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

June 14, 2023

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

I-81 Viaduct Today

Project Area

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

I-81 Viaduct Today

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

I-81 Viaduct Today

Interstate 81 Engineering Issues

Infrastructure Deficiencies

Safety

Mobility

Geometrics

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The 15th Ward – Urban Renewal and I81

Historical Impacts

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Alternatives

No Build

Viaduct

Community Grid

Tunnel

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Alternatives

Summary of Build Alternatives

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

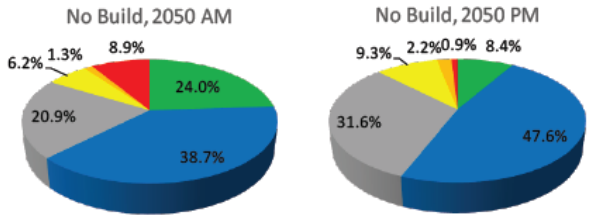
NEW YORK STATE OF OPPORTUNITY. Department of Transportation

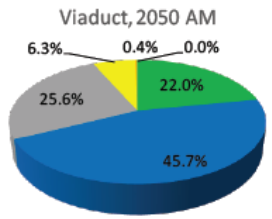
All Alternatives – Freeway Traffic Analysis

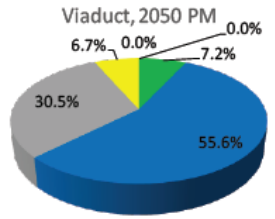
Freeway Segment Level of Service

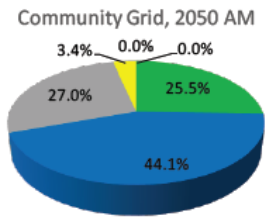
Level of Service (LOS) is an assessment of a road's operating conditions. It reflects the relative ease of traffic flow on a scale of A to F, with minimal delays rated as LOS A and congested conditions rated as LOS F.

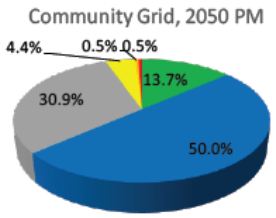
- More than 190 segments were analyzed
- Under the Viaduct, Community Grid, and Orange Tunnel Concept, the vast majority of freeway segments would operate at LOS A, B, or C, which is very good
- Less than 7 percent of segments would operate at LOS D, well within acceptable design criteria
- No substantial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

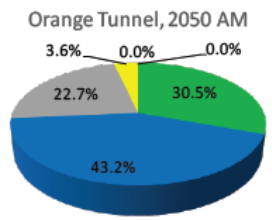


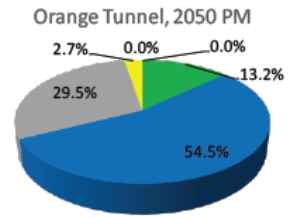












LOS Legend

A B C D E F

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Alternatives

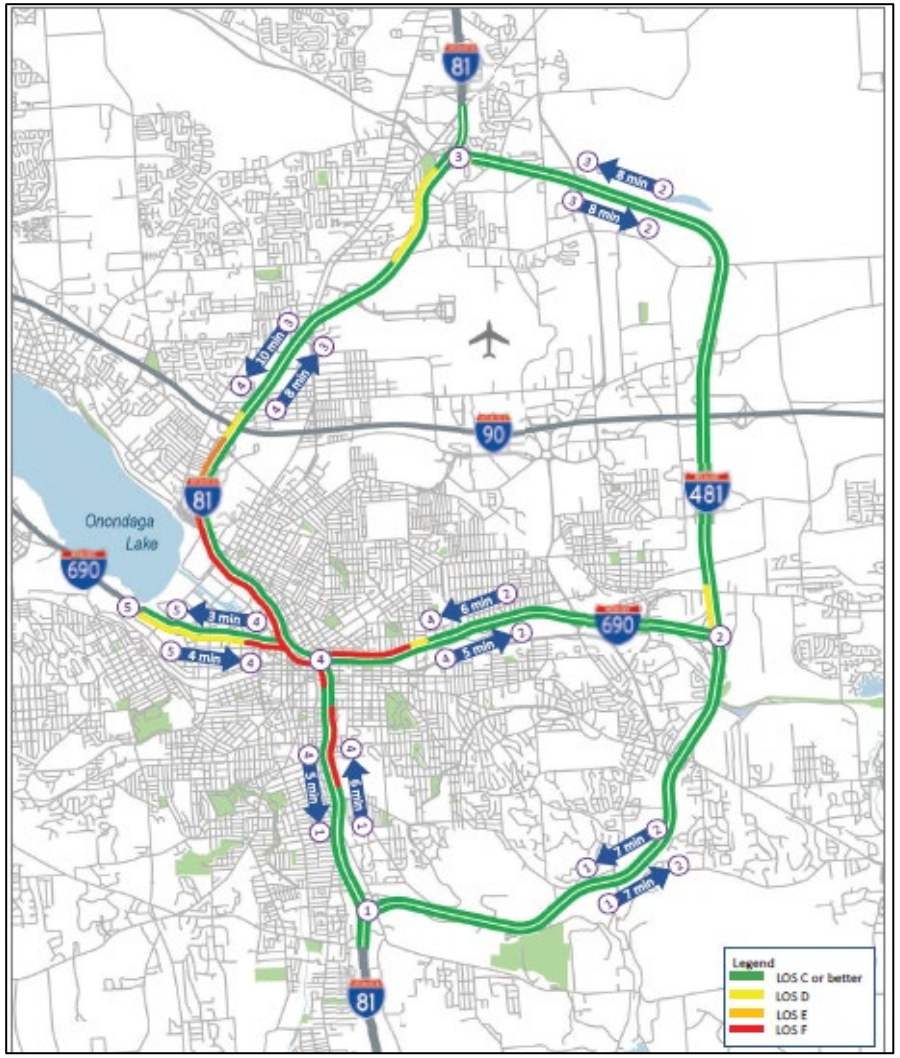
All Alternatives -Travel Time Differences

		Year 2050							
		Morning Peak				Evening Peak			
ALTERNATIVE		NO BUILD	VIADUCT	COMMUNITY GRID	TUNNEL	NO BUILD	VIADUCT	COMMUNITY GRID	TUNNEL
From Fayetteville/ Manlius to:	Baldwinsville	28	27	27	28	30	30	30	30
	Cicero	16	16	16	16	16	16	16	16
	Destiny USA	14	13	13	13	14	13	13	13
	Downtown	15	15	15	15	14	15	16	15
	Fairmount	21	20	20	20	22	22	22	22
	LaFayette	18	18	18	18	19	19	19	19
	Liverpool	18	17	17	17	18	18	18	18
	St. Joseph's Hospital	14	13	14	14	13	13	14	13
	University Hill	16	15	16	16	16	16	15	15
From LaFayette to:	Baldwinsville	31	30	37	31	32	31	36	32
	Cicero	25	24	26	24	25	24	26	24
	Destiny USA	17	15	22	15	16	15	20	15
	Downtown	18	16	19	17	16	16	16	17
	Fairmount	24	22	29	23	24	23	28	24
	Fayetteville/Manlius	18	18	18	18	18	18	18	18
	Liverpool	21	19	26	20	20	19	24	20
	St. Joseph's Hospital	19	17	20	18	16	17	17	17
	University Hill	17	14	16	16	14	14	14	15
From Liverpool to:	Baldwinsville	14	14	14	14	14	14	14	14
	Cicero	13	13	13	13	14	14	14	14
	Destiny USA	6	7	7	7	6	6	7	7
	Downtown	10	8	8	8	9	8	8	8
	Fairmount	15	15	16	15	17	17	19	17
	Fayetteville/Manlius	20	18	18	18	20	19	19	19
	LaFayette	21	20	24	20	20	20	25	20
	St. Joseph's Hospital	10	8	8	8	8	9	7	9
	University Hill	14	13	12	13	12	11	11	11
From St. Joseph's Hospital to:	Baldwinsville	20	20	21	21	22	23	23	23
	Cicero	12	12	12	12	12	12	13	12
	Destiny USA	3	3	3	3	4	3	4	3
	Downtown	3	3	3	3	3	3	3	4
	Fairmount	13	13	13	14	14	15	16	15
	Fayetteville/Manlius	14	14	16	15	15	16	17	16
	LaFayette	18	17	19	18	18	18	20	19
	Liverpool	7	7	7	7	8	8	8	8
	University Hill	7	7	8	9	7	8	7	8
From University Hill to:	Baldwinsville	21	20	21	22	24	23	23	25
	Cicero	15	14	15	16	16	15	16	17
	Destiny USA	7	6	7	7	7	6	7	8
	Downtown	6	5	6	6	6	6	6	6
	Fairmount	14	13	14	15	16	15	15	17
	Fayetteville/Manlius	15	15	14	16	17	17	16	17
	LaFayette	16	14	16	16	16	15	15	17
	Liverpool	10	10	11	11	12	11	12	13
	St. Joseph's Hospital	6	6	7	6	6	6	7	7

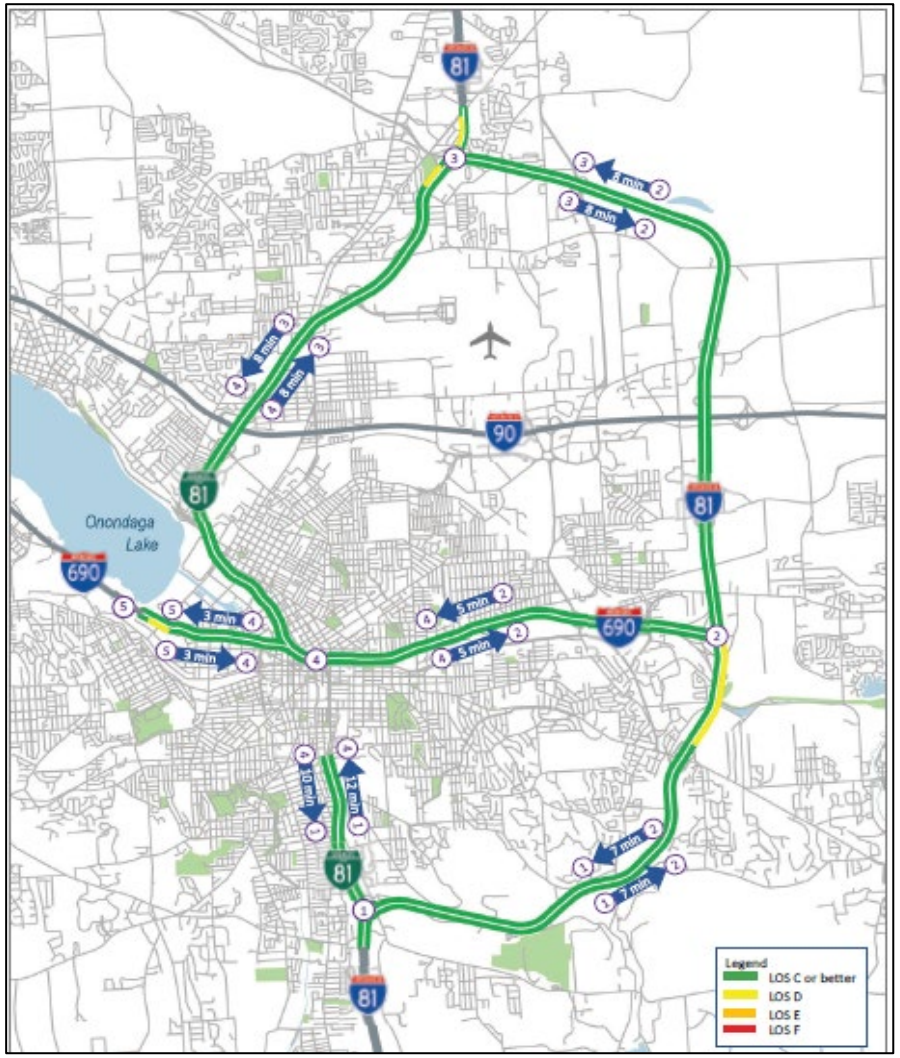
NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Alternatives

Interstate Travel Time Changes



No Build

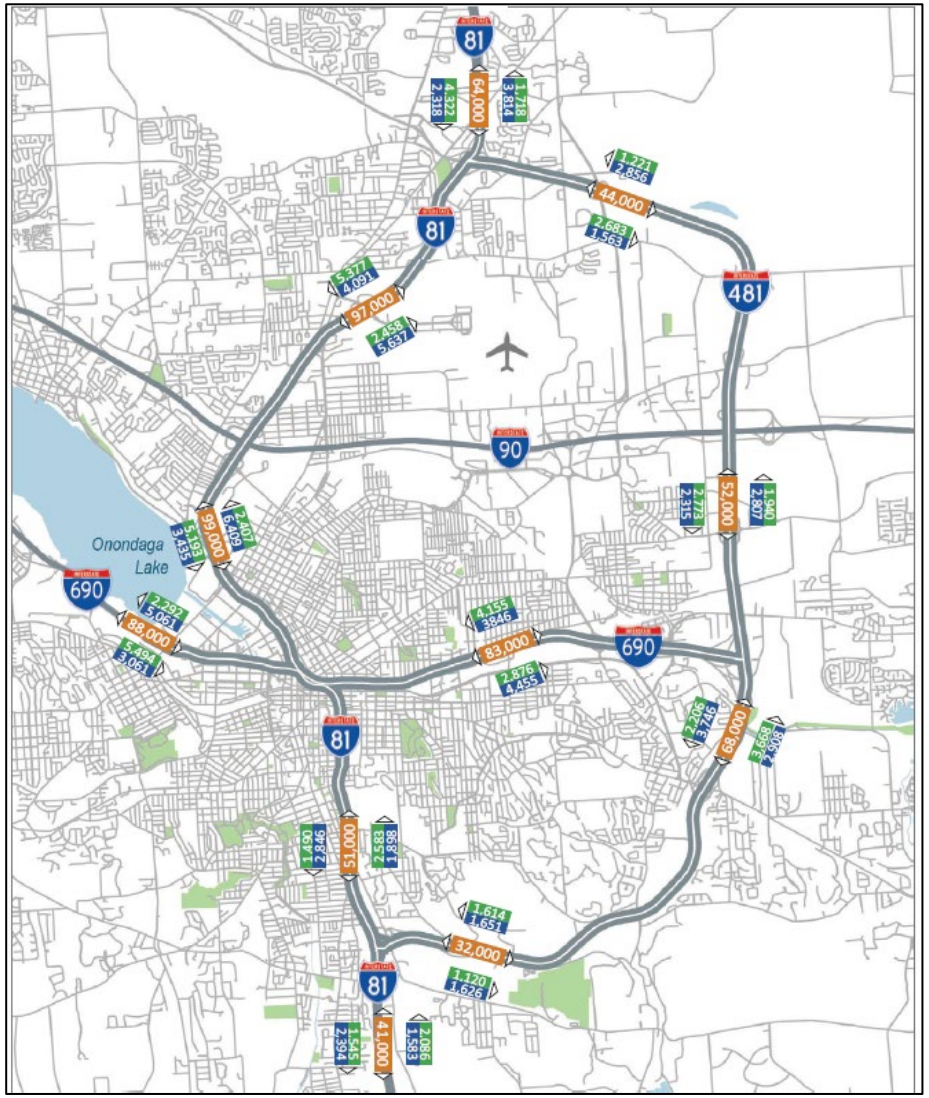


Community Grid

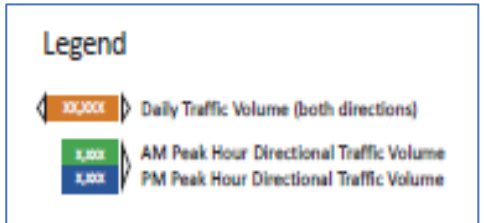
NEW YORK STATE OF OPPORTUNITY. Department of Transportation

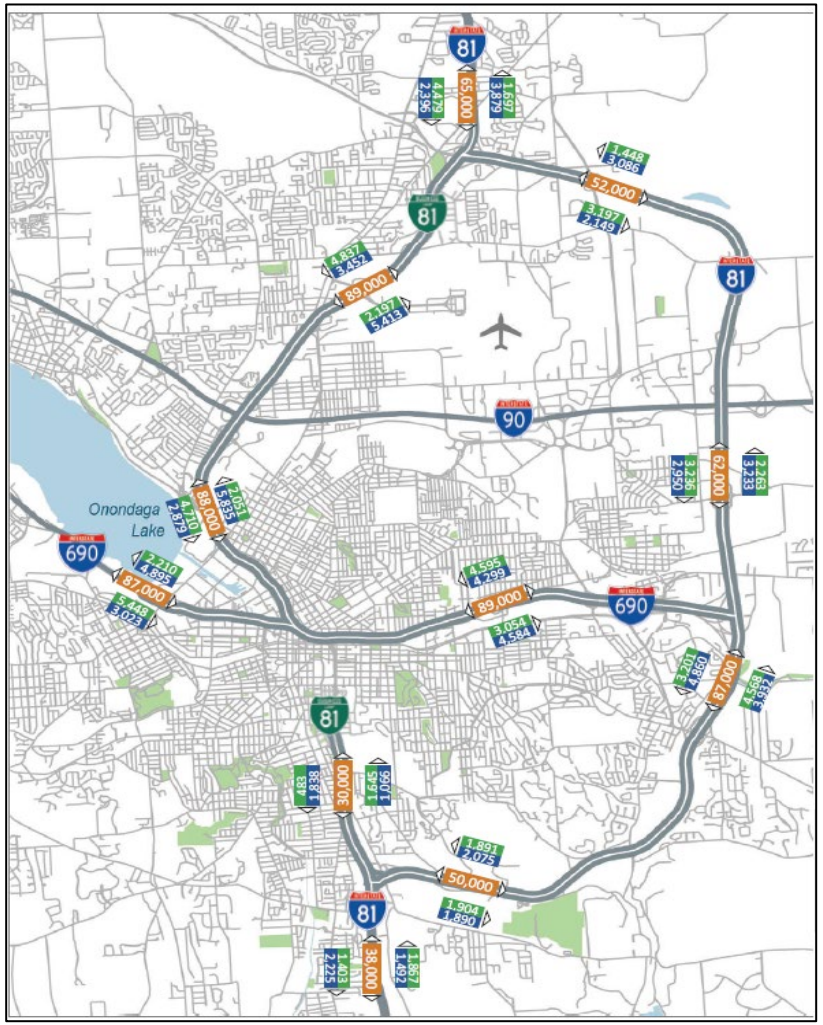
The Alternatives

Interstate Traffic Volume Changes



No Build



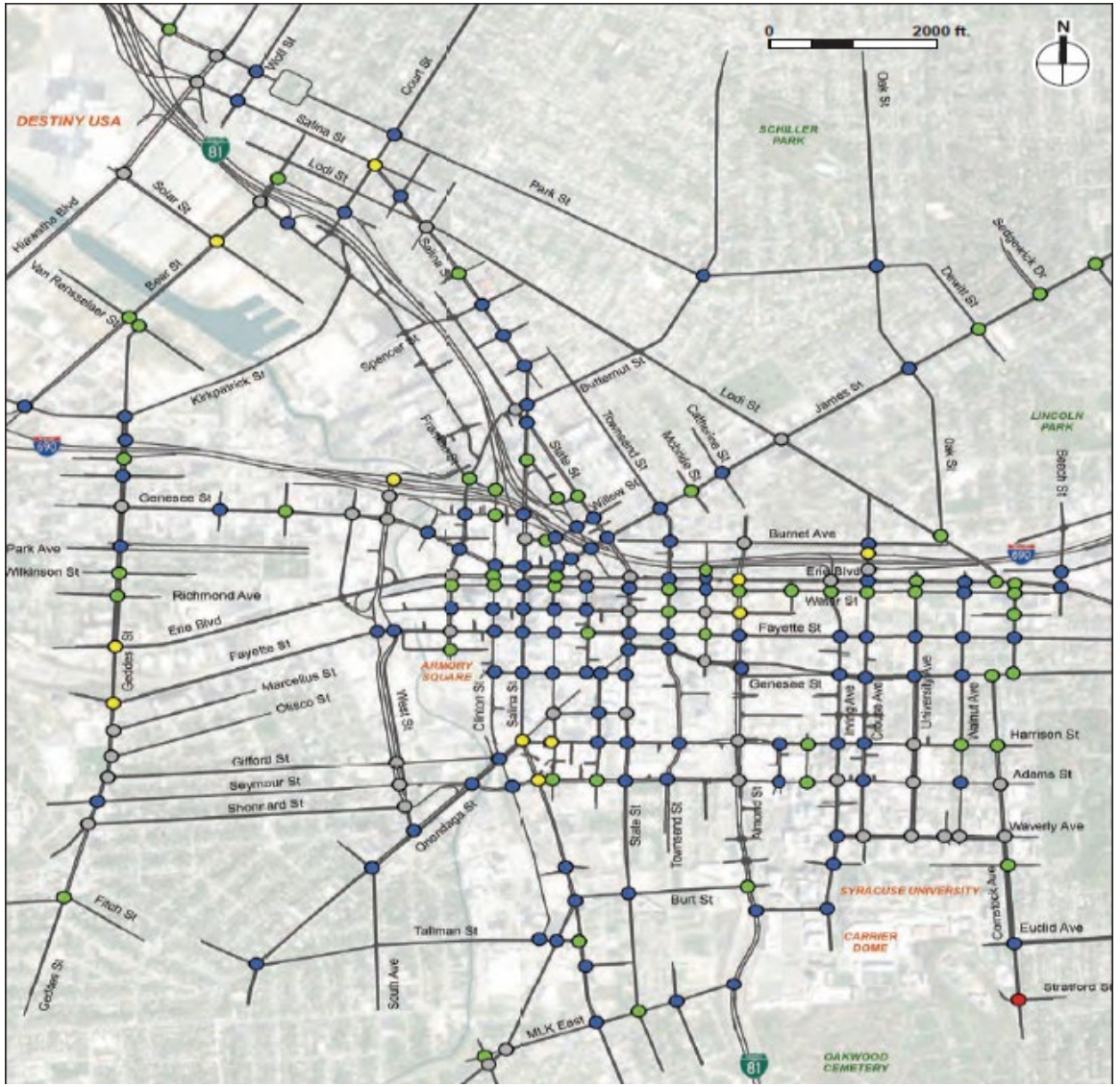


Community Grid

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Alternatives

Community Grid /Intersection Traffic Analysis



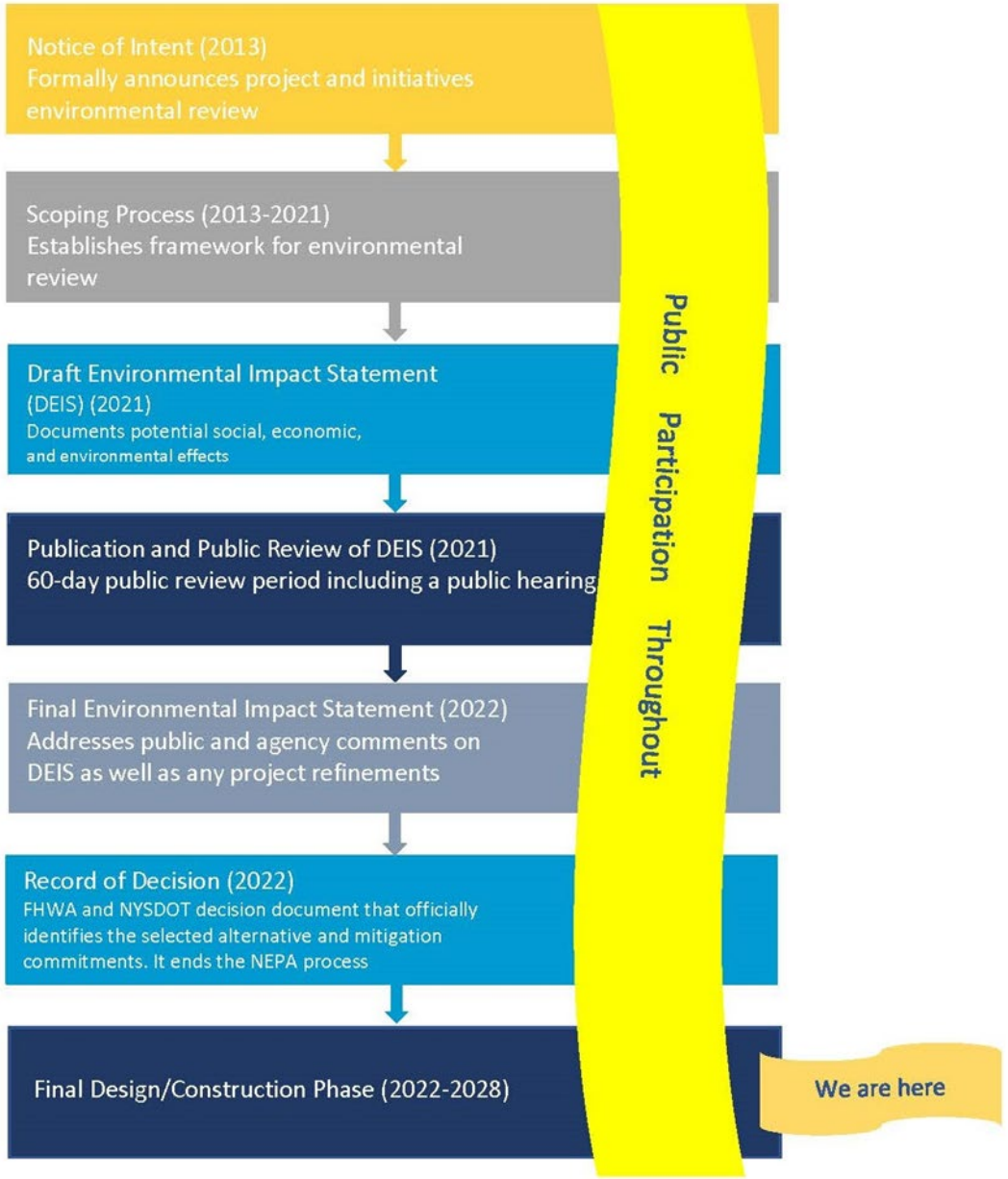
- Traffic functions well w/ good travel times. Traffic signals ≠ traffic congestion.

Intersection LOS

- A
- B
- C
- D
- E
- F

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Community Grid

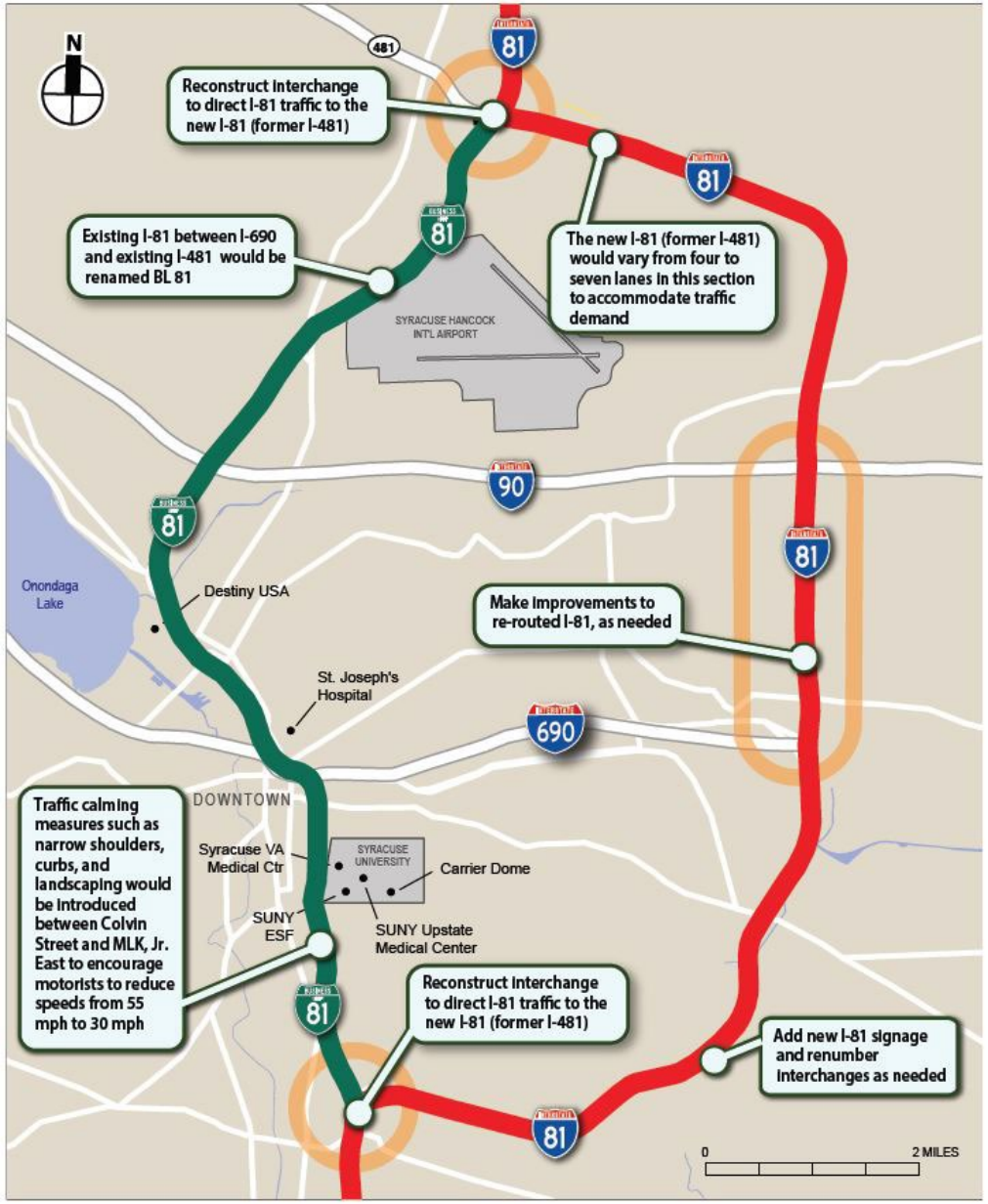


NEPA Process Timeline

- 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

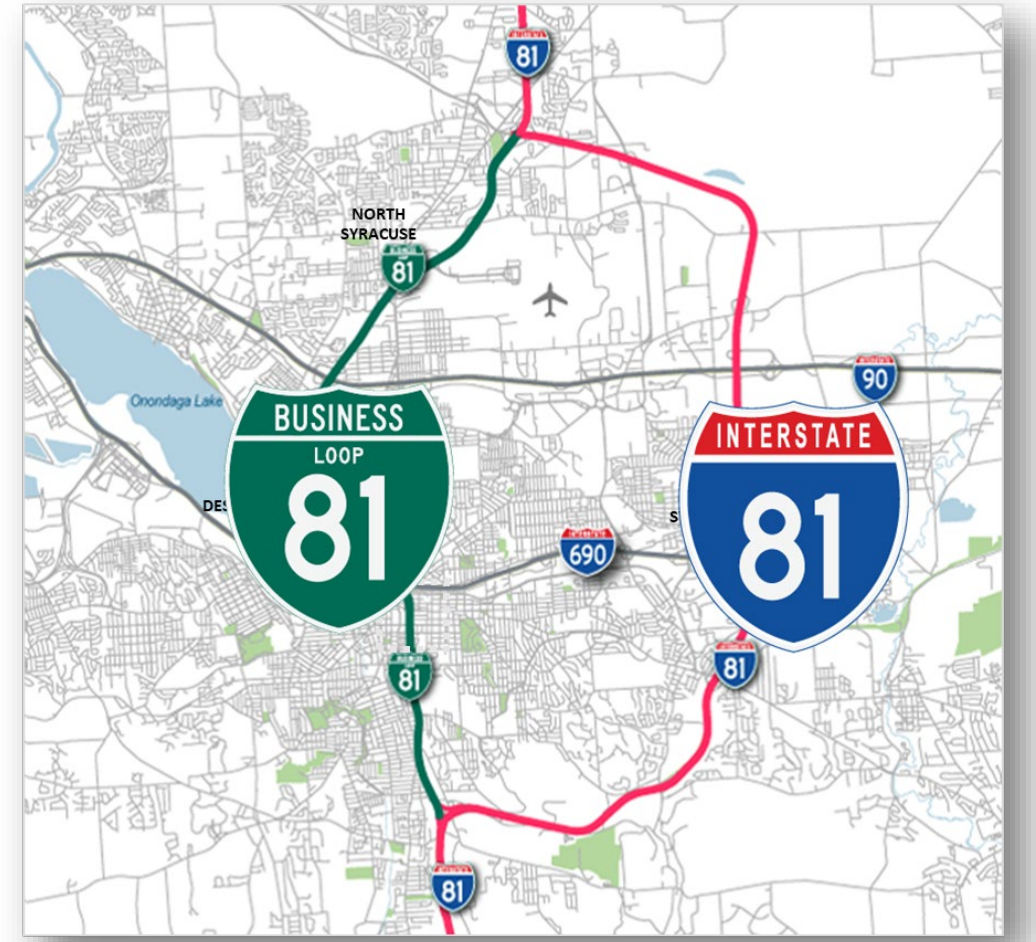
NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Community Grid



NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Community Grid



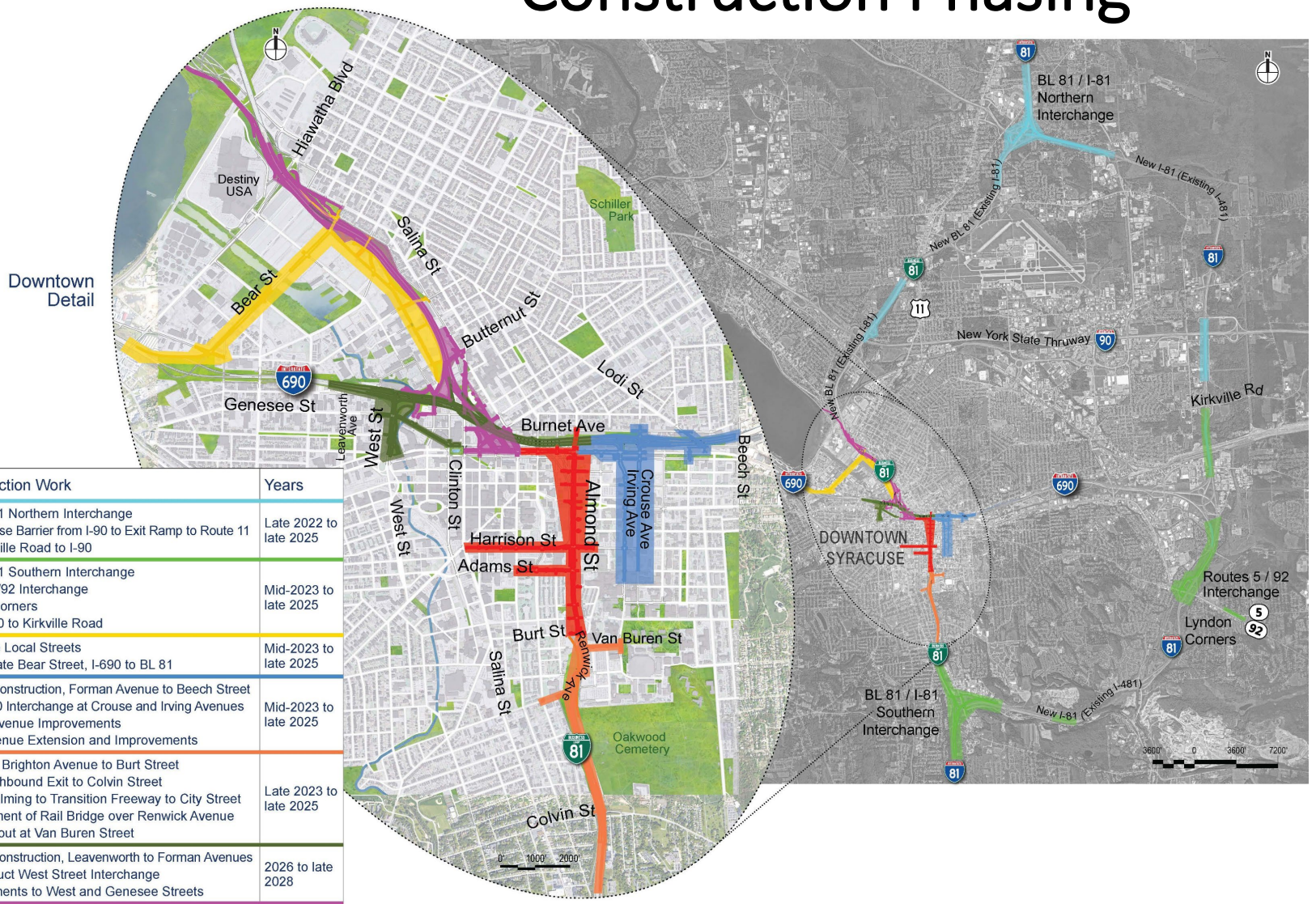
NEW YORK STATE OF OPPORTUNITY. Department of Transportation

Community Grid Alternative: Activating the Street Grid

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Community Grid

Construction Phasing



Contract Number	Construction Work	Years
1	BL 81/I-81 Northern Interchange BL 81 Noise Barrier from I-90 to Exit Ramp to Route 11 I-81 Kirkville Road to I-90	Late 2022 to late 2025
2	BL 81/I-81 Southern Interchange Routes 5/92 Interchange Lyndon Corners I-81 1-690 to Kirkville Road	Mid-2023 to late 2025
3	Northside Local Streets Rehabilitate Bear Street, I-690 to BL 81	Mid-2023 to late 2025
4	I-690 Reconstruction, Forman Avenue to Beech Street New I-690 Interchange at Crouse and Irving Avenues Crouse Avenue Improvements Irving Avenue Extension and Improvements	Mid-2023 to late 2025
5	BL 81, E. Brighton Avenue to Burt Street New Northbound Exit to Colvin Street Traffic Calming to Transition Freeway to City Street Replacement of Rail Bridge over Renwick Avenue Roundabout at Van Buren Street	Late 2023 to late 2025
6	I-690 Reconstruction, Leavenworth to Forman Avenues Reconstruct West Street Interchange Improvements to West and Genesee Streets	2026 to late 2028
7	BL 81, I-690 to Hiawatha Boulevard New Bear Street Interchange	2026 to late 2028
8	Almond Street, Burt Street to Burnet Avenue Improvements to Adams and Harrison Streets	2026 to late 2028

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

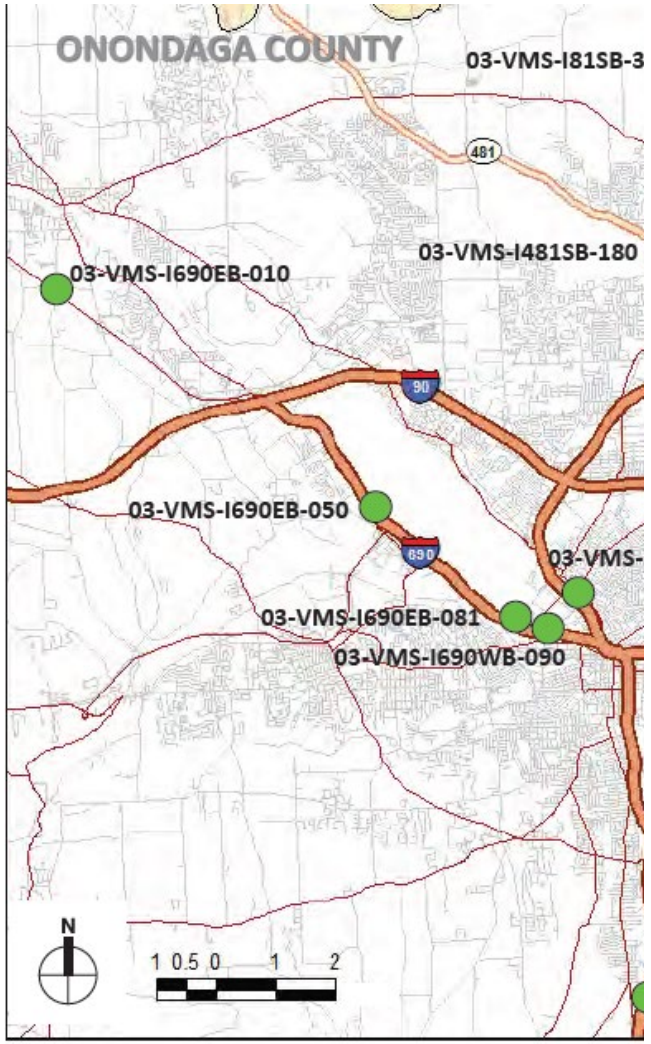
ITS in the EIS

- Update Regional ITS Architecture - Syracuse Metropolitan Area (Onondaga County), Intelligent Transportation Systems Strategic Plan, Draft Technical Memorandum #2, RegionalArchitecture

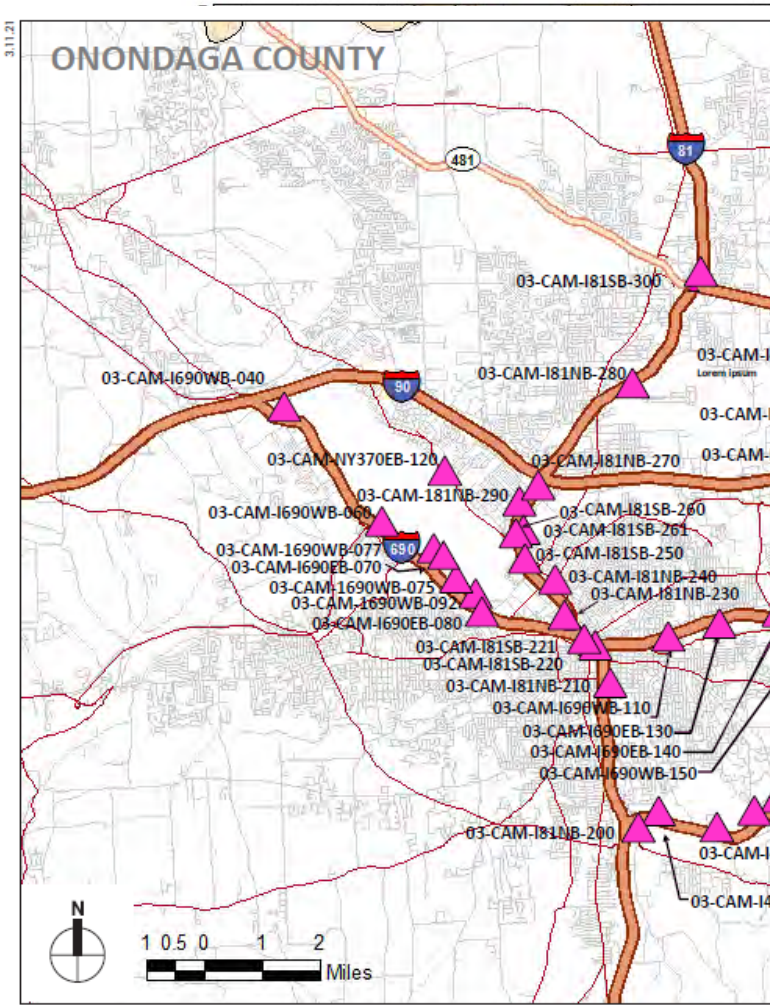
- Expand Intelligent Transportation Systems project-wide

The Community Grid

ITS in the EIS

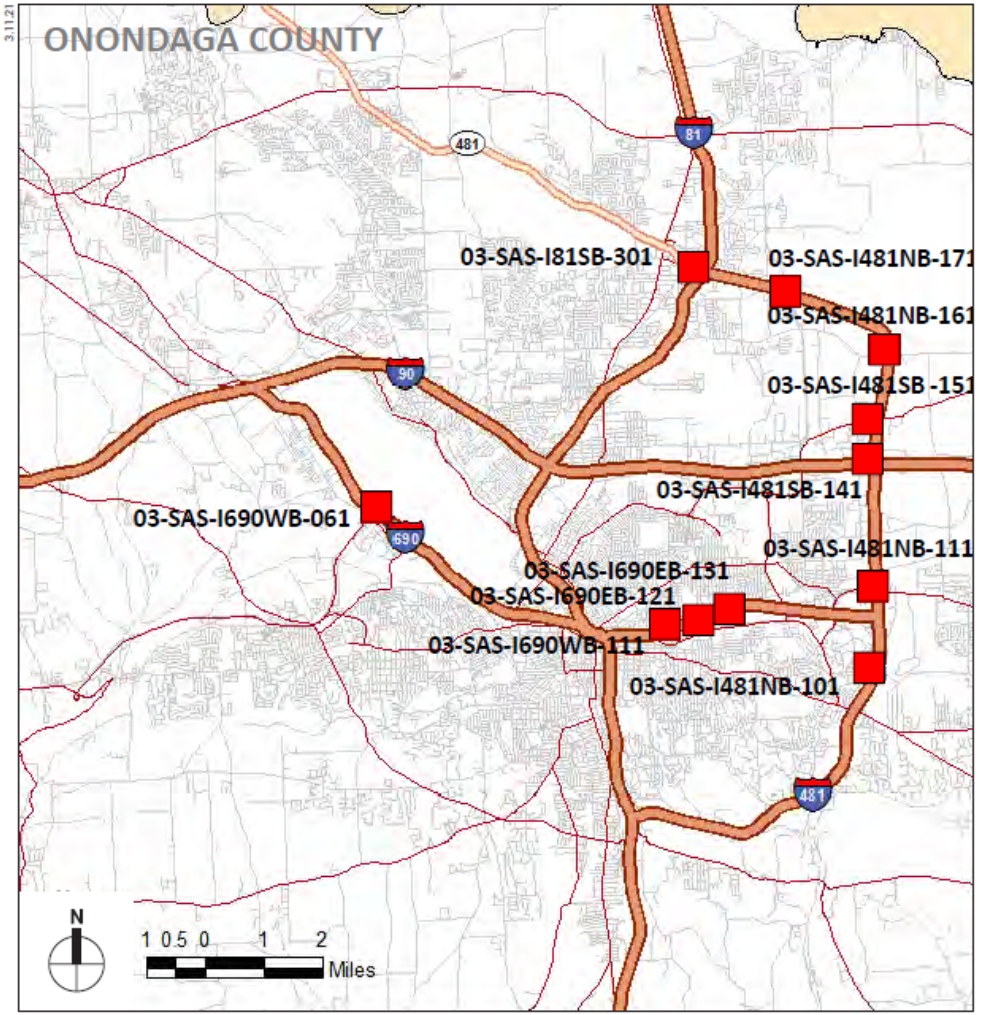


Variable Message Display (VMS) Location



CCTV Camera Location

ional Transportation Center

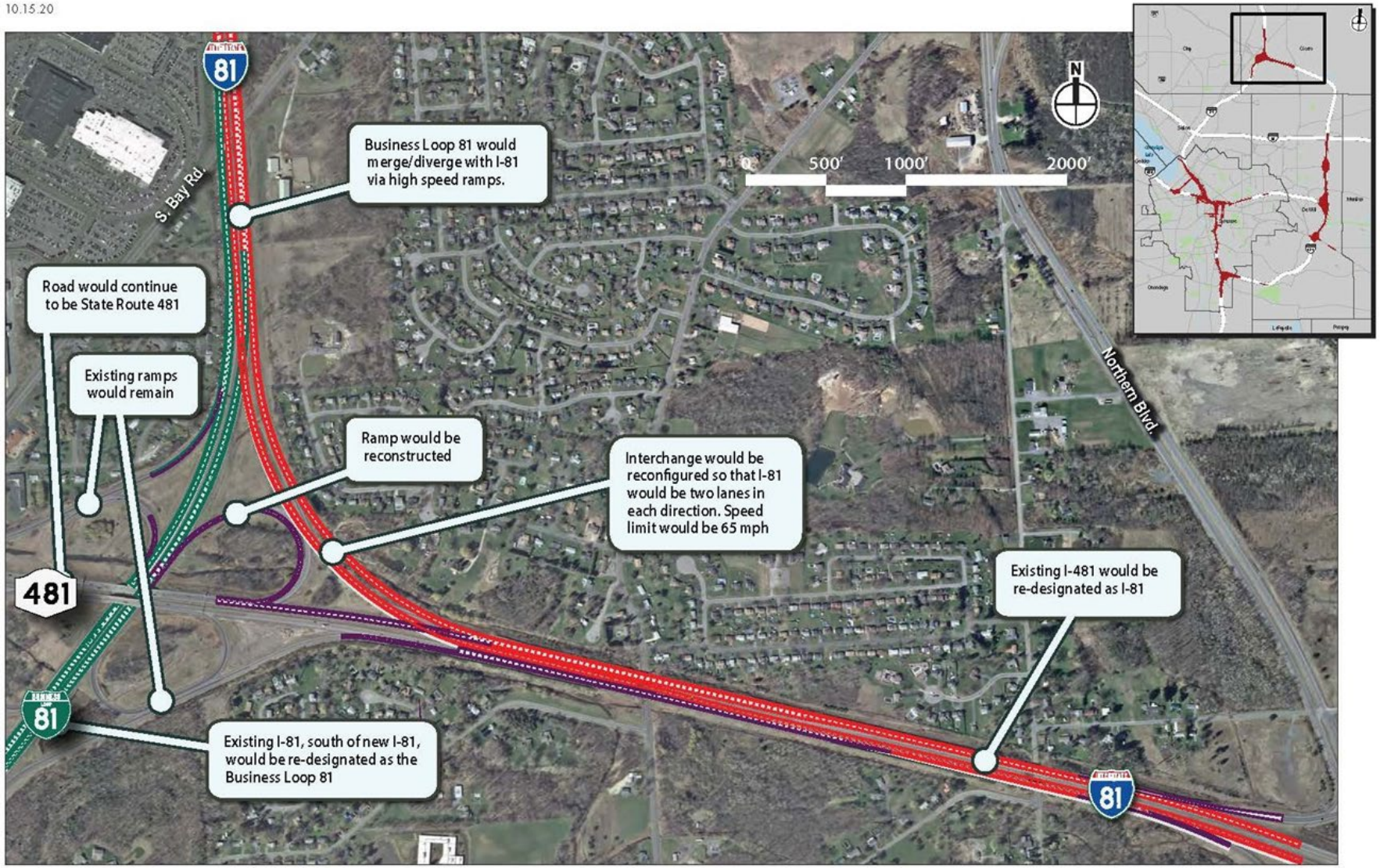


Vehicle Detection Sensor Location

The Community Grid

Contract 1 - Northern I-481 Conversion to I-81

10.15.20



NEW YORK STATE OF OPPORTUNITY. Department of Transportation

Contract 1 - Northern I-481 Conversion to I-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

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

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**

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

- Insert examples of spec details of ice detection system

The Community Grid

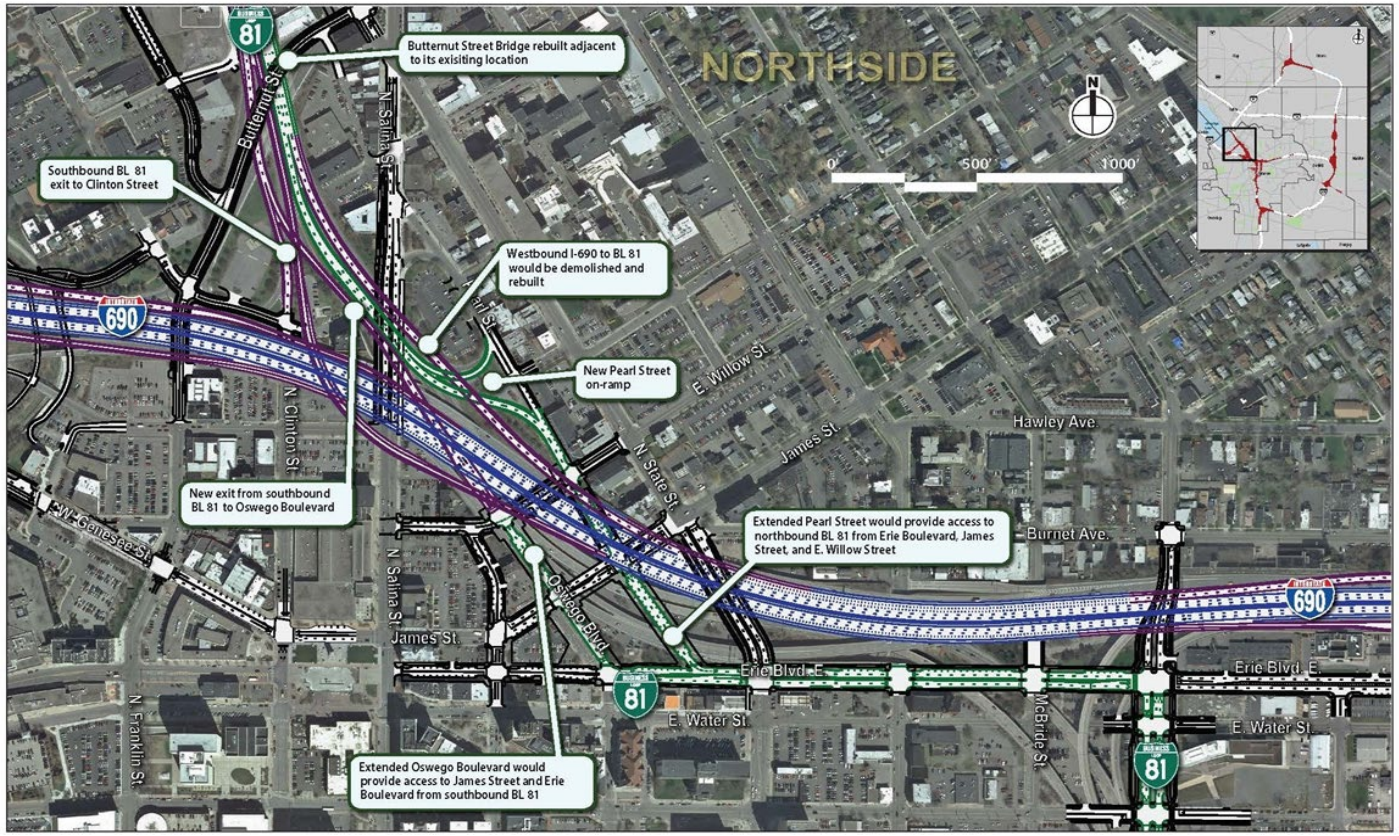
Contract 4 - I-690/Crouse, Irving & Lodi

- Possible ITS Elements
  - **Adaptive Signal Technology**
  - **Traffic Cameras & Poles**
  - **Variable Message Sign**

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Community Grid

Contract 6 - I-690 Rebuild



I-690 Rebuild Irving to Leavenworth

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

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

The Community Grid

Contract 8 - Business Loop 81 Southern Section

Community Grid BL 81 & Harrison Street

- Possible ITS Elements
  - **Adaptive Signal Technology**
  - **Traffic Cameras & Poles**
  - **Variable Message Sign**

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

PDH Questions

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

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

Question #2

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

Question #2

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

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

Question #4

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

Question #4

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

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

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

B. 145

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

NEW YORK STATE OF OPPORTUNITY. Department of Transportation