<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUILD</td>
<td>Better Utilizing Investments to Leverage Development (Discretionary Grant program)</td>
</tr>
<tr>
<td>CMAQ</td>
<td>Congestion Management and Air Quality Program</td>
</tr>
<tr>
<td>COAST</td>
<td>Cooperative Alliance for Seacoast Transportation</td>
</tr>
<tr>
<td>DNCR</td>
<td>Department of Natural &amp; Cultural Resources</td>
</tr>
<tr>
<td>EV</td>
<td>Electric Vehicles</td>
</tr>
<tr>
<td>FAST Act</td>
<td>Fixing Americas Surface Transportation Act</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FEET</td>
<td>Frederick E. Everett Turnpike</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highways Administration</td>
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<tr>
<td>FRA</td>
<td>Federal Railroad Administration</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
</tr>
<tr>
<td>GACIT</td>
<td>Governor's Advisory Commission on Intermodal Transportation</td>
</tr>
<tr>
<td>GARVEE</td>
<td>Grant Anticipation Revenue Vehicle (Borrows against future federal funds)</td>
</tr>
<tr>
<td>HB 1817</td>
<td>House Bill 1817 - Special funding for red listed bridges (One time infusion)</td>
</tr>
<tr>
<td>HSIP</td>
<td>Highway Safety Improvement Program</td>
</tr>
<tr>
<td>IIJA</td>
<td>Infrastructure Investment &amp; Jobs Act/ (BIL – Bipartisan Infrastructure Law)</td>
</tr>
<tr>
<td>LPA</td>
<td>Local Public Agency</td>
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<tr>
<td>LTAP</td>
<td>Local Technology Transfer Program</td>
</tr>
<tr>
<td>MOBIL</td>
<td>Municipal Owned Bridge-Bipartisan Infrastructure Law</td>
</tr>
<tr>
<td>MOBRR</td>
<td>Municipal Owned Bridge Replacement &amp; Rehabilitation</td>
</tr>
<tr>
<td>MTA</td>
<td>Manchester Transit Authority</td>
</tr>
<tr>
<td>NTA</td>
<td>Nashua Transit Authority</td>
</tr>
<tr>
<td>RAISE</td>
<td>Rebuilding American Infrastructure with Sustainability and Equity (Discretionary grant program)</td>
</tr>
<tr>
<td>RPC</td>
<td>Regional Planning Commission</td>
</tr>
<tr>
<td>SAB</td>
<td>State Aid Bridge Program</td>
</tr>
<tr>
<td>SAH</td>
<td>State Aid Highway Program</td>
</tr>
<tr>
<td>SB 367</td>
<td>Senate Bill 367 - 4.2 Cents Road toll tax (Gas Tax)</td>
</tr>
<tr>
<td>SRL</td>
<td>State Red List (Bridges)</td>
</tr>
<tr>
<td>SPR</td>
<td>Statewide Planning &amp; Research</td>
</tr>
<tr>
<td>STBG</td>
<td>Surface Transportation Block Grant</td>
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<tr>
<td>TA/TAP</td>
<td>Transportation Alternatives Program</td>
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<tr>
<td>TIFIA</td>
<td>Transportation Infrastructure Finance and Innovation Act (Federal Loan)</td>
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<tr>
<td>TIFIA DS</td>
<td>TIFIA Debt Service</td>
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<tr>
<td>TIGER</td>
<td>Transportation Investment Generating Economic Recovery (Discretionary Grant Program)</td>
</tr>
<tr>
<td>TMA</td>
<td>Transportation Management Area</td>
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<tr>
<td>TRR</td>
<td>Turnpike Rehabilitation &amp; Reconstruction</td>
</tr>
<tr>
<td>TYP</td>
<td>Ten Year Plan</td>
</tr>
<tr>
<td>UZA</td>
<td>Urbanized Zone Area</td>
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Ridership Forecasting Overview

The prior ridership forecast for the project was prepared in 2014 for a number of service alternatives studied at that time as part of the NHDOT Alternatives Analysis for the project. The most promising of the alternatives was identified as Manchester Regional Commuter Rail. Subsequently, in 2021 NHDOT commenced further development of the preferred alternative, which involved updating the service plan and developing a new ridership forecast.

During the seven year hiatus in analysis of the alternatives there were changes in federal guidelines on preparation of ridership estimates and changes in corridor demographics. The tables and bullet points below provide a summary comparison of the forecasts and their key differences.

**Comparison of New Hampshire Daily Inbound Boardings* from the Prior and New Ridership Forecasts**

<table>
<thead>
<tr>
<th>New Hampshire Stations</th>
<th>Prior Build Forecast (Year 2014)</th>
<th># of Inbound Trains</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Nashua</td>
<td>590</td>
<td>17</td>
</tr>
<tr>
<td>Nashua Crown Street</td>
<td>420</td>
<td>17</td>
</tr>
<tr>
<td>Bedford/MHT</td>
<td>280</td>
<td>8</td>
</tr>
<tr>
<td>Downtown Manchester</td>
<td>270</td>
<td>8</td>
</tr>
<tr>
<td><strong>New Hampshire Total</strong></td>
<td><strong>1,560</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Hampshire Stations</th>
<th>New Build Forecast (2040)</th>
<th>COVID Low impact</th>
<th>COVID Medium impact</th>
<th>COVID High impact</th>
<th># of Inbound Trains</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Nashua</td>
<td>934</td>
<td>800</td>
<td>700</td>
<td>500</td>
<td>16</td>
</tr>
<tr>
<td>Nashua Crown Street</td>
<td>705</td>
<td>600</td>
<td>500</td>
<td>400</td>
<td>16</td>
</tr>
<tr>
<td>Bedford/MHT</td>
<td>764</td>
<td>700</td>
<td>600</td>
<td>400</td>
<td>16</td>
</tr>
<tr>
<td>Downtown Manchester</td>
<td>464</td>
<td>400</td>
<td>400</td>
<td>300</td>
<td>16</td>
</tr>
<tr>
<td><strong>New Hampshire Total</strong></td>
<td><strong>2,866</strong></td>
<td><strong>2,500</strong></td>
<td><strong>2,200</strong></td>
<td><strong>1,600</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Note that total ridership (inbound and outbound) would be approximately double the daily inbound boardings

**Similarities in the Forecasts**

- Both assume service is an extension of the MBTA Lowell Line commuter rail with same type of equipment and similar operating speeds
- Both assume the same four proposed stations in New Hampshire at locations listed above

**Key Differences in the Forecasts**

- **Demographics**: Prior forecast used 2014 demographics (population and employment) and the new forecast uses updated 2040 demographics from regional planning agencies in the corridor
- **Forecasting Model**: Prior forecast used Federal Transit Administration (FTA) Aggregate Rail Ridership Forecasting Model. The new forecast uses FTA’s Simplified Trips-On-Project Software (STOPS) model, which is the now standard FTA model for forecasting ridership
- **Increased Connectivity**: Multimodal connections were not as well defined in the 2014 forecast, and the new forecast provides improved bus transit, ped/bike, shuttle service to the airport, and P&R connectivity
PROTECT - Promoting Resilient Operations for Transformative, and Cost-saving Transportation

**Purpose:** To help States improve the resiliency of transportation infrastructure

**Funding:** 80% federal with 20% match

Match can be reduced to 10% with development and implementation of a resiliency improvement plan

Formula funding – NH receives annual apportionment ($5.8M FFY 2022)

Discretionary Grants (resiliency improvement, community resilience & evacuation route, at risk coastal infrastructure grants).

**Plan:**

1) Increase CRDR program (Culvert Replacement/Rehabilitation & Drainage Repairs) funding by $2M per year.
   a. DOT Recently completed an initial statewide culvert inventory in the Statewide Asset Data Exchange System (SADES) called CCDS Phase 1 (Culvert & Closed Drainage Systems). This 3-year effort geolocated over 5000 culverts and documents culvert details including a basic condition assessment. DOT also developed a detailed culvert inspection procedure to take a closer look at poor condition culverts. This culvert inventory is utilized to prioritize the DOT’s culvert investments.

2) Identify existing projects that are making resiliency investments by developing a coastal flood risk tolerance framework for various highway tiers.
   a. Utilize CRDR program for smaller size projects (less than $5M for resiliency components).
   b. Introduce individual projects through the TYP to address larger scale investment needs
   c. DOT Project Review Committee to ensure all projects (current & future) consider climate change and address resiliency needs where appropriate
      i. Rye 43002 - NH1A culvert replacement
      ii. Gilmanton 43536 – NH107 culvert improvements
      iii. Shelburne 42599 - US2 culvert replacements
      iv. Greenland 43849 NH33/Winnicut River Engineering assessment - resiliency
   d. Apply for discretionary grants for larger projects, ie.
      i. Hampton 40797 - Ocean Boulevard
      ii. North Hampton – Rye 42312 – seawall reconstruction
      iii. Hampton 41584 – NH101-US1 interchange reconfiguration
Traffic Noise Analysis  
State Project No. 16189B  
Portsmouth, New Hampshire 

Monitoring Locations

Category B (Below NAC)
Category B (Exceed NAC)
Category C (Below NAC)
Category C (Exceed NAC)
Category D (Below NAC)
Category E (Below NAC)
Category F
Category G

Existing Noise Barrier

Figure 2
Existing Exterior Sound Levels

November 2021
Area 2 - Sherburne Rd/ Greenland Rd
Length: 1,700
Height: 25
Area: 42,330 s.f.
Impacts: 12
Benefits: 13
Insertion Loss: 9-13 dB(A)
Effectiveness: 3.256
Criterion: 1,700
Cost ($55/sf): $2.3M

Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire
Area 3 - Pannaway Manor
Length: 2,500 ft
Height: 21 ft
Area: 52,260 s.f.
Impacts: 33
Benefits: 70
Insertion Loss: 8-14 dB(A)
Effectiveness: 747
Criterion: 1,700
Cost ($55/sf): $2.9M
Utility Relocation: $1M
Total Cost: $3.9M

Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

October 2021
Area 4 - Coakley Rd
Length: 1,400 ft
Height: 25 ft
Area: 35,000 s.f.
Impacts: 4
Benefits: 10
Insertion Loss: 7-10 dB(A)
Effectiveness: 3,500
Criterion: 1,700
Cost ($55/ft): $1.9M

Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

Impact & Benefit
No Impact & No Benefit
Impact & No Benefit
No Impact & No Benefit (Category F)
Impact & No Benefit (Category G)
Existing Noise Barrier
Noise Barrier (Feasible and Reasonable)
Noise Barrier (Not Feasible and Reasonable)
Areas 6 & 8 - Rockingham Ave/Edmond Ave (No Bridge Barriers)
Length: 3,140 ft
Height: 23 ft
Area: 72,180 s.f.
Impacts: 34
Benefits: 49
Insertion Loss: 7-14 dB(A)
Effectiveness: 1.473
Criterion: 1.600
Cost ($55/sf): $4M
Figure 11
Build - Study Areas 6 & 8
Maplwood Avenue to US-4 (I-95 SB)

Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

Areas 6 & 8 - Rockingham Ave/Edmond Ave (Barriers on Bridges)
Length: 3,540 ft
Height: 23 ft (11 ft on bridges)
Area: 76,580 s.f.
Impacts: 34
Benefits: 68
Insertion Loss: 8-14 dB(A)
Effectiveness: 1,126
Criterion: 1,600
Cost ($55/sf): $4.2M
Bridge Retrofit: $1.5M
Total Cost: $5.7M
Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

Figure 12

Build - Study Area 7
Woodbury to Maplewood Avenue (I-95 NB)

Area 7, 9 & 10 - New Franklin School/Central Ave/Cutts Ave
Length: 5,620 ft
Height: 25 ft
Area: 132,400 s.f.
Impacts: 29
Benefits: 60
Insertion Loss: 7-10 dB(A)
Effectiveness: 2.207
Criterion: 1.600
Cost ($55/sf): $23.8M
Figure 1

Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

Area 7, 9 & 10 - Cutts Ave/Central Ave/New Franklin School
Length: 5,620 ft
Height: 25 ft
Area: 132,400 s.f.
Impacts: 29
Benefits: 60
Insertion Loss: 7-10 dB(A)
Effectiveness: 2.207
Criterion: 1,600
Cost ($55/sf): $23.8M

Impact & Benefit
No Impact & No Benefit
Impact & No Benefit
No Impact & No Benefit

Existing Noise Barrier
Noise Barrier (Feasible and Reasonable)
Noise Barrier (Not Feasible and Reasonable)
Area 11 - Kearsarge Way
Length: 1,300 ft
Height: 25 ft
Area: 32,500 sq ft
Impacts: 2
Benefits: 0
Insertion Loss: 4 dB(A)
Effectiveness: N/A
Criterion: 1,700
Cost ($55/ft): $1.8M
Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

Build - Study Area 12
North of Market Street (I-95 SB)

Figure 16

Impact & Benefit
No Impact & Benefit
Impact & No Benefit
No Impact & No Benefit
Category F
Category G
Existing Noise Barrier
Noise Barrier (Feasible and Reasonable)
Noise Barrier (Not Feasible and Reasonable)

November 2021
Traffic Noise Analysis
Type II Study
Portsmouth, New Hampshire

Area 13 - Echo Ave
Length: 1,400 ft
Height: 25 ft
Area: 35,000 s.f.
Impacts: 1
Benefits: 0
Insertion Loss: 4 dB(A)
Effectiveness: N/A
Criterion: 1,500
Cost ($/sf): $1.9M
Figure 3

Existing Noise Levels

<table>
<thead>
<tr>
<th>Category A (Below NAC)</th>
</tr>
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</tr>
<tr>
<td>Category F</td>
</tr>
</tbody>
</table>

Monitoring Locations

- Existing Sound Wall

Area 16 - Corporate Dr.
- Length: 600 ft
- Height: 17 ft
- Area: 10,200 sq. ft.
- Impacts: 4 (Tony Rahn Park)
- Benefits: 4
- Insertion Loss: 7.2 dB(A)
- Effectiveness: 2.55
- Criterion: 1.500
- Cost ($55/ft): $0.6M

Traffic Noise Analysis
Type II Study
Portsmouth, New Hampshire
Traffic Noise Analysis
State Project No. 16189B
Portsmouth, New Hampshire

Area 7 - New Franklin School
Length: 2,390 ft
Height: 22 ft
Area: 52,600 s.f.
Impacts: 22
Benefits: 19
Insertion Loss: 7-10 dB(A)
Effectiveness: 2.768
Criterion: 1.600
Cost ($55/sf): $2.9M

Figure 1
Build - Study Area 7
Woodbury to Maplewood Ave (I-95 NB)
1 State 10-Year Transportation Improvement Plan. The legislature hereby adopts the Ten Year Transportation Improvement Plan 2023-2032 Pursuant to RSA 228:99 and RSA 240 of the Laws of New Hampshire and encourages expeditious implementation of the projects shown therein.

2 Turnpike System; Funds Provided. Amend RSA 237:7, I subparagraph (s) to read as follows:

(e) Construction and improvements to the central New Hampshire turnpike. RSA 237:2, IV. $126,600,000-$179,800,000
(h) Improvements to central New Hampshire turnpike. RSA 237:2, IV(h), VII, VII(b), VII(c), IX, XI. $954,000,000-$977,500,000
(r) Construction of the Newington-Dover Little Bay Bridge project. $275,000,000-$279,100,000
(s) Construction of noise barriers along I-95 in Portsmouth. $3,200,000-$13,700,000
(t) Construction of all electronic tolling or open road tolling plazas. RSA 237:2, VIII, RSA 237:5, II(o)-(p). $27,000,000-$37,300,000

Effective Date. This act shall take effect upon its passage.