

Route 110-113 Rotary Interchange Study
Study Advisory Committee (SAC) Meeting Summary
Thursday, July 26, 2007

Searles Building
2nd floor – Conference Room
41 Pleasant Street, Methuen
4:00 – 6:00 PM

In Attendance: *Committee Members or Designated Representatives:* Robert Andrew, Dennis DiZoglio, Frank DaSilva, Hon. Representative Colleen Garry, Justin Howard, Tony Komornick, Chris Metzemaekers, Joseph Onorato, Dennis Piendak, Colie Ryan, Eleni Varitimes representing Senator Baddour, and Stanley Wood. *Study Team:* Ethan Britland, Paul Nelson, George Gefrich, Joe Cahill, Sudhir Murthy, Carla Tillery and Leslie Black.

Meeting Agenda

- 1. Welcome and Introductions**
- 2. Review of Task 4: Alternatives Analysis**
- 3. Discussion of Evaluation Criteria**
- 4. Schedule of Public Informational Meeting**
- 5. Next Steps**
- 6. Other Business**

1. Welcome and Introductions

Ethan Britland of the Office of Transportation Planning and Project Manager of the study welcomed attendees. He provided draft minutes from the February 6, 2007 meeting and asked that committee member comments be forwarded to him in order to finalize the minutes and make them available on the website. He said the purpose of the meeting today was to outline study progress to date with a recap of short and long term alternatives and to review the traffic operations analysis of those alternatives. Ethan stressed that the alternatives being discussed at the meeting were conceptual drawings and would be subject to further adjustments.

2. Recap of Alternatives

Joe Cahill, a member of the study team, recapped three short term and four long term alternatives that had been discussed at the previous SAC meeting and that had been determined to have merit to go forward for more in-depth traffic operations analysis.

Long Term Alternatives:

- Concept 2A Modified SPUI (Single Point Urban Interchange)
- Concept 2B Modified SPUI
- Concept 3A Partial Cloverleaf
- Concept 3B Partial Cloverleaf

SAC members were asked to note the following:

- Alternatives 2A, 2B and 3B were slightly modified from previous meeting to incorporate SAC comments
- Arrows shown only indicate direction of traffic flow
- Linework as shown indicates general roadway alignments only. It does not necessarily correspond to the actual width of roadway needed (multiple through lanes, turning lanes, etc.)

Short term alternative #1: dedicated bypass lanes in: 1) southwest quadrant to provide dedicated lane from the northbound off-ramp of I-93 to Route 110-113 westbound, 2) southeast quadrant to provide dedicated lane from Route 110 eastbound to on-ramp I-93 southbound and 3) northeast quadrant to provide dedicated lane from southbound I-93 to Route 110-113 westbound.

Short term alternative #2: realigned westbound exit to add more weaving distance and provide more separation for safe traffic operations. The increased radius slows traffic coming onto the Route 110-113 westbound from I-93.

Short term alternative #3: re-striping for rotary and for ramps to and from I-93 to two lanes – the left lane would be dedicated to entry into the rotary and the right lane dedicated to eastbound or westbound travel on Route 110-113. This concept adds guidance to the flow of traffic in the rotary and applies roundabout principles to the rotary structure.

A SAC committee member commented that there would be little benefit to re-striping as people who use the rotary regularly will maintain old traffic patterns. The benefit will only be for new travelers on the system. Other SAC comments: if the re-striping drops the rotary to one lane travel, why not make it a simple one lane rotary to reduce confusion. The use of rumble stripping would help to discourage misuse of lanes.

Sudhir Murthy presented statistics showing projected increases in traffic volumes to the year 2025 using the Massachusetts Statewide Model. Of note were projected volume increases of 3 and 4% on I-93 south and north of Exit 46 respectively, and significant projected traffic volume growth in the Dracut, MA region with projected 33% traffic volume growth on Route 110 at the Dracut town line and 32% projected traffic volume growth on Route 113 at the Dracut line.

Carla Tillery from the study team presented the traffic operations evaluation of alternatives looking at traffic volume data collection, methodology, and operations analysis of the rotary, ramps, and intersections:

Traffic Volumes

Traffic count data was collected in January 2006 for peak hour time periods capturing the highest vehicle activity:

- Weekday AM: 7 AM – 9 AM
- Weekday PM: 4 PM – 6 PM

Future 2025 traffic volumes were forecasted using the Massachusetts Statewide Model. Comparisons were also made between existing to future projected volumes and distribution.

Traffic Operations Methodology

Methodology included use of Highway Capacity Manual (HCM) 2000, Transportation Research Board and the following tools accepted as standards by the FHWA:

- Synchro: Intersection Analysis
- SIDRA: Rotary Analysis
- HCS: Ramp Analysis

In the analysis, the term Level-of-Service (LOS) denotes different operating conditions defined in terms of delay per vehicle in seconds

- LOS ranges from A (best conditions) to F (worst conditions)
- LOS D is considered acceptable condition for traffic operations

Short term alternatives #1 and 3 showed LOS improvements for southbound I-93 and eastbound 110-113 traffic (west of the rotary). To summarize, the operational impacts:

- Poor LOS will continue (east of I-93)
- Study area intersections will operate similarly to the No-Build conditions
- Benefits
 - Relieves traffic volume in the rotary
 - Significant improvement to the rotary (west of I-93)

Short term alternative #2 showed no traffic operational benefit with the realignment.

For the *long term alternatives analysis of Alternatives 2A, 2B, 3A, and 3B*, the following considerations were noted:

- Operational Impacts
 - Ramp operations reflect conditions on I-93– it must be noted that the project team is charged to study improvement of traffic movement at the Route 110-113 rotary area, not to solve the traffic congestion of I-93. The future expansion of I-93 to four lanes is included in the current study analysis.
 - Increase from a 5 to 6-lane cross section on Route 110/113 corridor to improve turning lane movements
 - The possible signalization of intersections and synchronization of those signals to improve traffic movement is dependent on conducting a Signal Warrant analysis to determine which intersections warrant signalization. For example, if signalization at Route 113 and Branch Street is considered

warranted, it could act as a possible regulator of traffic flow/speed as well as improving the LOS for that intersection from failure to acceptable level.

- Benefits
 - All long-term alternatives (2A, 2B, 3A, 3B) achieved acceptable LOS for intersection movements.
 - Alternatives 2A and 2B improve ramp junction movement for southbound off-ramp in the AM peak hour as well as southbound on-ramp in the PM peak hour
 - Alternative 3A improves ramp junction movement for southbound off-ramp for AM peak hour; 3B shows no change
 - Alternatives 3A and 3B improve ramp junction movement for southbound on-ramp for PM peak hour
- Traffic & Safety Issues
 - Ramps have travel delays indicative of travel demand at certain times of day. For example, in the AM peak hour – southbound ramps have high demand; in the PM peak hour – northbound ramps have high demand
 - Weave areas are a safety issue where traffic must weave over a short distance that is closely spaced to an adjacent intersection with heavy demand eastbound

Merge Areas (Alternatives 2A and 2B)

- From SPUI to On-ramps
- 5 to 6-lane cross section on Route 110-113 needed to support the projected volume demand at the ramp junctions with Route 110 & Route 113
- Eastbound through movement (west of the interchange) experiences delay
- Double turn lanes or double through lanes are consideration on Route 110-113 eastbound (east of rotary) to accommodate traffic volumes

Analysis of Existing and Project Crash Rates:

Sudhir Murthy presented an analysis comparing types of traffic accidents and crash rates predicted for each alternative as compared to a no-build scenario. The impact on safety for each alternative varies with the type of traffic movement: merging, weaving, or signalization. Short-term alternatives will have nominal positive impacts on accident rates. Long-term alternatives will have more positive impacts on accident rates with Alternative 3B predicted to have the most positive impact in reduction of crash rates.

3. Discussion of Evaluation Criteria

George Gefrich discussed the evaluation criteria to be used for evaluating each of the alternatives. At this point, the evaluation criteria are a work in progress and the SAC are encouraged to put forward any criteria they would like to see become part of the process. Criteria currently include:

- Mobility – delays, LOS (levels of service), VMT-VHT(Vehicle miles traveled-Vehicle hours traveled) demand

- Safety – accident rates, crash sites, public safety, school buses, pedestrian/bicycle access
- Environment – air, wetlands, HAZMAT, Architectural/Historic sites, parks/open spaces, farmland
- Land use – access, right-of-way, parking
- Cohesion – for neighborhoods, pedestrian and bicycle traffic
- Cost – construction costs, cost effectiveness, short range costs, permits

General Discussion

- It was discussed that noise be added as an environmental criteria and queuing added as a mobility criteria.
- Development of criteria with low, medium, and high rankings as opposed to 1-5 rankings would be easier for the public to assess
- Noise can be identified as an issue in this study but noise impact will be looked at more in-depth as part of an Environmental Assessment (EA) document in a future study.
- Future development and the impact of each alternative on future development are not currently being included in the analysis.
- C. Ryan noted that a second city park will be developed abutting the rotary and must be taken into account in the study.
- Neighborhood cohesion is currently hindered by poor LOS and the four quadrants. Pedestrians will get better access if improvements are made.
- Bicyclists prefer signalization. The rotary and I-93 are barriers to bike/pedestrian movement currently.
- Analysis numbers that show benefit for pedestrians/bicyclists should be shown at public meetings.
- Route 113 westbound is still a concern with narrow pavement and non-existent shoulders.
- It is important to improve signalization at Route 110 and Riverside to improve bicycle/pedestrian movement and also to create access down Riverside from Route 110-113 to the park.
- Route 113 and business park intersection should be signalized. Will signalization cause queuing into the rotary?
- Construction costs should be compared with impacts in other areas – measurement of alternative criteria can be classified in different ways
- Signalization of Riverside and Route 110 was discussed as a short term solution to safety issues – SAC members discussed this project as something the town budget might look at as a separate request and remove it from the study due to length of time before construction could begin if it remained a study alternative
- Short term alternatives do not preclude long term alternatives – could do both but the timelines will differ
- SAC members must determine several alternatives of merit and gain the support of the town to take the process forward to the MPO-TIP level; safety issues will maintain community support for the study alternatives

- Alternatives of merit must be determined by October 1, 2008 to be added to the MPO-TIP process
- Strong legislative support could work toward fast-tracking long-term alternatives

4. Schedule of Public Informational Meeting

It was determined that a public informational meeting be scheduled once the SAC has met again to further narrow the list of alternatives to a workable point. The SAC would like to present a minimum of two workable alternatives to take forward to the EA/EIR process.

5. Next Steps

- SAC to provide comments on Evaluation Criteria to Ethan Britland at EOT to have any additional evaluation criteria assessed
- EOT to provide to the SAC a timeline of the study and future steps to move the process forward to EA/EIR
- Consultant team to apply future traffic forecast projections for 2026 to short listed set of alternatives
- Consultant team to review traffic findings with EOT
- Prepare written analysis for review with the Task Force for possible identification of a preferred alternative
- Schedule Task Force and Public meetings

The meeting adjourned at 6:30 PM.