MEMORANDUM

TO: Richmond Transportation Committee
FROM: Cathleen Gent, member
Date: May 4, 2023

RE: Cochran Road/Bridge Street/Thompson Road/Huntington Road intersection – Next Steps per 2021 Scoping Report

This memo provides two sets of background information stemming from the 2021 scoping study and consultant final technical report regarding safety concerns for bicyclists, bicyclists, and the traveling public at the intersection of Cochran Road, Bridge Street, Thompson Road, and Huntington Road.

In June 2021, the consulting group VHB completed a Richmond Bridge Street Complete Streets Corridor Study Technical Memorandum (Project #: 58538.00), in collaboration with the Chittenden County Regional Planning Commission (CCRPC) and the Town of Richmond. The Bridge Street Complete Streets Corridor Study was conducted to identify and prioritize multimodal improvements along the Bridge Street corridor. While there were other aspects to that study, this memo focuses on the intersection of Cochran Road, Bridge Street, Thompson Road, and Huntington Road.

To see the full VHB 2021 scoping study, please see the following link:
https://studiesandreports.ccrpcvt.org/wp-content/uploads/2021/09/20210827_RichmondBridgeStreet_ScopingMemo_WithAppendices.pdf

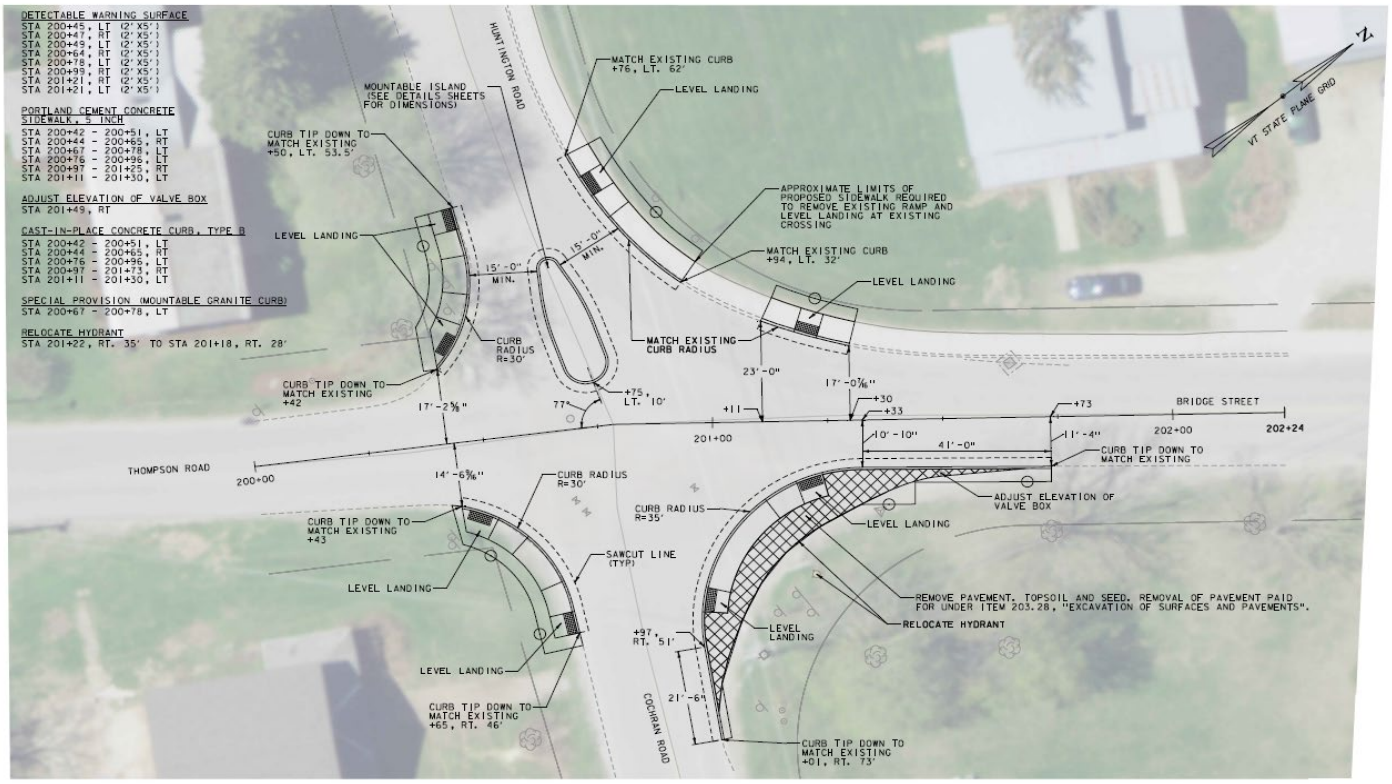
Summary: The consultant team developed three alternatives for the Cochran Road/ Bridge Street/ Thompson Road/ Huntington Road intersection. Following public discussion and Transportation Committee evaluation, the Transportation Committee ultimately supported a No Build condition with low-cost enhancements and pedestrian accommodations. The consultant team later developed a Preferred Alternatives Preliminary Plan Set, with Bridge Street set within a yield controlled scenario. All four alternatives, including the option from the Preferred Alternatives Preliminary Plan Set are shown below, along with information about public engagement and the Transportation Committee discussion.

A. The Preferred Alternatives Preliminary Plan Set (proposed by consultants after RTC involvement completed)

This is the VHB alternative on which the Transportation Committee will begin its discussion on May 9th. Additional information about the three original consultant alternatives is included in subsection B. below.

Preferred Alternatives Preliminary Plan Set
[from VHB Technical Memo, Page 16]
"At the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road, even in the no build condition, the desire for pedestrian access and safe crossings remains. Therefore, provision of pedestrian landings and crosswalks on all four legs of the intersection was the priority. Support for a Rectangular Rapid Flashing Beacon (RRFB) was heard from the community. With the volumes, speeds, and context for the crossing of Huntington Road, an RRFB is not advisable. Other enhancements, like raised median treatments, can be effective in slowing traffic and providing visual cues for drivers. A mountable median on the Huntington Road leg was designed as a possible enhancement to the intersection. In addition, given the pedestrian accommodations and enhancements proposed, the design team raised concerns with the ability to bring these elements through to final design without some additional traffic control at the intersection. The primary concern was with the lack of clear yielding behavior at the intersection given the atypical through movement between two adjacent legs of the intersection (i.e. Bridge Street to Huntington Road and vice versa). As shown in the plan set (see below), it was proposed that Bridge Street approach be yield controlled, unless the community is amenable to one of the other alternatives proposed (i.e. all-way stop or typical two-way stop)."

Cost for yield-controlled intersection: $72,697.48 (from VHB Preliminary Set Plan, page 42 of VHB Technical Memo)



[from VHB Preferred Alternatives Preliminary Plan Set, sheet 4 of 4]

B. Information from VHB Technical Memo RE: Original Alternatives and Public Engagement

This is provided for the Transportation Committee discussion.

[from VHB Technical Memo – Pages 2-3]

Public Engagement

On December 10, 2020, a Local Concerns Meeting was held via Zoom with the primary purpose of understanding what the issues and opportunities along Bridge Street are from the community perspective. A brief overview of the recommendations from previous studies of the corridor was presented and a draft purpose and need based on the information gathered to date was shared. The remainder of the time was focused on gathering input from the community at focus areas along the Bridge Street corridor, particularly between US 2 Main Street and Railroad Street, at the intersection of Railroad Street / Jolina Court, and at the intersection of Huntington Road / Cochran Road / Thompson Road. The stakeholders at this meeting included Transportation Committee members, residents, and business owners, gathering a broad range of perspectives. Through this engagement, it became clear that not only are there critical gaps in the sidewalk infrastructure and a desire to better accommodate pedestrians and cyclists safely but maintaining parking in support of the area businesses is an utmost priority.

The project team refined the purpose and need based on the feedback from the Local Concerns Meeting and began to develop alternatives for Bridge Street. An interim meeting with the project team on the various alternatives narrowed the focus to three alternatives for the Bridge Street corridor focused on the area between US 2 Main Street and Railroad Street / Jolina Court and three alternatives for the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road.

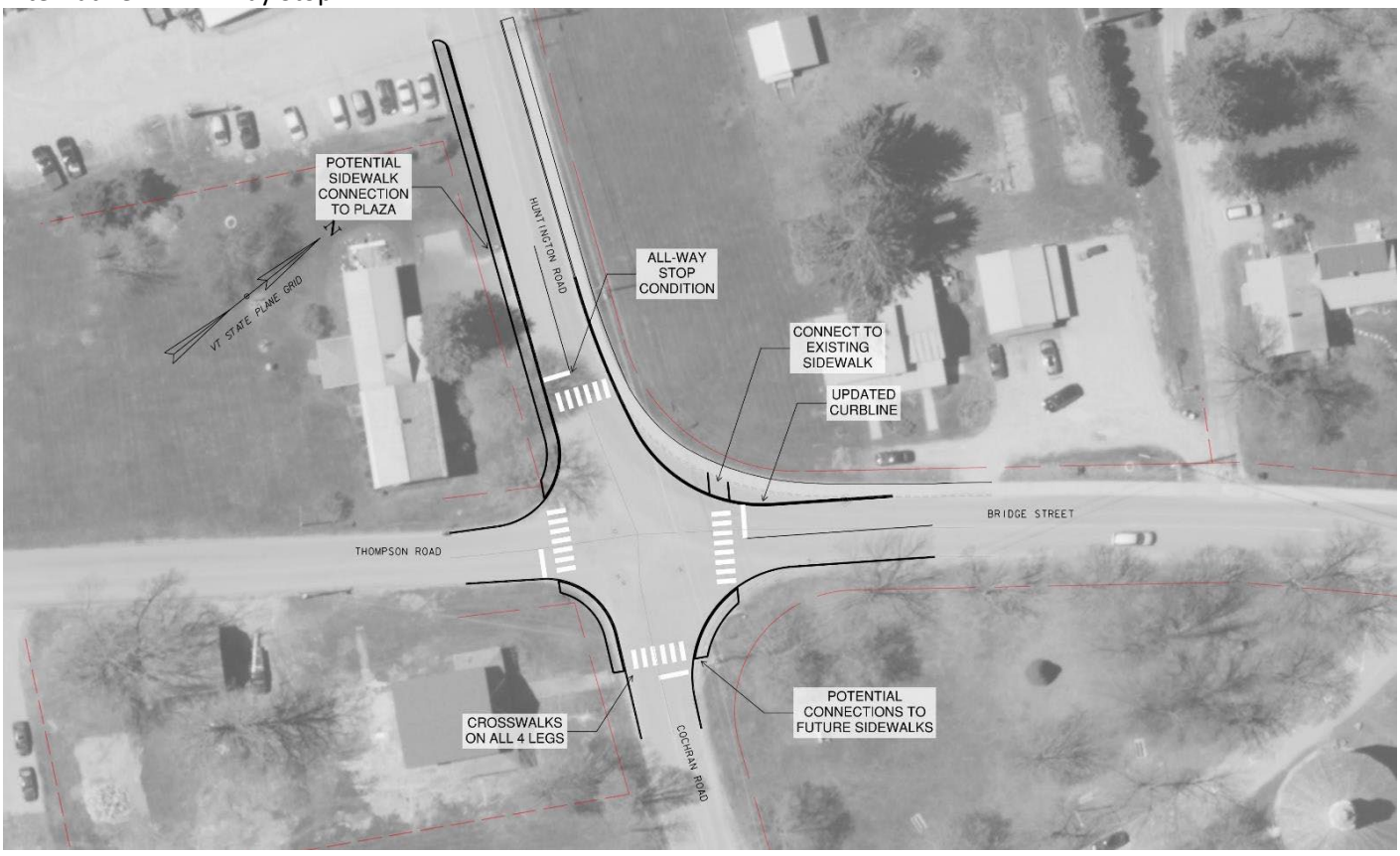
A presentation of the alternatives was developed for the focal areas and the public meeting was scheduled for April 8, 2021. The meeting was intended to gage community support for a preferred alternative for each of the focal areas. Discussion of the alternatives and the evaluation and tradeoffs associated with each revealed the preferences of the community for alternatives to carry forward for further refinement.

The project team presented the preferred alternative preliminary plans to the Town of Richmond Selectboard on June 21, 2021. The Selectboard reviewed the plan set and the technical memorandum prior to the meeting. At the meeting, a brief presentation on the project process and overview of the preferred alternatives were shared with a discussion of the preliminary design followed. The Selectboard members voted unanimously in support the study findings and the preferred alternative preliminary plans.

[from VHB Technical Memo – Page 9 - 13]
Alternatives Development and Evaluation
Intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road
The intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road had three alternatives that were developed and refined based on input from the project team and presented to the public at the Alternatives Presentation. The three alternatives included Alternative 1 – All-Way Stop, Alternative 2 – Typical Two-Way Stop, and Alternative 3 – Mini-Roundabout. The three alternatives all create a more typical four-way intersection to better facilitate pedestrian crossings on all four legs.

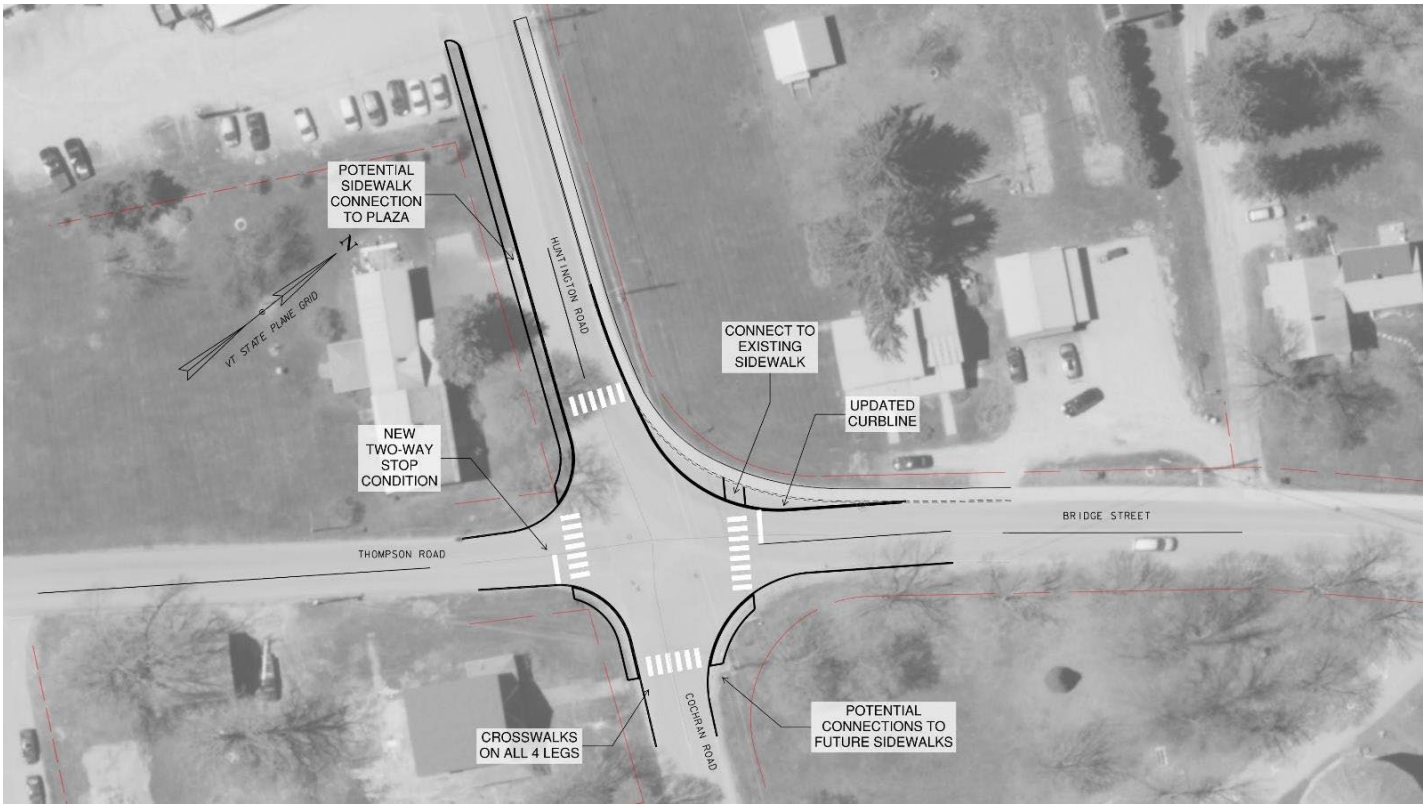
Alternative 1 would implement an all-way stop condition, adding stop signs and stop bars to the Bridge Street and Huntington Road approaches. In addition, the radius on the corner between Bridge Street and Huntington Road would be tightened. Sidewalks with ramps, level landings, and detectable warning surfaces would be added to each corner of the intersection to provide appropriate pedestrian crossing locations. The opportunity to connect to future sidewalk segments would exist along each leg of the intersection if desired by the community. From an operational standpoint, the all-way stop condition would serve all legs of the intersection during peak hours with less than 15 seconds delay at a level of service of LOS B or better. Based on simulations of the all-way stop condition, the most significant queuing would be expected for the Huntington Road approach in the AM peak hour at approximately 100’ (95th percentile queue) and for the Bridge Street approach in the PM peak hour at approximately 120’ (95th percentile queue). A comparison of simulated queues for the alternatives and the no build condition are detailed in the appendices.

Alternative 1 – All-Way Stop



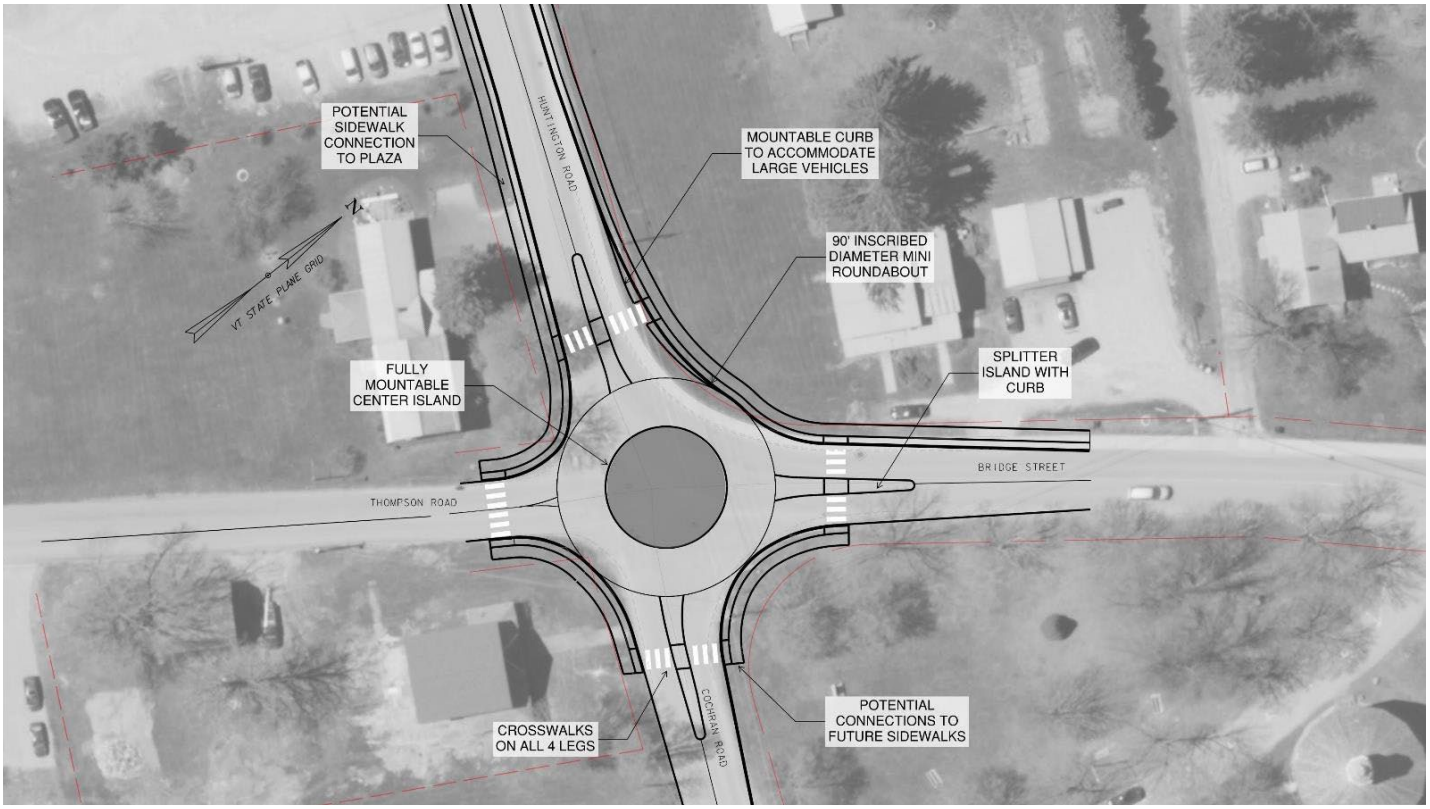
Alternative 2 would reconfigure the intersection to be a typical two-way stop-controlled intersection, with stop control on the Bridge Street and Thompson Road approaches. This would effectively make the through movement the Huntington Road to Cochran Road movement. Similar to Alternative 1, the radius on the corner between Bridge Street and Huntington Road would be tightened. Again, sidewalks with ramps, level landings, and detectable warning surfaces would be added to each corner of the intersection to provide appropriate pedestrian crossing locations. From an operational standpoint, the two-way stop condition would stop-control the approaches of Thompson Road with LOS D/C (AM/PM) and Bridge Street with LOS C (AM and PM). Based on simulations of the two-way stop condition, the most significant queuing would be expected for the Bridge Street approach at 80' in the AM peak hour and 145' in the PM peak hour (95th percentile queues). A comparison of simulated queues for the alternatives and the no build condition are detailed in the appendices.

Alternative 2 – Typical Two-Way Stop



The third alternative was a mini-roundabout. The circulating roadway would have an inscribed diameter of 90’ and at this size would be able to accommodate large trucks on the major movements. The center island would be fully mountable to allow for those truck movements through the intersection. Splitter islands would channelize traffic on the Bridge Street, Huntington Road, and Cochran Road approaches to the intersection. These splitter islands would provide pedestrian refuge allowing for pedestrians to cross one lane of traffic at a time. Again, sidewalks connecting the crossings would be installed on all four corners of the intersection to provide appropriate crossing locations, with the option to connect to future sidewalk segments. Operationally, the mini-roundabout is anticipated to keep traffic flowing with standard yield conditions for all approaches entering the circulatory roadway, serving all approaches at
LOS A, with delays of less than 10 seconds.

Alternative 3 – Mini-Roundabout



A side-by-side comparison of the three alternatives for the intersection is summarized in Table 1. These comparisons were drawn based on conceptual cost estimates, pedestrian and bicyclist mobility and safety, right-of-way and utilities impacts, drainage considerations, and satisfying the purpose and need.

Evaluation Matrix for Alternatives at the Intersection of Bridge Street / Huntington Road / Cochran Road / Thompson Road

Alternative	Alternative 1 All-Way Stop	Alternative 2 Two-way Stop	Alternative 3 Mini Roundabout
Cost	$100,000	$100,000	$850,000
Pedestrian Mobility	Improved Connections to Crossings of Low Volume Roadways	Improved Connections to Crossings of Low Volume Roadways	Improved Connections to Crossings of Low Volume Roadways
Pedestrian Safety	Stop Condition for All Crossings	Stop Condition for 2 Crossings	Median Refuge on 3 Crossings
Bike Mobility	Potential for bike lanes or shared lane markings	Potential for bike lanes or shared lane markings	Potential for shared lane markings
Bike Safety	All vehicles stop. lower traffic speeds for better bike travel with vehicles thru intersection	Some lower traffic speeds for better bike travel with vehicles thru intersection	Slower vehicle speeds thru roundabout better bike travel with vehicles
ROW Impact	Minimal	Minimal	Moderate
Utilities Impact	Minimal	Minimal	Moderate
Drainage	Minimal	Minimal	Moderate
Satisfies Purpose & Need	Yes	Yes	Yes

[from VHB Technical Memo, Page 13]
Preferred Alternative Refinement and Design

For the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road, support for a more typical four way intersection was heard, but consensus on a particular alternative was lacking. Alternative 3 – Mini-Roundabout was supported by some, but the price tag was a significant deterrent. Alternative 1 – All-Way Stop was discussed in detail, but hesitation to stop the “through” movements between Bridge Street and Huntington Road was insurmountable. Through much deliberation, the Transportation Committee ultimately supported the No Build condition here with low-cost enhancements and pedestrian accommodations.