

Exploring Threats to Biking in Boston: An Introductory Analysis of Bluebikes, Sea Level Rise, and Crash Incidents in Boston, MA

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Goal:

What are the threats to biking in Boston?

Methods:

We examined bike crashes and fatality data, sea level rise storm events, and Bluebike stations and trips to see how these data intersected in Boston.

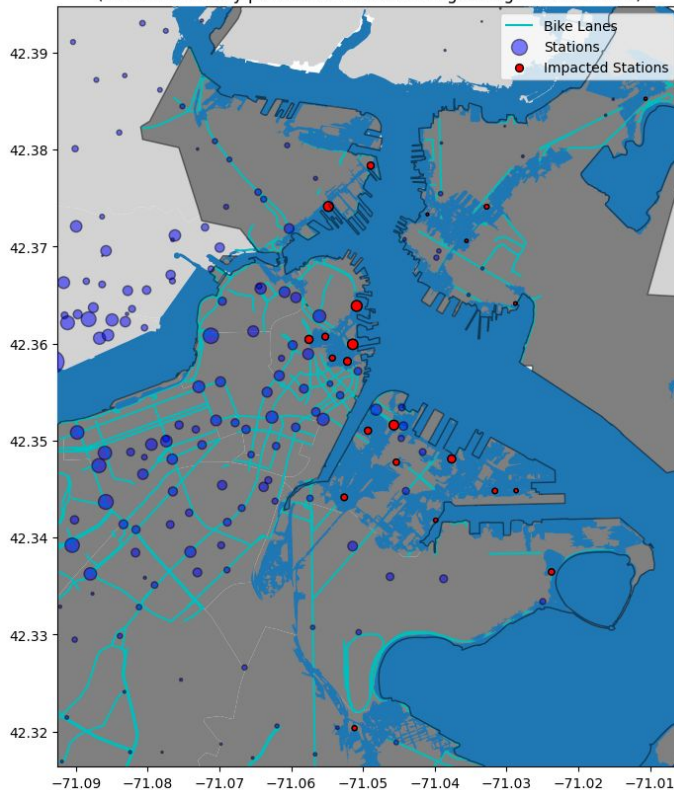
Results:

By 2050, sea level rise of 21 inches is expected across all emissions scenarios. Under a 21-inch sea level rise scenario, a 10% storm would inundate 23 out of 251 total Bluebike stations in Boston. 175,858 out of 3,757,281 total trips originate at one of these stations, accounting for 4.7% of total trips in 2022.

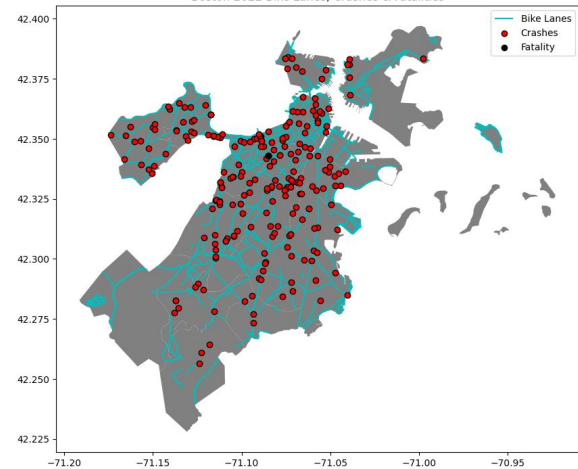
Weekly counts of crashes involving a bicycle have decreased since 2015. In 2017, there were 390 crashes involving a bike; in 2022, there were 242, and 1 fatality. Crashes appear to be clustered in denser parts of the city.

There were 3,757,281 Bluebike trips in 2022, accounting for a total trip distance of 4,467,589 miles (avg. trip of 1.19 miles). Given the average emissions per mile of a car, this represents at least 1,787 metric tons of CO2 emissions avoided.

Bluebike Stations Impacted by 10% Storm Under 21-Inch Sea Level Rise
(Stations sized by percent of total rides originating at that station)



Boston 2022 Bike Lanes, Crashes & Fatalities



Number of Bicycle Crashes per Week

