2023 ITS-NY
I-81 Viaduct: Where We’ve Been and Where We’re Going

June 14, 2023
I-81 Viaduct Today

Project Area

[Map showing the project area with key locations such as Syracuse High School, Downtown Syracuse, and Street-level Grid Improvement. Arrows indicate directions to Canada and Tennessee.]
I-81 Viaduct Today

Interstate 81 Engineering Issues

Infrastructure Deficiencies

Safety

Mobility

Geometrics
The 15th Ward – Urban Renewal and I81

Historical Impacts
The Alternatives

No Build

Viaduct

Community Grid

Tunnel
### Summary of Build Alternatives

<table>
<thead>
<tr>
<th></th>
<th>Community Grid</th>
<th>Viaduct</th>
<th>Tunnel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>$2.25 billion</td>
<td>$2.4 billion</td>
<td>$4.9 billion</td>
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<tr>
<td><strong>Project Duration</strong></td>
<td>6 Years</td>
<td>7 Years</td>
<td>11 years</td>
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<tr>
<td><strong>Building Takings</strong></td>
<td>4</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td><strong>Reconnects Community/ Facilitates Economic Development</strong></td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Enhances Safety</strong></td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Supports Health Across All Policies</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td><strong>Annual Operating/ Maintenance Costs</strong></td>
<td>Average</td>
<td>Average</td>
<td>High</td>
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</table>
The Alternatives

All Alternatives – Freeway Traffic Analysis

Freeway Segment Level of Service

Level of Service (LOS) is an assessment of a road’s operating conditions. It reflects the relative ease of traffic flow on a scale of A to F, with minimal delays rated as LOS A and congested conditions rated as LOS F.

- More than 190 segments were analyzed
- Under the Viaduct, Community Grid, and Orange Tunnel Concept, the vast majority of freeway segments would operate at LOS A, B, or C, which is very good
- Less than 7 percent of segments would operate at LOS D, well within acceptable design criteria
- No substantial differences between the Viaduct, Community Grid, and Orange Tunnel

LOS Legend

- A
- B
- C
- D
- E
- F
## The Alternatives

### All Alternatives - Travel Time Differences

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>Morning Peak</th>
<th>Evening Peak</th>
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<tbody>
<tr>
<td></td>
<td>HOURS</td>
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<td><strong>From Fayetteville to Manlius to:</strong></td>
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<tr>
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<td>Fairmount</td>
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<td>Liverpool</td>
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<tr>
<td>St. Joseph's Hospital</td>
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<td>13</td>
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<tr>
<td>University Hill</td>
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<td>15</td>
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<td><strong>From Lafayette to:</strong></td>
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The Alternatives

Interstate Travel Time Changes

No Build

Community Grid
The Alternatives

Interstate Traffic Volume Changes

No Build

Community Grid

Legend:
- Daily Traffic Volume (both directions)
- AM Peak Hour Directional Traffic Volume
- PM Peak Hour Directional Traffic Volume
The Alternatives

Community Grid / Intersection Traffic Analysis

- Traffic functions well with good travel times. Traffic signals ≠ traffic congestion.
NEPA Process Timeline

- **August 2013** – FHWA issued NOI to prepare an EIS
- **November 2013** – FHWA & NYSDOT prepared Scoping Initiation Package
- **2013 & 2014** – FHWA and NYSDOT held public scoping meetings
- **June 2014** – FHWA & NYSDOT prepared Draft Scoping Report
- **April 2015** – FHWA & NYSDOT issued Final Scoping Report
- **July 2021** – FHWA & NYSDOT published DDR/DEIS → Public comment period of 90 days included both virtual & in-person meetings. More than 8,000 comments received.
- **April/May 2022** – FHWA & NYSDOT published FDR/FEIS, ROD
The Community Grid
The Community Grid

Community Grid Alternative: Activating the Street Grid
# Construction Phasing

## The Community Grid

### Downtown Detail

<table>
<thead>
<tr>
<th>Contract Number</th>
<th>Construction Work</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BL 81/81 Northern Interchange, BL 81 Noise Barrier from I-690 to Exit Ramp to Route 11, I-81 Kirkville Road to I-690</td>
<td>Late 2022 to late 2025</td>
</tr>
<tr>
<td>2</td>
<td>BL 81/81 Southern Interchange, Routes 5/92 Interchange, Lyndon Corners, I-81 I-690 to Kirkville Road</td>
<td>Mid-2023 to late 2025</td>
</tr>
<tr>
<td>3</td>
<td>Northside Local Streets, Rehabilitate Bear Street, I-690 to BL 81</td>
<td>Mid-2023 to late 2025</td>
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<tr>
<td>4</td>
<td>I-690 Reconstruction, Forman Avenue to Beach Street, New I-690 Interchange at Crouse and Irving Avenues, Crouse Avenue Improvements, Irving Avenue Extension and Improvements</td>
<td>Mid-2023 to late 2025</td>
</tr>
<tr>
<td>5</td>
<td>BL 81, E. Brighton Avenue to Burt Street, New Northbound Exit to Colvin Street, Traffic Calmning to Transition Freeway to City Street, Replacement of Rail Bridge over Remwick Avenue Roundabout at Van Buren Street</td>
<td>Late 2023 to late 2025</td>
</tr>
<tr>
<td>6</td>
<td>I-690 Reconstruction, Leavenworth to Forman Avenues, Reconstruct West Street Interchange, Improvements to West and Genesee Streets</td>
<td>2026 to late 2028</td>
</tr>
<tr>
<td>7</td>
<td>BL 81, I-690 to Hawaiia Boulevard, New Bear Street Interchange</td>
<td>2025 to late 2028</td>
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<tr>
<td>8</td>
<td>Almond Street, Burt Street to Burnet Avenue, Improvements to Adams and Harrison Streets</td>
<td>2026 to late 2028</td>
</tr>
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*Source: New York State Department of Transportation*
Update Regional ITS Architecture - Syracuse Metropolitan Area (Onondaga County), Intelligent Transportation Systems Strategic Plan, Draft Technical Memorandum #2, Regional Architecture

Expand Intelligent Transportation Systems project-wide
The Community Grid

ITS in the EIS
Contract 1 - Northern I-481 Conversion to I-81

1. Business Loop 81 would merge/diverge with I-81 via high speed ramps.
2. Road would continue to be State Route 481.
3. Existing ramps would remain.
4. Ramp would be reconfigured.
5. Interchange would be reconfigured so that I-81 would be two lanes in each direction. Speed limit would be 65 mph.
6. Existing I-81 would be re-designated as I-481.
7. Existing I-81, south of new I-81, would be re-designated as the Business Loop 81.
ITS Elements
- **Removal/Replacement of:**
- **3 Permanent VMS**

- Design Builder shall perform all work necessary to design, furnish, build, and install temporary and permanent replacement of all ITS communication system field devices for uninterrupted service of the regional traffic management and traffic signals.

- “All work items shall not interrupt the Traffic Management Center (TMC) operation.”

- The Design Builder shall maintain and protect any existing Fiber Optic trunk cables located in the NYSDOT Right of Way. Should any disruptions of the existing Fiber Optic network be required due to the Design Builder’s operations, a temporary communication system or bypass communication linked to the NYSDOT TMC shall be provided.

- None of the current functionality of the existing system may be lost or negatively affected by construction activities related to this
The Community Grid

Contract 2 - Southern, I-481 Conversion to I-81
ITS Elements

- Removal and Replacement of:
  - 2 permanent VMS
  - 4 cameras & poles
  - 1 Acoustic Detection system (replaced with 4)
  - 2 ice detection systems

- 2 Road Weather Information Systems (RWIS) installed
• Insert examples of spec details of ice detection system
The Community Grid

Contract 4 - I-690/Course, Irving & Lodi

- Possible ITS Elements
  - Adaptive Signal Technology
  - Traffic Cameras & Poles
  - Variable Message Sign
The Community Grid

Contract 6 - I-690 Rebuild

- Possible ITS Elements
  - Variable Message Signs
  - Traffic Cameras and Poles
  - Road Weather Information Systems (RWIS) installed

I-690 Rebuild Irving to Leavenworth
The Community Grid

Contract 8 - Business Loop 81 Southern Section

- Possible ITS Elements
  - Adaptive Signal Technology
  - Traffic Cameras & Poles
  - Variable Message Sign
Possible PDH Questions to be updated/expanded on following slides
Question #1

The I-81 Viaduct bridge is coming to the end of its useful life. What are the major transportation engineering components that need to be addressed as part of this project?

A. Sustainability, Economic Development, Quality of Life, Livability

B. Infrastructure Deficiencies, Improve Safety, Correct Geometrics, Improve Mobility

C. DEIS, Public Hearing, FEIS, Record of Decision

D. None of the above
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B. Infrastructure Deficiencies, Improve Safety, Correct Geometrics, Improve Mobility

C. DEIS, Public Hearing, FEIS, Record of Decision

D. None of the above
DOT evaluated 17 underground solutions as a possible alternative to the I-81 Viaduct project. Why did the tunnel solutions fail to be carried forward as a feasible and prudent alternative?

A. Cost

B. Construction Timeframes & other Constructability Issues

C. Severing of Street Connectivity

D. All of the above
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D. All of the above
Question #3

The idea of the ‘Business Loop 81’ concept to replace Interstate 81 through Syracuse came from?

A. The Commissioner

B. Federal Highway Partners

C. The Public

D. None of the above
Question #3

The idea of the ‘Business Loop 81’ concept to replace Interstate 81 through Syracuse came from?

A. The Commissioner
B. Federal Highway Partners
C. The Public
D. None of the above
Some groups expressed concern with the conversion of I-81 to BL81 and the potential for future congestion issues under the Community Grid Alternative. DOT provided which piece of information to address this concern?

A. Intersection Level-of-Service Analysis in downtown Syracuse

B. Travel Times from the Suburbs to Major Destinations in downtown Syracuse

C. Changes in Freeway Traffic Volumes

D. All of the above
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B. Travel Times from the Suburbs to Major Destinations in downtown Syracuse

C. Changes in Freeway Traffic Volumes

D. All of the above
The department has done a significant amount of traffic analysis for signalized intersections in downtown Syracuse. How many signalized intersections were studied as a part of the I-81 Viaduct project?

A. 45
B. 145
C. 205
D. 260
Question #5

The department has done a significant amount of traffic analysis for signalized intersections in downtown Syracuse. How many signalized intersections were studied as a part of the I-81 Viaduct project?

A. 45
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C. 205
D. 260
The I-81 Viaduct: Where We’ve Been and Where We’re Going

Elizabeth Parmley, P.E.
NYSDOT, I81 Project Director
I81.dot.ny.gov