

M E M O

Date: February 7, 2007
To: Gail Rosenberg, DCAM
From: Nick Rubino, Earth Tech
Subject: DCAM, Proposed Trial Courts Expansion
Salem, MA
Pedestrian Improvement & Accommodations and Traffic Calming

The proposed Trial Courts Expansion in Salem, MA will involve the removal of the East Ramps at the interchange of North Street with Bridge Street. This will require a new traffic signal at the intersection of North Street, Federal Street, and the West Ramps. Included in the new traffic signal will be improved pedestrian accommodations. A fully-actuated traffic signal is being proposed to control the traffic movements at the intersection, and provide improved pedestrian accommodations across North Street and through the intersection. This memorandum will summarize and describe the proposed improvements and also explain how these improvements tie into pedestrian accommodations at adjacent intersections.

EXISTING CONDITIONS

The existing pedestrian amenities (see figure 1) within the North Street/Federal Street intersection and the North Street/Bridge Street interchange include the following:

- Sidewalks exists along both sides of North Street and Federal Street, and along the south sides of both the East Ramps and West Ramps to provide access from North Street to Bridge Street. Also, there is a sidewalk along both sides of Bridge Street at the existing MBTA Drive intersection. The sidewalk along the south side of Bridge Street extends east to Washington Street, while the sidewalk along the north side ends at the northbound Bridge Street ramp onto North Street.
- There is an existing mid-block pedestrian signal on North Street between Federal Street and Lynde Street. This signal is push button actuated, meaning that the signal will not accommodate pedestrians and stop the North Street traffic unless the button is pushed. It was to be replaced as part of the current North Street project by MassHighway.
- There is an unsignalized mid-block crosswalk on North Street between the Bridge Street ramps and Federal Street. This unsignalized crossing was to be removed as part of the North Street project by MassHighway.
- There are unsignalized crosswalks to cross both sides of Federal Street at North Street, as well as crosswalks to cross both the East Ramps and West Ramps at North Street.
- On Bridge Street there are two unsignalized mid-block crosswalks, one between the West Ramps and the overpass and one between the East Ramps and Washington Street.
- There is a pathway that connects the West Ramps to Bridge Street approximately 60 feet west of North Street. There is no sidewalk along the West Ramps to access the pathway.

PROPOSED MODIFICATIONS AND RESULTING CONDITIONS

As mentioned above the reconstruction of the North Street/Federal Street/West Ramps intersection will include a new traffic signal to control the vehicle movements through the intersection. Incorporated into the signal will be pedestrian signal heads and push buttons to allow pedestrians to safely cross North Street and Federal Street. Pedestrian signals and crosswalks will be provided to cross North Street on both sides of the new intersection. The existing mid-block pedestrian signal on North Street between Federal Street and Lynde Street will be removed and replaced by the crossing on the south side of the intersection. Pedestrian signals and a crosswalk will also be provided to cross the east leg of Federal Street at North Street. An additional crosswalk outside of the intersection will be installed to cross the west leg of Federal Street. As a result, the existing single pushbutton pedestrian signal across North Street will be replaced by three signalized pedestrian crossings in this area, thus improving overall pedestrian safety.

Along with the improvements at North Street, a walkway along the proposed courthouse site will be provided that will allow pedestrian access from the North Street/Federal Street Intersection to Bridge Street near the existing MBTA Driveway. This walkway will replace the existing East Ramps sidewalk that is being removed. It will provide a safer connection from North Street to Bridge Street as the walkway will no longer be immediately adjacent to vehicular traffic.

The pathway west of North Street will remain. It should be noted that to walk from the Federal Street neighborhood to the MBTA Station, the safer and shorter route is to use the new signalized crossing of North Street and the walkway from North Street to Bridge Street.

A separate MassHighway project that is currently under design (Bridge Street Reconstruction) involves the installation of a new traffic signal at the Bridge Street/MBTA Drive intersection. The proposed signal there will include pedestrian push buttons and signal heads as well as ramps and crosswalks to safely cross Bridge Street.

Based on the information above, in the future, pedestrians wanting to access the MBTA station from North Street will be able to safely cross North Street at the North Street/Federal Street/West Ramps signal, continue down the proposed walkway at the courthouse site and safely cross Bridge Street at the proposed Bridge Street/MBTA Drive signal. After the North Street Project is complete, and prior to completion of the Bridge Street Project, pedestrians from North Street will use the walkway to Bridge Street, then follow the existing sidewalk on the south side of Bridge Street to Washington Street, and safely cross Bridge Street and access the MBTA station at the recently completed signalized intersection of Bridge Street and Washington Street.

Figure 2 displays the proposed pedestrian accommodations and improvements.

The proposed pedestrian accommodations will result in an overall improvement from the existing features. Up to date technology, such as modernized push buttons and pedestrian signal heads with LED lenses will be provided at the signalized crossings. Also, this intersection will be coordinated with the signal at the intersection of North Street at Essex Street, which will better regulate the traffic flow in the area. Better regulated vehicle movements provide for the best pedestrian safety within roadways and intersections.

TRAFFIC CALMING

The North Street at Federal Street intersection along the west side of North Street currently has a wide opening that allows southbound traveling vehicles the ability to make right turns onto Federal Street at higher than appropriate speeds. This is a safety issue, particularly for pedestrians trying to cross Federal Street. Carrying this high rate of speed around the corner onto Federal Street can also lead to vehicles maintaining the excessive speed as they travel west on Federal Street.

This project proposes to narrow the intersection along both sides of Federal Street, which will physically force any right turning vehicles to travel at a slower, more appropriate speed through the turn.

In addition, the narrowing of the Federal Street opening provides a shorter crossing distance for pedestrians of about 20 feet. Shorter crossing distances are safer, as pedestrians return to the sidewalk faster.

This issue was first brought to our attention by the Federal Street neighborhood during the North Street Project. As part of the traffic signal improvements related to the Court House Project, this traffic calming measure has been maintained.

Figure 3 displays the proposed intersection layout, as well as the proposed geometry.