Exit 36 South
Planning Study

EXECUTIVE SUMMARY

NASHUA REGIONAL PLANNING COMMISSION

A joint project of the Nashua Regional Planning Commission and the Northern Middlesex Council of Governments
**Project Benefits And Opportunities**

**Less traffic, more time:** The 24 hour traffic volumes are forecast to drop by an average of 10% on Spit Brook Road east of the F.E. Everett Turnpike and an average of 20% on Daniel Webster Highway south of Spit Brook Road.

Travelers destined for the southern Pheasant Lane Mall entrance could save up to 7 minutes of travel time with a potential annual savings of $2 Million dollars per year in increased productivity.

**Multimodal Opportunities:** Exit 36S facilitates the possible expansion of transit bus service in the study area. Additionally, Exit 36S will greatly enhance the feasibility of future passenger rail service in South Nashua and Tyngsborough.

**An Economic Driver:** The Exit 36S off ramp provides direct access to major regional employers located along the Daniel Webster Highway in Nashua and Middlesex Road in Tyngsborough. More than 22 percent of all jobs in Nashua are located within the one square mile that makes up the study area in South Nashua.

**A Population Center:** The Nashua portion of the study area accommodates more than 5,900 residents in approximately one square mile, the vast majority of which live within walking or biking distance of retail and commercial amenities as well as a potential passenger rail station.

**Sustainable growth and economic development:** In Nashua, Exit 36S reduces congestion on the existing road network, ensuring that the area remains an economic driver well into the future. In Tyngsborough, Middlesex Road from the Town Center north to the New Hampshire state line is viewed by the Town as a future commercial corridor, with a special focus on restaurant development.

**Innovative Financing:** With limited transportation funds available in both states, innovative financing opportunities, including private sector investment, need to be further explored to support federal investment in the project.

**Green House Gas Emissions:** Constructing Exit 36S saves an estimated 89,000 gallons of fuel per year with a corresponding reduction in CO₂ emissions of 1.8 Million pounds per year. Based on travel time, average speed fuel economy data, and an estimated fuel cost of $3.75 gallon the construction of Exit 36S could save as much as $333,000 per year.
As a vibrant commercial and residential district bustling with shoppers, office workers and residents, the Exit 36 area of South Nashua, New Hampshire and Tyngsborough, Massachusetts represents one of New England’s most dynamic mixed-use corridors. Located approximately four miles from Downtown Nashua and ten miles from Downtown Lowell, the Exit 36 study area is located off U.S. Route 3 and strategically situated between two regionally significant urban areas.

While the corridor has enjoyed significant development and economic success, it has incurred significant challenges in the form of peak hour and seasonal traffic congestion along Daniel Webster Highway, Middlesex Road and Spit Brook Road.

The Exit 36 interchange lies just south of the New Hampshire border in Tyngsborough Massachusetts. The ramp system terminates/originates at the signalized intersection with Middlesex Road and the Pheasant Lane Mall. The current configuration of the interchange provides for all movements except for southbound Route 3 traffic.

The Exit 36 Southbound Planning Study provides an analysis and summary of the potential benefits to regional traffic and economic development that would be realized by constructing a Route 3 southbound off ramp at Exit 36. This study was funded by the Federal Highway Administration through the Transportation System and Community Preservation (TCSP) Grant Program.

The Exit 36S off ramp significantly improves operating conditions along the major roads in the study area, by relieving traffic congestion and delay, reducing greenhouse gas emissions, improving travel times, and decreasing lost productivity. The project enhances the effectiveness of public transportation and supports future passenger rail service. The southbound ramp and related improvements will provide more efficient access to services, area business establishments, and local and regional job centers. The proposed improvements will also generate opportunities for sustainable growth and serve as a catalyst for future economic development and community investment. The bi-state aspect of the project provides exceptional opportunities for innovative financing, interstate cooperation and coordination, and public/private partnerships.

A BREAK IN TRAFFIC: This map shows projected changes in traffic volumes along major corridors in South Nashua if an Exit 36S ramp was constructed.
Exit 36 South creates the ideal conditions for a retail circulator service.

The first option would involve travel along Daniel Webster Highway between northern Tyngsborough and Adventure Way in Nashua.

The second option consists of a loop from the Pheasant Lane Mall north along Daniel Webster Highway, west on Spit Brook Road, south along the F.E. Everett Turnpike and returning to the mall via the new Exit 36 Southbound off ramp.

Both options provide the opportunity to connect residents in the study area with numerous retail establishments as well as access to passenger rail service.

The idea of expanding commuter rail service from Boston to Southern New Hampshire, via an extension of the Lowell MBTA line, has long been discussed in the region.

Exit 36S provides direct access to a potential passenger rail and intermodal facility located near the Pheasant Lane Mall at the New Hampshire border.

This location could be served by Nashua Transit System and Boston Express Bus Service. A local circulator bus route would allow more than 5,900 residents direct access to passenger rail and bus service, improving access to employment opportunities in eastern Massachusetts and southern New Hampshire.
The Build Scenario assumes a loop ramp layout on the west side of US 3 in Tyngsborough, MA. The off ramp begins just north of the Massachusetts Border in Nashua NH, The ramp passes over the US 3 mainline and meets grade, merging with the existing Exit 36 northbound off ramp.

The intersection of Middlesex Road and the Exit 36 ramps/Pheasant Lane Mall would require the construction of physical improvements to provide three left-turn lanes, two through lanes, and a right-turn lane from the off-ramps, as well as two through lanes, a left-turn lane and a right-turn lane from the Pheasant Lane Mall exit. The northbound approach of Middlesex Road from Massachusetts would require a redistribution of lanes, changing a through lane into a left turn lane; no changes are needed for the geometry of Middlesex Road southbound at this intersection.
A planning level project cost estimate was developed for a loop ramp concept on the west side of U.S. Route 3 Southbound with bridges crossing over the highway ending in an at grade intersection at Middlesex Road. The cost estimate is shown in 2014 dollars and does not include the cost to acquire the necessary Right of Way to construct the project. Assuming construction begins in 2020 and using a 4% inflation factor as recommended by the FHWA, the cost of the project is expected to be approximately $21M.

### Exit 36S Off Ramp Planning Level Estimate

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Roadway Construction</td>
<td>$10,105,000</td>
</tr>
<tr>
<td>Bridge Construction</td>
<td>$2,340,000</td>
</tr>
<tr>
<td>Engineering and Permitting</td>
<td>$2,055,000</td>
</tr>
<tr>
<td>Construction Engineering</td>
<td>$1,245,000</td>
</tr>
<tr>
<td>Rounded Total in 2014 Dollars</td>
<td>$16,000,000</td>
</tr>
<tr>
<td>Rounded Estimate in 2020 Dollars</td>
<td>$19,850,000</td>
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### Implementation

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Duration</th>
<th>Year</th>
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<tbody>
<tr>
<td>Establish support of the Executive Branch of Government</td>
<td>6 months</td>
<td>2015</td>
</tr>
<tr>
<td>Early coordination State and federal Agencies</td>
<td>12 months</td>
<td>2015</td>
</tr>
<tr>
<td>Establish Federal Support, secure funding and local match</td>
<td>6 to 12 months</td>
<td>2016</td>
</tr>
<tr>
<td>Preliminary Engineering, Environmental Permitting, Right of Way</td>
<td>12 to 24 months</td>
<td>2017</td>
</tr>
<tr>
<td>Final Design</td>
<td>12 months</td>
<td>2018</td>
</tr>
<tr>
<td>Construction</td>
<td>24 months</td>
<td>2020</td>
</tr>
</tbody>
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## Exit 36 by the Numbers

### Current Conditions

- **A Population Center**
  - Population of one-square mile area of South Nashua: 5900

- **An Economic Driver**
  - Share of all jobs in Nashua located in Exit 36 Area: 22%

- **A Destination**
  - Saturday daily traffic count, Daniel Webster Highway: 399,377

### The Investment

- **$16 Million**
  - 2014 estimated construction cost

### Multi-modal Opportunities

- **1500 Feet**
  - Distance from Capitol Corridor line

### The Project

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
<th>Description</th>
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<tr>
<td>Greenhouse Gas Emissions</td>
<td>1.8 Million</td>
<td>Reduction in CO2 emissions, in pounds</td>
</tr>
<tr>
<td>Increased Productivity</td>
<td>$2 Million</td>
<td>Productivity benefit due to reduced congestion</td>
</tr>
<tr>
<td>Less Traffic</td>
<td>10-20%</td>
<td>Traffic volume reductions, DW Hwy., Spit Brook</td>
</tr>
</tbody>
</table>

### Forecast Benefits

- **1.8 Million**
  - Reduction in CO2 emissions, in pounds

- **$2 Million**
  - Productivity benefit due to reduced congestion

- **10-20%**
  - Traffic volume reductions, DW Hwy., Spit Brook
value yesterday.

Enhance tomorrow.

Plan today.