✓	✓		✓	✓	✓
Rural Surface Transportation Grant Program	$300 M[2,5]	✓	✓		✓	✓	✓
Reduction of Truck Emissions at Port Facilities Program	$80 M[2,5,7]	✓		✓		✓	
OTHER ALLOCATED PROGRAMS							
Federal Lands and Tribal Transportation Program (FLTTP)	$1.3 B[2,8]	✓	✓	✓	✓	✓	✓
Puerto Rico Highway Program (PRHP)	$173 M[2]	✓	✓	✓	✓	✓	✓
Territorial Highway Program (THP)	$46 M[2]	✓	✓		✓	✓	✓
INNOVATIVE FINANCE PROGRAMS							
State Infrastructure Banks (SIBs)	Varies	✓	✓	✓	✓	✓	✓
Transportation Infrastructure Financing and Innovation Act (TIFIA)	$250 M[2]	✓	✓	✓	✓	✓	✓

Page 10 of NEVI Guidance

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Requirements for NEVI

1 | Build Out ***ALL*** Existing Corridors

2 | Obtain Certification

3 | Invest in Communities

Build Out Requirements

- ≤ 50 miles between one station/site and the next on corridor (Minimum 2 Stations)
- ≤ 1 mile from Interstate exits or highway intersections along the corridor
- Include 4 Combined Charging System (CCS) connectors - Type 1 ports (Simultaneously charging 4 EVs)
- Maximum charge power per DC ports should not be below 150 kW.
- Site power capability should be no less than 600 kW (Support at least 150 kW per port simultaneously across 4 ports)

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NEVI Plan Components


Introduction


State Agency Coordination


Public Engagement


Plan Vision & Goals


Contracting


Existing & Future Conditions


EVSE Deployment


Implementation


Civil Rights


Equity Considerations


Labor & Workplace Considerations


Cybersecurity


Program Evaluation


Discretionary Exceptions

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FAQs – Under Development

- Posted on ZEVIP website ~ 1 week
- Continuously Updated as Questions Come In
- Will cover high-level / general topic areas and questions, e.g.:
  - When is the plan due?
  - What are the requirements & eligibility for funding?
  - What is the timeline for this project?
  - What is the difference between a plan and a program?
- Please continue to submit questions via the EVPlan website: https://evplan.mdot.maryland.gov/ and/or email: EVPlan@mdot.maryland.gov

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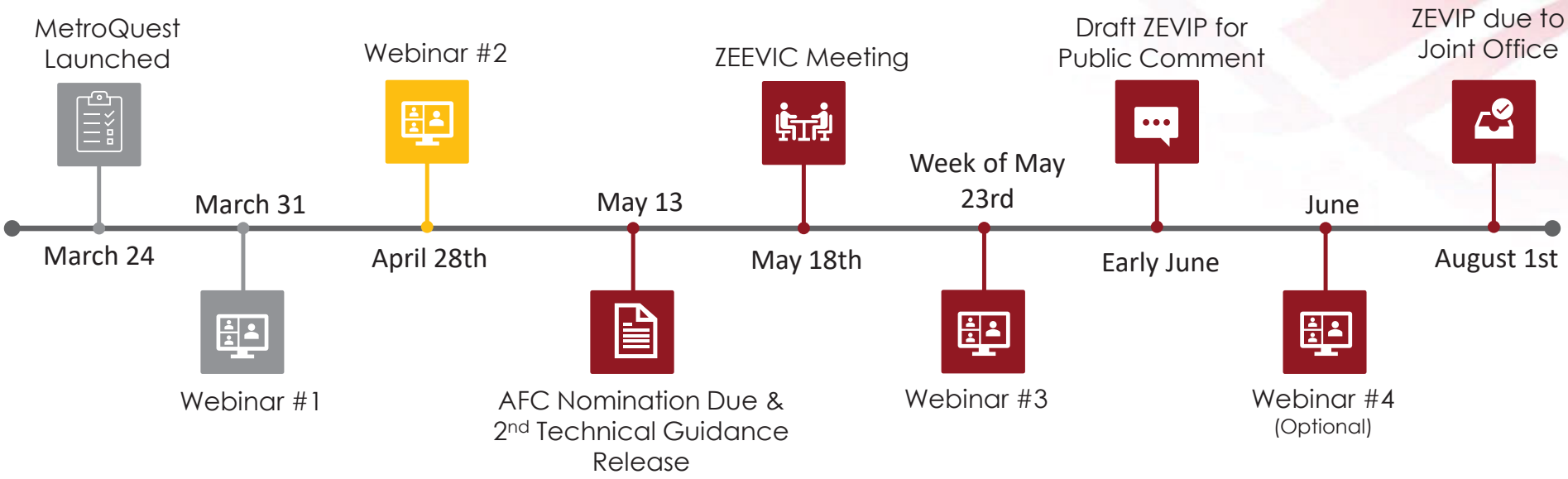
Schedule - Subject to Change



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MetroQuest Survey Results

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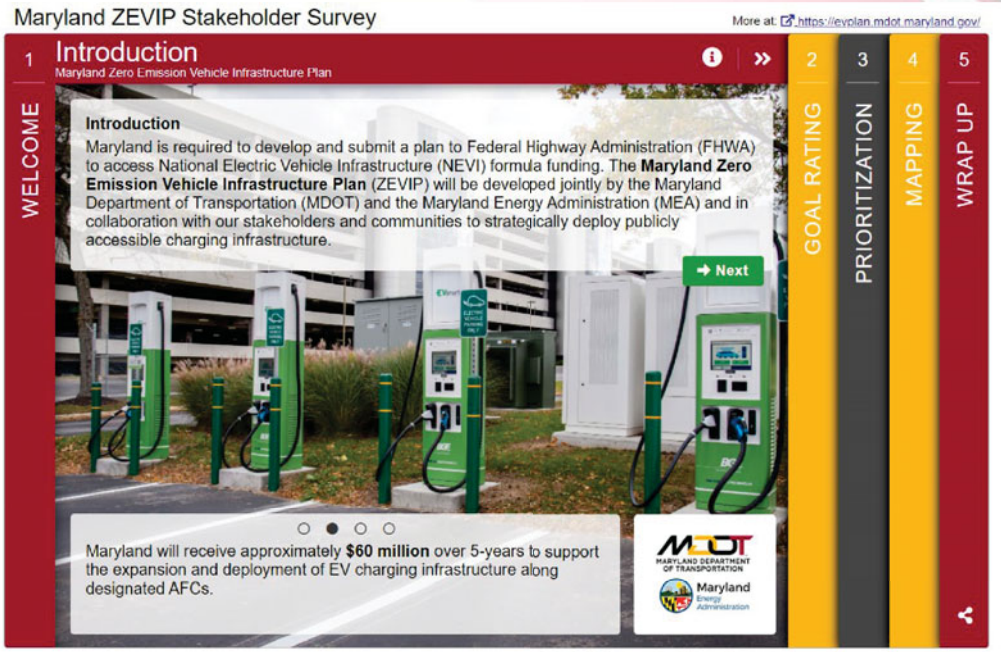
MetroQuest Survey

- Survey launched March 24th
  - 183 Participants
- Opportunity for Feedback/Comment
  - Vision and Goals
  - Prioritization
  - Infrastructure Siting



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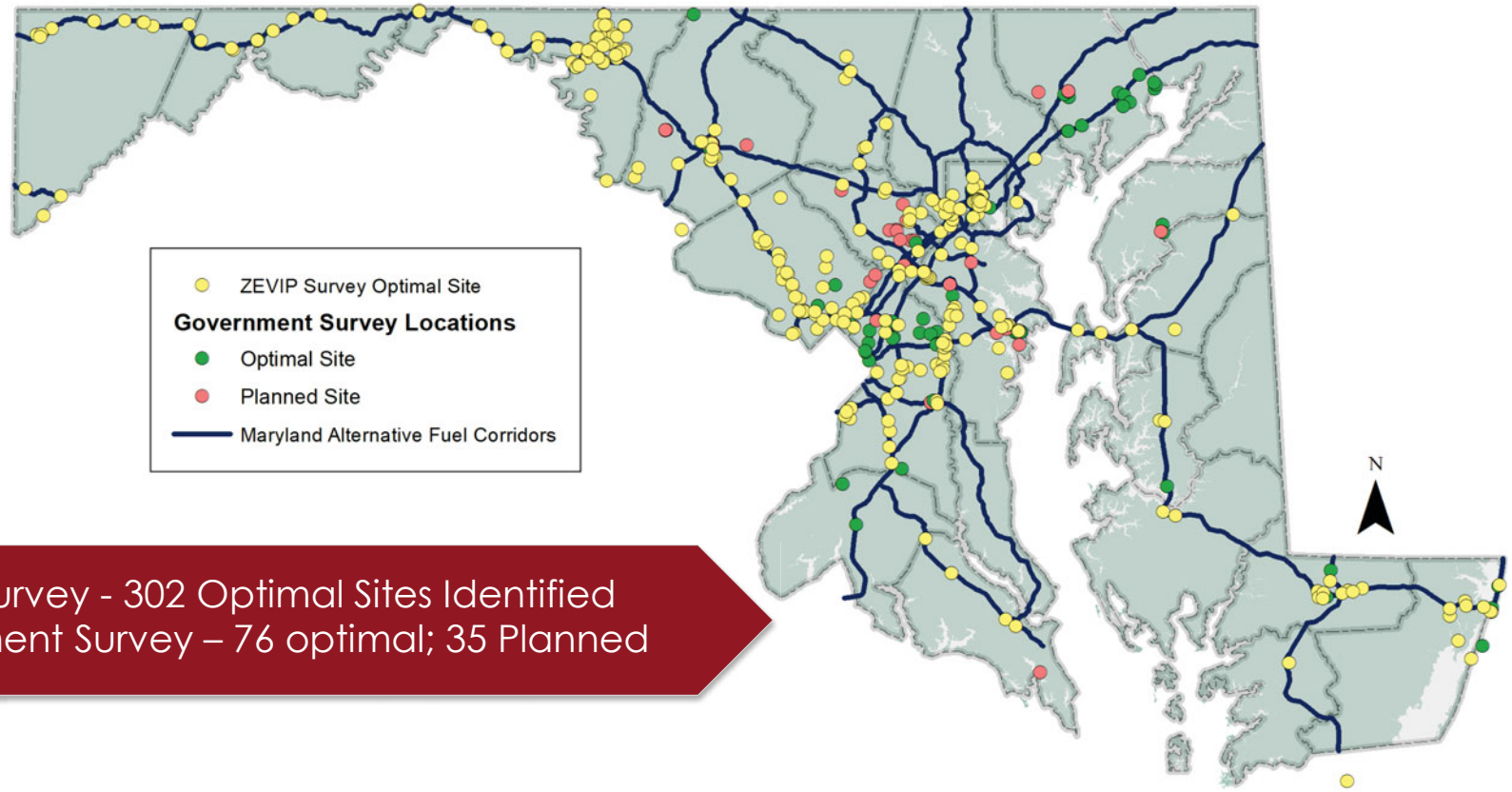
MetroQuest Location Summary



ZEVIP Survey - 302 Optimal Sites Identified
Government Survey – 76 optimal; 35 Planned

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Initial Analysis

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Analysis Goals

1. Understand existing conditions
   - Data
   - Infrastructure
2. Identify impact of FHWA's new AFC criteria
3. Position MDOT & MEA to develop prioritization/selection criteria
4. Equitable deployment of infrastructure
   - Geographic
   - Socio-economic
5. Guide transition from corridor investment to community investment

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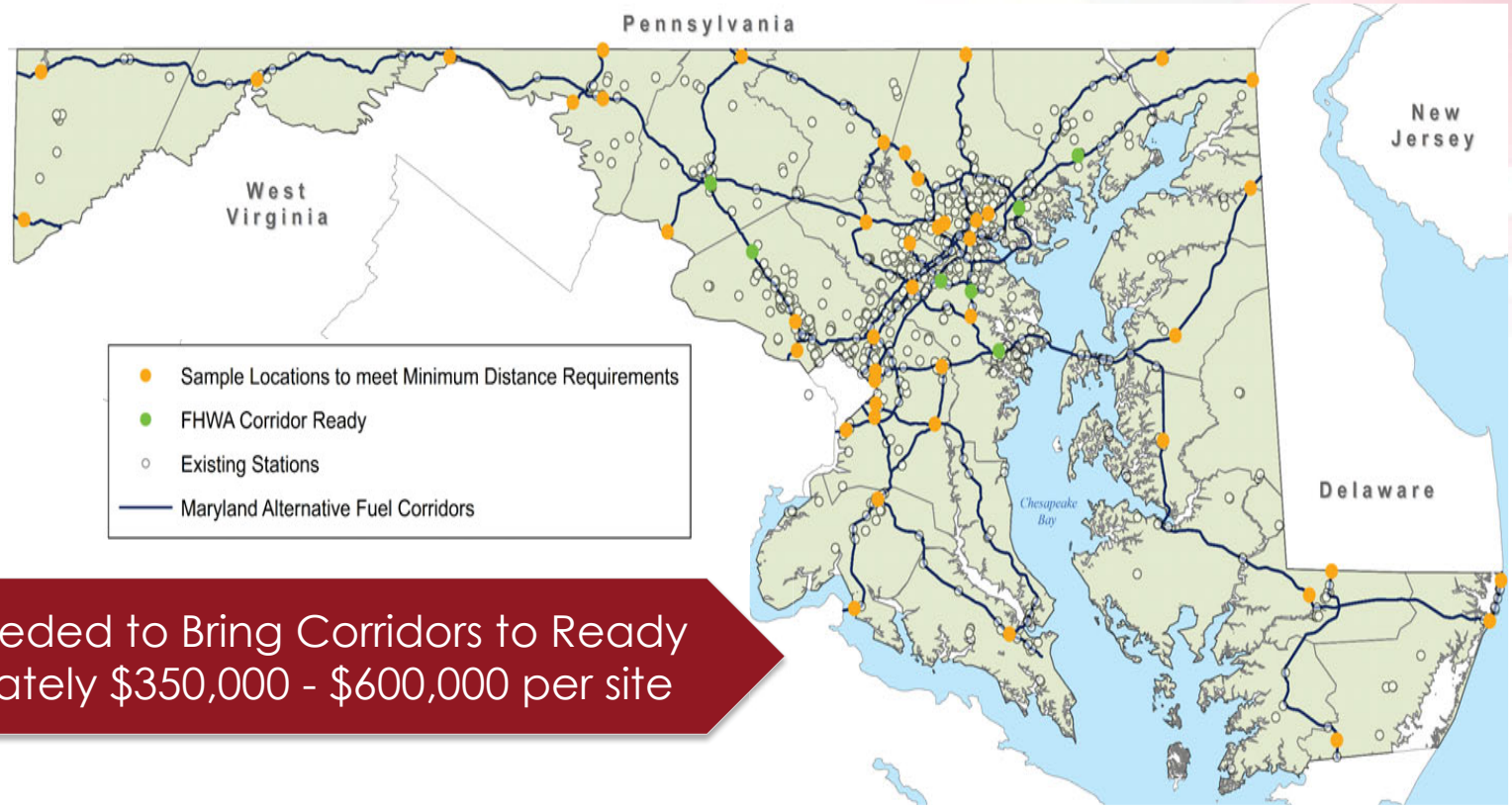
Initial Gap Analysis



45 Sites Needed to Bring Corridors to Ready
Approximately $350,000 - $600,000 per site

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Data Analysis – Location Based

EV Infrastructure

- Charging Stations
  - Meets FHWA Criteria
  - Other DCFC Stations
- Alternative Fuel Corridors
  - 1-Mile Buffer
  - AADT
  - Type – Interstate, US Route, State

Land Use

- Most Recent Land Use:
  - Industrial
  - Commercial
  - Institutional
  - Residential – High, Medium, low density

Socioeconomic

- MDE Socioeconomic EJ Score
- Justice 40
- Historical Disadvantaged Communities
- Designated Rural Area
- CDC SVI Household Composition
- CDC SVI Housing Type & Transportation

Outreach

- 2020 Local Government Survey
  - Preferred & Optimal Locations
- ZEVIP Survey
  - Optimal Locations

Other

- Transit Oriented Developments
- Priority Funding Areas
- Intermodal Facilities
- Substations
- Bike Lanes
- Transit Stops
- Registered EVs

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Other Considerations

- Innovations
  - Solar
  - Storage
  - Mobile Charging
- Cost
  - More than 20% Match
- Supports community charging & greater deployment efforts
- Amenities
  - Restrooms
  - Food/Dining/Retail
  - Lighting
  - Other Services

Fully solar-powered EV charging station deployed for CALtrans.

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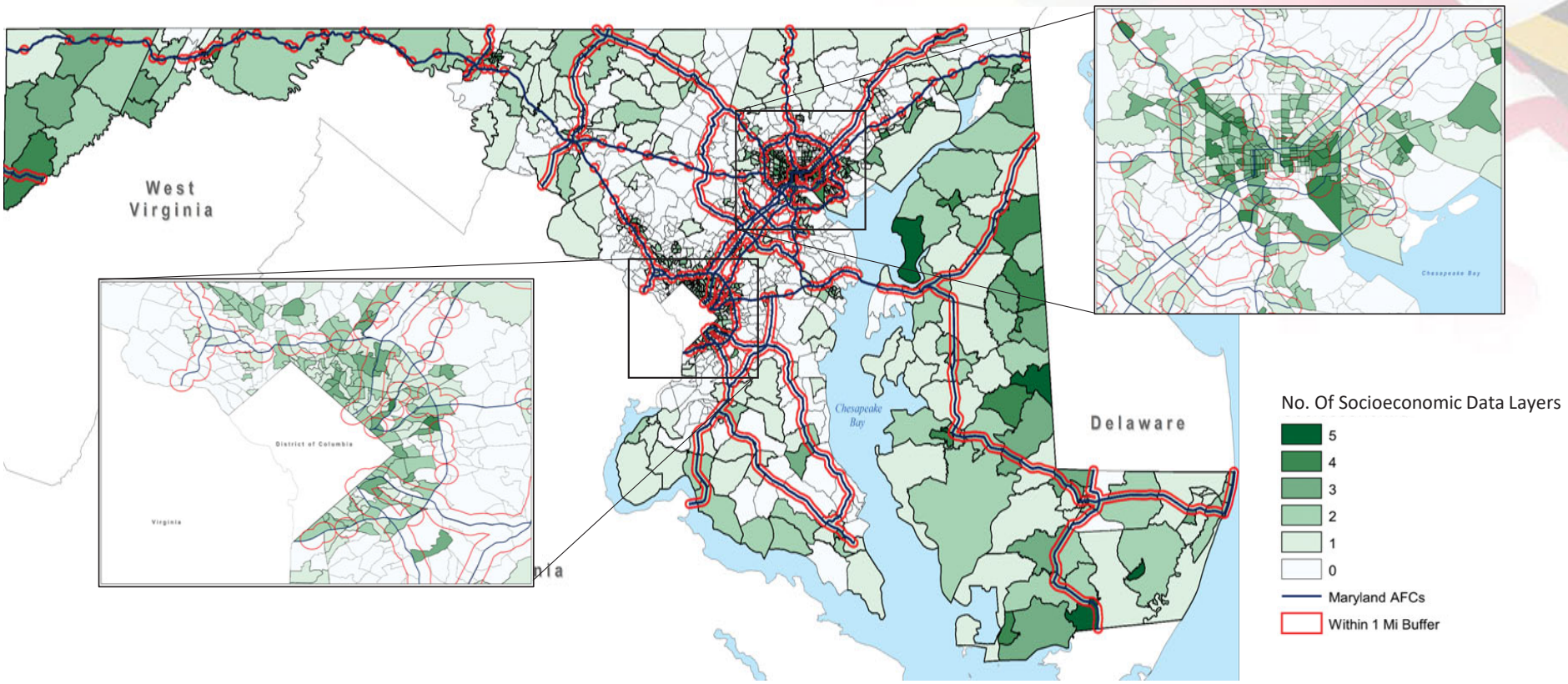
DRAFT NEVI EJ Consideration



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Mentimeter Questions

- Go to: www.menti.com
- Enter code: 8823 7518

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What are your top equity concerns related to EV infrastructure?

Mentimeter

how much usage the chargers will actually get

potential for gentrification

affordability of maintenance of stations for the community

Home charging for renters

That cost of charging is either free or reasonably priced.That stations are easy to find.That stations are in locations that are safe; I realize that's subjective.

Home charging

that EJ communities won't get the same funding as other communities because they don't have anyone to fight for them.

that vehicle price is high so few lower income people can afford them. How do we make sure those charging stations are used? Can we assist promoting vehicles?

Cost for charging, being available away from more affluent and tourist areas

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What are your top equity concerns related to EV infrastructure?

Mentimeter

- cost to charge should be free
- lack of easy access to EV chargers, cost of charging
- Price of both electric vehicles and charging
- Failure to consider future impacts - deterioration of utility system, disposal and removal of equipment, maintenance, etc.
- Reducing air pollution in EJ communities
- Reliable charging and safe locations
- cost and location
- lack of stakeholder engagement with the communities, is there an opp to create jobs for these folks to provide the O&M on the stations?
- Cost of charging.

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What are your top equity concerns related to EV infrastructure?

Mentimeter

Is there evidence of large numbers of EV in rural and disadvantaged communities to make the investment worthwhile? Projections of usage might be helpful.

DCFC sites in rural communities. Also, charging costs that are increased as demand charges and tariffs aren't adjusted with utilities

re: vehicle price and charging cost there used to be lots of tax incentives for e-car purchase. they have mostly been phased out but still may be relevant to revisit from an affordability and equity perspective

This infrastructure is expensive and operation costs will be volatile (utility demand charges, maintenance, etc.). Even with proper training/education, the average small business will get buried by unexpected costs.

Some EJ communities, with a strong tourism component, need charging stations to attract visitors to the area which will, in turn, support jobs .

That ALL people, focusing on socio-economic status, are given a fair share of all aspects of this.

A plan in place incase one stops working. How long to replace one or a part.

lack of charging for multifamily (apartments and condos) and high-density residential areas in EJ communities.

Barriers to buying personal vehicles. Will the chargers get used/actually be beneficial

Barriers to purchasing personal vehicles

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What do you think the barriers are with respect to installing EV infrastructure in rural or disadvantaged communities?

Mentimeter

- none
- Coordination between state, local governments and landowners
- maintenance responsibility
- Ease of access/convenience for EV drivers
- Potential lack of maintenance for charging infrastructure
- climate change deniers thinking it will cost the community money, more taxes etc. other misunderstandings
- Low demand, high costs
- Demand charges in rural areas. Need demand charges address with utility tariffs for projects to pencil
- location of parking area in competition with overall parking space

Response Entered in Meeting Chat

- Barriers include fewer locations deemed to be well lighted and close to amenities.

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What do you think the barriers are with respect to installing EV infrastructure in rural or disadvantaged communities?

Mentimeter

Education. Community Leaders and residents need to understand the costs involved. who pays for electricity/power?

These communities typically have shot infrastrucutre. Maybe there is an opp to increase resilience by adding battery storage and making micro-resilience hubs near important places (medical, old folks homes, churches, etc) ?

for rural areas - retail and such is concentrated in "larger" towns-remote areas are going without

Distance from larger-scale infrastructure, saftey of vehicles and owners during charging times

incentives for low-income households

People have to have money to afford EVs. People who are low income need tax credits and 0% financing of EVs for this to work. I see no barrier to installation, as long as the State does its job

maximizing use in lower density areas

how many uses can you get out of chargers placed in rural communities, since they are sparsely polulated?

Pairing stations with other infrastructure - PV gerneration, Restrooms, Park & Ride, Park space

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Do you think there are any particular challenges associated with building out the EV Corridors?

Mentimeter

power supplied to the chargers

local planning approvals

Too few corridors in Eastern Shore

For southern Garrett County with its two "stripes" going east/west, we need to connect those north/south.

availability of sites to install charging stations--will the state acquire or lease the space from private properties?

people only stop at a rest area for 10 min, chargers need to be outside of restaurants, popular shopping centers on these corridors where people spend more time

parking facilities with electrical infrastructure (cost of running infrastructure to say parking garage

MD's climate impacts - hotter days, more precip. MDOT's roads have ~70% of their flooding incidents outside of FEMA Flood Zones. EVSE and flood = bad look

rapidly changing technology. Induction (wireless) charging will supplant wired charging. It concerns me that I haven't heard much about this.

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Do you think there are any particular challenges associated with building out the EV Corridors?

Mentimeter

Opportunity: Education on and promotion of cleaner air. Marketing of corridor

Mixing charging parking spots and ADA accessible spaces

prioritize brownfield parcels

balancing short charging with longer charging (workplace parking)

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A overarching goal of the NEVI plan is to prioritize underserved and rural communities. Are there specific goals that you think should correspond?

Mentimeter

- Prioritize brownfield type parcels
- broadband/public wifi access at the charging areas in rural communities
- Charging at libraries, parks, and beaches.
- encourage ownership of EVs to increase demand and actual use of charging stations in these areas
- Air quality metrics
- just providing good public transportation
- Yes, underutilized sites with good access to public facilities
- Tree planting to reduce Urban Heat Island, stormwater implications, snow and ice removal/maint
- 'free' charging for low to moderate income

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A overarching goal of the NEVI plan is to prioritize underserved and rural communities. Are there specific goals that you think should correspond?

Mentimeter

Is there a way to create a solar hub or sorts to allow for device-charging in these areas (create a resilience hub in conjunction with EV infrastructure)

balancing short term charging options vs. full day (workplace & residence) options

Reducing barriers for residents of MUDs

Increase EV ownership in rural and underserved communities. And, by the way, the goal should be to decrease the number of cars on the road while increasing the proportion of cars (in all corridors) that are EVs.

Make sure that the community has a need for the chargers and aren't just being dumped with a service that outsiders will use...

Maybe some of the plug-in instructions in Spanish.

Solar canopied parking?

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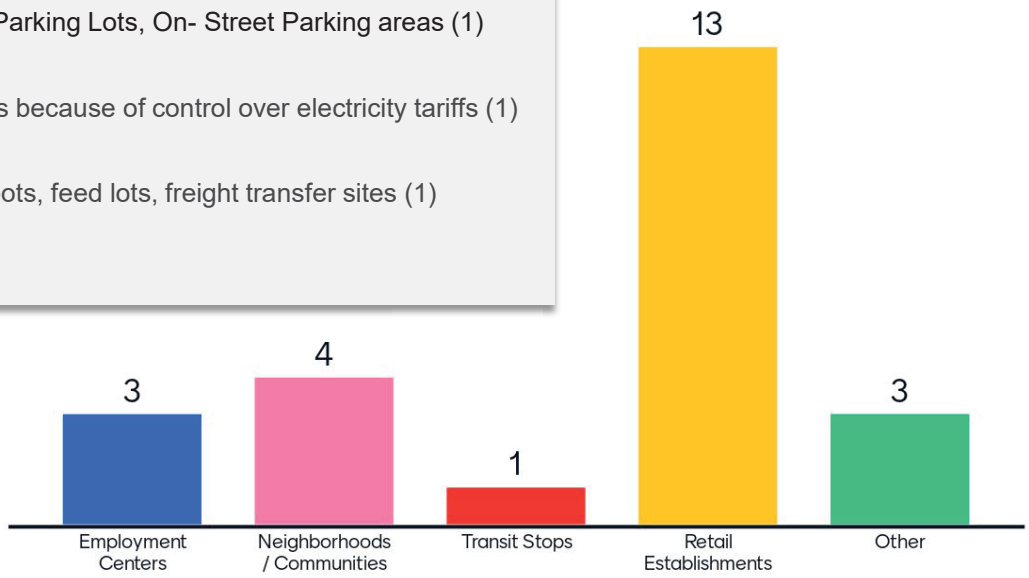
Where do you think charging would be best suited in rural and disadvantaged communities

Mentimeter

Response Entered in Meeting Chat:

- Other- Parking Garages, Parking Lots, On- Street Parking areas (1)
- Metro stations (1)
- Utility co-ops in rural areas because of control over electricity tariffs (1)
- Fleet depots (1)
- High turnover areas – depots, feed lots, freight transfer sites (1)
- Churches (1)
- Trailheads (1)



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Where do you think other charging would be best suited in rural and disadvantaged communities

Mentimeter

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Questions & Answers

- Type question in chat box
- Raise hand

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Question & Answers

Q1: Have you also included some overlays with hazards data to see where NOT to place EVSE via this program (e.g., in a flood plain)?

A1: Federal flood risk management standards as well as how climate change may affect EV Charger placement is a requirement of the NEVI Guidance and we will be including these overlays / considerations in the plan.

Q2: Have EVSEs at Park & Rides been considered?

A2: EVSEs at Park & Rides are being considered under NEVI. There are also other funding programs available that can fund EV charging at Park & Rides.

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Question & Answers

Q3: Has State of MD examined what the EV drivers of today are looking for from an amenity standpoint in their DCFC locations?

A3: The EV driver refueling, or recharging, experience is an important part of EV acceptance and adoption. It is related to more than just the amenities and speed of charging. We are continuing to participate in national conversations to establish some high-level principles related to many aspects of the recharging experience, including amenities, ease of payment, and other factors.

Q4: Is there any information on Trip generation of EV Stations as we begin to evaluate their impact on the road network?

A4: Potential EV Stations through the Maryland NEVI Implementation Plan would be located at existing destinations, gas stations, travel centers, etc. We do not anticipate that the stations will be additional travel generators themselves.

We will collect data on the charging that is taking place per federal requirements. We will continue to monitor the impact of charging along with the traditional travel data that we collect and analyze on a regular basis.

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Question & Answers

Q5: Are there plans to make the wired charging flexible enough to replace it with unwired, induction charging infrastructure? That unwired [charging] is on the way.

A5: We are going to use currently available technology that we know works. We expect that technological changes and advancements will occur throughout the life of this effort. Maryland will remain in close contact with our partners and stakeholders, including EV charging infrastructure companies, to monitor and evaluate technology developments and determine whether they are the right fit for Maryland.

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Additional Resources

- ZEVIP Website:
  - Evplan.mdot.Maryland.gov
- Questions or Comments:
  - Email: Evplan@mdot.Maryland.gov
- The Joint Office of Energy and Transportation
  - https://driveelectric.gov/
- Maryland EV
  - https://marylandev.org/
- Maryland Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC)
  - https://www.mdot.maryland.gov/tso/pages/Index.aspx?PageId=81

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Thank you!

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