Appendix B-1
Alternatives Evaluation Matrices

TABLE A-1: SUMMARY
ALTERNATIVES SCREENING

ALTERNATIVE	PASS (✓) or FAIL (X)				
	Purpose and Need	Right-of-Way	Constructability	Cost	Overall
Alternative NB* No Build	N/A	N/A	N/A	N/A	✓
Alternative V-1 Rehabilitation	X	✓	✓	✓	X
Alternative V-2 New Viaduct Fully Improved to Current Standards	✓	✓	✓	✓	✓
Alternative V-3 New Viaduct with Substantial Design Improvements	✓	✓	✓	✓	✓
Alternative V-4 New Viaduct with Considerable Design Improvements	✓	✓	✓	✓	✓
Alternative V-5 New Stacked Viaduct	X	✓	✓	✓	X
Alternative SL-1 Boulevard	✓	✓	✓	✓	✓
Alternative SL-2 One-way Traffic on Almond Street and Other Local Street(s)	✓	✓	✓	✓	✓
Alternative SL-3 Two-way Traffic on Almond Street and Other Local Street(s)	✓	✓	✓	✓	✓
Alternative T-1 Almond Street Tunnel from MLK East to Butternut Street	X	✓	X	X	X
Alternative T-2 Almond Street Tunnel from MLK East to Genesee Street	X	✓	X	✓	X
Alternative T-3 Townsend Street Tunnel	X	X	X	X	X
Alternative T-4 Tunnel on Eastern Alignment (81' Below Syracuse)	✓	X	✓	X	X
Alternative DH-1 Depressed Highway from Adams Street to Butternut Street	X	✓	X	✓	X
Alternative DH-2 Depressed Highway from Adams Street to Genesee Street	X	✓	X	✓	X
Alternative O-1 Western Bypass	✓	X	✓	X	X
Alternative O-2 West Street (Salt City Circuit)	X	X	X	✓	X

* The No Build Alternative does not meet the project's purpose and need, but it passes the preliminary screening because NEPA requires an examination of the No Build Alternative in the EIS.

TABLE A-2
ALTERNATIVE V-1: REHABILITATION

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✗	Alternative V-1 would not change the geometric features of the highway, and therefore, would not correct most nonstandard or nonconforming features.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Alternative V-1 would not alter existing access to and from I-81 or other regional highways. There would continue to be no access between I-690 eastbound and I-81 northbound and between I-81 southbound and I-690 westbound
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Upon completion of Alternative V-1, all structural deficiencies would be addressed, and the bridge maintenance program would improve bridge ratings.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	There would be no change in access along or under I-81.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	Pedestrian and bicycle enhancements could be implemented along Almond Street and streets that cross beneath the viaduct when these segments of I-81 are rehabilitated.
PURPOSE AND NEED—PASS (✓) or FAIL (X)	✗	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	No property acquisition is required.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	Construction would occur over a long period as funding permits. In many cases, the highway would remain open, but temporary closures are possible.
CONSTRUCTABILITY—PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost is $800 million. The cost of the rehabiliation alternative has been used to determine whether the cost of other alternatives is reasonable.
COST—PASS (✓) or FAIL (X)	✓	
OVERALL—PASS (✓) or FAIL (X)	✗	

TABLE A-3

ALTERNATIVE V-2: NEW VIADUCT FULLY IMPROVED TO CURRENT STANDARDS

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative V-2 would improve geometric and operational deficiencies as compared to current conditions. It would meet 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	An additional lane at Interchange 18 (Harrison/Adams Streets) would improve operations at that location. Ramp enhancements along I-81 and I-690 would improve safety, and local street improvements would enhance traffic flow. A full interchange would be provided between I-81 and I-690.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Alternative V-2 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Alternative V-2 would dead-end Monroe and Madison Streets, cutting off their access to Almond Street, but it would maintain all other existing local street connections.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	Alternative V-2 offers opportunities to improve east-west and north-south pedestrian and bicycle connections across and along the viaduct through safety and aesthetic enhancements to local roadways and intersections.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative V-2 would acquire about 30 to 40 buildings and all or portions of other property to allow for a wider right-of-way.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	The project could be constructed with typical engineering practices. I-81 and Almond Street traffic may need to be detoured during construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.438 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✓	

TABLE A-4

ALTERNATIVE V-3: NEW VIADUCT WITH SUBSTANTIAL DESIGN IMPROVEMENTS

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative V-3 would improve geometric and operational deficiencies as compared to current conditions. It would meet most 60 MPH highway design standards, but on some curves, the horizontal sight stopping distance would meet a minimum 55 MPH or 50 MPH design standards. The 55MPH design standard would apply to traffic in the inside lane on 2 curves and the 50MPH design standard would apply to the inside lane on 5 curves.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	An additional lane at Interchange 18 (Harrison/Adams Streets) would improve operations at that location. Ramp enhancements along I-81 and I-690 would improve safety, and local street improvements would enhance traffic flow. A full interchange would be provided between I-81 and I-690.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Alternative V-3 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Alternative V-3 would dead-end Monroe and Madison Streets, cutting off their access to Almond Street, but it would maintain all other existing local street connections.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	Alternative V-3 offers opportunities to improve east-west and north-south pedestrian and bicycle connections across and along the viaduct through safety and aesthetic enhancements to local roadways and intersections.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative V-3 would acquire about 25 percent fewer buildings than Alternative V-2 and all or portions of other property to allow for a wider right-of-way.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	The project could be constructed with typical engineering practices. I-81 and Almond Street traffic may need to be detoured during construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.423 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✓	

TABLE A-5

ALTERNATIVE V-4: NEW VIADUCT WITH CONSIDERABLE DESIGN IMPROVEMENTS

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative V-4 would improve geometric and operational deficiencies as compared to current conditions. It would meet most 60 MPH highway design standards, but on some curves, the horizontal sight stopping distance would meet a minimum 55 MPH or 50 MPH design standards. The 55MPH design standard would apply to traffic in the inside lane on 2 curves and the 50MPH design standard would apply to the inside lane on 5 curves.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	An additional lane at Interchange 18 (Harrison/Adams Streets) would improve operations at that location. Ramp enhancements along I-81 and I-690 would improve safety, and local street improvements would enhance traffic flow. A full interchange would be provided between I-81 and I-690.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Alternative V-4 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Alternative V-4 would dead-end Monroe and Madison Streets, cutting off their access to Almond Street, but it would maintain all other existing local street connections.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	Alternative V-4 offers opportunities to improve east-west and north-south pedestrian and bicycle connections across and along the viaduct through safety and aesthetic enhancements to local roadways and intersections.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative V-4 would acquire about 40 percent fewer buildings than Alternative V-2 and all or portions of other property to allow for a wider right-of-way.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	The project could be constructed with typical engineering practices. I-81 and Almond Street traffic may need to be detoured during construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.419 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✓	

TABLE A-6

ALTERNATIVE V-5: NEW STACKED VIADUCT

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative V-2 would improve geometric and operational deficiencies as compared to current conditions. It would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business	✓	All existing highway interchanges would be maintained or enhanced.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Alternative V-5 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✗	Alternative V-5 would eliminate east-west travel on Genesee Street where it crosses Almond Street. Genesee Street is an important east-west street between Downtown and University Hill. It is an arterial roadway and a designated New York State Route. Genesee Street carries bike lanes that are part of the Connective Corridor between University Hill and Downtown, and it used by CENTRO Routes 62 and 262.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	Alternative V-5 offers opportunities to improve east-west and north-south pedestrian and bicycle connections across and along the viaduct through safety and aesthetic enhancements to local roadways and intersections.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✗	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative V-5 would acquire up to 30 to 40 buildings and portions of other property to allow for a wider right-of-way. The number of buildings to be acquired would depend on the design speed for some curves (see Alternatives V-2, V-3, and V-4).
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	The project could be constructed with typical engineering practices. I-81 and Almond Street traffic may need to be detoured during construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.588 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✗	

TABLE A-7
ALTERNATIVE SL-1: BOULEVARD

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative SL-1 would address the operational deficiencies in the I-81 Viaduct priority area. The viaduct would be removed, and improvements along the remaining segments of I-81, I-690, and I-481 would meet FHWA and NYSDOT design standards. The surface street would be constructed to meet FHWA, NYSDOT, and local standards for an urban arterial.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Alternative SL-1 would remove about a one-mile section of highway. Access to Downtown, Northside, Southside and University Hill from points south would be provided by a surface street. I-690 and the section of I-81 north of Downtown would be maintained and improved. I-481 would carry interstate traffic around the east side of Syracuse. Alternative SL-1 would include improvements along I-481, as necessary, to accommodate anticipated changes in traffic.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and improvements along I-481 would meet FHWA and NYSDOT design standards. The surface street would meet FHWA, NYSDOT, and local design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Where the boulevard would meet I-690, it may be necessary to alter three east-west streets (Erie Boulevard, Water Street, and Washington Street) where they currently intersect Almond Street. An overpass would carry Erie Boulevard over the new boulevard. Through traffic on Washington and Water Streets may be restricted such that only right-turns would be permitted. These changes in local street access would divert some vehicles by a block or two, but they would not substantially diminish access between Downtown and adjoining neighborhoods.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new two-way street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative SL-1 would acquire about 5 to 10 buildings and maybe other property to meet right-of-way needs. Land beneath and adjacent to the existing viaduct may be available for another use.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	Typical engineering practices would be used. Construction could be sequenced such that I-81 traffic would be maintained on the viaduct until I-481 is designated as I-81. There would be closures along Almond Street while the viaduct is removed and the surface street is constructed.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.047 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✓	

TABLE A-8

ALTERNATIVE SL-2: ONE-WAY TRAFFIC ON ALMOND STREET AND OTHER LOCAL STREET(S)

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	*Description*
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative SL-2 would address the operational deficiencies in the I-81 Viaduct priority area. The viaduct would be removed, and improvements along the remaining segments of I-81, I-690, and I-481 would meet FHWA and NYSDOT design standards. The surface street would be constructed to meet FHWA, NYSDOT, and local standards for an urban arterial.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Alternative SL-2 would remove about a one-mile section of highway. Access to Downtown, Northside, Southside and University Hill from points south would be provided by a surface street. I-690 and the section of I-81 north of Downtown would be maintained and improved. I-481 would carry interstate traffic around the east side of Syracuse. Alternative SL-2 would include improvements along I-481, as necessary, to accommodate anticipated changes in traffic.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and improvements along I-481 would meet FHWA and NYSDOT design standards. The surface streets would meet FHWA, NYSDOT, and local design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Alternative SL-2 would maintain existing local street connections except at Jackson Street.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new northbound surface street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements. These improvements could also be provided on the southbound street (i.e., West Street, Clinton Street, Townsend Street, or University Avenue)
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative SL-2 would acquire about 5 to 10 buildings and all or portions of other property to meet right-of-way needs. Land beneath and adjacent to the existing viaduct may become available for another use.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	Typical engineering practices would be used. Construction could be sequenced such that I-81 traffic would be maintained on the viaduct until I-481 is designated as I-81. There would be closures along Almond Street while the viaduct is removed and the surface street is constructed.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.067 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✓	

TABLE A-9

ALTERNATIVE SL-3: TWO-WAY TRAFFIC ON ALMOND STREET AND OTHER LOCAL STREET(S)

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	*Description*
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative SL-3 would address the operational deficiencies in the I-81 Viaduct priority area. The viaduct would be removed, and improvements along the remaining segments of I-81, I-690, and I-481 would meet FHWA and NYSDOT design standards. The surface street would be constructed to meet FHWA, NYSDOT, and local standards for an urban arterial.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Alternative SL-3 would remove about a one-mile section of highway. Access to Downtown, Northside, Southside and University Hill from points south would be provided by a surface street. I-690 and the section of I-81 north of Downtown would be maintained and improved. I-481 would carry interstate traffic around Syracuse. Alternative SL-3 would include improvements along I-481, as necessary, to accommodate anticipated changes in traffic.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and improvements along I-481 would meet FHWA and NYSDOT design standards. The surface streets would be constructed or improved to meet FHWA, NYSDOT, and local design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Alternative SL-3 would maintain existing local street connections except at Jackson Street.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new two-way street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements. These improvements could also be provided on the alternate two-way street (i.e., West Street, Clinton Street, Townsend Street, or University Avenue).
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative SL-3 would acquire 5 to 10 buildings and maybe other property to meet right-of-way needs. Land beneath and adjacent to the existing viaduct may become available for another use.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	Typical engineering practices would be used. Construction could be sequenced such that traffic would be maintained on the existing viaduct until I-481 is designated as I-81. There would be closures along Almond Street while the viaduct is removed and the surface street is constructed.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.067 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✓	

TABLE A-10

ALTERNATIVE T-1: ALMOND STREET TUNNEL FROM MLK EAST TO BUTTERNUT STREET

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-1 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Access to Harrison and Adams Streets would be via a new surface roadway. Missing connections between I-81 and I-690 would be provided. Interchange enhancements would be implemented to improve highway safety and traffic flow.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-1 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✗	Alternative T-1 would require that several streets be closed. Because of inadequate clearance, construction of the new ramps between I-81 and I-690 would require that Fayette Street, Water Street, and Washington Street be closed to traffic between State Street and Almond Street and that McBride Street and Townsend Street be closed to traffic between Genesee Street and Burnet Avenue. These street closures would diminish local access between Downtown and Northside.
Will the alternative provide enhanced bicycle and pedestrian connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new surface street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✗	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative T-1 would acquire about 35 to 40 buildings and all or portions of other property to meet right-of-way needs. Because of the right-of-way needs for the tunnel, it is unlikely that land beneath and adjacent to the existing viaduct may become available for another use.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✗	The subsurface conditions along Almond Street are not favorable for tunnel construction. There is a high water table and difficult soil. The water is saline, which requires special disposal methods, and all subsurface utilities would need to be relocated. Because of these subsurface conditions, cut-and-cover construction would be needed, extending the duration of construction activities compared to other alternatives. Therefore the viaduct and Almond Street would need to be closed for much of the duration of construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✗	
Cost		
Is the projected construction cost reasonable?	✗	The construction cost of $2.651 billion exceeds 2.5 times the rehabiliation cost ($800 million), which is not considered easonable.
COST--PASS (✓) or FAIL (X)	✗	
OVERALL--PASS (✓) or FAIL (X)	✗	

TABLE A-11

ALTERNATIVE T-2: ALMOND STREET TUNNEL FROM MLK EAST TO GENESEE STREET

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-2 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Access to Harrison and Adams Streets would be via a new surface roadway. Missing connections between I-81 and I-690 would be provided. Interchange enhancements would be implemented to improve highway safety and traffic flow.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-2 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	X	Alternative T-2 would require that several streets be closed. Because of inadequate clearance, construction of the new ramps between I-81 and I-690 would require that Fayette Street, Water Street, and Washington Street be closed to traffic between State Street and Almond Street and that McBride Street and Townsend Street be closed to traffic between Genesee Street and Burnet Avenue. These street closures would diminish local access between Downtown and Northside.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new surface street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	X	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Alternative T-2 would acquire about 35 to 40 buildings and all or portions of other property to meet right-of-way needs. Because of the right-of-way needs for the tunnel, it is unlikely that land beneath and adjacent to the existing viaduct may become available for another use.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	X	The subsurface conditions along Almond Street are not favorable for tunnel construction. There is a high water table and difficult soil. The water is saline, which requires special disposal methods, and all subsurface utilities would need to be relocated. Because of these subsurface conditions, cut-and-cover construction would be needed, extending the duration of construction activities compared to other alternatives. Therefore the viaduct and Almond Street would need to be closed for much of the duration of construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	X	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.761 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	X	

TABLE A-12

ALTERNATIVE T-3: TOWNSEND STREET TUNNEL

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative T-3 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Access to Harrison and Adams Streets would be via a new surface roadway. Missing connections between I-81 and I-690 would be provided. Interchange enhancements would be implemented to improve highway safety and traffic flow.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-3 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	X	Alternative T-3 would require that several streets be closed. To accommodate the transition from the tunnel section to the existing I-81 at Butternut Street as well as ramps between the tunnel and I-690, it would be necessary to close Water, Washington, and Fayette Streets. Erie Boulevard would travel under the new ramp structure, but it may need to be lowered to provide adequate clearance for traffic to pass beneath the ramp. These street closures would diminish access between Downtown and Northside.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new surface street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements. Such improvements could also be provided for the reconstructed Townsend Street atop the tunnel.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	X	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	X	NYSDOT would be able to abandon some right-of-way along and near Almond Street, but Townsend Street and adjacent property would need to be acquired. Along much of Townsend Street, NYSDOT would need a swath of land about 80 feet wide. Between 55 and 75 buildings could be acquired and demolished.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	X	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	X	The subsurface conditions along Townsend Street are not favorable for tunnel construction. There is a high water table and difficult soil. The water is saline, which requires special disposal methods. Cut-and-cover construction would be needed.The viaduct and Almond Street could remain open during construction, but Townsend Street would be closed to traffic.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	X	
Cost		
Is the projected construction cost reasonable?	X	The construction cost of $2.643 billion exceeds 2.5 times the rehabiliation cost ($800 million), which is not considered easonable.
COST--PASS (✓) or FAIL (X)	X	
OVERALL--PASS (✓) or FAIL (X)	X	

TABLE A-13

ALTERNATIVE T-4: TUNNEL ON EASTERN ALIGNMENT (81' BELOW SYRACUSE)

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-4 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Access to Downtown, University Hill, and Southside would be via I-690 from its new I-81 interchange. Given the proposed depth of Alternative T-4, it may not be feasible to provided interchanges with local streets, but a new surface street along the I-81 corridor would serve Southside, University Hill, Downtown, and Northside.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative T-4 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Almond Street would be reconstructed and east-west connections would be maintained or enhanced.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and Almond Street would be reconstructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✗	NYSDOT would be able to free up right-of-way along and near Almond Street. NYSDOT would require acquisition of public and private property for the full, new alignment of I-81. More than 100 buildings would be acquired.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✗	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	Subsurface conditions are favorable for construction of Alternative T-4, and the existing I-81 viaduct could remain open during construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✗	The construction cost of $3.298 billion exceeds 2.5 times the rehabiliation cost ($800 million), which is not considered easonable.
COST--PASS (✓) or FAIL (X)	✗	
OVERALL--PASS (✓) or FAIL (X)	✗	

TABLE A-14

ALTERNATIVE DH-1: DEPRESSED HIGHWAY FROM ADAMS STREET TO BUTTERNUT STREET

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative DH-1 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	No interchanges would be eliminated. Missing connections between I-81 and I-690 would be provided. Interchange enhancements would be implemented to improve highway safety and traffic flow.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative DH-1 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	X	Alternative DH-1 would eliminate Almond Street. Service roads would provide north-south local access, but there would be limited room to support enhanced pedestrian or bicycle connections. Overpasses would carry east-west traffic across I-81, but it would not be feasible to provide overpasses at every street. Because of inadequate clearance for new ramps, Fayette Street, Water Street, and Washington Street would be closed to traffic between State Street and Almond Street and McBride Street and Townsend Street would be closed to traffic between Genesee Street and Burnet Avenue. Where the depressed highway transitions to the highway section south of Adams Street, it would be necessary to cut-off Jackson Street and dead-end Monroe Street.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The service road and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	X	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Much of Alternative DH-1 would be constructed within NYSDOT right-of-way. However, new ramp connections would require acquisition of about 30 to 40 buildings.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	X	The subsurface conditions along Almond Street are not favorable for construction of Alternative DH-1. There is a high water table and difficult soil. The water is saline, which requires special disposal methods, and all subsurface utilities would need to be relocated. The viaduct and Almond Street would need to be closed for much of the duration of construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	X	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.751 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	X	

TABLE A-15

ALTERNATIVE DH-2: DEPRESSED HIGHWAY FROM ADAMS STREET TO GENESEE STREET

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative DH-2 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	No interchanges would be eliminated. Missing connections between I-81 and I-690 would be provided. Interchange enhancements would be implemented to improve highway safety and traffic flow.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	The viaduct would be removed, and Alternative DH-2 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✗	Alternative DH-2 would eliminate Almond Street. Service roads would provide north-south local access, but there would be limited room to support enhanced pedestrian or bicycle connections. Overpasses would carry east-west traffic across I-81, but it would not be feasible to provide overpasses at every street. Because of inadequate clearance for new ramps, Fayette Street, Water Street, and Washington Street would be closed to traffic between State Street and Almond Street and McBride Street and Townsend Street would be closed to traffic between Genesee Street and Burnet Avenue. Where the depressed highway transitions to the highway section south of Adams Street, it would be necessary to cut-off Jackson Street and dead-end Monroe Street.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The service road and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✗	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✓	Much of Alternative DH-2 would be constructed within NYSDOT right-of-way. However, new ramp connections would require acquisition of about 30 to 40 buildings.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✓	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✗	The subsurface conditions along Almond Street are not favorable for construction of Alternative DH-2. There is a high water table and difficult soil. The water is saline, which requires special disposal methods, and all subsurface utilities would need to be relocated. The viaduct and Almond Street would need to be closed for much of the duration of construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✗	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.503 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✗	

TABLE A-16

ALTERNATIVE O-1: WESTERN BYPASS

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative O-1 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	A surface street would replace I-81 through Downtown, Northside, Southside, and University Hill, which could be accessed by Interchange 16A. The portion of I-81 between I-690 and Interchange 29 could be maintained to provide access to Downtown from points to its north. I-690 could also be maintained.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Alternative O-1 would remove the viaduct and would correct or meet all FHWA and NYSDOT structural and bridge design standards with the viaduct project limits.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✓	Alternative O-1 would remove the viaduct but would reconstruct Almond Street. All existing east-west connections to Almond Street would be maintained.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new surface street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✓	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✗	Alternative O-1 would require acquisition of at least 220 acres of new right-of-way or could require upwards of 655 acres of new right-of-way not including the land needed for new interchanges. This would include both developed and undeveloped land and would include more than 100 buildings.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✗	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✓	The project could be constructed with typical engineering practices. I-81 and Almond Street traffic could be retained during construction.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✓	
Cost		
Is the projected construction cost reasonable?	✗	The construction cost of $2.446 billion exceeds 2.5 times the rehabiliation cost ($800 million), which is not considered easonable.
COST--PASS (✓) or FAIL (X)	✗	
OVERALL--PASS (✓) or FAIL (X)	✗	

TABLE A-17

ALTERNATIVE O-2: WEST STREET

	REASONABLE/PASS (✓) or NOT REASONABLE/FAIL (X)	Description
Purpose and Need		
Will the alternative address identified geometric and operational deficiencies in the I-81 Viaduct priority area?	✓	Alternative O-2 would meet all or most 60 MPH highway design standards.
Will the alternative maintain or enhance vehicle access to the interstate highway network and key destinations (i.e., I-690, central business district, hospitals, and institutions)?	✓	Alternative O-2 would provide access to I-690 and Downtown. Access to and from University Hill would be provided from a new surface street and potential new or enhanced connections to I-690.
Will the alternative address structural deficiencies and improve bridge ratings in the I-81 Viaduct priority area?	✓	Alternative O-2 would meet all FHWA and NYSDOT structural and bridge design standards.
Will the alternative maintain the local street connections within or adjacent to the I-81 Viaduct priority area?	✗	Alternative O-2 would improve connections along Almond Street, where the viaduct would be removed and a new surface street constructed. However, Alternative O-2 would create a highway along the West Street corridor, deteriorating local access in this area.
Will the alternative provide enhanced bicycle and pedestrian surface connections on streets across and along the I-81 viaduct?	✓	The viaduct would be removed, and a new surface street would be constructed. The new surface street and its intersections with east-west streets could include pedestrian and bicycle enhancements such as wider sidewalks, bicycle lanes, and safety improvements.
PURPOSE AND NEED--PASS (✓) or FAIL (X)	✗	
Right-of-Way		
Can the alternative be built without substantial property acquisitions?	✗	Alternative O-2 would require properties on both sides of West Street. Between 70 and 90 buildings could be acquired.
RIGHT-OF-WAY--PASS (✓) or FAIL (X)	✗	
Constructability		
Can the alternative be constructed without difficult means and methods, a long duration, or an inability to maintain adequate traffic flow?	✗	Alternative O-2 would be very disruptive to local traffic circulation along and across West Street. I-81 could operate along most of its current alignment while construction is underway.
CONSTRUCTABILITY--PASS (✓) or FAIL (X)	✗	
Cost		
Is the projected construction cost reasonable?	✓	The construction cost ($1.326 billion) is less than 2.5 times the rehabiliation cost ($800 million) and is considered reasonable.
COST--PASS (✓) or FAIL (X)	✓	
OVERALL--PASS (✓) or FAIL (X)	✗	