Greenfield – Montague - General Pierce Bridge
Traffic Considerations for One-Lane Bridge

While it is impossible to ensure 100% driver compliance with signals at any location, there are special circumstances at the bridge with a very long all-red clearance time required, due to the distance between the signals at each end, that can contribute to driver frustration or confusion on whether the signals are properly functioning. The all-red clearance time for the signals when the direction of travel on the bridge is going to change, needs to be set to accommodate the lower end of the range of vehicle speeds on the bridge to minimize vehicles from the opposing direction proceeding on a green light before the bridge is clear. Observations indicate that the roughness of the deck causes some vehicles, including larger vehicles like trucks and buses and some smaller vehicles, including those with trailers, to cross at slower speeds than others. The clearance time is set to accommodate those vehicles – currently 36 seconds.

The signals for all three approaches are currently operating with vehicle detection and provide time to each approach that is responsive to traffic demand. Detection was initially not available for the Mountain Road approach when the system was first installed but was added July 18 and should have resulted in some increased efficiency for the last couple of weeks.

MassDOT has considered two alternatives to the current one-way alternating traffic signal operation.

1. The alternative that is proposed is to improve the signal operation of the current setup by eliminating the left turn onto the bridge from Mountain Road in Greenfield and thus removing the signal time needed to allow for those left turns. Under this alternative, signal time will no longer need to be given to what will become a right-turn-only approach from Mountain Rd. That approach will be signalized with RIGHT ARROW indications, that will provide a green right arrow at the same time as the northbound signal is green, and a red right arrow, with RIGHT TURN ON RED allowed, when traffic is coming southbound across the bridge. From traffic data previously collected, the traffic patterns will remain unchanged for 80-90% of the traffic using the bridge, depending on the time of day. The Mountain Road intersection will be as follows:
The "Extended Red to Clear Oncoming Traffic – Wait For Green" sign will also be located on the Montague approach to the bridge. We propose to provide notice of the Mountain Road turn restriction at the bridge with signs at the Parkway and Maple Street approaches to Mountain Road as below.

2. The other alternative considered would have been to completely eliminate the signals and make the bridge operate in one direction all the time. Operating southbound-only from Montague to Greenfield, the bridge would serve 66% of the traffic in the morning peak hour (7:30-8:30 AM) and 54% in the afternoon peak hour (4:30-5:30 PM). Operating Northbound only from Greenfield to Montague, the bridge would serve 45% of the morning peak hour traffic and 52% of the afternoon. The other direction of traffic would need to be detoured. Also, emergency vehicle flow in the opposite direction would be problematic. The signed detour routes that would be used for each direction are shown on the following pages.
Traffic on General Pierce Bridge Allowed Southbound Only – Montague to Greenfield
Traffic on General Pierce Bridge Allowed Northbound Only -- Greenfield to Montague