Commonwealth of Massachusetts

Executive Office of
Energy and Environmental Affairs

Electric Vehicle Infrastructure Coordinating Council (EVICC) Meeting

June 4, 2025

Agenda

Opening

- Roll call, vote on meeting minutes, meeting agenda, objectives
- Administrative Updates

Public Comment

Updates

- Guide to the Equitable Siting of Electric Vehicle Charging Stations in EJ Populations - Update and Vote

Educational Presentations / Discussions

- Managed Charging Follow-Up Presentation and Discussion
- Draft 2030/2035 EV Charging Projections Presentation

Public Comment

Meeting Objectives

- Vote to adopt the Guide to the Equitable Siting of Electric Vehicle Charging Stations in EJ Populations
- Revisit the initial analysis on the potential of managed charging
- Learn about EV charging projections for 2030 and 2035

Disclaimer: *The EVICC team invites presenters to speak about topics of interest to EVICC members and to the development of the second assessment to the Legislature. The Commonwealth is not endorsing any particular company or organization.*

Vote on May Minutes

Administrative Updates

- Second Assessment Public Comment Period
- Energy Star

Rules for Presentations / Public Comment

Presentations

- Presenters should keep to the assigned time
- The EVICC Chair will allow questions from EVICC members first and then the public if time remains

Public Comments

- Use the “raise hand” function to indicate your desire to speak at the appropriate time
- Identify yourself and affiliation prior to commenting
- Limit comments and questions to 3 minutes
- Please engage in constructive and respectful dialogue
- Be able to substantiate assertions or claims in support of comments

Public Comment

Updates

A Guide to the Equitable Siting of Electric Vehicle Charging Stations in EJ Populations

Office of Environmental Justice and Equity (OEJE)

June 4, 2025

Overview

Office of Environmental Justice and Equity

A Guide to the Equitable Siting of Electric Vehicle Charging Stations in EJ Populations

- Purpose of the Guide
- Principles and Best Practices

Q&A

Office of Environmental Justice and Equity

The Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs' (EEA) Office of Environmental Justice and Equity (OEJE) works with all EEA agencies to ensure policies and programs are designed with equity at the center, ensuring that all voices are heard and all voices are shaping the solutions. OEJE works diligently to ensure there is meaningful engagement in all processes, resulting in more equitable public policies. OEJE is committed to ensuring a fair and equitable distribution of all environmental and energy benefits and burdens.

Purpose of the Guide

- The *Guide to the Equitable Siting of Electric Vehicle Charging Stations in EJ Populations* (Guide) serves to complement the second Electric Vehicle Infrastructure Coordination Council (EVICC) Assessment, as well as an independent resource

- As it becomes increasingly necessary for publicly accessible EV charging stations to further expand into communities with EJ populations, publicly-accessible municipal- and state-owned EV charging station locations should be selected with intentionality and in close partnership with local communities to ensure that the clean energy benefits are enjoyed by the residents of neighborhoods with EJ Populations

- Process: EVICC Sub-Committee

- Target Audience: Community-based organizations, municipalities, state agencies, as well as utility providers, EV industry and others

IV. Environmental Justice and Equity Considerations in Electric Vehicle Infrastructure Siting

It is essential to consider EJ and equity in the siting of publicly accessible EV charging stations. This process should be informed by principles that ensure a comprehensive understanding of accessibility and resilience. By understanding and adopting best practices, including meaningful engagement, an EV charging station network can be developed that supports EJ and equity.

Principles	Best Practices
• Reduce Disparities in Access to Public EV Charging Stations • Sustainable and Resilient EVSE	• Conduct Equity-Centered Site Assessments • Prioritize Community-Centered Planning • Collaboration and Stakeholder Engagement • Accessibility and Affordability

Best Practices:
Conduct Equity-Centered Site Assessments

- **Identify Priority Areas:** Use tools like EEA's Environmental Justice Map Viewer to identify communities with high pollution burdens, low incomes, or limited mobility options.
- **Evaluate Existing Infrastructure:** Assess the community's transportation needs, current EV adoption levels, and infrastructure gaps.
- **Consider Co-Benefits:** Prioritize sites that provide additional benefits, such as reducing air pollution near schools, healthcare facilities, or densely populated areas.
- **Data:** Use transparent, data-driven approaches to inform EVSE siting and adjust based on community feedback and usage patterns.

Best Practices:
Prioritize Community-Centered Planning

- **Early and Ongoing Engagement:** Projects impacting EJ Populations should undertake enhanced measures of engaging community members early and seeking initial feedback at the project's onset. Involve EJ Populations early in the decision-making process to ensure their voices shape the siting and implementation plans. This engagement can help identify opportunities for medium- and heavy-duty vehicle and fleet transition to EVs.

- **Meaningful Engagement:** Conduct meaningful and ongoing engagement, which requires consultation with communities to gather information about their specific needs. Empower community members to influence and shape project design, timeline, and benefits, and actively contribute to the public EV charging station site-selection process, including identifying charging options near highways and other roads with high congestion that could support freight and high mileage internal combustion engines in transitioning to EVs.

- **Culturally Relevant Outreach**: Use culturally appropriate materials and communication methods, such as multilingual resources and outreach through trusted community organizations.

- **Public Meetings and Workshops**: Host accessible meetings (virtual and in-person) to gather input, ensuring timing and locations accommodate residents' schedules. To the greatest extent possible, planning for public meetings should be developed in consultation with community-based organizations.

Best Practices:
Collaboration and Stakeholder Engagement

- **Collaborative planning:** Foster cross-sector collaboration among government agencies, utilities, the private sector, and community organizations to ensure comprehensive and inclusive decision-making. Community centers, faith-based organizations, and other CBOs can often assist with identifying populations where additional outreach is needed and have insight on the best channels to engage with local EJ Populations

- **Involve Local Community Leaders:** Join community meetings, town halls, EJ forums, or other advertised community activities to establish relationships with community leaders. Engage with local leaders who are active in underserved communities, so they can refer you to key organizations and networks.

- **Engage with Utilities:** Engage with the utility company serving the local geographic area to understand relevant rebates, incentives, and income-restricted assistance programs they offer. Work collaboratively with the utilities to conduct outreach and enhance awareness and participation in these programs.

- **Community Advisory Groups:** Establish advisory committees that include residents, EJ advocates, and local leaders to guide the process. Leverage expertise from organizations focused on EJ and equity and clean energy to shape and review plans. Consider offering compensation for their participation.

Best Practices:
Accessibility and Affordability

- **ADA-Compliance:** Ensure chargers are ADA-compliant and accessible to people with diverse disabilities. Reference MassEVIP ADA requirements as an example.

- **Clear Signage:** Ensure clear and consistent communication about the availability and pricing of charging stations to encourage use and build trust and are also designed for non-English speakers.

- **Technology Access**: Install EV chargers that are compatible with diverse EV models, particularly affordable and used EVs.

- **Curbside Charging Stations:** Consider installing curbside charging stations to provide convenient, public charging options for residents without access to private parking spaces. Reference MassCEC's Study (to be released in late 2025) and the City of Boston's Curbside EV Pilot Program.

- **Affordable Access**: Ensure that EV chargers are affordable to use, with clear pricing transparency and posting, both on the charging station and in the app. Provide subsidies or tiered pricing for low-income users where possible. Please refer to EVICC's Public Level 2 EV Charging Station Fees and Policies Guide.

- **Payment Flexibility**: To address financial inclusion, enable cash payment or systems that do not solely require credit cards or a smart phone application. Smart phone applications should include options to enter banking information and should not require additional debit or credit card fees at point-of-sale. Also consider adapting existing programs, such as SNAP, to allow for beneficiaries to apply those funds towards EV charging.

Questions?

Presentations

Potential Benefits of Managed Electric Vehicle Charging

Prepared for the Massachusetts Executive Office of Energy and Environmental Affairs and the Electric Vehicle Infrastructure Coordinating Council (EVICC)

June 4, 2025

Aidan Glaser Schoff and Ida Weiss

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Key Findings

- Load from unmanaged EV chargers could add up to 1.4 GW by 2030
  - Managed charging can reduce peak demand and avoid and defer electricity system costs on the bulk power system (capacity and transmission) and the distribution grid
  - Distribution-grid impacts are highly location-dependent
- Greatest managed charging/load reduction potential is from residential level 2 chargers
  - Flexible load
  - Represents the majority of chargers in 2030
- A variety of program types should be used to achieve the greatest load reduction, including active management programs (e.g., third-party/utility-controlled charging)

Overview

Goal of Analysis: To analyze the potential for **managed charging solutions** to minimize the impacts of electric vehicles (EVs) on the electric system and quantify possible load reductions and cost savings.

- We are using a broad definition of managed charging that includes strategies such as time-of-use (TOU) rates, off-peak charging rebates, utility/third party-controlled active management, etc.

Key Questions: What is the value of managed charging? How does it compare across geographies?

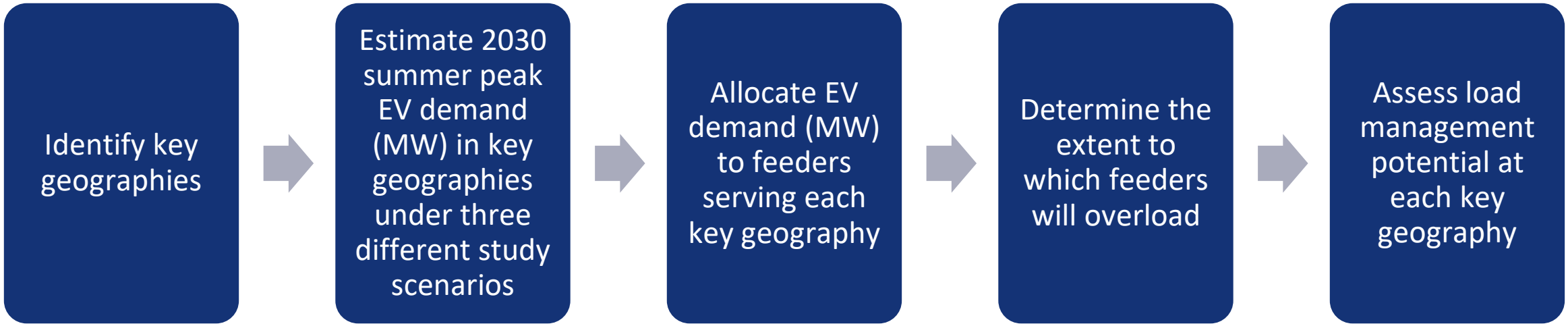
We assess and discuss the potential for managed charging in 2030 at five different key geographies:

- Urban centers
- Suburban areas
- Rural communities
- Major highways/transportation corridors
- Fleet depots (trucks and buses)

Study Caveats

- Scope of study is solely electric vehicles; does *not* include other types of future electrification (i.e. heat pumps)
- Does not examine the business models or incentive structures of managed charging solutions
- Is not a feasibility or economic potential study

High-Level Approach



Scenario Design and Inputs

To estimate the potential for managed charging, and associated future cost savings, we examine load from EV chargers in three scenarios:

Scenario 1: Unmanaged

- Assume all EV chargers are unmanaged
- Load curves for chargers serving light-duty vehicles from the Department of Energy Alternative Fuels Data Center's EVI-Pro Lite Tool[1]
- Load curves for fleet depot charging from Lawrence Berkely National Laboratory's Medium- and Heavy-Duty Electric Vehicle Infrastructure – Load Operations and Deployment (HEVI-LOAD) Model[2]

Scenario 2: Status Quo (currently offered passive load management programs)

- All load is managed according to currently offered off-peak charging programs at present enrollment levels (15% of all light-duty EVs)
- Current programs seek to shift ~80% of charging off-peak of system peak hours[3]

Scenario 3: Advanced Managed Charging

- This scenario provides insight into a hypothetical scenario with very high levels of participation and load reductions beyond currently approved programs

Note: Load curve assumptions for public chargers at transportation routes were compared to Coordinating Research Council Report. Source: Coordinating Research Council. CRC SM-E-16 - Charging Plaza Load Analysis and Forecast Final Report. CRC Report No. SM-E-16. May 2023.

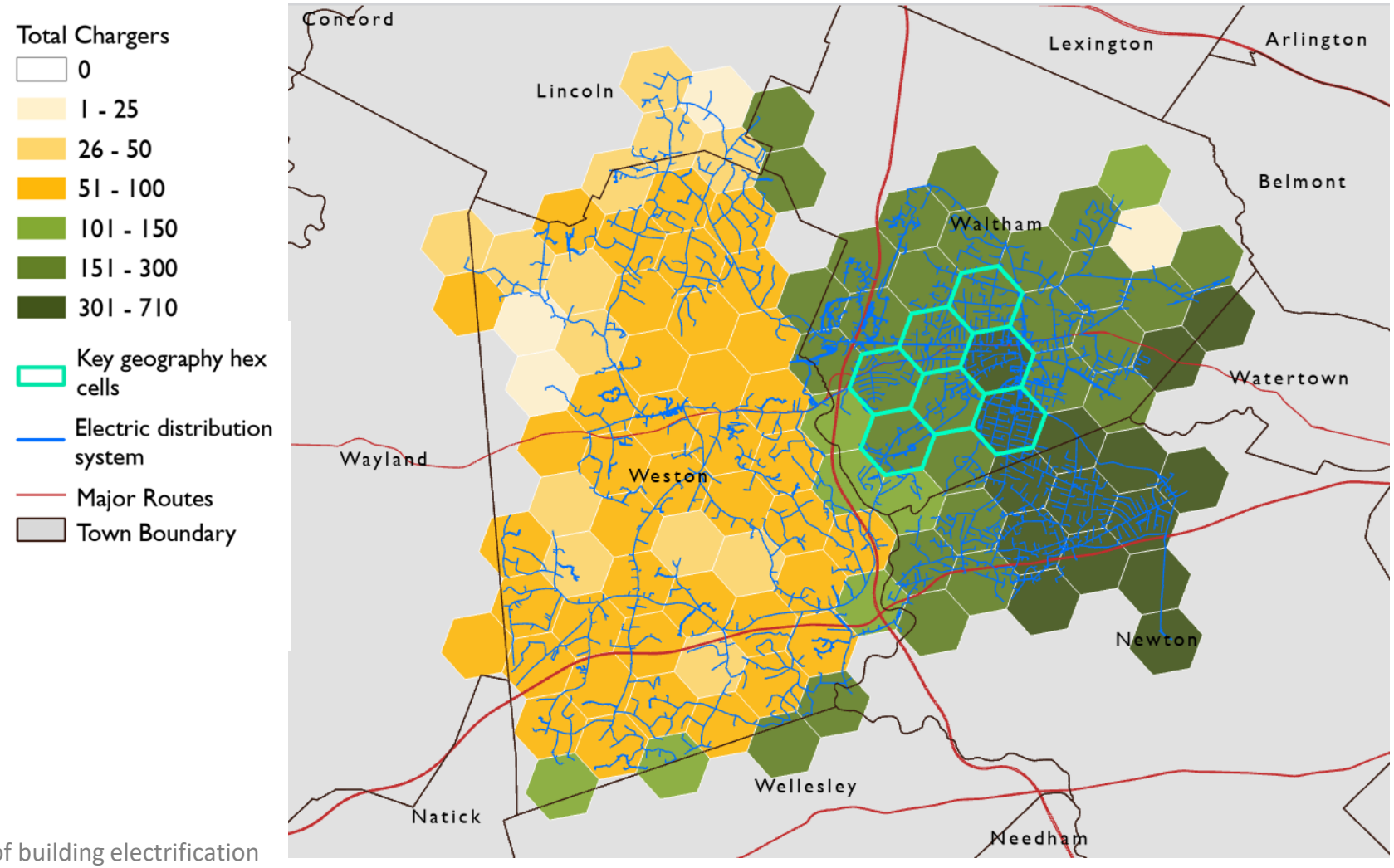
1. Department of Energy's Alternative Fuels Data Center. Electric Vehicle Infrastructure Toolbox: EVI-Pro Lite: Load Profile Tool. Available at: https://afdc.energy.gov/evi-x-toolbox#/evi-pro-loads
2. Wang, B., Zhang, C. 2021. Medium- & Heavy-Duty Electric Vehicle Infrastructure Load, Operations and Deployment Tool (HEVI-LOAD). Available at: https://www.energy.ca.gov/sites/default/files/2021-09/5%20LBNL-FTD-EAD-HEVI-LOAD%20Medium-%20and%20Heavy-Duty%20Load%20Shapes_ADA.pdf
3. Massachusetts Phase III EV Program Year 1 Evaluation Report National Grid, DPU 24-64 Exhibit NG-MMJG-1

Suburban Areas - Waltham

Waltham could host up to ~16,000 chargers by 2030.

- If *unmanaged,* these chargers would take up **132%** of available headroom, **overloading the substation**[1]
- Managed charging programs under scenario 3 could reduce on-peak demand by 24.5 MW; in this case, EV load would only take up **17%** of available headroom
  - Greatest reduction potential from residential L2 chargers

Estimated total chargers within the Waltham substation area in 2030



1. Analysis does not include the load growth impact of building electrification and other non-EV load.

Thank you!

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Estimating Statewide EV Charging Requirements for 2030 and 2035

Prepared for the Executive Office of Energy and Environmental Affairs

June 4, 2025

Center for Sustainable Energy (James Tamerius)

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EV Landscape in 2030 and 2035

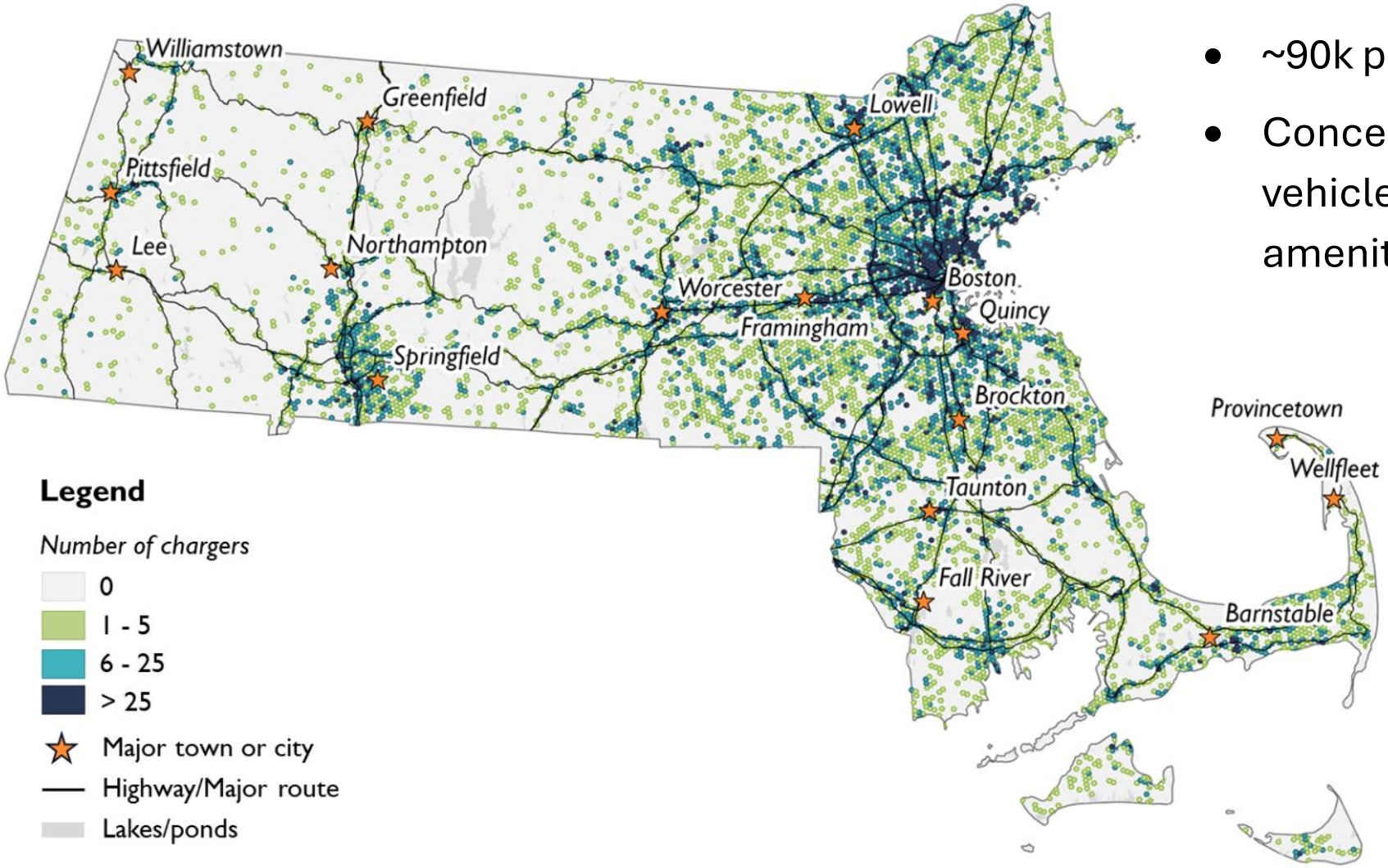
- 900K EVs by 2030
- 2.4M light-duty EVs by 2035
- 74K MHD EVs by 2035
- Charging network must grow rapidly across all types by 2035:
  - 1.5M public LDV ports
  - 19K MHDV ports

Charger Estimates in 2030 and 2035

Category	Charger Type	Port Count		2035 EV/Port Ratio	Source
		2030	2035		
Multi-Family*	Level 1	8,000	17,800	22.5	EV Pro Lite
	Level 2	17,800	45,000	8.9	EV Pro Lite
Workplace	Level 2	17,900	46,800	51.7	EV Pro Lite
Public	Level 2	40,300	91,800	26.4	Observed ratios
	DC fast charger [1]	5,500	10,500	230.4	Observed and modeled ratios
Medium- and Heavy-Duty	Level 2	6,600	17,000	1.9	Modeled ratios
	DC fast charger	800	2,300	13.9	Modeled ratios
Total		**97,000** (rounded)	**230,000** (rounded)		

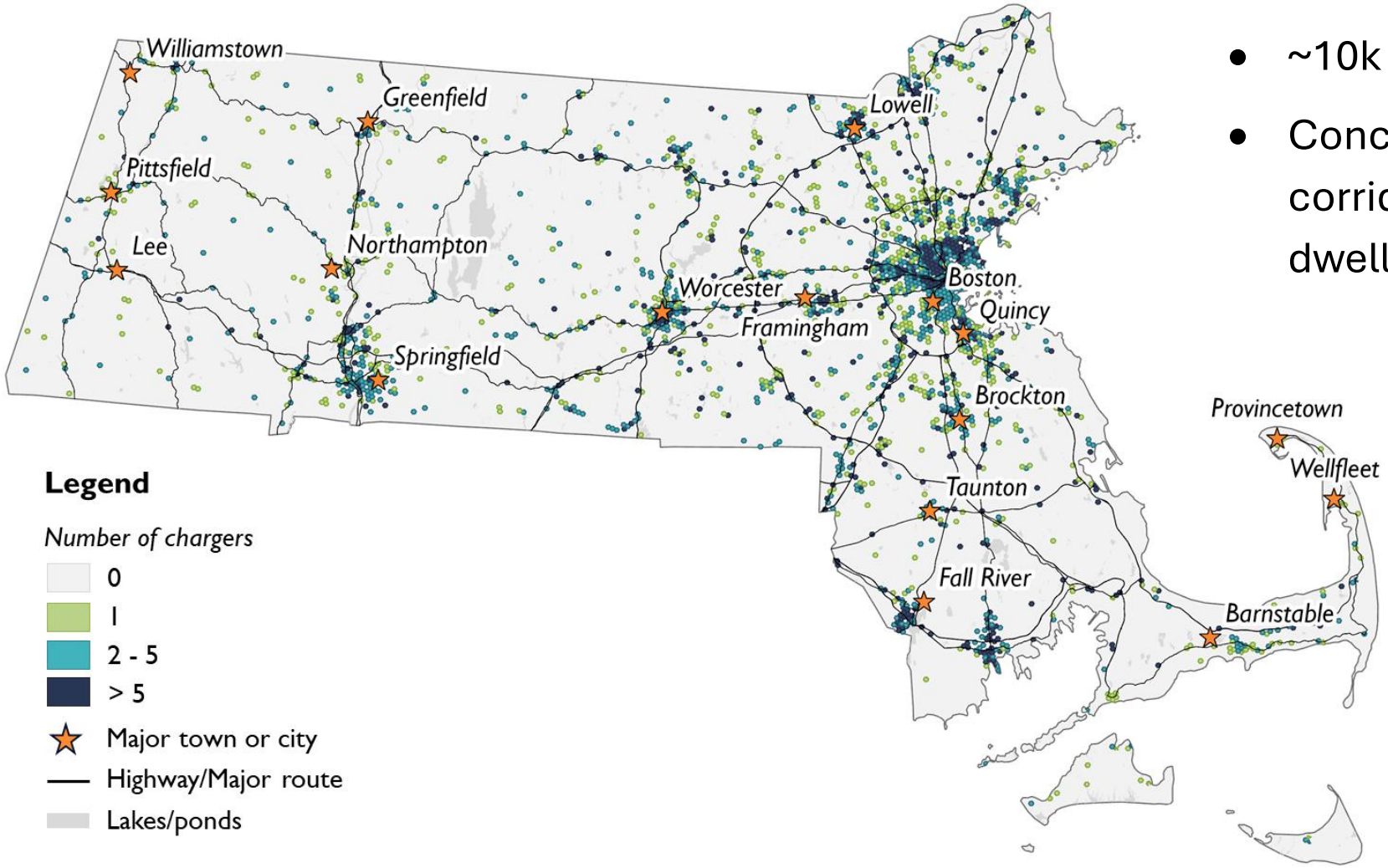
*Single-family charger port counts will be included in the EVICC Assessment

Public Level 2 Charger Distribution



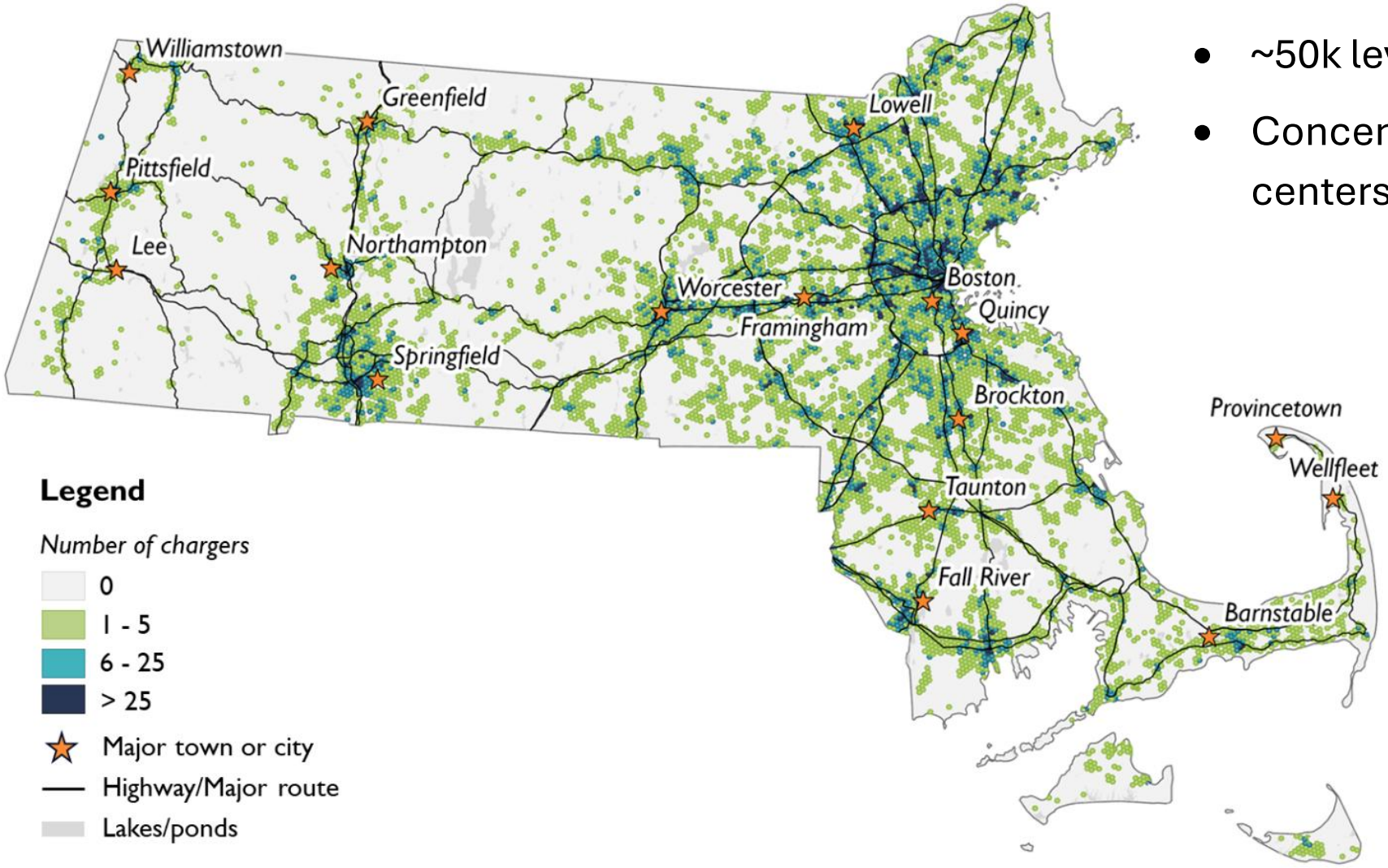
- ~90k public level 2 ports by 2035.
- Concentrated in areas with high vehicle density and appropriate amenities.

Public DC Fast Charger Distribution



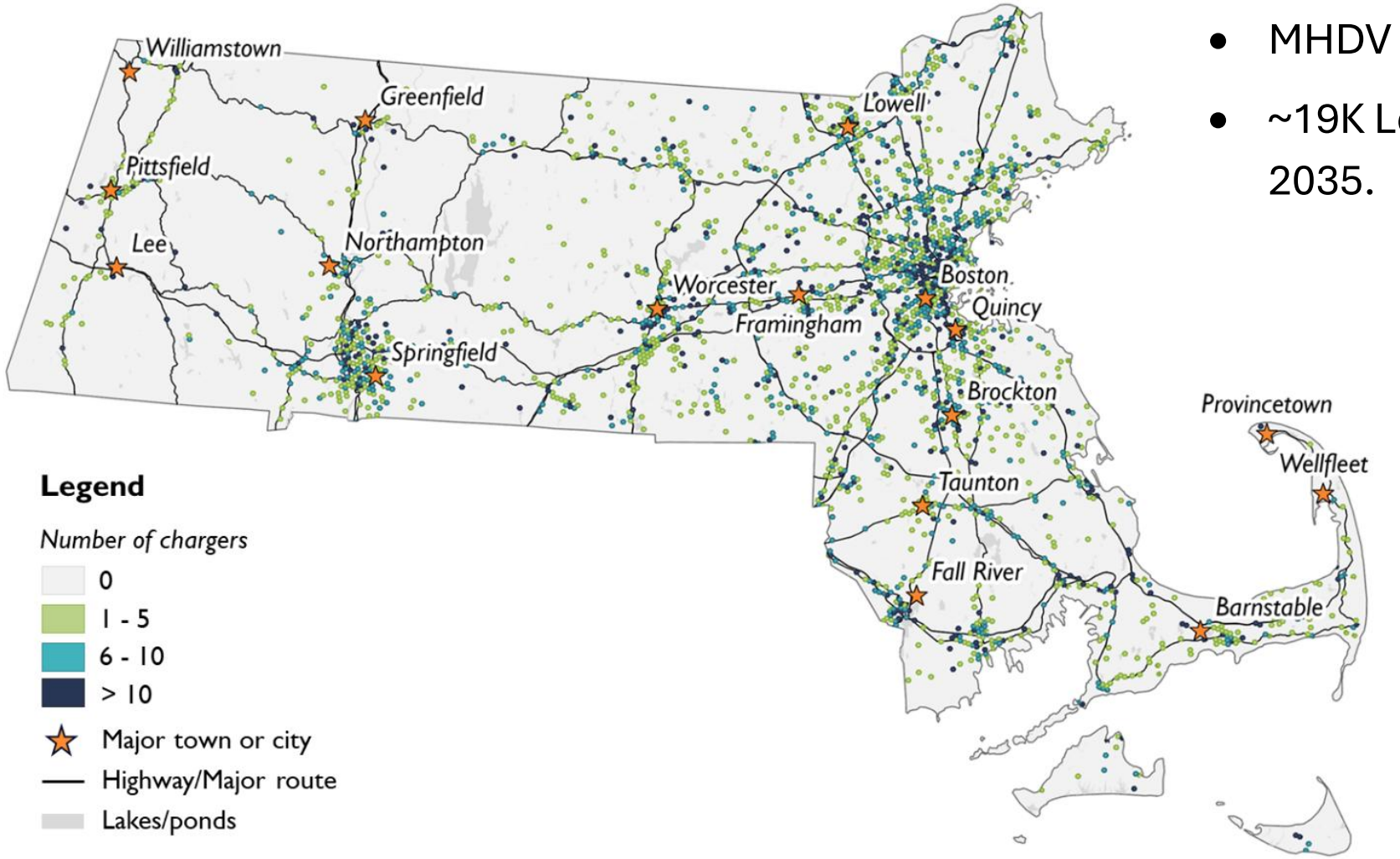
- ~10k public DCFC by 2035.
- Concentrated in areas along travel corridors and areas with multi-unit dwellings without off-street parking.

Workplace Charger Distribution



- ~50k level 2 workplace ports by 2035.
- Concentrated in employment centers of the state.

Medium- and Heavy-Duty Vehicle Charger Distribution



- MHDV ports are <2% of 2035 total
- ~19K Level 2 and DCFC ports by 2035.

Key Caveats and Limitations

- EV adoption depends on policy, markets, and behavior.
- More PHEVs = fewer chargers needed; fewer PHEVs = more.
- Multi-family EV adoption is uncertain.
- Faster charging and bigger batteries may reduce port needs.
- Delays from permitting and interconnection are possible.
- MHDV estimates assume the same usage patterns, which may shift.

Key Takeaways

- Massachusetts will need a significant increase in charging infrastructure by 2030 and 2035.
- Residential chargers will make up the majority, especially in single-family homes.
- Public chargers are critical for drivers without home access or to enable long distance trips; workplace chargers are also important for drivers without home access
- MHDV charging requires targeted deployment at depots and along highways.
- Geographic needs are highly uneven: major urban hubs will require significant increases in charger deployment versus less populated areas.
- Ongoing assessment of infrastructure utilization and deployment trends will be critical for refining these estimates as conditions evolve.

Questions?

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