Mid-Atlantic Electrification Partnership Annual Merit Review Presentation

Mid-Atlantic Electrification Partnership

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Organization: Virginia Department of Energy
(formerly Virginia Department of Mines, Minerals, and Energy)
Presentation Date: June 21, 2022
Project ID: ti127 (DE-EE0009225)

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Overview

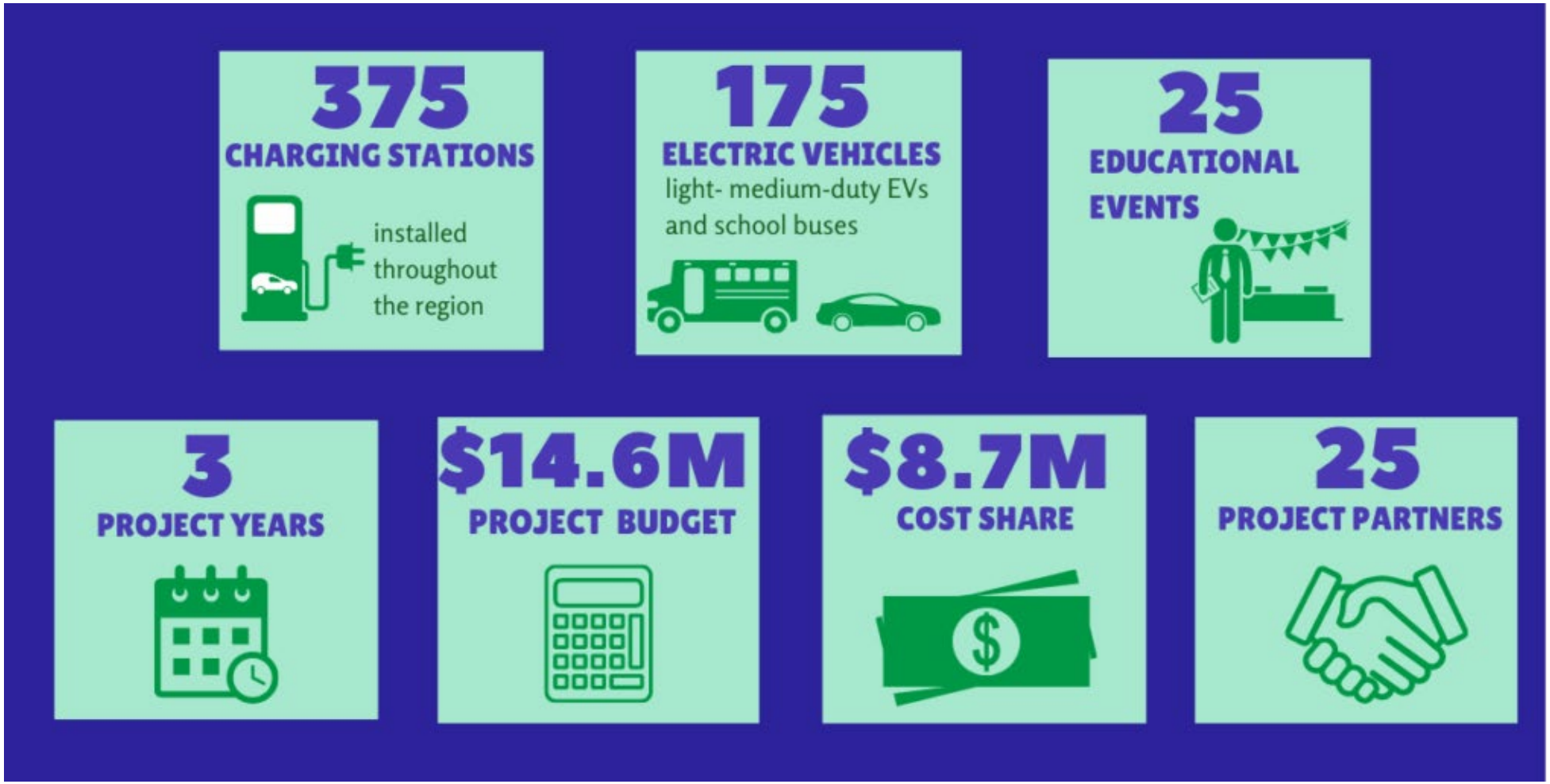
Timeline
Project Start Date: September 1, 2020
Project End Date: December 31, 2024
Percent Complete: 25%
**No Cost Time Extension expanded BP1 by 12 months*

Budget
- Total Project Funding: $14,747,791
  - DOE Share: $5,988,154
  - Cost Share: $8,759,637
- Total Project Expended: $1,786,991
  - DOE Share: $904,242
  - Cost Share: $882,749

Barriers and Targets
1. Supply chain disruption for orders
2. Pandemic remote work environment
3. Slower than expected site selection process

Partners
- **Virginia Clean Cities (leader)**
- **Argonne National Laboratory (analysis)**
- **EVNoire (education)**
- **Greater Washington Clean Cities (vehicle lead)**
- West Virginia Clean Cities
- Maryland Clean Cities
- Blink Charging
- Greenspot
- Beam Global
- Baltimore Gas & Electric
- Pepco
- Maryland Port Authority
- Dominion Energy
- Other project partners

Overview



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Project Objectives

Objectives:
- Develop tools, education, and teams
- Execute 25 educational events
- Deploying 175 EVs
- Installing 375 EV charging stations in VA, DC, MD, and WV

VTO TI Goals:
- Improving fuel diversity
- Increasing local resiliency (infrastructure reliability, diverse/resilient fueling, and transportation options)
- Reducing greenhouse gas emissions (through increasing alternative fuel use and transportation efficiency

Impact:
- This project will introduce 375 EV charging stations and 175 EVs.
- This project is giving local communities diverse fueling and transportation options.
- The increased use of EVs reduces greenhouse gas emissions.

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Any proposed future work is subject to change based on funding levels.

Approach

Budget Period 1

1. Commitment Review and Planning
2. Team Kick-Off Meeting
3. Educational Series Launch
4. Infrastructure Study and Development and Ecosystem Launch
5. Vehicle and Port Study and Deployment Launch

Budget Period 2

1. Outreach and Engagement Implementation
2. Educational Implementation
3. Infrastructure Implementation and Analysis
4. Vehicle, Rideshare, and Heavy-Duty Implementation and Analysis

Budget Period 3

1. Summary Reports
2. Outreach Completion Reporting
3. Education Completion and Reports
4. Infrastructure Completion and Reports
5. Vehicle Completion and Reports

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Milestones (Budget Period 1)

Milestone	Type	Description	Status
EVSE Criteria Set	Technical	Develop a data collection plan and model for identifying suitable locations for new or expanded EVSE in the VA, MD, WV, and DC area based on current and future parameters	Complete
Charging Evaluation Completed	Technical	Analyze the placement and feasibility of fast chargers (DCFCs) for EVs on major roadways and regional multimodal hubs and energy corridors and publishes report. Initial data collection plan with ports and TNCs.	Complete
Educational Materials Finalized	Technical	Educational Materials will be presented and confirmed	Complete
Infrastructure Initiated & EVs Deployed	Technical	Initial Infrastructure and vehicle projects initiated	Complete, All Initiated
Launched	Go/No Go	Complete all educational events (8), EV charging stations (103) and electric vehicle deployment (37)	In Progress: 8 of 8 34 of 103 26 of 37

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Project Accomplishments and Progress

- 15+ in-person and online outreach events held (of 8 planned)
- 33 of 38 environmental questionnaires approved (5 pending)
  - Represents 127 ports
- 34 of 103 EV charging ports deployed
  - 22 high-powered L2 chargers deployed
  - 10 EV charging stations at BWI Airport
  - 2 solar-powered EV charging stations deployed
- 25 EVs delivered for ride-share program
- 1 EV for Eastern WV Regional Airport customer transport
- 25 positive earned media stories about the project
- Regional dialogue on National Electric Vehicle Infrastructure (NEVI)

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Project Accomplishments and Progress

BGE fleet EVs at BWI Airport ribbon-cutting event

BGE and US DOE officials at BWI Airport ribbon-cutting event

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Project Accomplishments and Progress

Example of Blink EV charging station deployment

BGE's charging station at BWI Airport

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Project Accomplishments and Progress

Argonne National Lab's Analysis Work:

- Expanded access and use of the Energy Zones Mapping Tool (EZMT), which is free and available for use beyond the MAEP project. It includes nationwide data sets that are downloadable.
- 25k jobs: JOBS EVSE determined the job-creation potential of installing EV charging stations at homes, workplaces, and public spaces using data from project partners.
- Created an EVSE Siting Analysis and Modeling Data Plan
- Led ports electrification analysis planning and coordination.
- Prepared case study titled, "Modeling EV Charging Station Siting Suitability with a Focus on Equity"
- Analyze the placement and feasibility of fast chargers (DCFCs) for light-duty EVs on major roadways, regional multimodal hubs, energy corridors and publish report.

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Project Accomplishments and Progress

Additional value of the project:

- The project contributes to the EV charging section of the quadrennial comprehensive Virginia Energy Plan.
- Forthcoming bi-partisan infrastructure IIJA-funded projects will benefit greatly from the groundwork laid by the Mid-Atlantic Electrification Partnership
- Virginia Department of Transportation and West Virginia Department of Transportation will be utilizing best practices and learnings from the project in their upcoming work.
- Previous planning in state areas has assisted the Argonne National Lab in developing better mapping tools for widespread use.

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Project Accomplishments and Progress

Ribbon-cutting ceremony for the Beam Global solar-powered EV charging station at James Madison University

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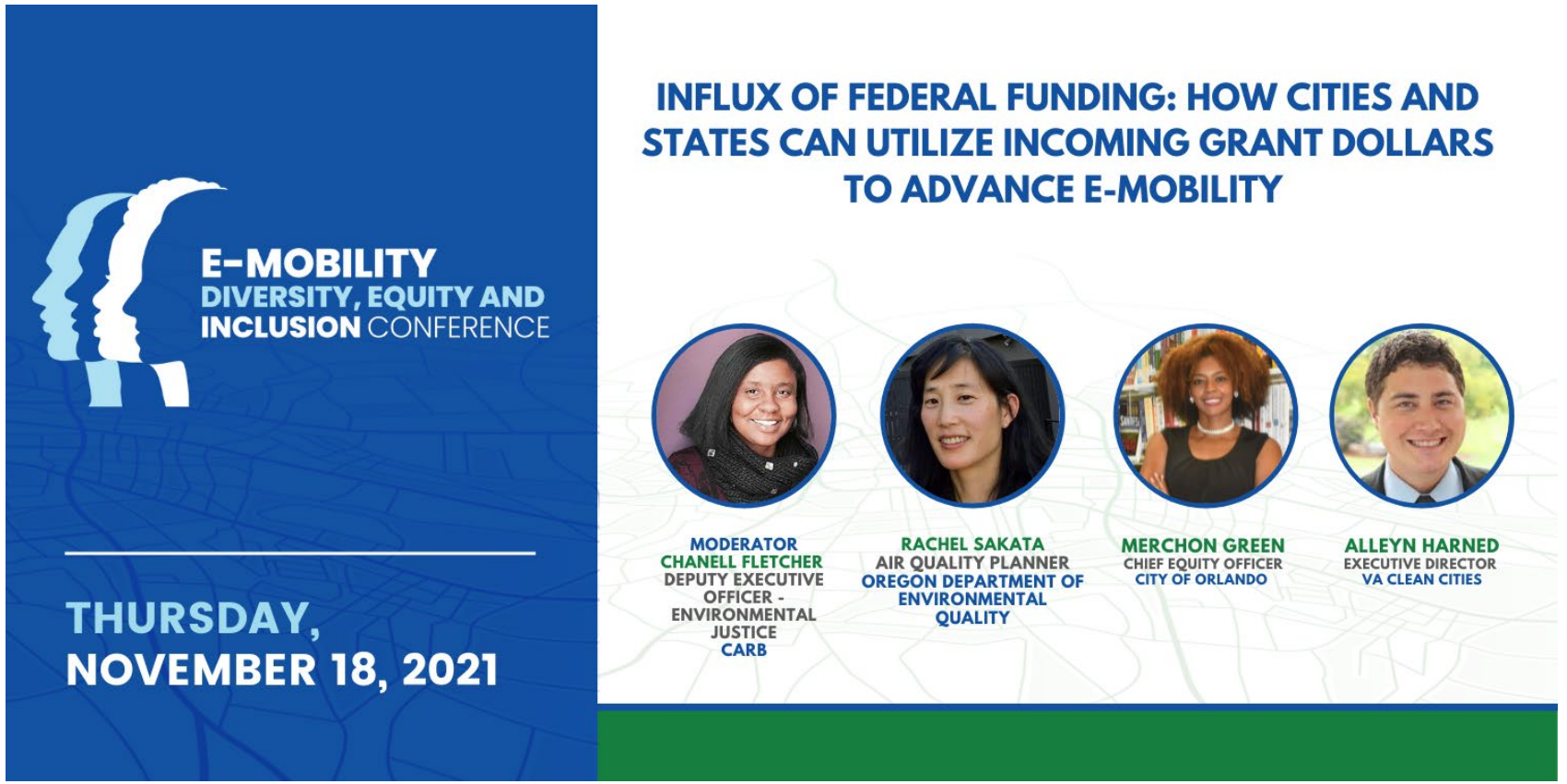
Project Accomplishments and Progress



EVNoire hosted the two-day E-Mobility Diversity, Equity and Inclusion Conference, which included speeches by U.S. Department of Energy Secretary Jennifer Granholm.

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Collaboration and Coordination

Education and Outreach Collaboration:
- EVNoire
- West Virginia Clean Cities
- Blink Charging

Analysis Collaboration:
- Argonne National Lab
- Maryland Port Administration
- Maryland Clean Cities
- Maryland Department of Energy

Education and Outreach Collaboration:
- Greater Washington Clean Cities
- EVNoire

EV Charging Stations Collaboration:
- Virginia Clean Cities
- West Virginia Clean Cities
- Blink Charging
- Greenspot
- Beam Global
- Eastern West Virginia Airport
- Dominion Energy (utility)
- Maryland Clean Cities

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Market Impact and Sustainability

Market Impact:

- The presence of the project has encouraged many local governments in the region to reach out to serve as a site host. Local governments are beginning community EV planning to include EV charging hubs.
- The educational and engagement activities have raised the important and profile of access to EV technology through EVNoire's outreach activities with partners in this project.
- Charging stations have been installed in previously unserved areas of West Virginia, introducing revenue generating opportunities.

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Market Impact and Sustainability

Sustainability:

- Partners are committed to continued electrification ecosystem growth.
- EV charging infrastructure will continue operation beyond the project.
- The ports analysis component will bring about actionable plans on electrification and decarbonization.
- Ride share partners are committed to continued transitioning to electric, providing the needed clean transportation for underserved communities.
- Analysis tools made freely available to planners nationwide and serve as the basis for other equity initiatives.

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Contribution to Energy Equity and Environmental Justice

Project partners are working with:

- Historically Black Colleges and Universities (HBCUs) to provide EV demos, education, and exposure for students (including virtual meetings)
- International Brotherhood of Electrical Workers (IBEW) and National Society Black Engineers (NSBE) to collaborate on and determine what an equitable transition to transportation electrification would look like

Benefits of this project to underserved communities include:

- Improved air quality urban environments and along transportation corridor
- Increased access and awareness of the technology
- Increased awareness of careers in EV technology
- Awareness and analysis tools for planners nationwide

Sustaining the project beyond it's end date:

- Deployed chargers will have agreements in place beyond the project period, with options for renewal.

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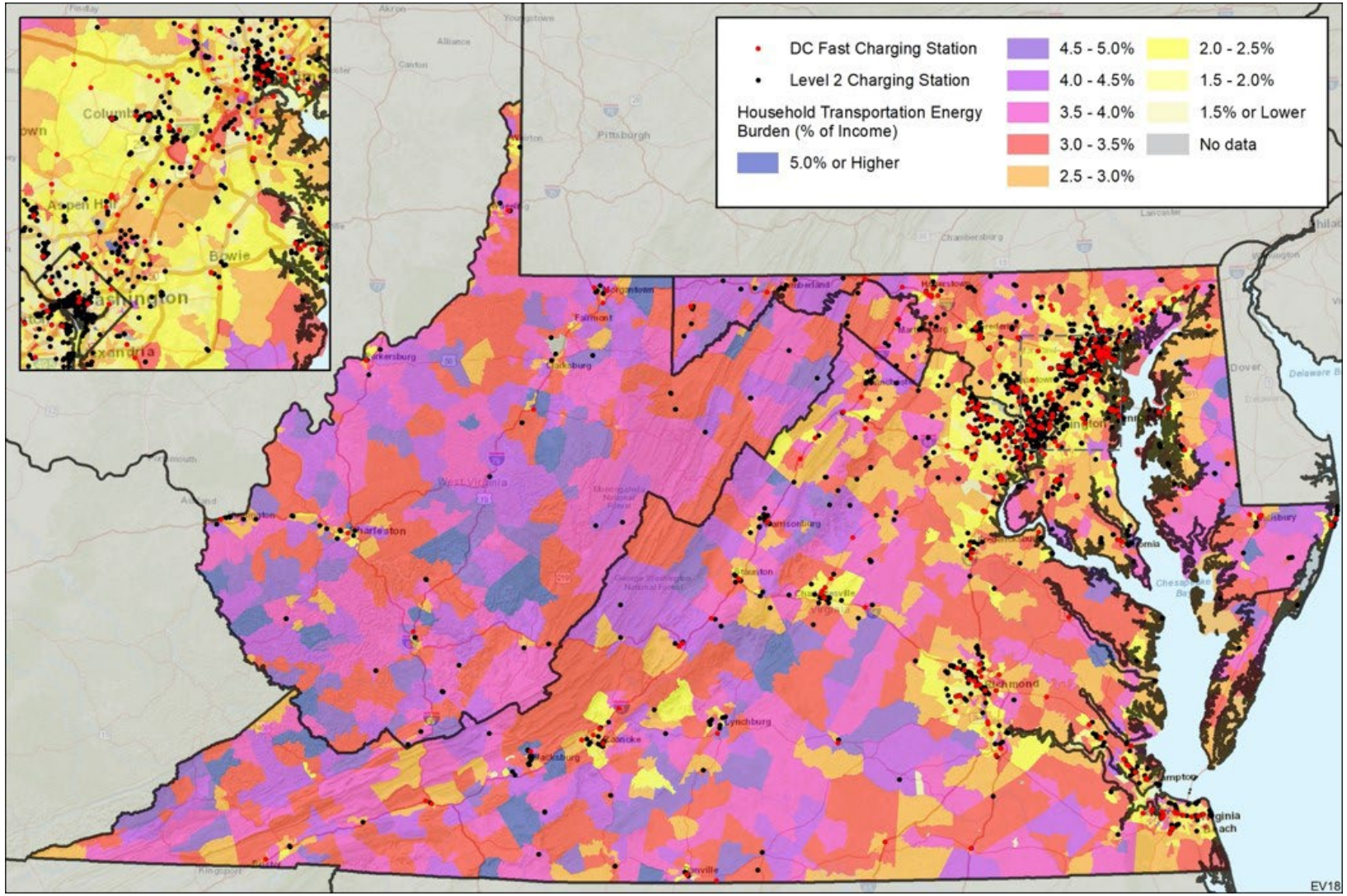
Contribution to Energy Equity and Environmental Justice

EZMT Household Transportation Energy Burden and Charging Stations



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Contribution to Energy Equity and Environmental Justice

Energy Zones Mapping Tool

- The EZMT has been expanded to incorporate necessary EV and EJ specific layers
  - Example: existing charger locations; household transportation energy burden; low income percentage; total minority percentage; opportunity zones; and more
- Led to the EZMT being used for EV and equity topics → creation of MAEP specific map portal focusing on EVSE and EJ layers → **some of the same approach and data being used for the Electric Vehicle Charging Justice40 Map**
- Allows project partners to identify charging gaps and assess their location in relation to other chargers and underserved communities
- This tool is also free and available for use beyond the MAEP project. This includes nationwide data sets that are downloadable and a migration to an instant access platform.
- Partners have been utilizing and promoting the EZMT with partners outside of the project. For example, Virginia Clean Cities has presented EZMT mapping data to local and regional planners.

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Summary Slide

Relevance:	• Addressing EV charging needs in the Mid-Atlantic Region • Timely national supporting tools and education efforts for equity • Ecosystem development and long-term sustainability
Approach:	• Educational series: virtual and in-person events • Infrastructure study and development, releasing tools • Vehicle and ports planning; EV charging station deployment
Collaborations:	• Multiple collaborations in Education and Analysis • Multiple collaborations in EV charging station deployment
Accomplishments:	• 10 DCFCs at BWI Airport, 22 fast Level 2 chargers installed • 2 solar-powered EV charging stations deployed, plus 1 EV deployed • Analysis tools launched and education events underway

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