

Mass Ave Partial Construction

Waterhouse Street to Alewife Brook Parkway

May 26, 2023 Summary of Costs

In April 2022, [staff recommended, and City Council approved](#) implementing **separated bike lanes on Mass Ave** north of Harvard Square through **partial construction**. This will **remove the median**, install **separated bike lanes**, improve **pedestrian crossings** of Mass Ave, improve the experience for people **taking the bus** and **maintain 40% to 50% of curbside uses** such as accessible parking, customer loading, and outdoor dining. Maintaining curbside uses along this critical section of Mass Ave and **supporting local businesses** were the key drivers behind the decision to move forward with partial construction and was **strongly supported by the community**.

The Partial Construction project **includes two previously implemented quick-build separated bike lane projects** to allow for a more complete evaluation of this two-mile corridor.



What does the project do for various users of Mass Ave?



Walk

- ❖ Improve existing crosswalks (e.g., crossing islands, accessible ramps, pavement markings)
- ❖ Add new crosswalk locations and new accessible ramps
- ❖ Install additional Rectangular Rapid Flashing Beacons (RRFBs)



Ride a bike

- ❖ Separated bike lanes
- ❖ Bike signals at intersections
- ❖ Bike friendly catch basin grates
- ❖ New pavement markings



Take a bus

- ❖ Bus stop improvements (e.g., shelters, benches, accessibility)
- ❖ Bus transit priority for more efficient and more reliable service
- ❖ Increase bus ridership by improving service



Own a Business

- ❖ Remove median and overhead trolley wires to maintain 40% to 50% of curbside uses
- ❖ Improve pedestrian crossings and increase pedestrian accessibility and activity
- ❖ Improve safety and comfort for people biking and increase biking activity
- ❖ Improve streetscape aesthetics



Drive

- ❖ Replace and relocate traffic signal equipment and optimize signal timing
- ❖ Remove portions of concrete median and modify intersection geometry



What construction is included in partial construction?

- ❖ Removal of concrete median
- ❖ Crossing islands and pedestrian ramps
- ❖ Changes to intersection geometry
- ❖ Critical repairs to existing utilities
- ❖ Relocation of sections of utilities to improve traffic signal locations
- ❖ Paving the street and new pavement markings



Why does this project cost \$50M?

It is important to note that **separated bike lanes could be implemented through a quick-build project for significantly less money**, but the \$50M for a partial construction project provides the additional benefits summarized above. It is also important to note that this section of Mass Ave is the **longest corridor project that the City has undertaken**. It is twice as long and almost twice as wide as River St or Western Ave!

Mass Ave Partial Construction by the Numbers:

- ❖ Approximately 2 miles long, with 4 travel lanes
- ❖ Average roadway width 71 feet from curb to curb
- ❖ Approximately 4 miles of sidewalk, typical widths 8 to 10 feet
- ❖ 55 intersections, including 16 signalized intersections
- ❖ 42 pedestrian crosswalks across Mass Ave at 30 different locations
- ❖ 69 pedestrian crosswalks across side streets
- ❖ Approximately 4 miles of water main and 15 fire hydrants
- ❖ Approximately 5 miles of sewer and drainage pipes, 175 manholes and 100 catch basins



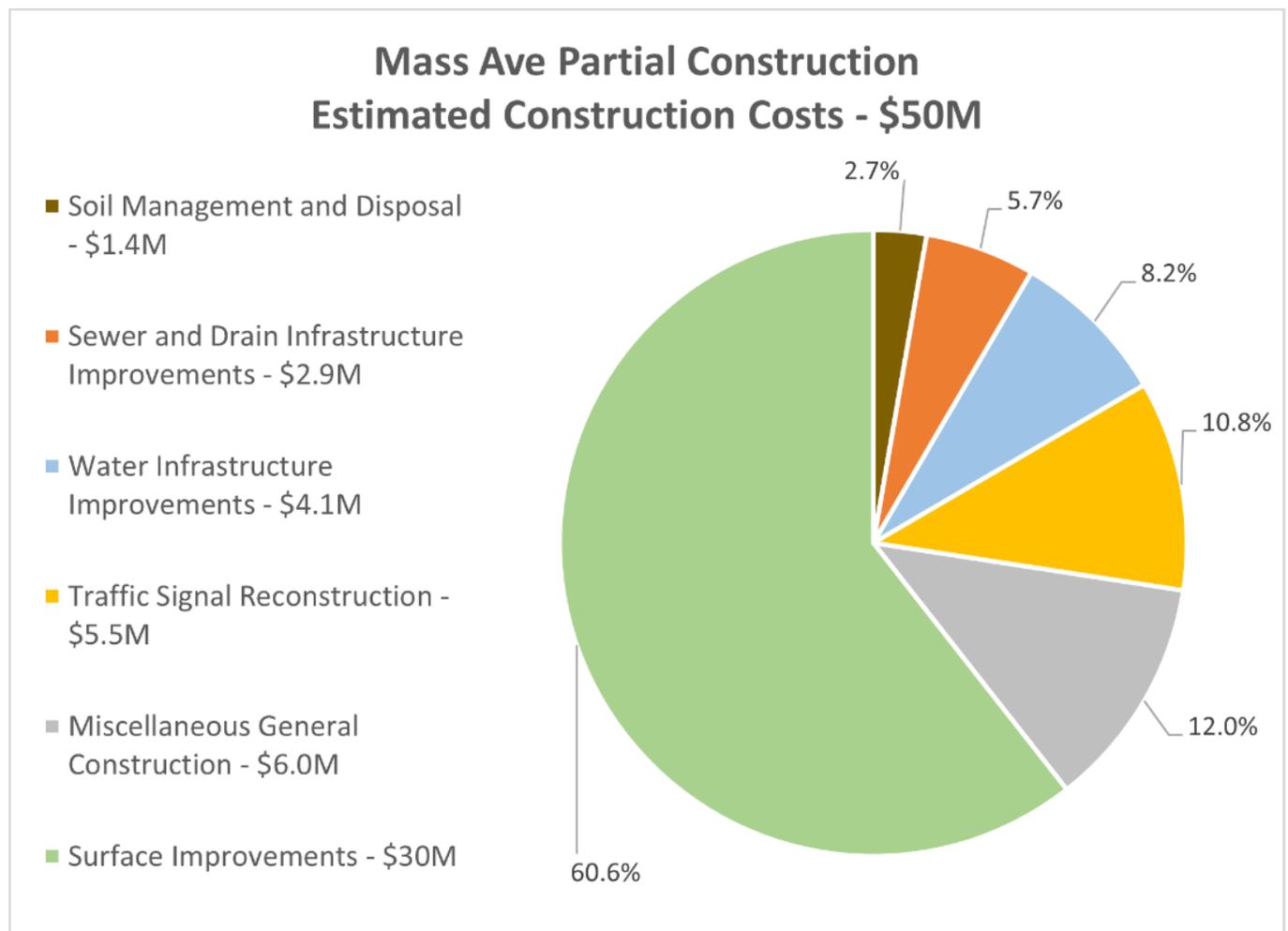
Details on the cost estimate are provided at the end of this document.

What about the other CSO (Combined Sewer Overflows)?

Through 25 years of investment, the City has **reduced combined sewer overflows to the Charles River by 98%** and to the **Alewife Brook by 85%**. This is **great progress, but more work is needed** to continue **improving the quality of these valuable water resources**, while **protecting residents and businesses from flooding**. The City is currently working with the Massachusetts Department of Environmental Protection (MassDEP), the US Environmental Protection Agency (EPA), the City of Somerville and the Massachusetts Water Resources Authority (MWRA) on a [Combined Sewer Overflow Control Plan update](#). This updated control plan is the **first in the country to incorporate climate change** projections and is critical to **prioritizing future investments** in our sewer and drainage system.

Through this process, the City will be **identifying specific projects to most effectively reduce combined sewer overflows**. Projects range from **regional projects** to increase the capacity in the MWRA system to **sewer separation in Cambridge and Somerville** to **operational changes** in the system to **other projects not yet conceived**.

Any future larger project within the Mass Ave Partial Construction project limits could be hundreds of millions of dollars and 10+ years in the future. Similar to quick-build projects, **partial construction supports quicker implementation of safety improvements and does not preclude future full construction**. The **cost and effort to remove the median, modify intersections and improve traffic signals have long-term value** for the community, and are a step forward in a phased approach to improvements in these two miles of Mass Ave.



Mass Ave PARTIAL CONSTRUCTION - Waterhouse Street to Alewife Brook Parkway							
Conceptual Estimate of Probable Construction Cost							
Cost Summary - By Construction Category							
MAY 2023							
Category Description	Present Value Construction Cost	Escalation at 4.5% to midpoint of construction	Cost with Contingency (Use 30%)	Police Details (Use 10% of Construction Cost)	ESDC (Use 5% of Construction Cost)	Estimated Total Costs	Category Cost as a percentage of total cost
		4.50%	30%	10%	5%		
Miscellaneous General Construction: mobilization, traffic and pedestrian management, survey, erosion and sediment control, test pits, tree protection, etc.	\$ 3,615,920	\$ 4,036,543	\$ 5,247,505	\$ 524,751	\$ 262,375	\$ 6,034,631	12.0%
Soil Management and Soil Disposal	\$ 823,133	\$ 918,884	\$ 1,194,550	\$ 119,455	\$ 59,727	\$ 1,373,732	2.7%
Sewer and Drain Infrastructure Improvements: point and spot repairs of existing pipes (mains and laterals), replacements/adjustments to associated structures (manholes, catch basins).	\$ 1,711,000	\$ 1,910,032	\$ 2,483,042	\$ 248,304	\$ 124,152	\$ 2,855,498	5.7%
Surface Improvements: median removal, select sidewalk and curbing revisions, rebuild select intersections, curb to curb milling of existing pavement and overlay with new pavement, pavement markings (single and double line road markings, crosswalks, bus lanes, bike lanes), separated bike lane delineators, signage, street trees, etc.	\$ 18,262,336	\$ 20,386,706	\$ 26,502,718	\$ 2,650,272	\$ 1,325,136	\$ 30,478,125	60.6%
Water Infrastructure: relocation of water main, lead water service replacement, hydrant relocations.	\$ 2,465,000	\$ 2,751,742	\$ 3,577,264	\$ 357,726	\$ 178,863	\$ 4,113,854	8.2%
Traffic Signal Reconstruction: resignalize select intersections, upgraded traffic control equipment, signals for additional pedestrians crossings.	\$ 3,270,000	\$ 3,650,383	\$ 4,745,498	\$ 474,550	\$ 237,275	\$ 5,457,323	10.8%
Subtotals:	\$ 30,147,390	\$ 33,654,290	\$ 43,750,578	\$ 4,375,058	\$ 2,187,529	\$ 50,313,164	100.0%