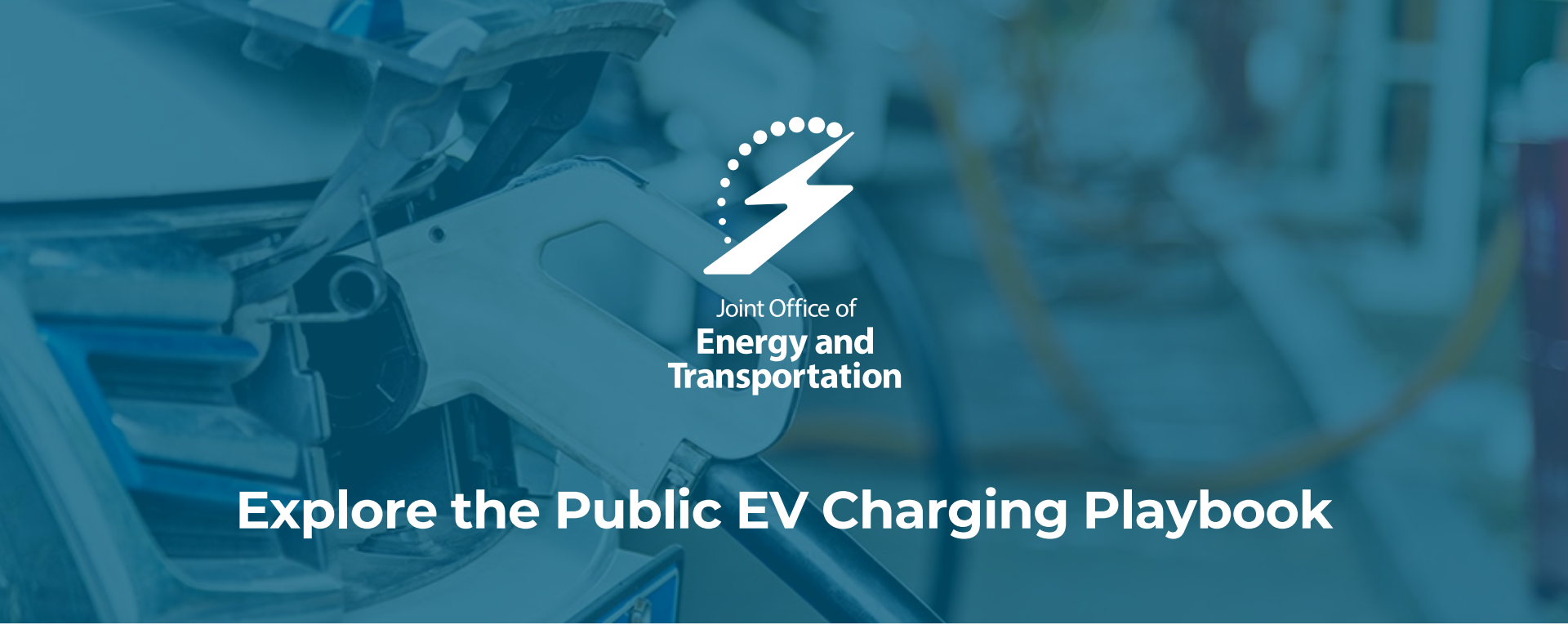


Joint Office of
Energy and
Transportation

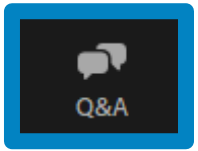
Explore the Public EV Charging Playbook

8/27/2024

driveelectric.gov

Zoom Tips and Housekeeping

- Controls are located at the bottom of your screen. If they aren't appearing, move your cursor to the bottom edge.
- Submit questions using the "Q&A" window



Disclaimer

Notice: This webinar is being recorded and may be posted on the Joint Office website or used internally.

If you speak during the webinar or use video, you are presumed to consent to recording and use of your voice or image.

Agenda

Introduction from the Joint Office

Presentations from panelists

Audience Q&A

Panelists

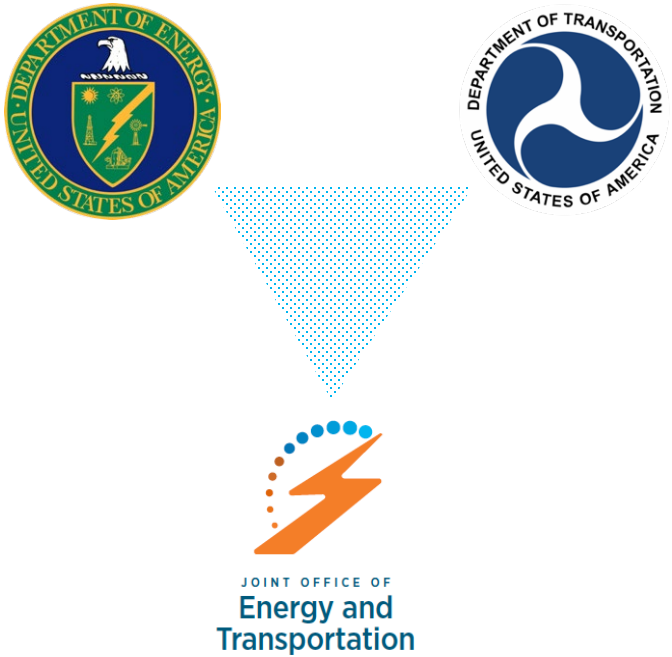
Lauren Reichelt
National Renewable Energy Laboratory (NREL)

Kaylyn Bopp
NREL

Brian Booher
Montgomery County Dept. of Environmental Protection

Alana Wilson
NREL

Mission and Vision



Mission

To accelerate an electrified transportation system that is affordable, convenient, equitable, reliable, and safe.

Vision

A future where everyone can ride and drive electric.

Programs Supported by the Joint Office

National Electric Vehicle Infrastructure (NEVI) Formula Program (U.S. DOT)
$5 billion for states to build a national EV charging network along corridors, including **$148** million awarded to repair and replace non-operational chargers.

Charging & Fueling Infrastructure Discretionary Grant Program (U.S. DOT)
$2.5 billion for communities to build EV charging, as well as hydrogen, natural gas, and propane fueling infrastructure

Low-No Emissions Grants Program for Transit (U.S. DOT)
$5.6 billion for transit agencies to deploy low- and no-emission transit buses

Clean School Bus Program (U.S. EPA)
$5 billion in support of electric school bus deployments

Ride & Drive Funding Opportunity (Joint Office)
$46.5 million to enhance charging resiliency and performance and enhance equitable access

Communities Taking Charge Funding Opportunity (Joint Office)
$54 million to expand community e-mobility access

Joint Office of
Energy and
Transportation

Technical Assistance for Communities

DriveElectric.gov/communities

Resources

DriveElectric.gov/communities/#resources

Webinars

Webinar: Zero-Emission Bus Resources

March 14, 2024

This webinar covered available resources from the Joint Office for school districts and transit agencies making the transition to zero-emission buses.

Webinar: Workforce Development Tools and Resources

March 5, 2024

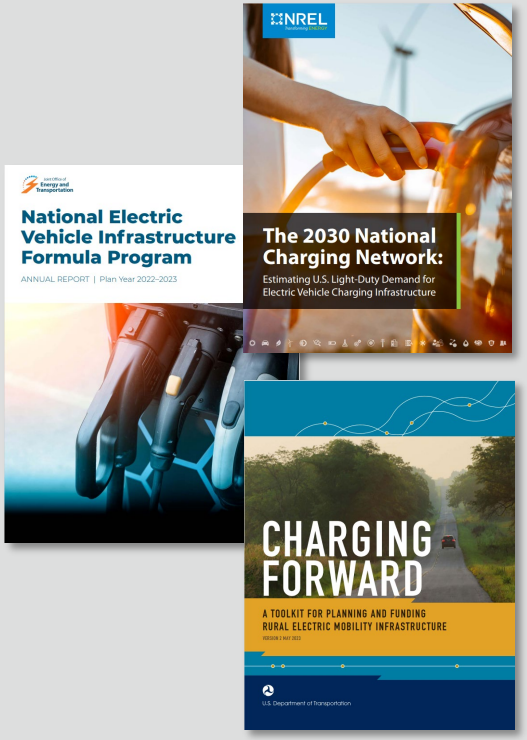
This webinar focused on workforce training programs, job creation, and local and economic hiring preferences in the transition to electrified transportation.

Webinar: Curbside EV Charging Strategies

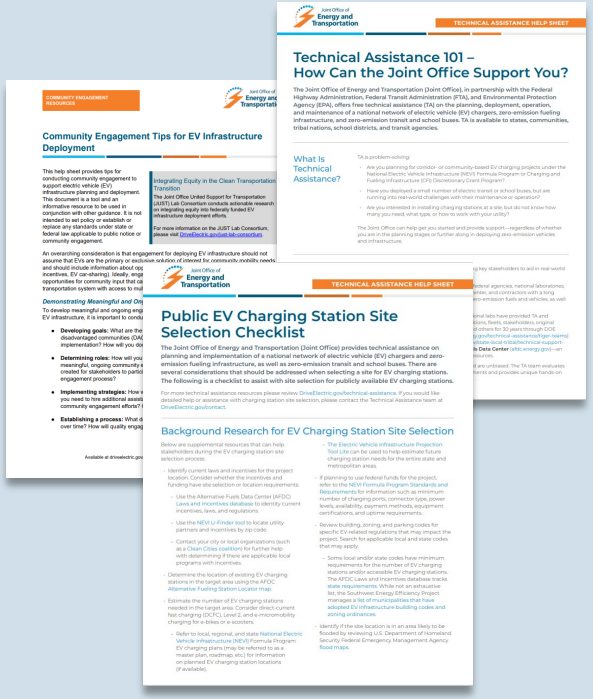
Feb. 27, 2024

Best practices, challenges, and strategies for effectively planning, deploying, and operating curbside electric vehicle (EV) charging projects.

Reports and Toolkits



Help Sheets and Checklists



WE PROVIDE

Technical Assistance

Contact Us

JOCommunityTA@nrel.gov

- Specialized assistance for **communities.**
- Come to us with your questions, and we'll connect you with the right resources.
- **Concierge service** (phone, email, web form) to efficiently route technical assistance requests.
- Technical assistance support team has **50 staff members across 10 organizations**.

Joint Office Concierge

DriveElectric.gov/Contact

Step 1
Request Submission
Submit your request through the Joint Office Concierge.

→

Step 2
Rapid Response
Receive a response with key resources and suggestions.

→

Step 3
In-Depth Consult
Solve real-world problems with hands-on technical assistance.

Concierge Service Contact Methods: 833-600-2751 | JOCommunityTA@nrel.gov | driveelectric.gov/contact/

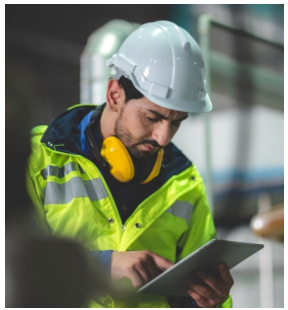
How can we help?

Infrastructure siting needs and support

Planning for EV charging deployment

Community and stakeholder engagement

Power needs analysis and working with the utility

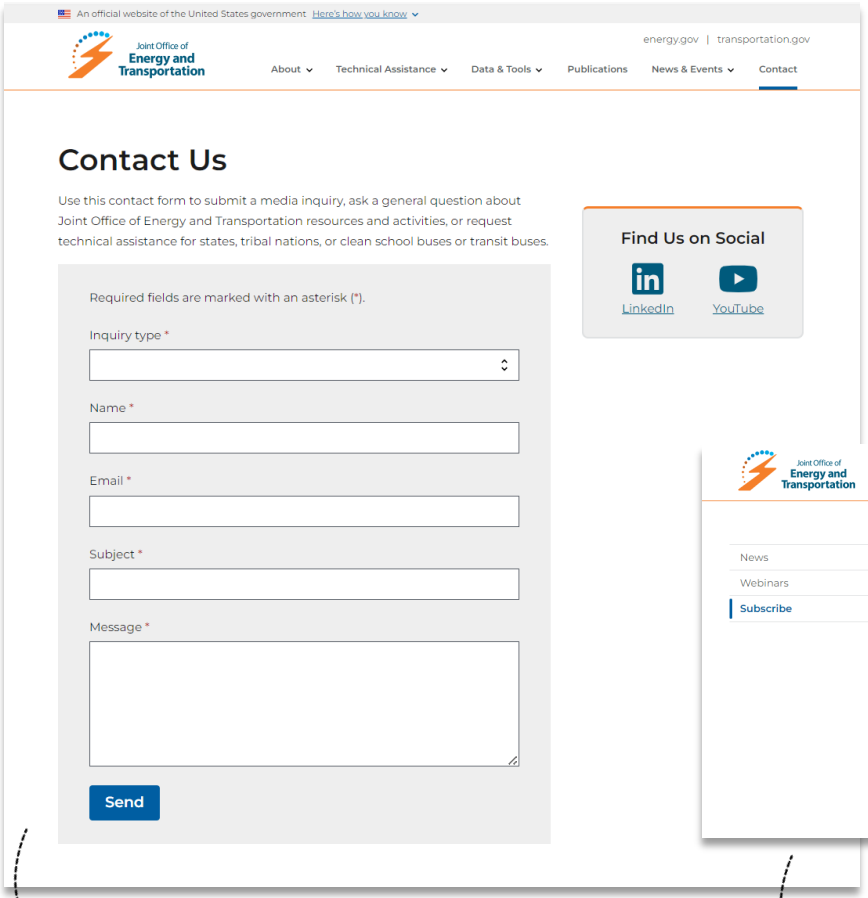


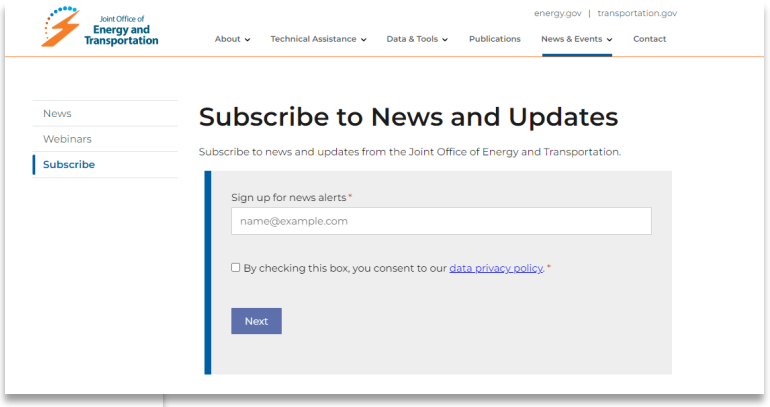
Training and workforce development

Battery energy storage solutions

JOCommunityTA@nrel.gov

- Request assistance via online form
- Initial response within 48 hours
- General questions and feedback welcome!



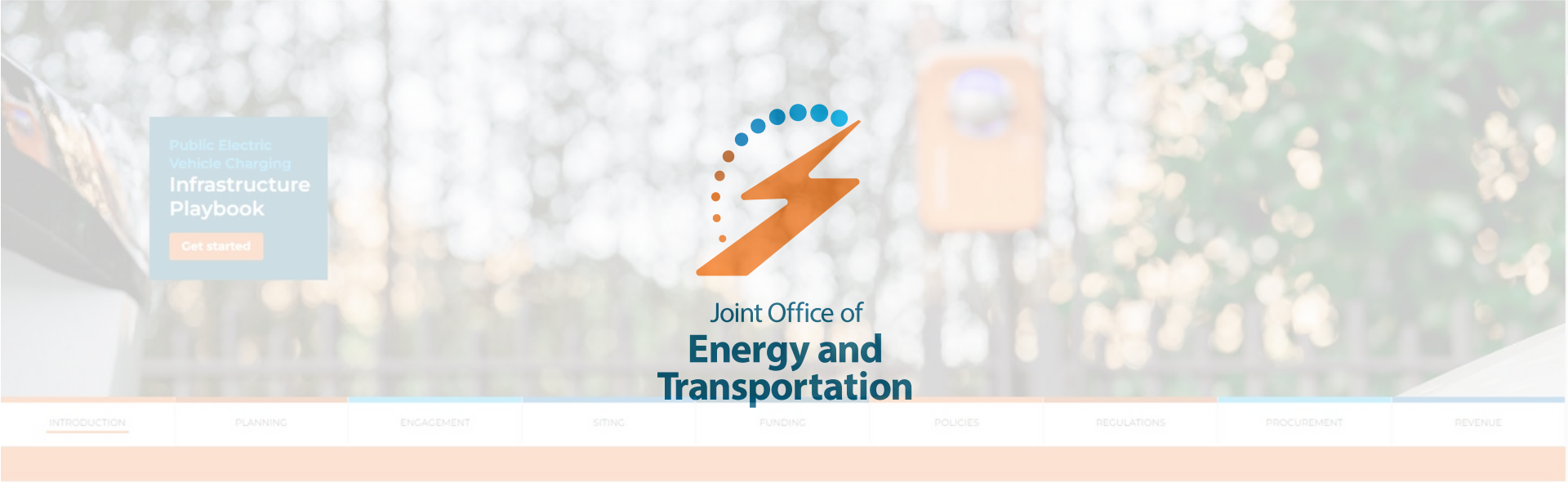


driveelectric.gov/contact

driveelectric.gov/subscribe

Lauren Reichelt and Kaylyn Bopp

NREL



Public EV Charging Playbook

driveelectric.gov/ev-infrastructure-playbook

driveelectric.gov

What are the origins of the Playbook?

C2C: Clean Energy *to* Communities

U.S. DEPARTMENT OF ENERGY

EV Cohort 2: Planning and Funding for Public EV Infrastructure Deployment

This planning-focused peer-learning cohort brings together participating local governments with Clean Cities coalitions to lay the groundwork for community-wide EV infrastructure planning and understand options for funding EV infrastructure deployment.

www.nrel.gov/c2c

Cohort Structure

Workshop Topics

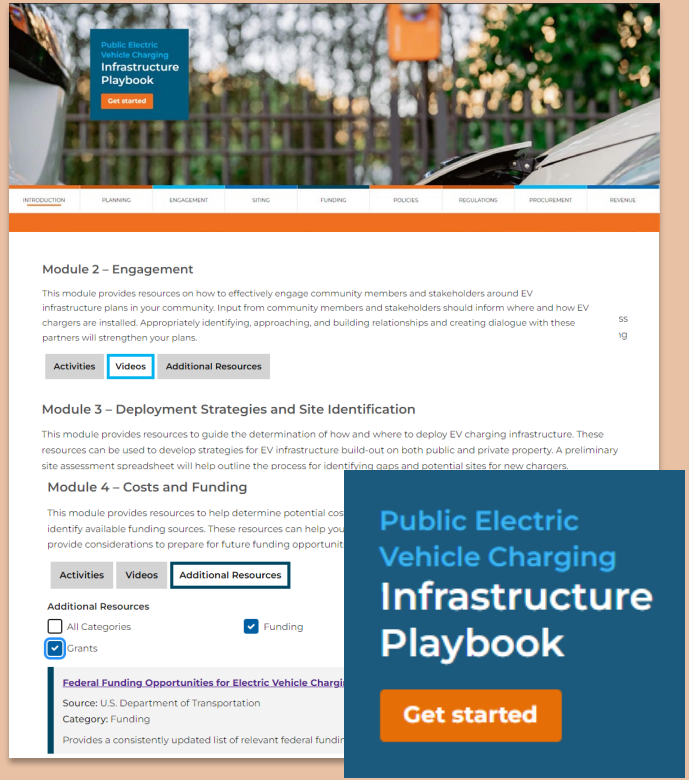
1. The Role of Local Government in Accelerating EV Charging Infrastructure Deployment
2. Funding for EV Charging Infrastructure
3. Equitable Deployment
4. Local Municipal Codes
5. Contracting with EV Charging Providers and Setting Fee Structures
6. Peer Showcase with Consulting and Coaching

Clean Cities and **Communities**

Clean Cities and Communities coalitions provided additional capacity and collaboration to cohort participants and conducted activities on their behalf to create meaningful outcomes and groundwork for their EV plans.

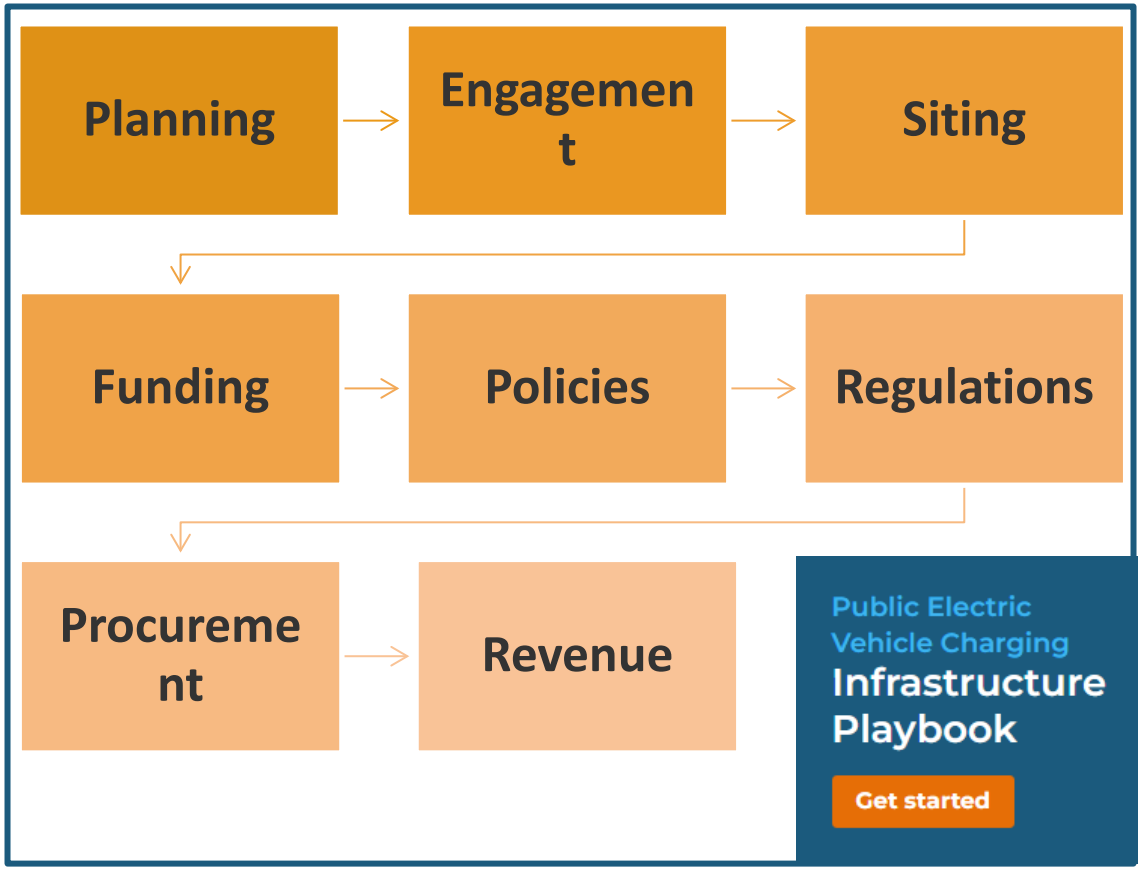
PUBLIC EV CHARGING INFRASTRUCTURE PLAYBOOK

- Interactive web-based resource to help communities plan and build public EV infrastructure.
- **Eight modules** with guiding questions, videos, worksheets, and library of additional resources.
- For use by any community wanting to plan and build EV infrastructure.



Visit **Driveelectric.gov/ev-infrastructure-playbook**

Eight Modules for Community EV Readiness Planning



Example Module

Module 1: Developing EV Infrastructure Plans

Activities

- ✓ Guiding questions for EV infrastructure planning
- ✓ EV readiness plan template
- ✓ Guidance for conducting a baseline assessment
- ✓ Planning process and timeline template

Videos

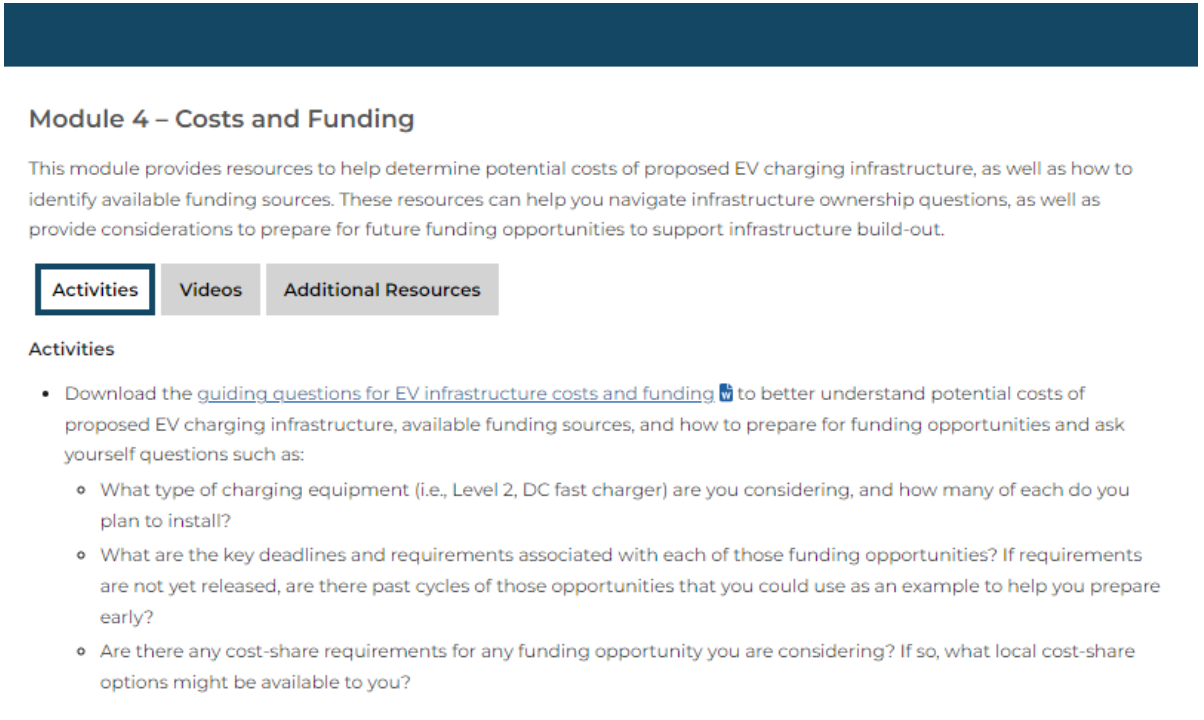
- ✓ City of Alexandria, VA – EV Planning Overview
- ✓ Charge Montgomery – Community EV Charging Infrastructure Plan
- ✓ Virginia Beach, VA – EV Community Charging Plan

Additional Resources

- ✓ Downloadable list of real examples of EV Infrastructure plans
- ✓ 7+ EV planning resources and tools from JO, DOT, Electrification Coalition, NREL

Module Activities

- ❑ Guiding questions
- ❑ Templates
- ❑ Worksheets
- ❑ Guidance



Module 4 – Costs and Funding

This module provides resources to help determine potential costs of proposed EV charging infrastructure, as well as how to identify available funding sources. These resources can help you navigate infrastructure ownership questions, as well as provide considerations to prepare for future funding opportunities to support infrastructure build-out.

Activities | Videos | Additional Resources

Activities

- Download the guiding questions for EV infrastructure costs and funding to better understand potential costs of proposed EV charging infrastructure, available funding sources, and how to prepare for funding opportunities and ask yourself questions such as:
  - What type of charging equipment (i.e., Level 2, DC fast charger) are you considering, and how many of each do you plan to install?
  - What are the key deadlines and requirements associated with each of those funding opportunities? If requirements are not yet released, are there past cycles of those opportunities that you could use as an example to help you prepare early?
  - Are there any cost-share requirements for any funding opportunity you are considering? If so, what local cost-share options might be available to you?

Module Videos

Community Charging Models

Presented by: Sarah Cardinali, NREL

Strategies for Grid-Friendly EV Charger Siting

Presented by: Joseph Womble, WRI

Electric Vehicle Charging Solutions for Multi-Family Housing Market Scan

Presented by: Alexander Epstein, PhD; US DOT Volpe Center

Developing EV Charging Station Grant Proposals

Presented by: Alicia Cox

Community Transportation Needs Assessment

Presented by: Sarah Stalcup-Jones and Cassandre Torres, Virginia Clean Cities

Western Riverside County Transportation Needs Assessment

Presented by: Taylor York, Western Riverside County Clean Cities Coalition

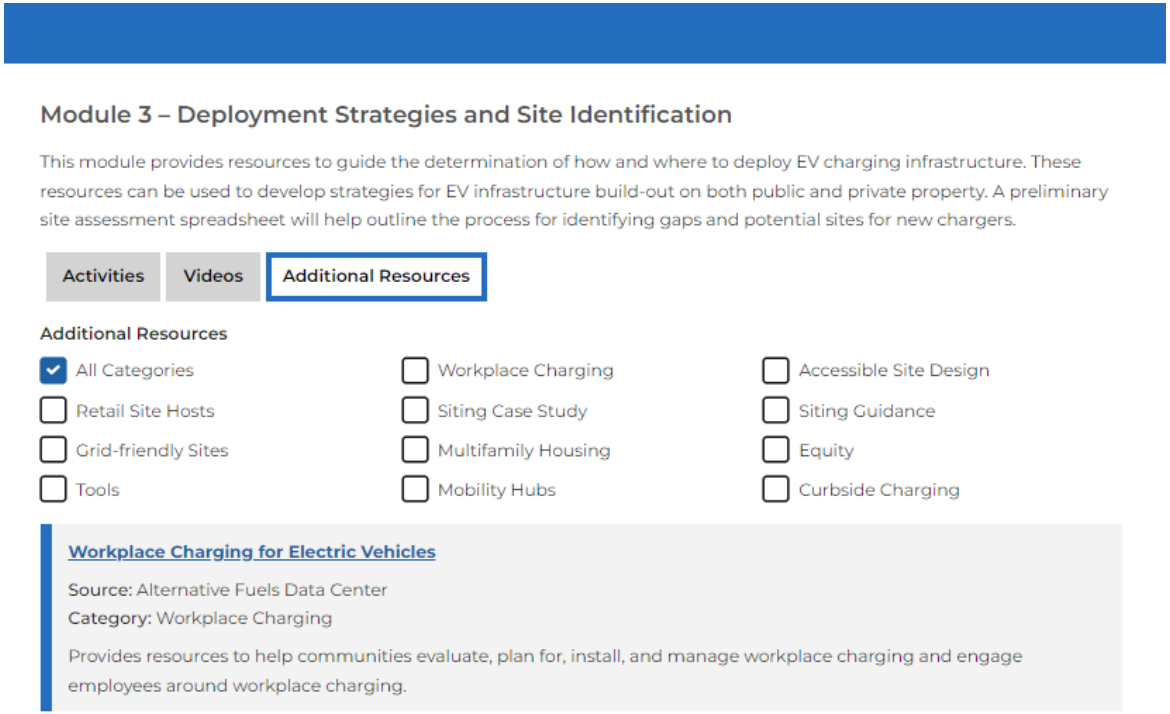
Alternative Fueling Station Locator

Presented by: Abby Brown, NREL

Engaging with Your Utility on EVSE Deployment

Presented by: Gregg Kresg

Module Additional Resources



Playbook Demo

Brian Booher

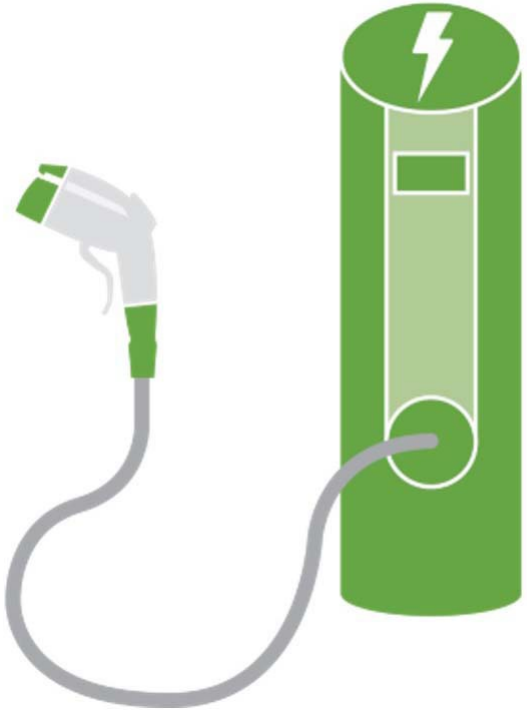
Montgomery County Department of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Montgomery County, MD

Public EV Charging Infrastructure Playbook

August 2024



Why Electric Vehicles?

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

The Climate Action Plan sets a goal for 80% emissions reductions by 2027 and 100% by 2035. About 30% of this goal would come from vehicle electrification. EVs will provide a wide range of benefits to County residents:

Zero tailpipe pollution and 70% lower emissions on local utility grid

Lower cost of ownership from electricity and maintenance costs

Convenient charging at home, work, or your destination

Zero Emission Vehicle Planning

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Objectives

1. Accelerate EV adoption to rapidly reduce GHG emissions
2. Encourage equitable EV adoption for all residents
3. Support the long-term market for ZEV

Barriers

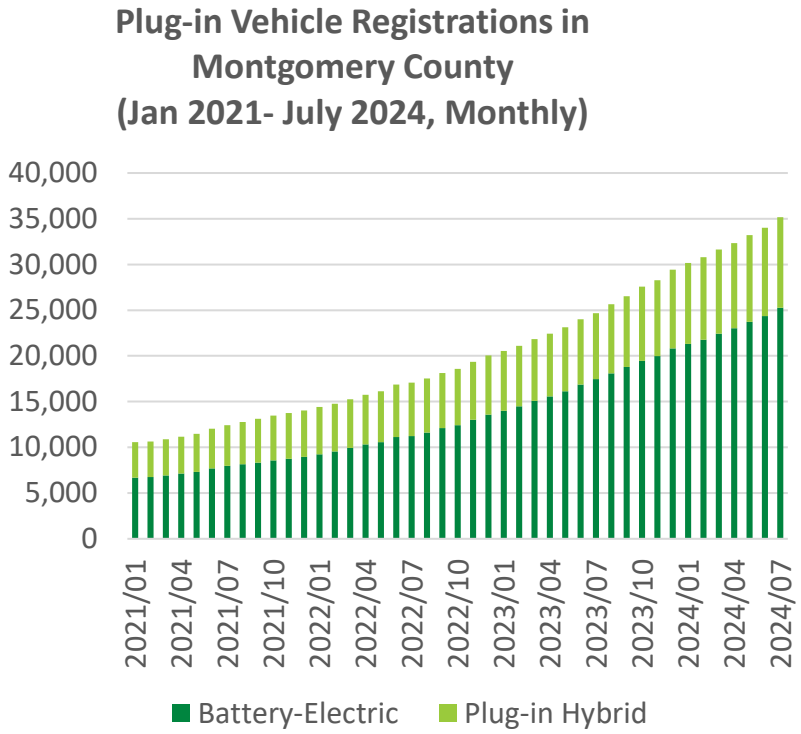
1. High costs for vehicles
2. Lack of EV charging at home
3. Unreliable and insufficient community charging
4. Technology preferences and lack of familiarity among residents and supply chain

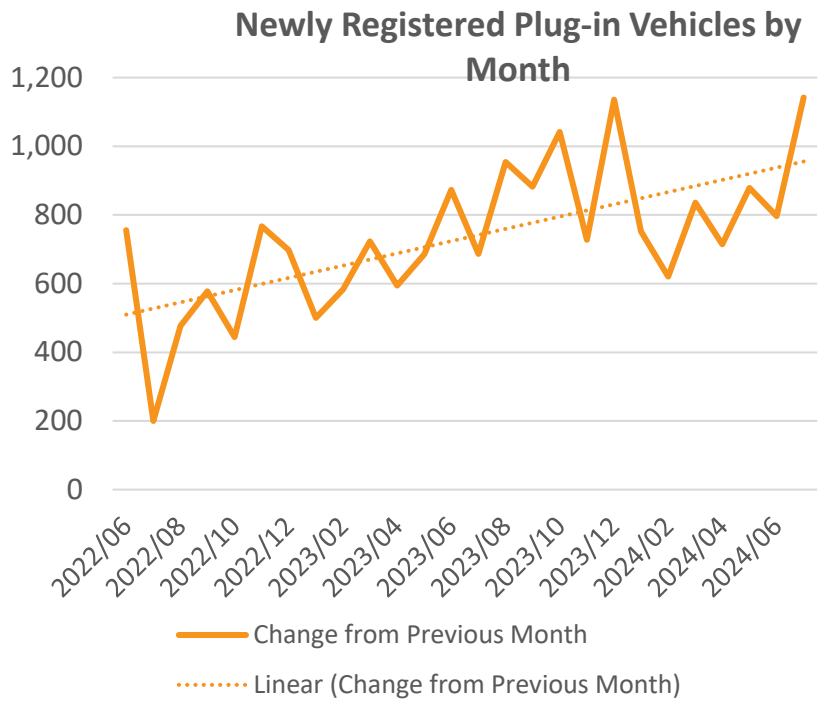
Key Strategies

1. Expand community charging through grants and partnerships
2. Offer EV charging planning & technical support for workplaces and multifamily communities
3. EV-ready building codes and standards for community charging
4. EV Co-op: cost savings, education, and experiences
5. Education and engagement for dealerships, installers
6. Utility, state, and regional coordination on building codes, grid and charging reliability, incentives

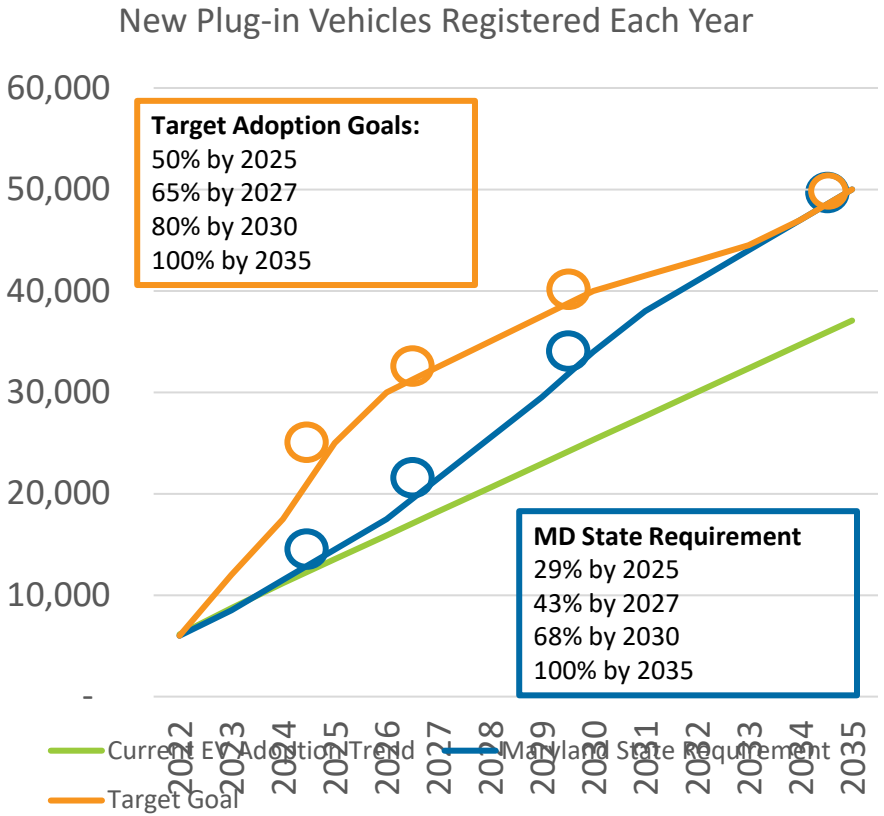
Montgomery County Plug-in Vehicle Data

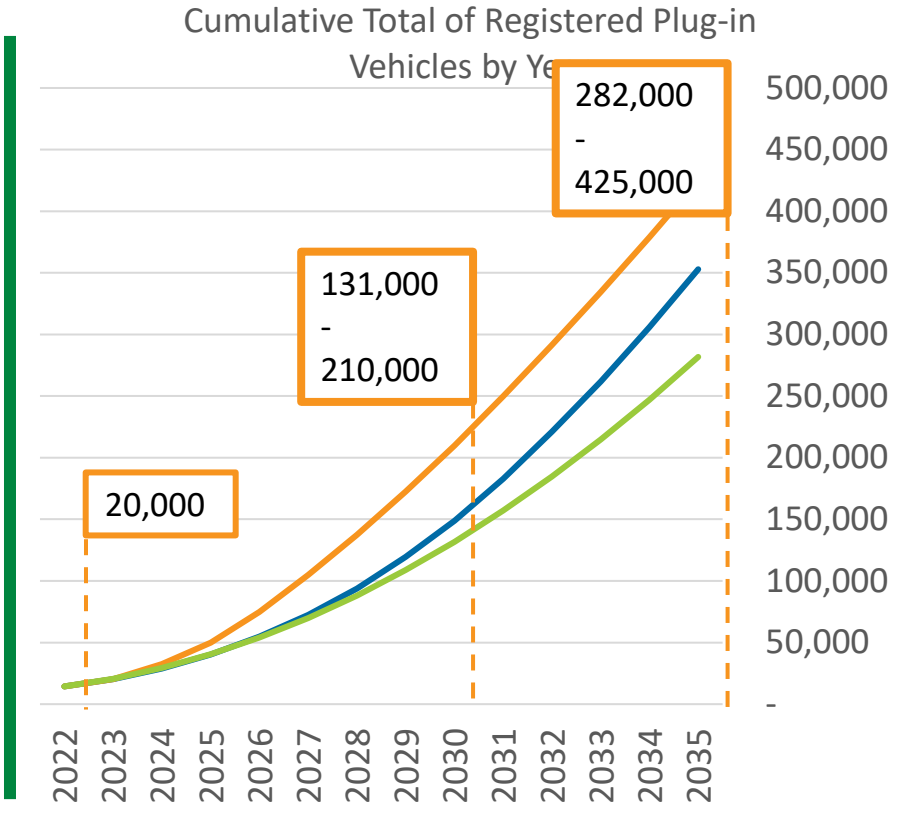
DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND





Plug-in Vehicle Projections for Montgomery County





Projected EV Charging Demand

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

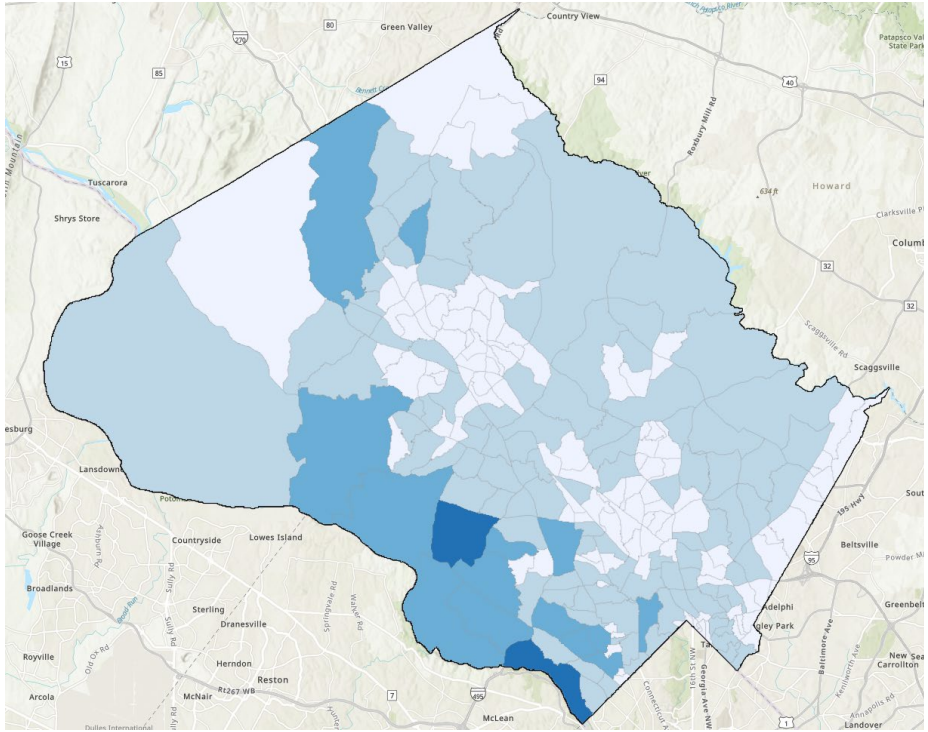
Based on projected market adoption of electric vehicles, U.S. DOE's National Renewable Energy Laboratory estimates the following need for EV charging for our region:

Years	Number of Plug-in Vehicles	Private Workplace Level 2 Ports	Multi-Unit Dwelling Level 1 and 2 Ports	Public Level 2 Ports	Total Level 2 Ports	Public Level 3 Ports
Market Today	**36,000**	**<100**	**<100**	**618**	**~800**	**123**
2026	50,000	1,829	807	2,872	5,500	208
2027	75,000	2,745	1,213	4,300	8,200	313
2028	100,000	3,661	1,616	5,732	10,900	418
2030	150,000	4,409	2,415	7,132	14,900	412
2035	300,000	8,820	4,834	14,268	27,800	826

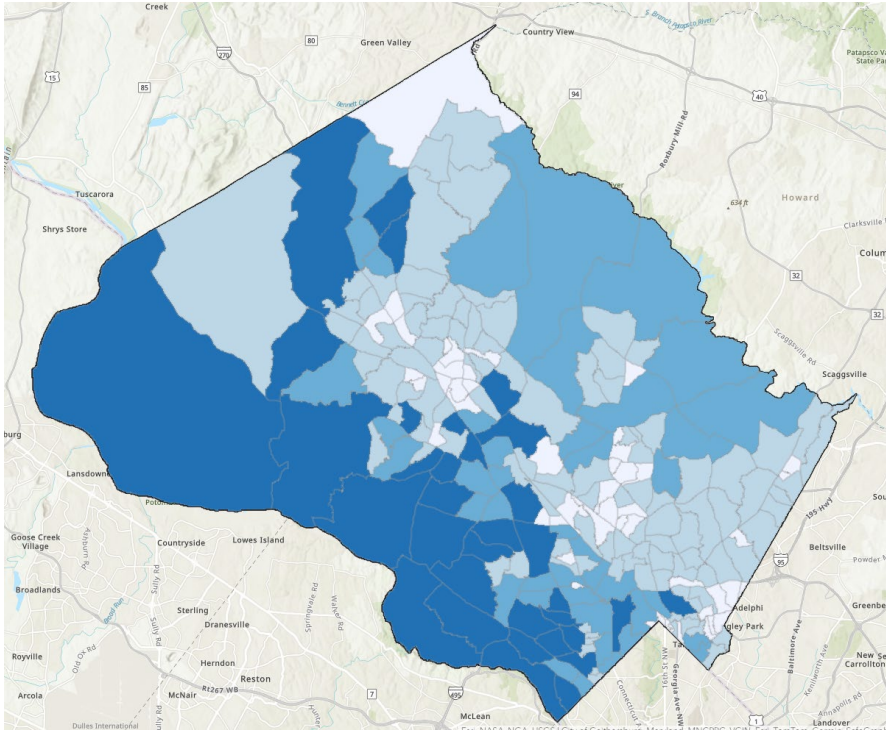
*Assumes 70% of drivers have access to home charging; lower home charging access requires more public and workplace charging

Projected EV Charging Demand

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

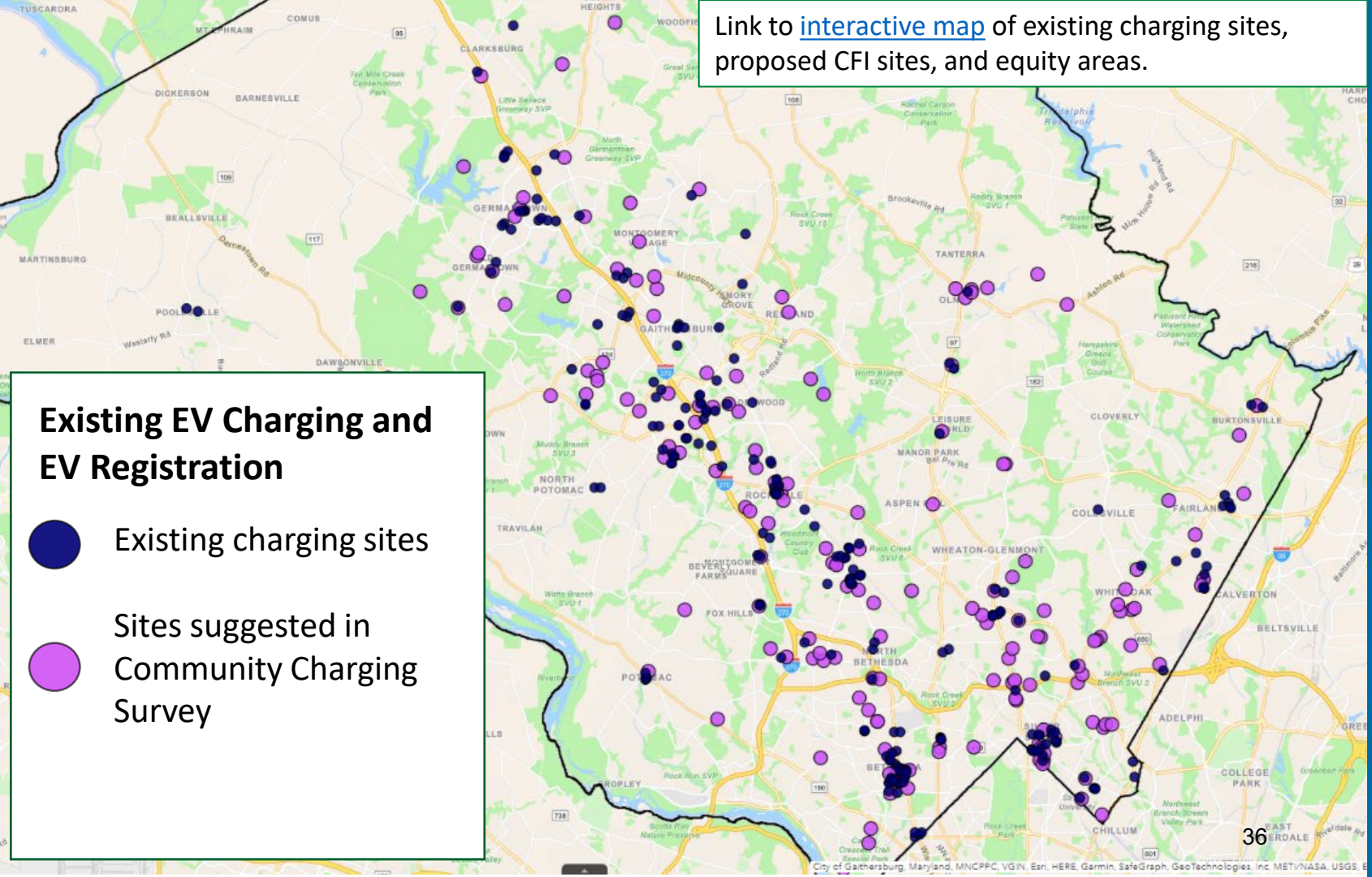


Plug-in Registrations July 2022



Plug-in Registrations July 2024

Link to interactive map of existing charging sites, proposed CFI sites, and equity areas.



Existing EV Charging and EV Registration

- Existing charging sites
- Sites suggested in Community Charging Survey

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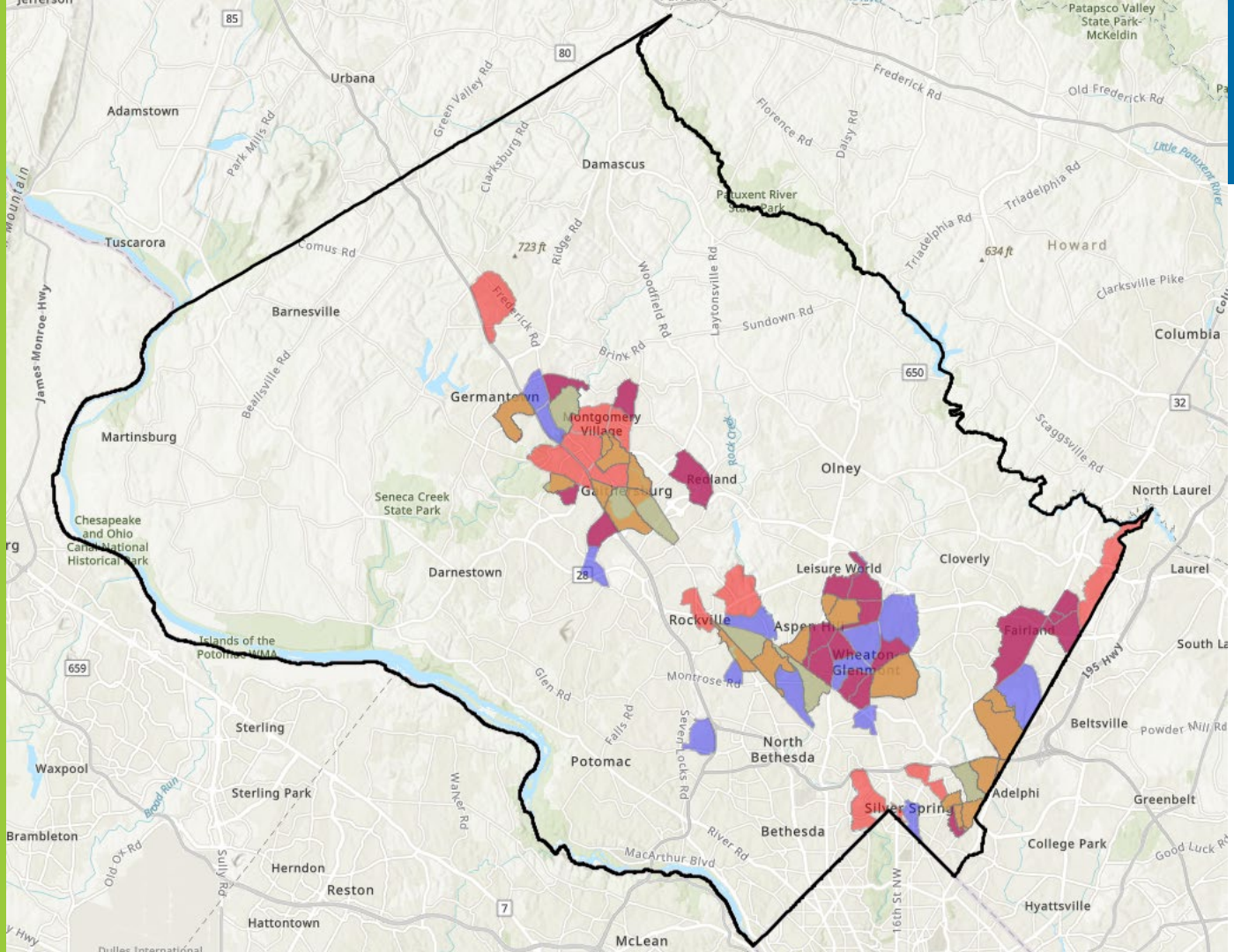

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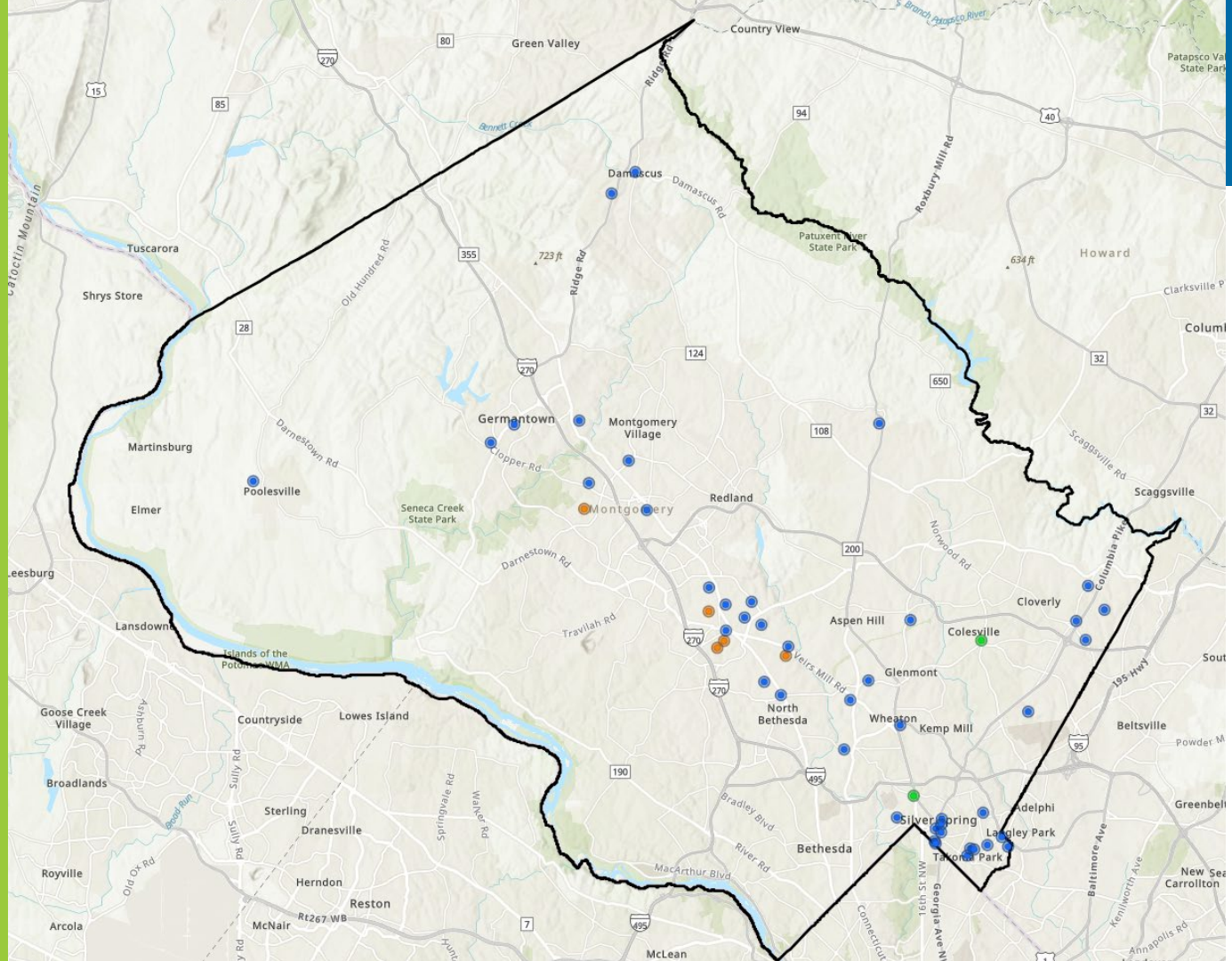
MONTGOMERY COUNTY • MARYLAND

Equity Based Census Tracts

- Equity Focus Areas
- Equity Emphasis Areas
- Justice 40 Census Tracts



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MONTGOMERY COUNTY • MARYLAND

Grant Status

- Proposed by County
- Proposed by Other
- Selected for Funding (Conditional)

Questions?

Contact: Brian Booher

Senior Planning Specialist – Zero Emissions Vehicles

Brian.Booher@MontgomeryCountyMD.gov

240-506-6075

www.montgomerycountymd.gov/ZEV

DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Dr. Alāna Wilson

JUST Consortium

JUST Cross-Lab Equity Consortium

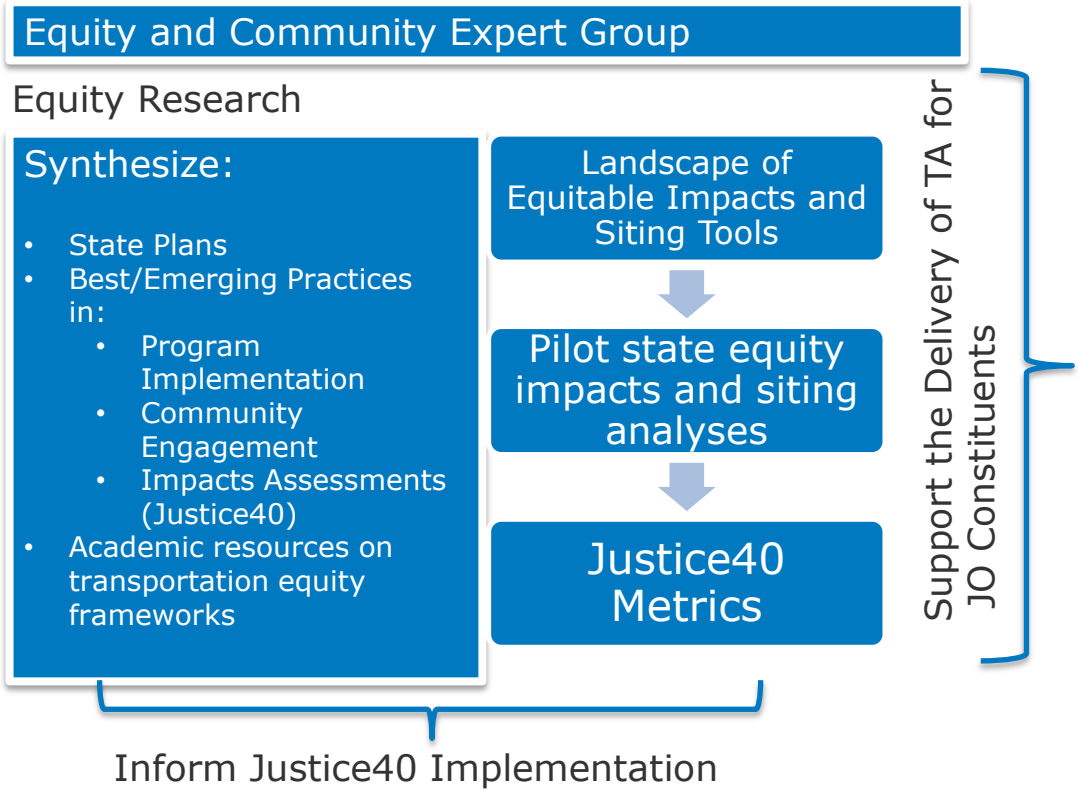
Alāna Wilson, NREL

Lab Leads: Alāna Wilson, NREL; Marcy Rood, ANL; Margaret Taylor, LBNL

www.driveelectric.gov/just-lab-consortium

JUST Lab Consortium

Three Labs: NREL, ANL, LBNL



Equity Technical Assistance Delivery Channels

Technical Accomplishments and Progress

Resources available at:
www.driveelectric.gov/just-lab-consortium

1. *Synthesis of Approaches for Incorporating Equity into Clean Transportation*
   - Review of NEVI State Plans
   - Best practices and lessons learned from past deployment
   - Transportation equity and justice literature review

2. *Analysis Capabilities for Equity Program Design and Evaluation*
   - Gap assessment and technical resources inventory
   - Piloting DOE lab tools with NEVI location data
   - Justice40 federal metrics framework support

3. *Equity and Community Expert Group and dissemination of JUST Lab Consortium resources*
   - Help sheets: embedding equity into EV charger planning, siting, and engagement

Major Insights from Case Studies

Respect the community's culture and members' time; limit requests to priority "asks" and reimburse attendees for their time.

Co-design projects with communities for increased community satisfaction and better utilization and long-term outcomes.

Engage the community regularly and reflect back what is understood about their goals. Engagement is not a task—it's an ongoing process.

Empower community members: appoint them to steering committees, hire them as contractors or apprentices, and/or provide other economic development opportunities.

Provide funds, coaching, and training opportunities upfront to help small CBOs understand proposal requirements, hire staff, and interpret and comply with contracting, invoicing, and other requirements.

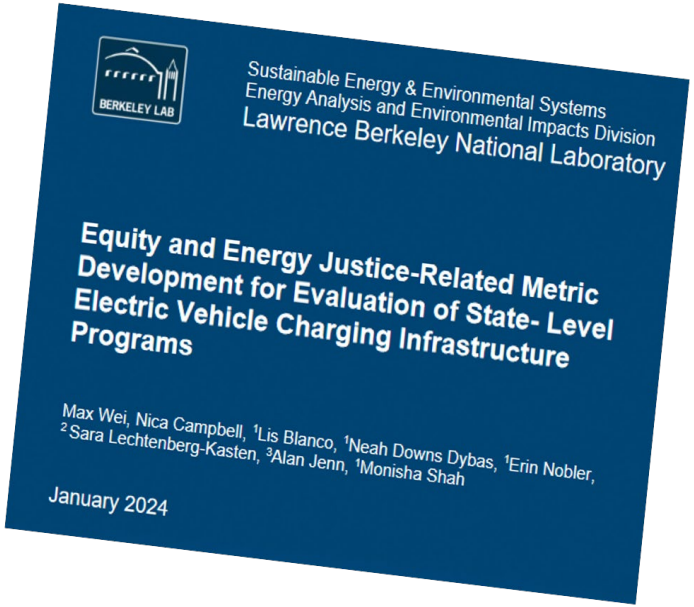
Build flexibility into contracting and funding disbursement to enable swift response to changes in project details and payment needs.

Metrics Development – How does Justice40 apply?

Objective:
- Inform metrics and measurement considerations for equitable deployment of EV charging infrastructure.

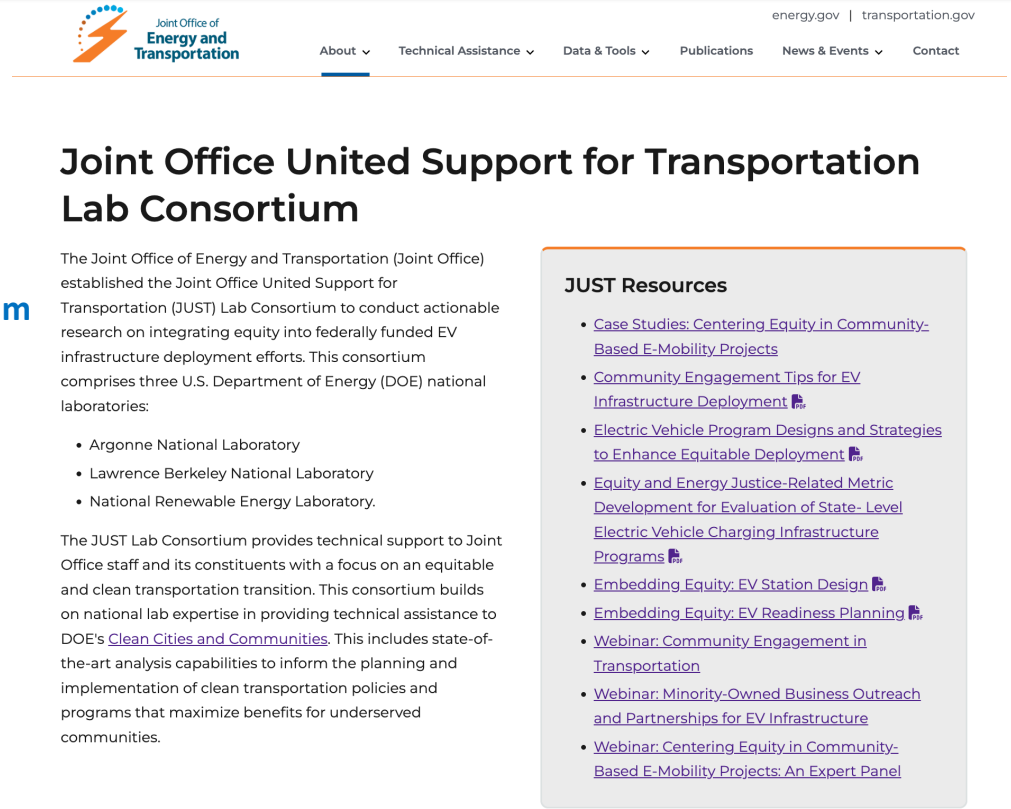
Outcome:
- White paper of potential equity metrics and examples relevant to each Justice40 policy priority category (economic opportunity, environmental benefits, accessibility, energy democracy)
    - Includes methodology, data, tools, and implementation.

Key insights:
- Investment in EVSE and adoption of EVs are intertwined and interrelated;
  - Focusing on infrastructure without attending to need for equitable access to technologies (e.g. vehicles, e-bikes) is limiting
- Common challenges include data availability, attribution of impact,
- Focusing on beneficial distributive justice impacts may lead to a misunderstanding of the net benefits or disbenefits to a community
- Meaningful community engagement is critical
- For non-vehicle owning households, electric transit, micromobility, and ride-hailing can make the electrification transition accessible



JUST Website – Resources!

www.driveelectric.gov/just-lab-consortium



Public EV Charging Infrastructure Playbook

- Equity isn't siloed in the Public EV Charging Infrastructure Playbook, it's woven throughout
  - Guiding questions
    - Each module's Activities section has guiding questions, including several that ensure equity is being considered in that phase.
      - Example from Planning module:
        - » Has any entity in or near your region undertaken a holistic transportation needs assessment or created a transportation master plan that identified local priorities?
          - If so, what priorities were identified and what is the plans to reflect these priorities in local policies/actions?
          - If not, what are the main transportation priorities of your community members?
      - Example from Siting module:
        - » Are there opportunities to leverage EV charging stations and associated infrastructure to support other e-mobility strategies such as multimodal hubs, e-bike-share stations, and/or e-car-share, or to support shared-use fleets or services?

Module 2 – Engagement

This module provides resources on how to effectively engage community members and stakeholders around EV infrastructure plans in your community. Input from community members and stakeholders should inform where and how EV chargers are installed. Appropriately identifying, approaching, and building relationships and creating dialogue with these partners will strengthen your plans.

Activities | **Videos** | **Additional Resources**

Activities

- Download the guiding questions for community and stakeholder engagement to help you develop a strategy for engaging community members and stakeholders. Ask yourself questions such as:
  - Why is engagement a priority for your upcoming EV infrastructure planning process or project?
  - How will you define and identify underserved communities?
  - How will you use the inputs from engagement activities to inform your plan or project?
- Download an interactive engagement planning worksheet to identify who might be impacted by EV charging infrastructure development and to begin planning your engagement activities.

Public EV Charging Infrastructure Playbook

- Equity isn't siloed in the Public EV Charging Infrastructure Playbook, it's woven throughout
  - Sorting function
    - The “Additional Resources” search function has an equity category coded for equity in the Community Engagement, Siting, Policies, Regulations, and Procurement modules

Module 2 – Engagement

This module provides resources on how to effectively engage community members and stakeholders around EV infrastructure plans in your community. Input from community members and stakeholders should inform where and how EV chargers are installed. Appropriately identifying, approaching, and building relationships and creating dialogue with these partners will strengthen your plans.

Activities | Videos | Additional Resources

Additional Resources

- [ ] All Categories
- [x] Equity
- [ ] Example Plans
- [ ] Stakeholder Engagement
- [ ] Tools
- [ ] Utility Engagement

Best Practices for Meaningful Community Engagement

Source: Groundwork USA
Category: Stakeholder Engagement, Equity

Provides tips for engaging historically underrepresented populations in visioning and planning.

Climate and Economic Justice Screening Tool (CJEST)

Source: White House Council on Environmental Quality
Category: Equity, Tools

U.S. Department of Energy-recommended tool to identify disadvantaged communities in your region.

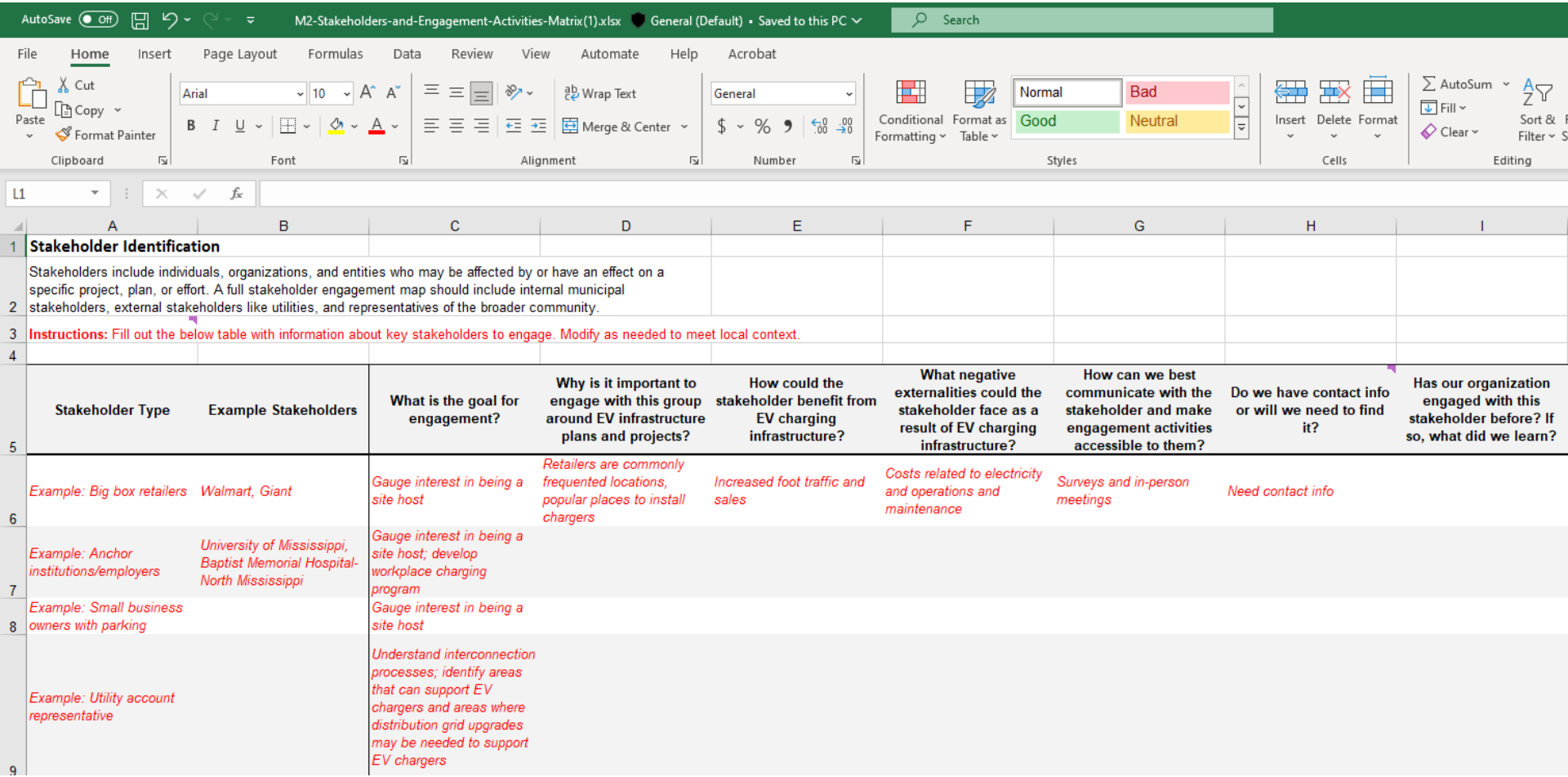
EV Program Designs and Strategies to Enhance Equitable Deployment

Source: JUST Lab Consortium
Category: Stakeholder Engagement, Equity

Synthesizes and categorizes information from more than five dozen sources published between 2015 and 2023—

Public EV Charging Infrastructure Playbook

- Equity isn't siloed in the Public EV Charging Infrastructure Playbook, it's woven throughout
  - Engagement module has lots of relevant content about considering community priorities
    - Guiding question example: How will you use inputs from your engagement activities to inform your plan or project?
    - Interactive engagement planning worksheet
      - Consider negative externalities and ways to communicate



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Stakeholder Identification

Stakeholders include individuals, organizations, and entities who may be affected by or have an effect on a specific project, plan, or effort. A full stakeholder engagement map should include internal municipal stakeholders, external stakeholders like utilities, and representatives of the broader community.

Instructions: Fill out the below table with information about key stakeholders to engage. Modify as needed to meet local context.

Stakeholder Type	Example Stakeholders	What is the goal for engagement?	Why is it important to engage with this group around EV infrastructure plans and projects?	How could the stakeholder benefit from EV charging infrastructure?	What negative externalities could the stakeholder face as a result of EV charging infrastructure?	How can we best communicate with the stakeholder and make engagement activities accessible to them?	Do we have contact info or will we need to find it?	Has our organization engaged with this stakeholder before? If so, what did we learn?
Example: Big box retailers	*Walmart, Giant*	*Gauge interest in being a site host*	*Retailers are commonly frequented locations, popular places to install chargers*	*Increased foot traffic and sales*	*Costs related to electricity and operations and maintenance*	*Surveys and in-person meetings*	*Need contact info*	
Example: Anchor institutions/employers	*University of Mississippi, Baptist Memorial Hospital-North Mississippi*	*Gauge interest in being a site host; develop workplace charging program*						
Example: Small business owners with parking		*Gauge interest in being a site host*						
Example: Utility account representative		*Understand interconnection processes; identify areas that can support EV chargers and areas where distribution grid upgrades may be needed to support EV chargers*						

Activities | Videos | Additional Resources

Videos

Watch videos that feature transportation needs assessments, equity, and how to engage with utilities.

The video titles are:

- Community Transportation Needs Assessment
- Western Riverside County Transportation Needs Assessment
- Engaging with Your Utility on EVSE Deployment

Community Transportation Needs Assessment

Western Riverside County Transportation Needs Assessment

Thank you!

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Thank you!

Today's Presentation:
Explore the Public EV Charging Playbook

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