

Cape Cod Regional Transit Authority
**EJ Community Considerations
for ZEV Fleet Transitions**

1. Introduction

As part of the zero emission vehicle (ZEV) transition study, Hatch considered Environmental Justice (EJ) communities to inform development of an equitable transition strategy for Cape Cod Regional Transit Authority (CCRTA). EJ considerations are critical to transition planning, codified as commonwealth policy, and are also a requirement to receive federal funding. EJ is defined as the equal protection and meaningful involvement of all people and communities with respect to the development, implementation, and enforcement of energy, climate change, and environmental laws, regulations, and policies and the equitable distribution of energy and environmental benefits and burdens. EJ is based on the principle that all people have a right to be protected from environmental hazards and burdens, with all members of a community provided the opportunity to live in and enjoy a clean and healthful environment regardless of their background.¹

EJ communities are members of the population that are vulnerable or at risk of being unaware of or unable to participate in environmental decision-making or to gain access to environmental resources due to socioeconomic disadvantages. The need for EJ is most widely recognized in communities of color and low-income communities. Communities who typically live in dense urban neighborhoods or proximate to industrial or contaminated sites are susceptible to EJ issues; these conditions make them more prone to environmental and health risks, affecting their quality of life.

ZEV transition planning has the potential to support EJ communities through the improvement of air quality with reduced particulate matter, encouragement of community participation, reduction of greenhouse gas (GHG) emissions, improvement of overall transit service, and by providing cleaner transit facilities and infrastructure.

2. Methodology

First, to ensure Hatch's operations analysis considered Cape Cod EJ communities, CCRTA's service area was defined to determine which geographic areas on Cape Cod would be affected by a ZEV transition. From there, Hatch identified three different EJ programs to utilize; the Federal Justice40 Initiative, the US Department of Transportation's (DOT) Equitable Transportation Community Explorer (ETCE), and the MA EEA Environmental Justice Populations. Once the EJ programs were decided upon, Hatch then evaluated the EJ programs' indicators and screening methodology to identify the EJ communities in CCRTA's service area based on each program's thresholds.

¹ Environmental Justice Policy of the Executive Office of Energy and Environmental Affairs, Commonwealth of Massachusetts, Updated June 24, 2021

3. Findings

Notably, three Justice 40-designated disadvantaged communities (by Census Tracts) were identified in CCRTA's service area; two in Barnstable and one in Falmouth. See Figure 1 for the areas of Justice40 disadvantaged tracts. The numbers on the map denote the census tracts. About five percent of the total population, or 10,000 residents, of the CCRTA service area is part of a disadvantaged community. These communities experience higher than average disadvantages when it comes to health (heart diseases); costs of living (increased spending on housing and energy); traffic proximity (live near major roads); income (low median income); and educational attainment. Notably, the Justice 40-designated communities within the CCRTA service area have high rates of asthma, ranking around 90th percentile for asthma compared to Census Tracts nationwide.

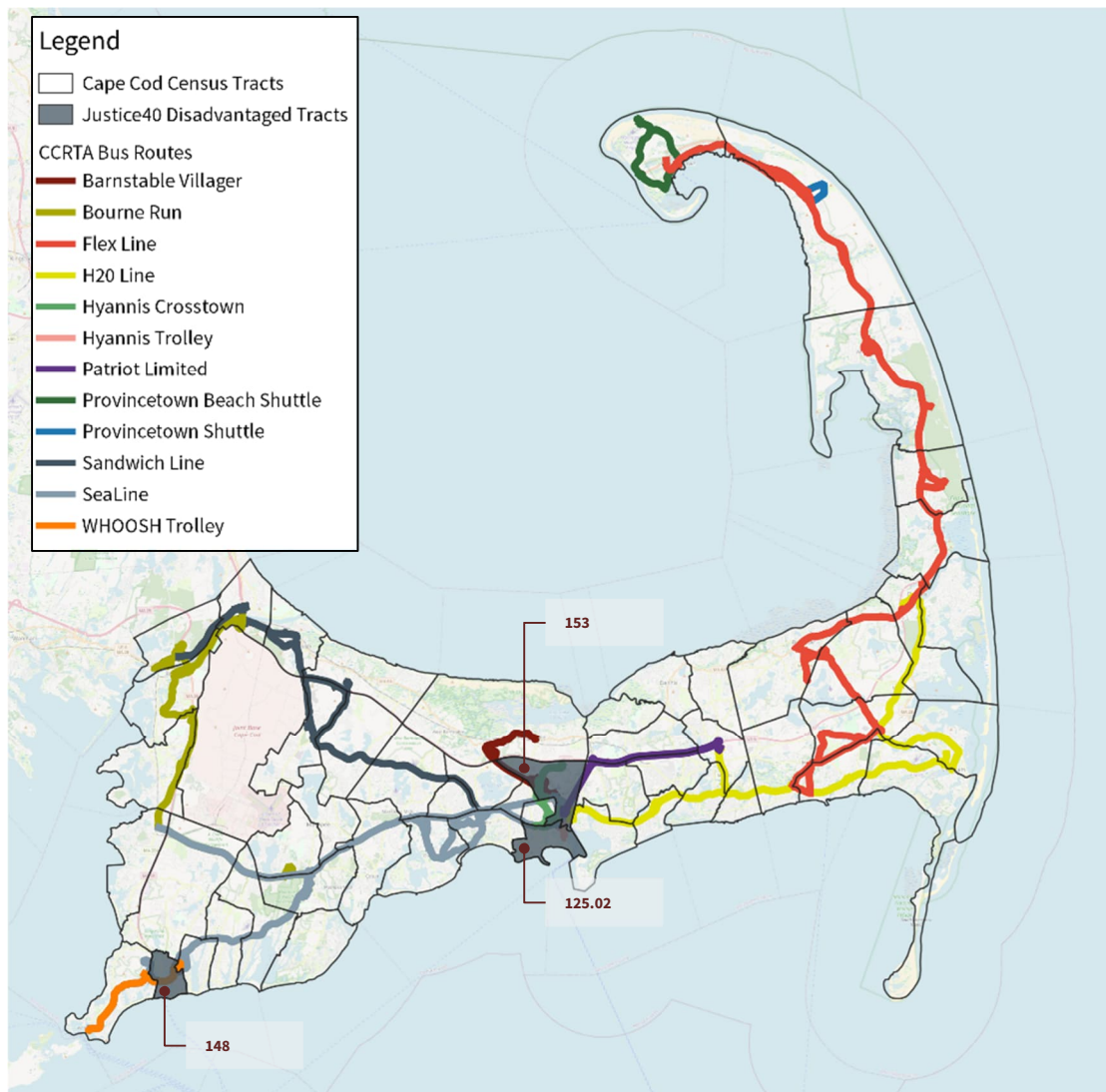


Figure 1 - CCRTA Bus Routes and White House Justice40-Designated Census Tracts

As shown in Figure 2, findings from the US DOT ETCE program identified communities in Bourne and Falmouth as well as in Barnstable and Truro with higher transportation cost burden scores, meaning that these communities devote a larger portion of their income to transportation. In addition, the areas with higher transportation cost burden were also identified as areas with higher concentrations of low-income and lower education-attainment households. Generally speaking, transportation cost burden limits a household's ability to spend on other essentials such as groceries and medical care, which may in turn lead to adverse health outcomes like chronic illnesses and higher obesity rates.

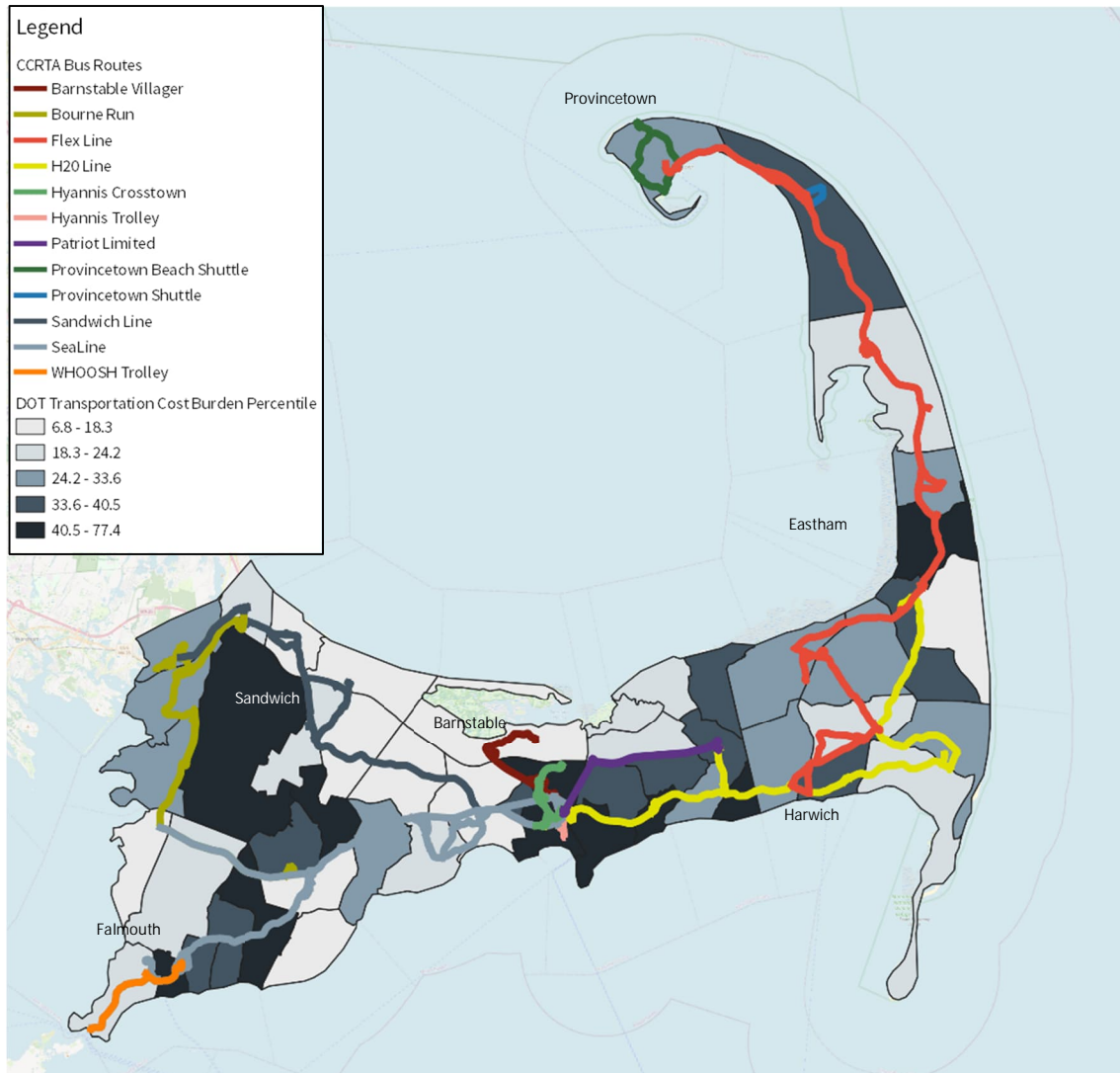


Figure 2 - CCRTA Bus Routes and DOT Transportation Cost Burden Percentile by Census Tract

As shown in Figure 3, the MA EEA program identified EJ Populations clustered within CCRTA's service area, in particular areas in southern Falmouth, at the intersection of the towns of Bourne and Sandwich, Barnstable, specifically near the Cape Cod Airport, and in Eastham. The EJ Populations as defined by MA EEA, include some communities making less than 65% of MA annual median income, and areas where minorities comprise 40 percent or more of the population. Beyond areas with low-income households, some of the EJ Populations within the CCRTA service area experience additional burdens associated with English language isolation or where 25 percent or more of the households lack English language proficiency.

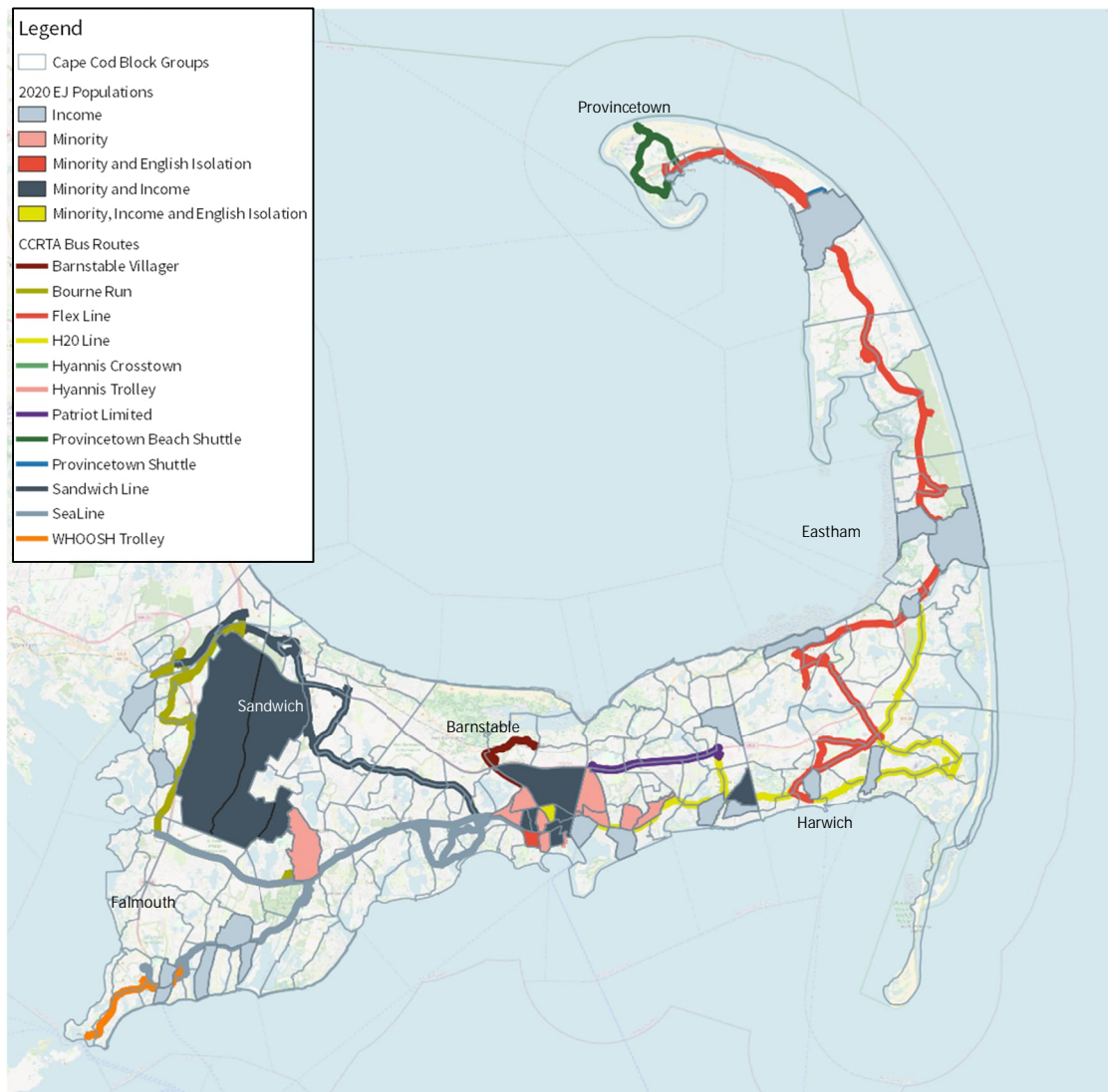


Figure 3 - CCRTA Bus Routes and MA EJ-Designated Census Block Groups

4. Recommendations

EJ considerations were accounted for during CCRTA's ZEV transition planning efforts. The preliminary strategy for electrification calls for the first batch of electric vehicles to be deployed and operated in Barnstable as charging infrastructure is planned for Hyannis Transportation Center (HTC) as early as 2024. Electric vehicles operating to/from HTC are anticipated to contribute less to air pollution; thereby offering the potential to reduce air quality concerns and contributions to greenhouse gas emissions in these communities. The location of HTC will also enable both fixed-route and demand-response vehicles to charge should electric range issues arise and will provide operational resiliency during the early transition period. This should reduce the potential for CCRTA ridership, inclusive of riders from the EJ communities identified above, to experience any changes to their existing service. Future transition planning strategy includes on-route charging locations in other identified EJ communities, like Falmouth, further reducing the likelihood of service disruption or changes to existing service. For identified EJ communities like Bourne and Truro, the CCRTA transition plan recommends phased, operational strategies including: deferring procurement of electric vehicles servicing those routes until improvement in battery technology; adding charging infrastructure in areas where there is significant overlap between the terminals for fixed-route operation and the areas of highest demand-response ridership (such as Mashpee, the terminal of the Bourne fixed route, and Provincetown); and adding fleet vehicles to routes shown to have the largest energy deficits.

To ensure that community considerations are accounted for throughout the transition period and beyond, it is recommended that CCRTA continuously monitor and evaluate the transition plan's potential benefits and adverse impacts to the environment and public health including impacts of recommended infrastructure investments, asset procurement, and changes to services or programs, particularly to EJ communities. In addition, CCRTA should ensure level of service is adequate in EJ communities within the CCRTA service area through each step of the ZEV Transition Planning phase. Similarly, CCRTA should ensure that public participation is encouraged and that the Authority is engaging and consulting with EJ communities, where appropriate, during the planning stages of electrification so that people are aware of the decisions affecting their environment. By planning for continuity, CCRTA will ensure environmental justice is considered beyond the plan development and through implementation.