

# ESG Data Sources and Platforms: Overview

The ESG group leads and assists on a variety of projects aimed at providing data, research, and tools that support a range of transportation planning and decision-making activities. ESG staff are mixed-methods analysts that are proficient at quantitative, qualitative, and spatial techniques, as well as dashboard and application development. ESG staff manage projects as well as provide advisory services and general support for many research and analytics efforts.

Skillsets that ESG offers include:

- Proficiency in transportation data platforms including but not limited to Conveyal, Replica, INRIX, Remix, and MS2
- Spatial data analysis and visualization in ArcPro, as well as dashboard development in ESRI Experience Builder and Microsoft PowerBI
- Quantitative and qualitative data collection (surveys, focus groups, direct measurements)
- Data layer compilation and creation in ArcGIS
- Dataset identification from public and proprietary sources (Census data; location-based services data; national, state, and proprietary sources) and aggregation

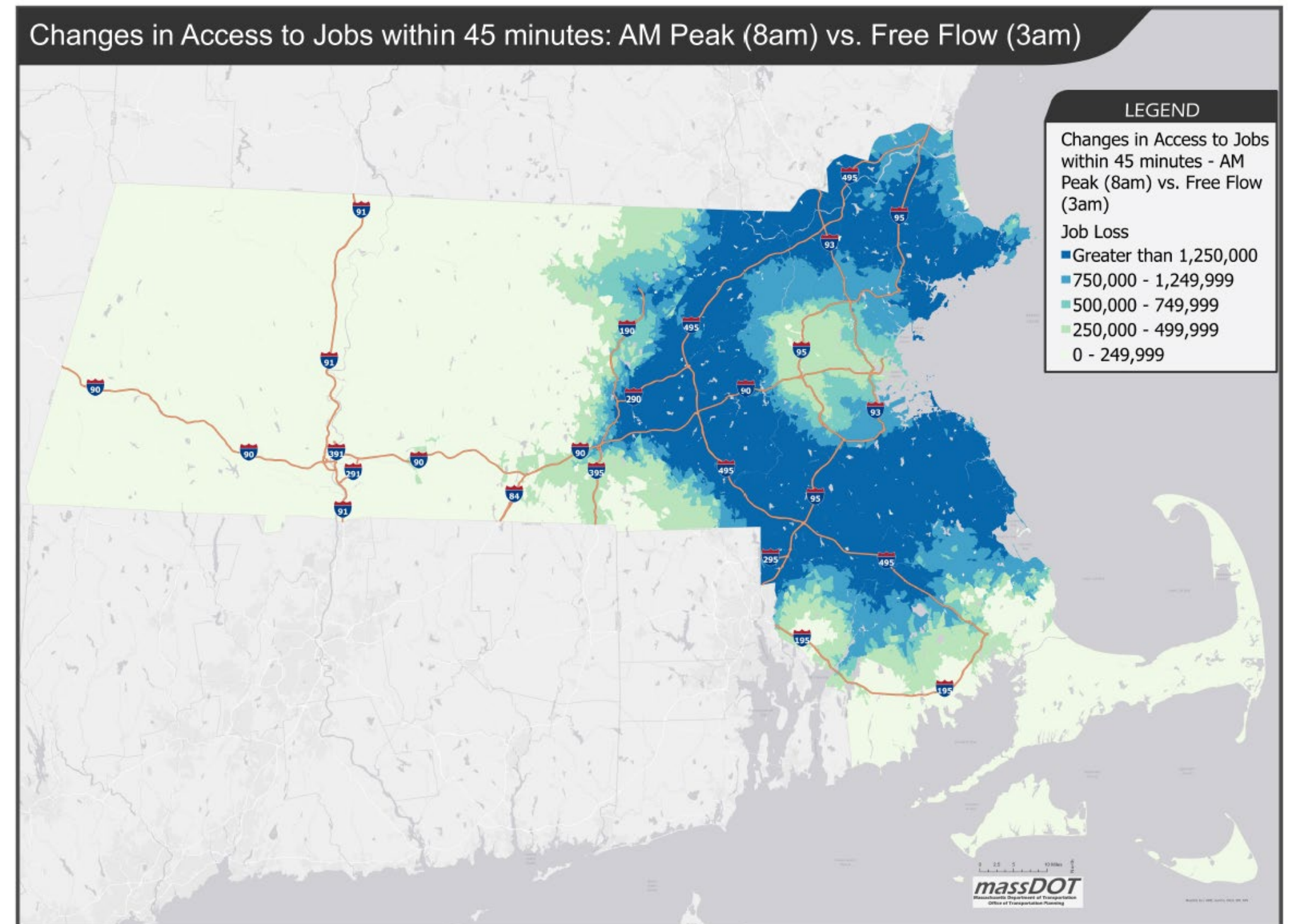
**The following slides offer examples of data sources the ESG team manages and data analysis platforms that the team utilizes.**

# Accessibility Observatory Data Role: Project Manager

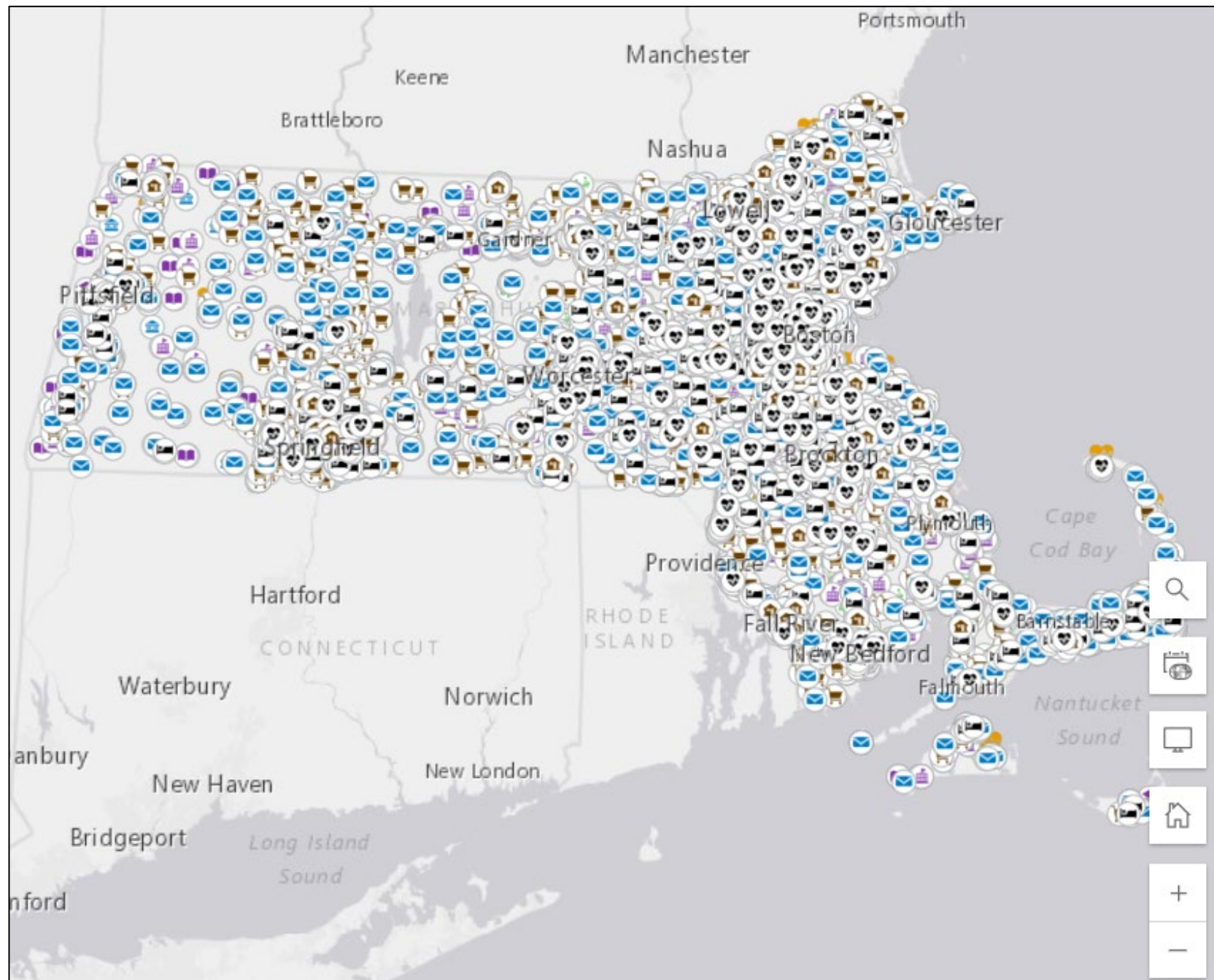
As a participant in a pooled fund study with other state DOTs, MassDOT supports the University of Minnesota's Accessibility Observatory as they conduct **research on access to destinations by different modes of transportation**. This data can be used to answer questions such as:

- How many jobs can residents of an area get to by driving vs. transit in 45 minutes?
- How does access to jobs by car compare during free flow vs. peak congestion?

In addition to the data included in the [Accessibility Observatory Dashboard](#), the **ESG team has access to, and can share, this data for data years 2015–2024.**



# Critical Destinations Data Layer Role: Project Manager



The [Critical Destinations data layer](#) provides geocoded information on a number of destination types throughout Massachusetts. This layer can be added to maps to **show how accessible these destinations are relative to transportation services or project locations.**

The destination types were chosen because of their importance for public health, education, and other essential services, and include:

- City or Town Halls
- Community Health Centers
- Food Retailers
- Higher Education Institutions
- Hospitals
- Libraries
- Licensed Child Care Programs
- Long Term Care Facilities
- Post Offices
- Public Housing
- Schools
- Urgent Cares

Environmental Justice (EJ) is a designation for communities that meet at least one of the following criteria:

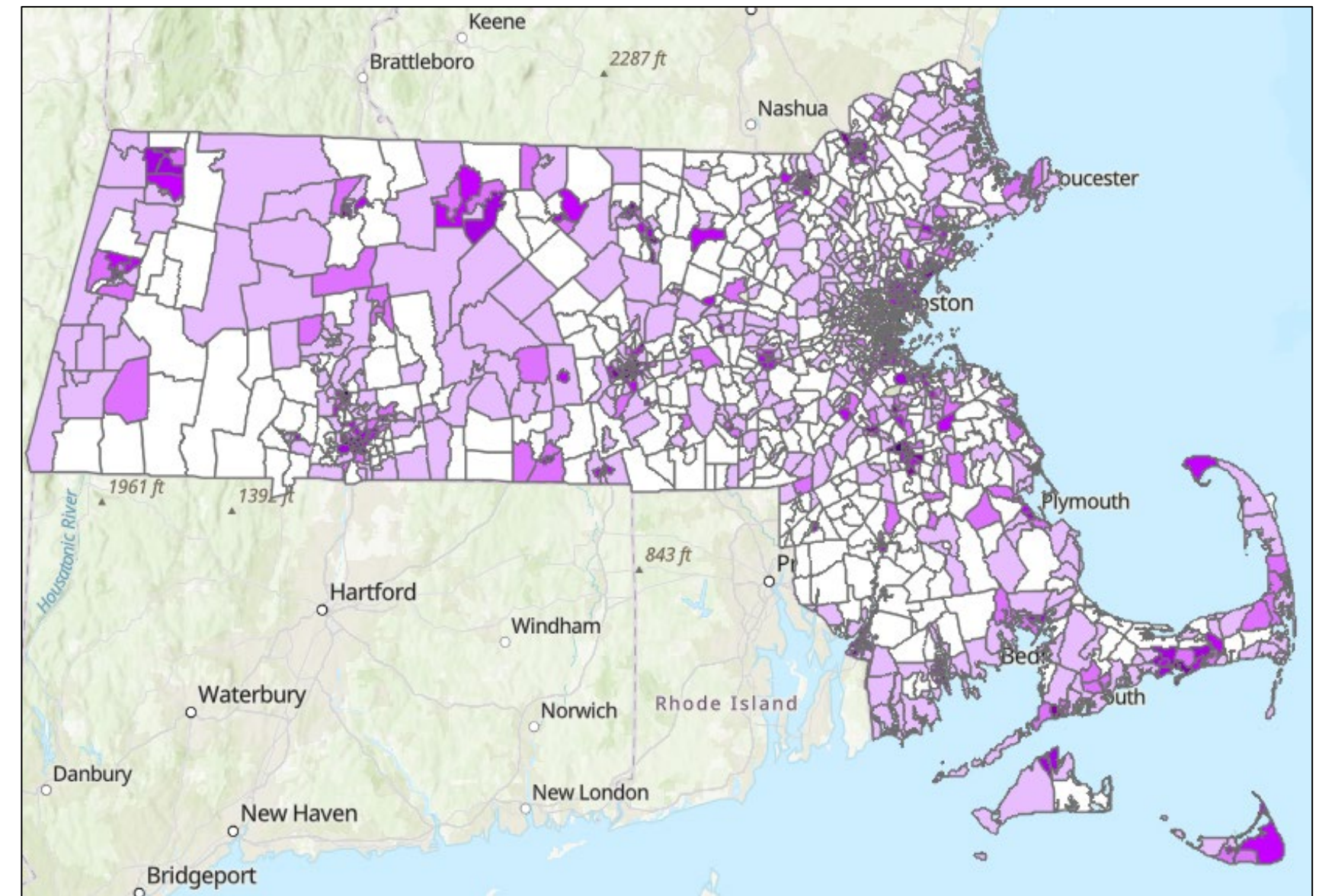
- Lower median household incomes compared to the statewide annual median household income,
- Higher concentration of non-white residents, and/or
- Higher concentration of households with limited English proficiency.

**To account for regional differences throughout the state, Regional Environmental Justice Plus (REJ+) establishes thresholds for these criteria relative to each MPO region.** To identify additional populations with a high need or vulnerability with respect to transportation decisions or policies, REJ+ expands the EJ categories to include:

- Higher concentration of households without access to a vehicle,
- Higher concentration of people with disabilities, and/or
- Higher concentration of people aged 65 years and over.

A data layer containing information about REJ+ communities in Massachusetts can be found [here](#).

## REJ+ Data

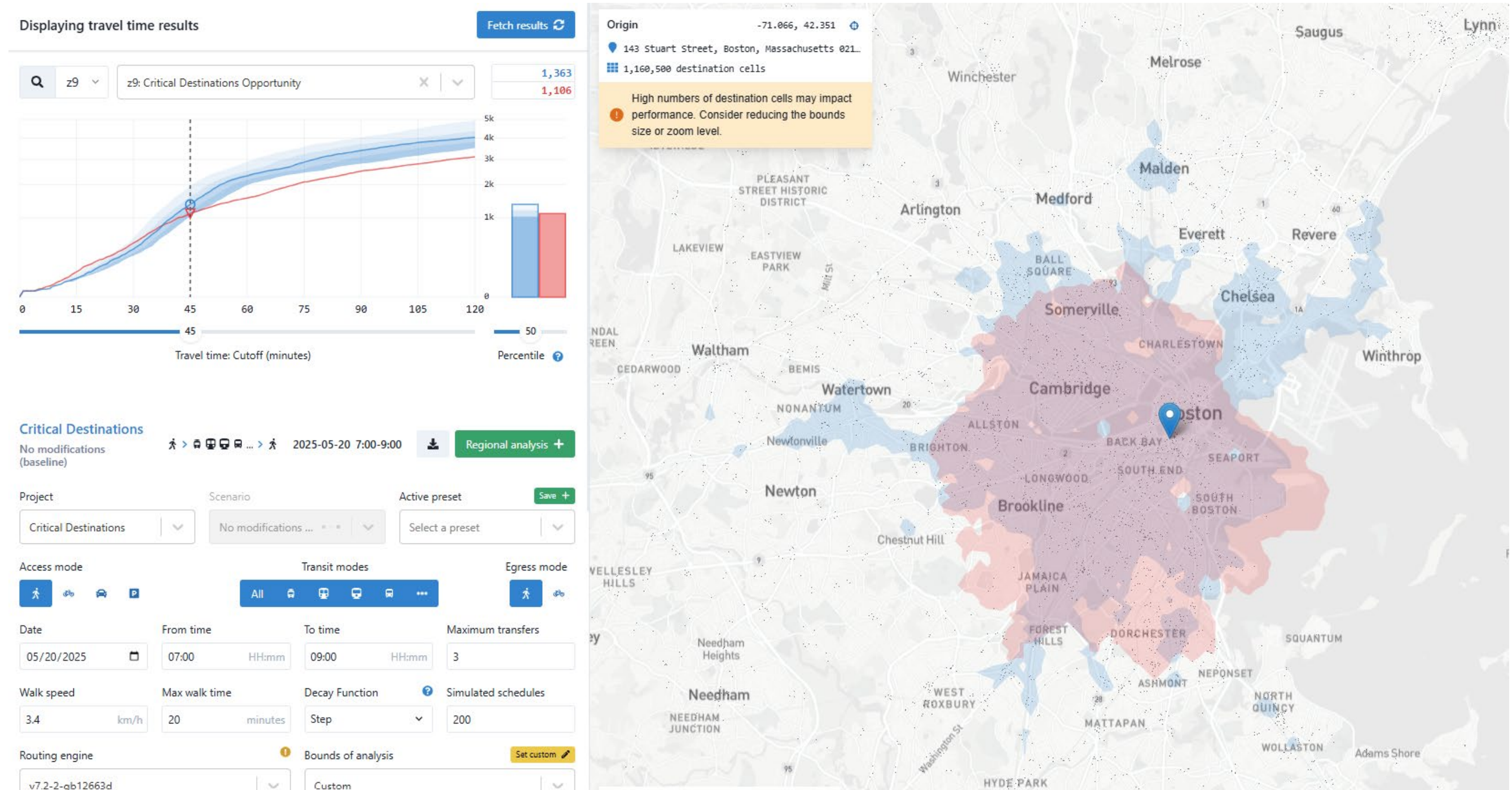


**Role: Project Manager**

# Data Analysis Role: Project Manager

The ESG team conducts analysis in platforms like **Conveyal** and Replica.

Conveyal is a web-based analysis tool that **evaluates access to destinations** across regions and **visualizes how proposed and existing multimodal transportation networks connect people to their destinations** – with an emphasis on public transit and active modes.

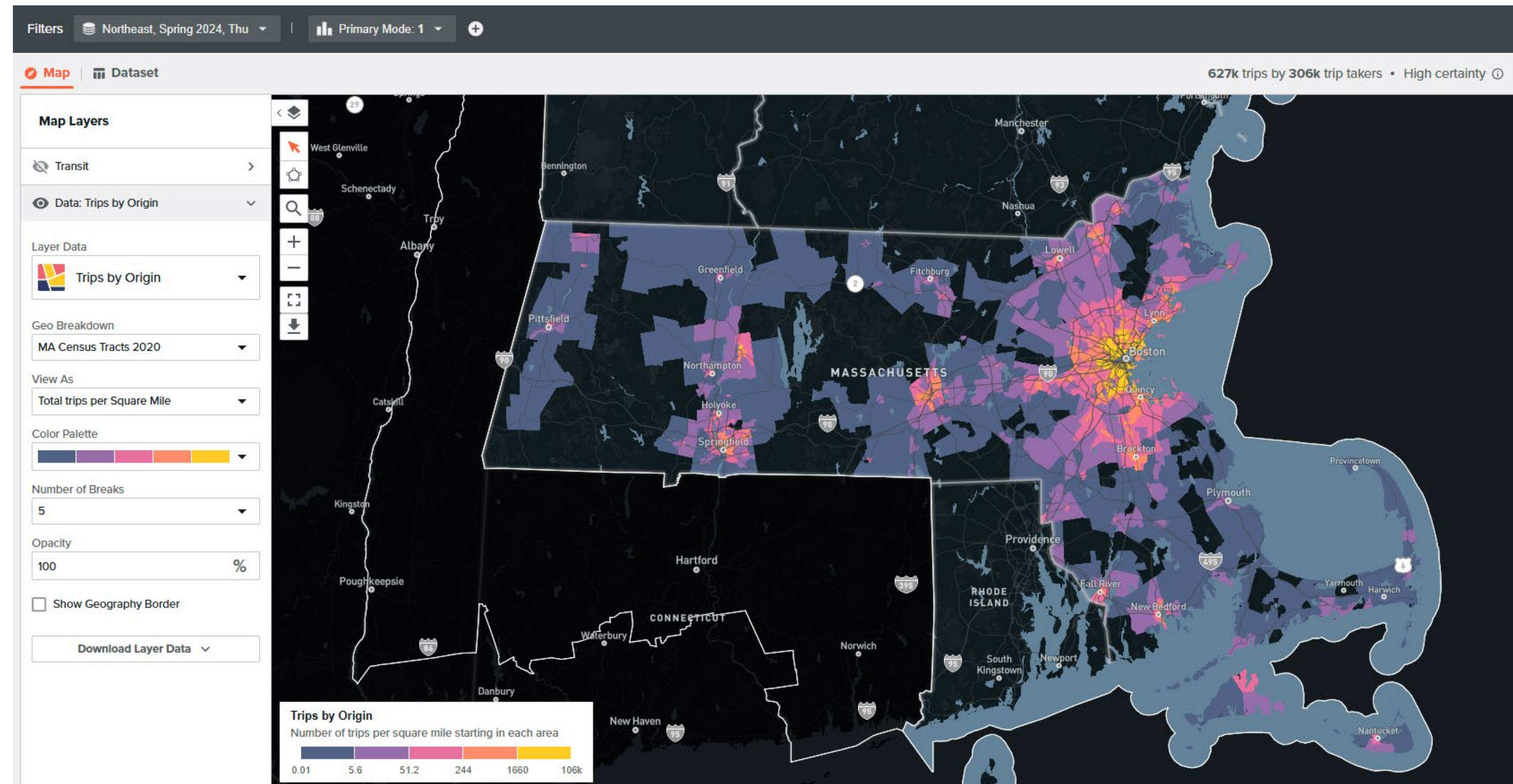


Comparison of access to critical destinations from a location in Boston by transit vs. biking in 45 minutes

# Data Analysis Role: Project Manager

The ESG team conducts analysis in platforms like Conveyal and **Replica**.

Replica is an analysis tool that uses various data sources to **show travel patterns** and **the interaction of travel modes, land use, people, and economic activity**.



Transit trips by origin across Massachusetts