

CLIMATE ACTION

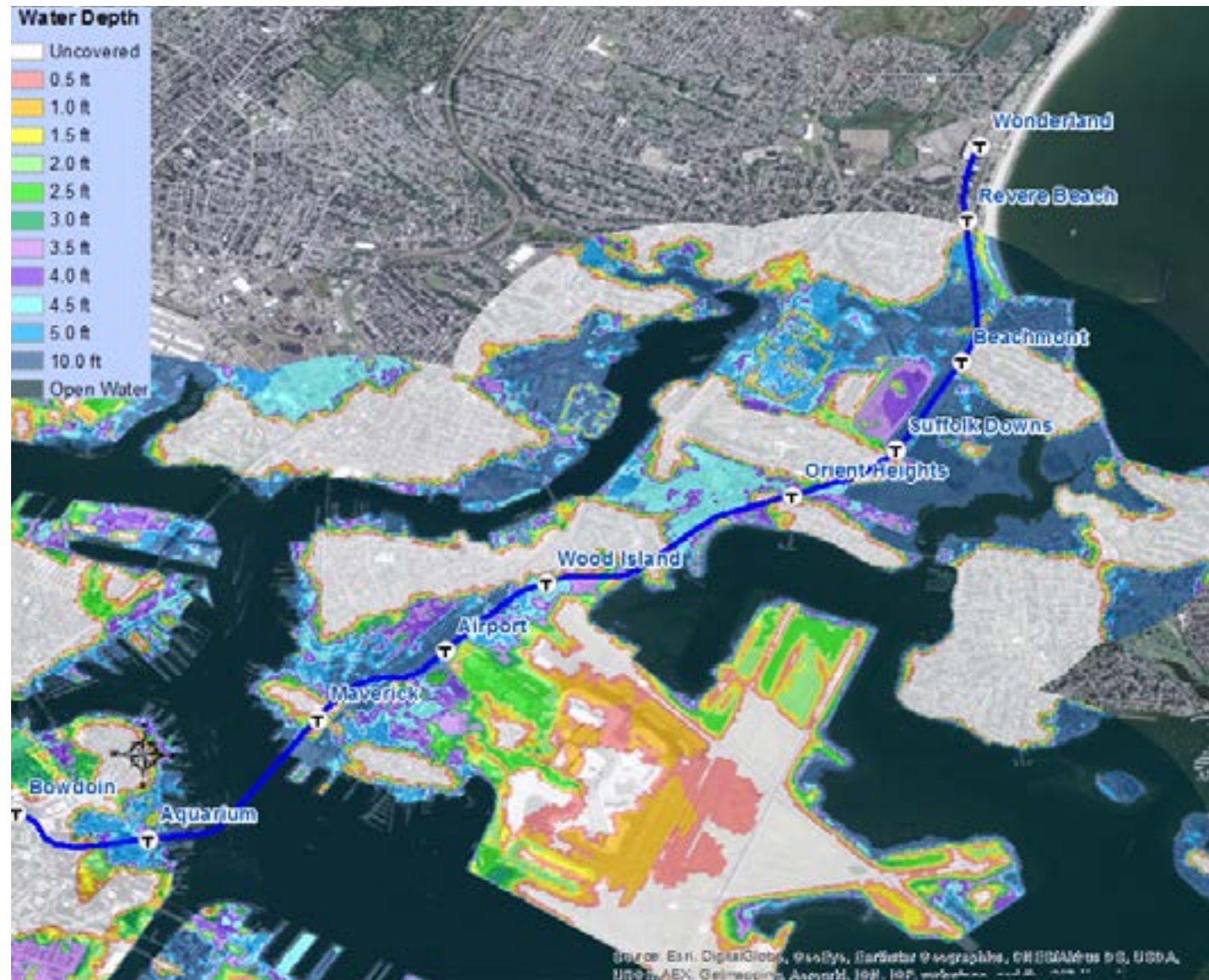
Severe weather is already creating a need for the MBTA to make its infrastructure more resilient to better withstand impacts already being felt on the MBTA system. Technology and policies have started to impact greenhouse gas emissions; however widespread behavior change has not yet materialized. Climate change and weather-related events pose significant challenges to transportation infrastructure across the Commonwealth, and to the operations of the MBTA in particular. Major storms and other weather events are becoming more frequent, and damage caused by high winds, coastal flooding, and above-average summer temperatures is occurring at a rate and with a level of severity that many MBTA assets were not built to withstand. As is true for almost every organization responsible for major infrastructure, the MBTA will need to adapt as an institution to be able to manage the responses that a changing climate will demand over the coming decades.

Due in particular to more frequent and pronounced coastal storms and flooding, public attitudes toward climate change have shifted over the years. In the past three years, the concern about climate change among Massachusetts residents increased by 6 percentage points with 63% of Massachusetts voters now saying the effects of climate change are already being felt, according to a 2018 WBUR/MassINC Polling Group survey. The same survey found 82 percent fear Massachusetts will be hit by increasingly powerful storms.

MBTA IMPACTS

Even if climate change doesn't accelerate, more days of extreme weather in the Boston area may convince more people to support broader efforts to reduce emissions and make transit infrastructure more resilient. Improvements in technology or an increase in gas prices, making individual choices to reduce emissions more affordable, can also help create a greater focus among the populous to support large scale efforts of climate responsiveness.

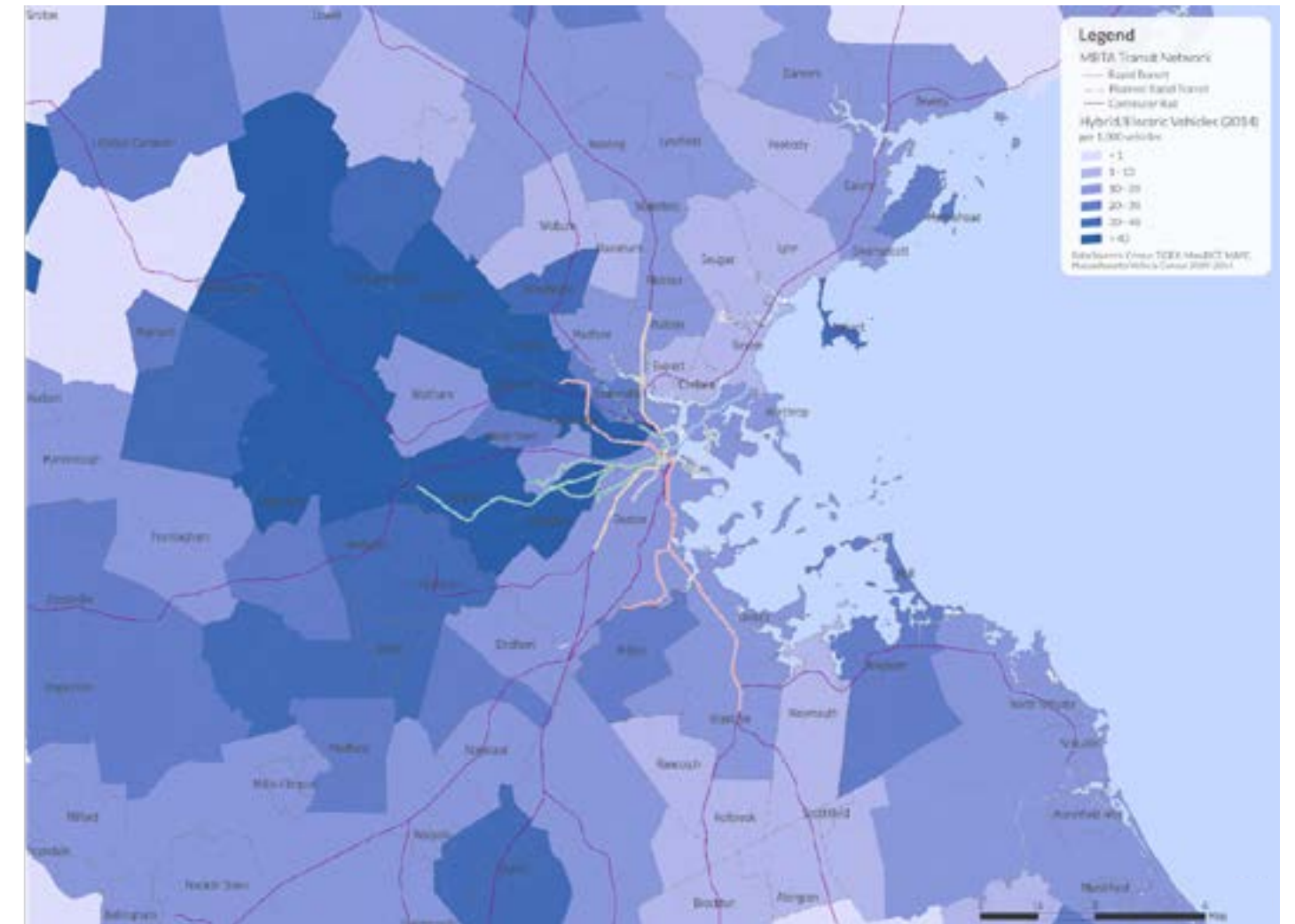
Water Depth along MBTA Blue Line, 2070 1,000-Year Storm (Feet)



Looking at a Sandy-like storm on top of projected likely sea level rise for the Boston metro, at least 9 MBTA rapid transit stations can expect flooding of 0.5 to 2.5 ft by 2030. By 2070, these statistics are 27 stations and depths of 0.5 to 10 feet.

Source: MBTA Department of Environmental Affairs

Electric Vehicle Adoption in Greater Boston



While the number of alternative vehicles has increased and is likely to increase, today hybrid/electric vehicles are a small segment of all vehicles in most municipalities.

Source: Massachusetts Vehicle Census 2009-2014

Public Opinion on Climate Change

Percent of Massachusetts Voters Who Say Effects of Climate Change Will be Felt at Each Time.

	2011	2014	2015	2017	2018
Already Begun	54%	57%	57%	69%	63%
Within a few years	3%	4%	3%	3%	3%
Within your lifetime	10%	10%	8%	7%	7%
Will affect future generations	18%	17%	20%	15%	15%
Will never know	12%	8%	8%	5%	6%
Don't know/Refused	2%	4%	4%	2%	5%

Overall, belief in global warming has steadily increased since 2011. Between 2011 and 2018, the percentage of Massachusetts voters who said climate change's effects have already begun to happen increased by almost 10 percentage points.



63% of Massachusetts voters believe effects of climate change are already happening

Source: WBUR/MassINC Polling Group poll of Massachusetts registered voters, 2011 - 2018