

Short-Term Design Concept

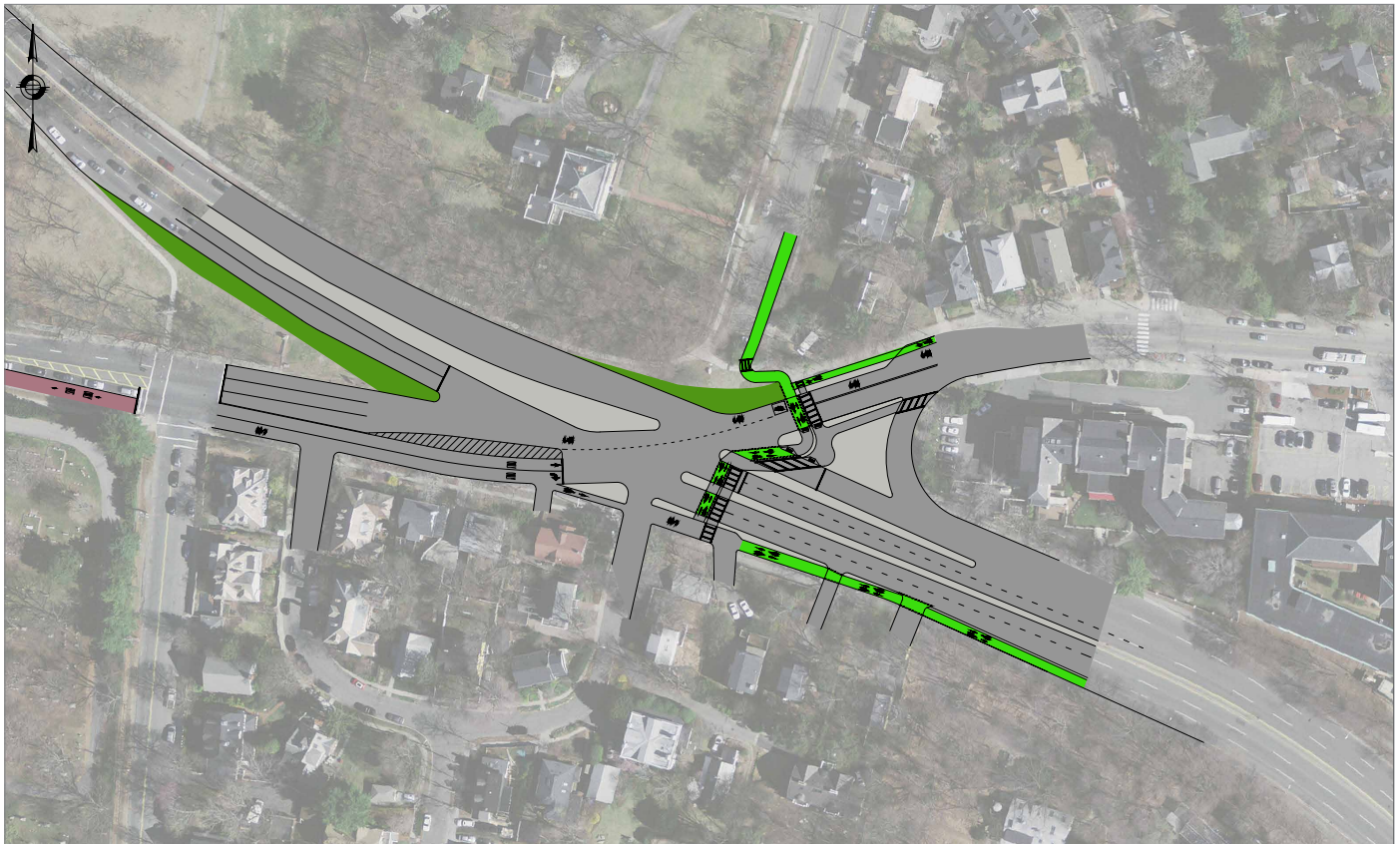
The design team also considered ways to make short-term improvements that can feed into the long-term vision for Mount Auburn Street. These include changes to the intersection of Mount Auburn Street and Fresh Pond Parkway as well as short-term implementation of transit priority on Mount Auburn Street to improve conditions for bus riders.

At the intersection of Mount Auburn Street and Fresh Pond Parkway, there is an opportunity to improve the intersection through changes to signalization, as well as constructing some improvements using pavement markings, and other interim methods to gain benefits of the long-term project described above before the long-term project is fully designed and constructed. The original potential short-term

concept, shown in **Figure 17**, coupled with transit priority improvements on Mount Auburn Street, would provide great benefit to all users of the corridor. Over the course of 2017, as design was progressed towards construction, refinements were made to the short-term design.

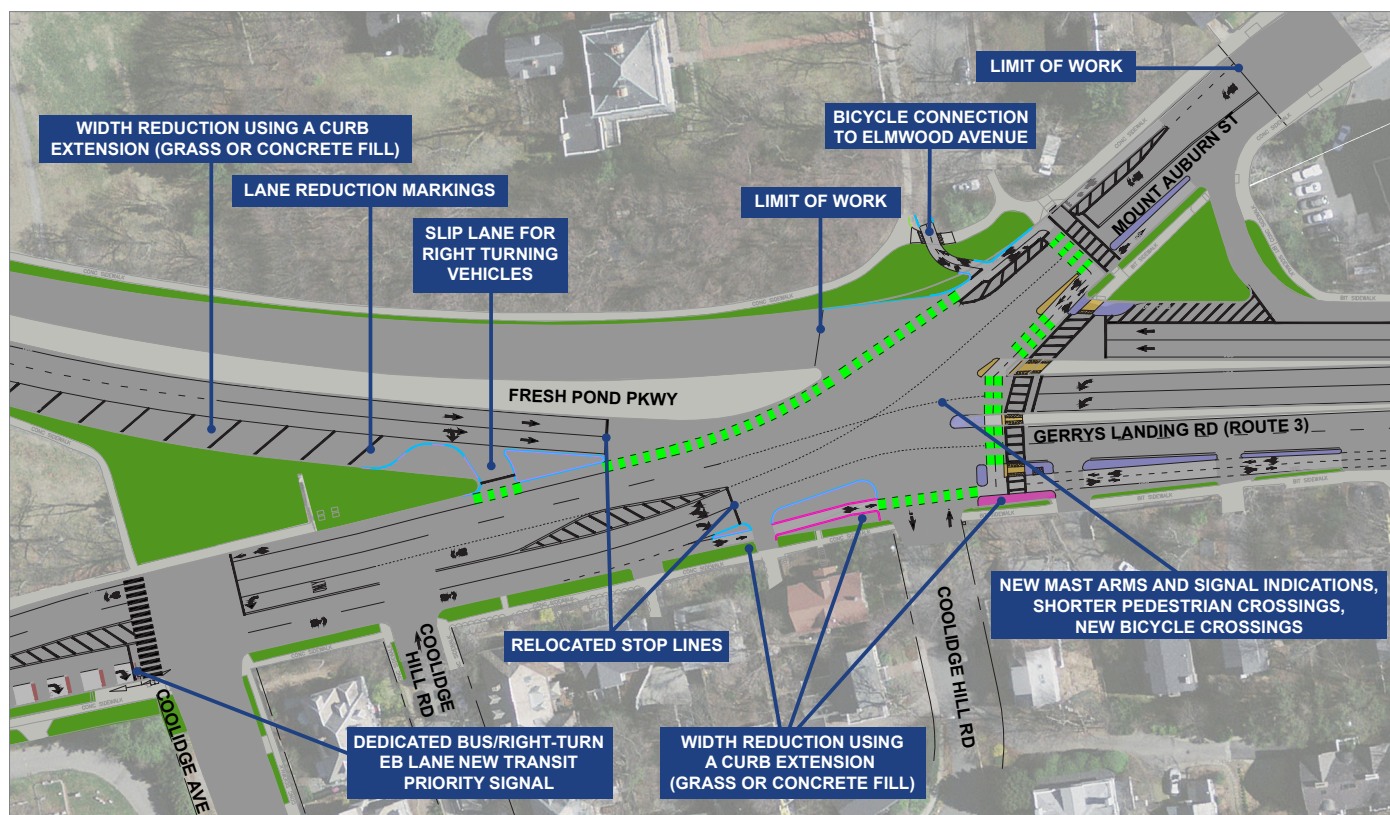
A public meeting was held on December 13, 2017, to present and gather feedback on the short-term design alternative plan. At this meeting, some neighbors expressed fears that the short-term design would not slow mainline traffic down enough to alleviate rear-end crashes for those making right turns onto Mount Auburn Street. Therefore, the design was revised to include a small slip lane, allowing a turning vehicle a place to slow down for the sharp right turn (see **Figure 18**).

Figure 17. Fresh Pond Parkway at Mount Auburn Street and Gerrys Landing (Fall 2016 Concept)



This illustration of the original short-term option shows the outlines of the changes, most of which will be delineated by paint, and other means of separation. This was driven by a desire to use paint and other low-cost materials.

Figure 18. Fresh Pond Parkway at Mount Auburn Street and Gerrys Landing at Final Submission (May 2018).



The intersection design was modified, based on feedback at the December 13, 2017 public meeting, to include a small slip lane for southbound vehicles turning right onto Mount Auburn Street.

Mount Auburn Street Transit Priority Pilot

The City of Cambridge is building on the results of this corridor study to refine the analysis and design of transit lanes and signal priority on Mount Auburn Street. Mount Auburn Street serves as a critical link for bus routes 71 and 73, connecting riders from Watertown and Waverly to Harvard Square and the Red Line. However, due to the congestion in this area, it is also the cause for major delays and unreliable service. The City of Cambridge's bus pilot focuses on providing near-term solutions from the study, which include the eastbound bus lane, modifying signal timings, and moving the current bus stop locations, if necessary.

During the a.m. peak hour, eastbound bus travel times are reduced by over two minutes, although westbound travel time increases on average 44 seconds (on average). At the 90th percentile, which models a significant traffic jam, the eastbound travel time is reduced by approximately four minutes, but the westbound travel time is increased by 34 seconds. The increase in the westbound travel time is mostly due to the fact that more green time was allocated to the eastbound through and left-turn movements (Homer and Aberdeen Avenues), and to the Belmont Street southbound left movement, to offset the impacts of the proposed lane reduction. During the p.m. peak hour, eastbound bus travel times are reduced as well. Overall, at the 90th percentile, the round trip savings for buses are at 45 seconds.

As for the travel times for all other vehicles, during the a.m. peak hour the eastbound travel times are reduced by three minutes, whereas westbound vehicles will see a modest 16-second increase. The increase in the westbound travel time can be attributed to providing the eastbound direction with more green time, as mentioned above.

During the p.m. peak hour, eastbound auto travel times are expected to be reduced by approximately one minute and the westbound travel times by about 30 seconds (see **Figure 19**). This decrease can be attributed to proposed coordination between the six intersections and improving the westbound direction at the Mount Auburn Street/Coolidge Avenue intersection, which provided the most delays under

existing conditions.

Very early on, this community proposed that we evaluate improvements based on measuring people rather than cars. The a.m. peak, average person travel time for both modes of transportation is expected to decrease by 2.6 minutes in the eastbound direction, and is expected to remain similar to existing conditions (six second reduction in delay) for westbound travelers. The p.m. peak, average person travel time is expected to improve by almost a minute in the eastbound direction, and see a reduction of over 30 seconds in the westbound direction. See **Figure 20** for the combined Person Travel Time along Mount Auburn Street.

The proposed bus lane and timing modifications are expected to improve bus travel times significantly through the Mount Auburn Street corridor, in spite of slight increases in westbound travel time.

Although the bus travel time improvements do impact the travel times of all other vehicles, the impacts are primarily to the off-peak direction of travel; i.e., the westbound direction in the a.m. peak hour and the eastbound direction in the p.m. peak hour (see **Figure 21**). Traffic on Mount Auburn Street is very directional, with the majority of traffic heading eastbound in the a.m. peak hour and westbound in the p.m. peak hour. Since the vehicle travel time increases are occurring in the directions with the least demand, the bus travel time improvements outweigh the vehicle travel time impacts.

The City of Cambridge in partnership with the Town of Watertown and the MBTA received a community grant from the Barr Foundation to work with the Institute for Transportation and Development Policy (ITDP) to pilot bus priority improvements on Mount Auburn Street. Outreach associated with the pilot program continues over the spring and early summer of 2018, and implementation is scheduled for late summer. For more information, see <http://www.cambridgema.gov/CDD/Projects/Transportation/mtauburnstreetbusprioritydemonstration>

Figure 19. Auto Travel Time (seconds)

Time of Day	Mount Auburn Street		Fresh Pond Parkway	
	EB	WB	SB	NB
a.m. existing	528	192	262	153
a.m. proposed	342	176	385	140
p.m. existing	316	247	223	152
p.m. proposed	247	204	347	163

Mount Auburn Street is measured from Cottage Street to Traill Street. Fresh Pond Parkway is measured from Heron Avenue to past Mount Auburn Street.

Figure 20. Person Travel Time along Mount Auburn Street (without ridership increase)

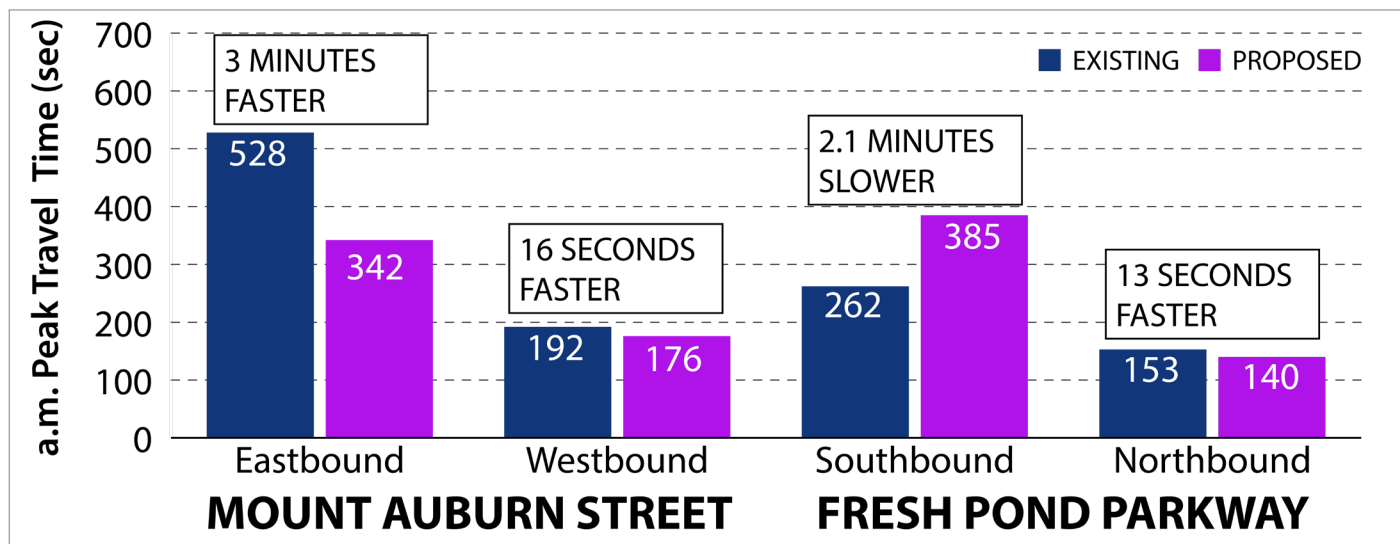


Figure 21. Bus Passenger Time Savings (seconds) – Mount Auburn Street (Brimmer St to Traill St)

Time of Day	Average		90th Percentile	
	EB	WB	EB	WB
a.m. existing	502	257	662	289
a.m. proposed	360	301	438	323
p.m. existing	358	337	440	391
p.m. proposed	305	371	369	415