

The I-81 Challenge
May 2012 Public Meeting
Appendix B – Informational Boards

Prepared for: Syracuse Metropolitan Transportation Council

August 2012

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Appendix B: Informational Boards

The following Appendix contains the new boards that were available at the May 2012 Public Meeting. Station 2 of the meeting also contained review boards, which repeated content from the first round of Public Workshops, held in May 2011. These review boards are not included in this Appendix. They can be found in Appendix C of the May 2011 Public Workshops Summary Report, available at www.thei81challenge.org.

What is *The I-81 Challenge*?

The I-81 Challenge is the official decision-making process to determine the future of I-81 through the Syracuse region.

I-81 CORRIDOR STUDY NYSDOT

- Existing physical conditions analysis
- Inventory of existing land use, economic, social, and environmental conditions
- Transit system review
- Identify viable improvement options

The New York State Department of Transportation (NYSDOT) is leading the planning process through its I-81 Corridor Study.

PUBLIC PARTICIPATION PROJECT SMTC

- Inform public about process
- Engage agencies, organizations, and individuals across the community in public dialogue
- Understand community's goals
- Facilitate public input into development and refinement of options

TRAVEL DEMAND MODELING SMTC

- Refine and upgrade SMTC's travel demand model
- Model alternatives

The NYSDOT has partnered with the Syracuse Metropolitan Transportation Council (SMTC) for assistance with the public involvement and travel demand modeling components.

Why is *The I-81 Challenge* needed?



AGING INFRASTRUCTURE

Sections of I-81—particularly sections of the viaduct in downtown Syracuse—are nearing the end of their lifespan.



LOOKING FORWARD

Over the coming decades, portions of the highway will need to be replaced, reconstructed, removed, or otherwise changed.

What will *The I-81 Challenge* accomplish?



UNDERSTANDING

A clear understanding of our collective transportation needs and problems.



GOALS

A set of goals that identify what we want to accomplish with I-81 and the measures by which we will know we have succeeded.



OPTIONS

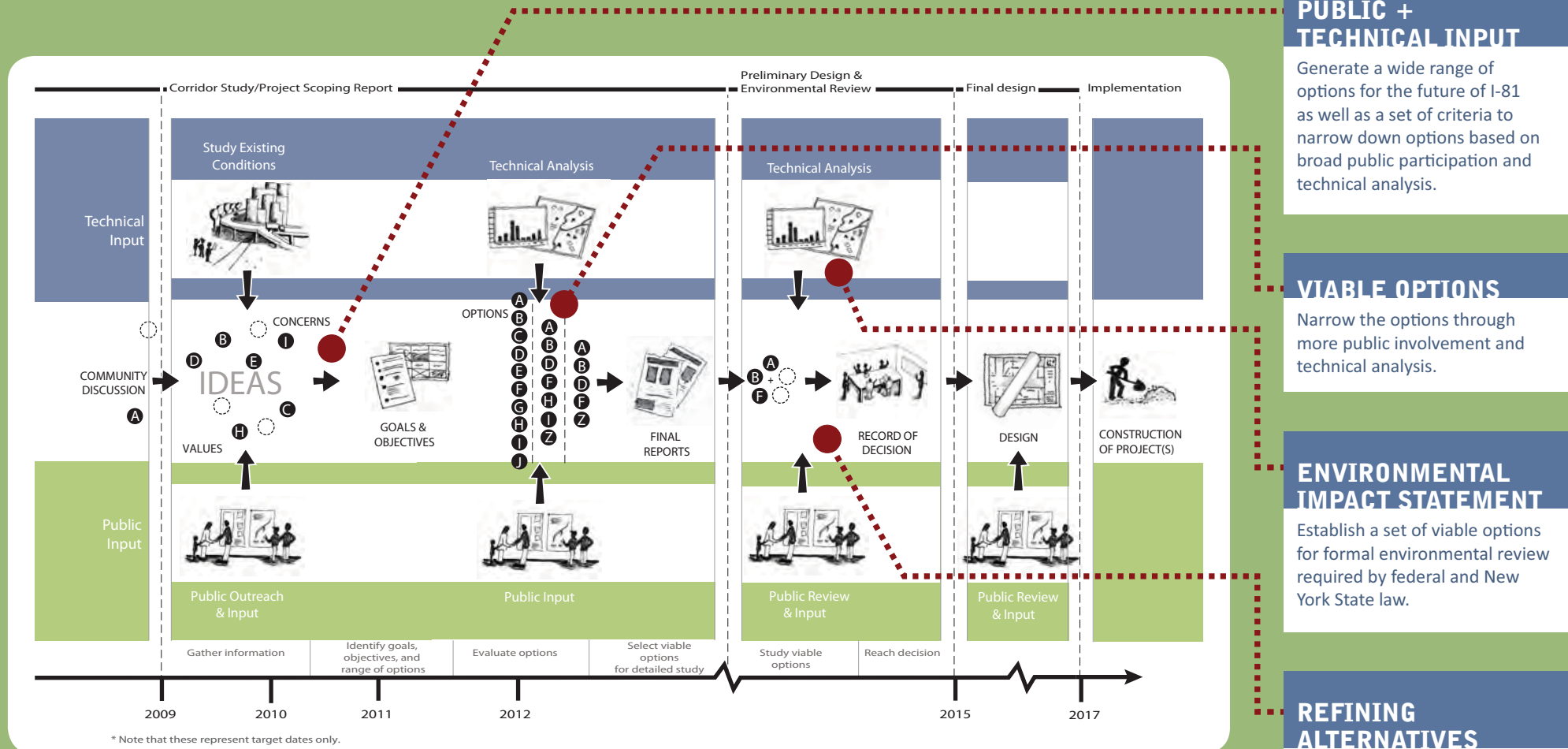
A short list of viable future options that will go through a formal environmental review.



SOLUTION(S)

A project or projects that can be implemented.

How will *The I-81 Challenge* lead to a decision?



PUBLIC + TECHNICAL INPUT

Generate a wide range of options for the future of I-81 as well as a set of criteria to narrow down options based on broad public participation and technical analysis.

VIALE OPTIONS

Narrow the options through more public involvement and technical analysis.

ENVIRONMENTAL IMPACT STATEMENT

Establish a set of viable options for formal environmental review required by federal and New York State law.

REFINING ALTERNATIVES

Further refine options through a formal environmental review process— ultimately leading to a decision and a project or projects that can be implemented.

Who makes the final decision?

The decision about what happens to I-81 involves many parties:



The New York State Department of Transportation (NYSDOT):

The NYSDOT owns the road and will therefore have ultimate responsibility for any decision about the future of I-81. NYSDOT will be responsible for overseeing the decision-making process and, eventually, construction.



The Syracuse Metropolitan Transportation Council (SMTC):

The SMTC is the federally designated agency responsible for planning and allocating federal funding for transportation projects in our region. Based on current Federal transportation legislation, project(s) that emerge from *The I-81 Challenge* requiring federal funds will have to be included in the SMTC's Transportation Improvement Program (TIP) of regional improvement priorities. Approval of the TIP requires a consensus of SMTC member agencies. The TIP is also made available for public comment prior to approval.



Federal Highway Administration (FHWA):

Because federal money will be expended, the federal government, through the Federal Highway Administration (FHWA) and other federal agencies, will also have a role in the I-81 decision-making process. The FHWA will oversee the adherence to federal transportation planning and design regulations throughout the process as well as ensuring that the environmental review is conducted in accordance with the National Environmental Policy Act (NEPA).



Centro, the City of Syracuse, Onondaga County, and others:



Any decisions that involve transit solutions and/or alterations to local streets will involve Centro, our local transit agency, and our local municipalities. These entities have ultimate responsibility for transportation decisions within their jurisdictions.



You (the public):

Because this project has the potential to profoundly impact everyone who lives in the Syracuse metropolitan area, the public will also play a role in the ultimate decision about I-81. The public will be involved in the development of options for the future of the highway, as well as the iterative process to narrow those options down to the preferred solution(s).

Budgeted funding for planning activities for *The I-81 Challenge*

AGENCY	FUNDS	
 NYSDOT	Statewide Planning & Research (SPR): SAFETEA-LU: TOTAL:	\$ 1,500,000 \$ 5,000,000 \$ 6,500,000
 SMTC	SPR: Metropolitan Planning: TOTAL:	\$ 450,000 \$ 608,130 \$ 1,058,130

Securing capital funding requires identifying a preferred project or projects which will not occur until after the planning study is complete in 2013.

To put in perspective, it is estimated to cost \$500 million to replace the bridge deck on the elevated portion of I-81 in Syracuse.

Technical analysis

Technical work for *The I-81 Challenge* has focused on:

- Collecting data to identify the condition of I-81 and the Syracuse region's transportation system and the environment in which they operate
- Identifying potential strategies for I-81 that are worthy of detailed evaluation



PHYSICAL CONDITIONS ANALYSIS

To date, the technical effort has resulted in a Physical Conditions Analysis, which analyzed:

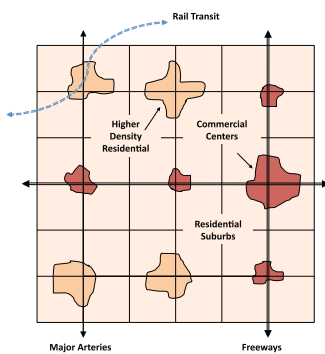
- Critical highway design elements
- Highway and bridge conditions
- Traffic volumes and interstate through traffic
- Congestion
- Accident rates
- Non-car means of travel (walking, cycling, bus)



The results of this analysis are documented in Technical Memorandum #1

Transportation modeling

You've probably seen or heard about models throughout your life – whether physical models such as a train or a building or more abstract models like those used to give us weather forecasts. What they have in common is that they represent real world objects or processes.



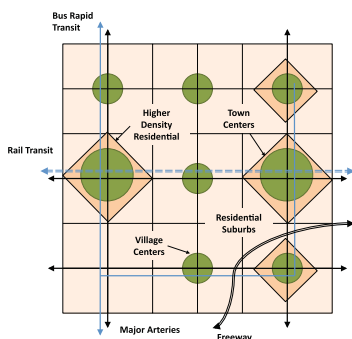
HOW DO THEY KNOW?

Ever heard that new transit service will take X number of cars off the road? Or that building a new road will cut travel time by X minutes? Ever wondered how planners know that?

It all comes from a model...



We also use models in transportation planning. These models are a series of complex mathematical equations that represent the choices, decisions, and behavior of thousands (or millions) of individual travelers.



MODELS HELP US:

- Know where, when and how people are traveling
- Understand what and where our transportation needs are now and in the future
- Evaluate different strategies and investments to meet those needs
- Determine the impacts of strategies and investments on system performance, air quality, travel time, and land use, just to name a few

Public involvement for The I-81 Challenge

Throughout *The I-81 Challenge*, community input will help guide the development and refinement of options for the future of I-81. The SMTC and the NYSDOT have used a wide variety of tools and techniques to disseminate information and facilitate input into *The I-81 Challenge* process.



EDUCATION AND INFORMATIONAL MATERIALS

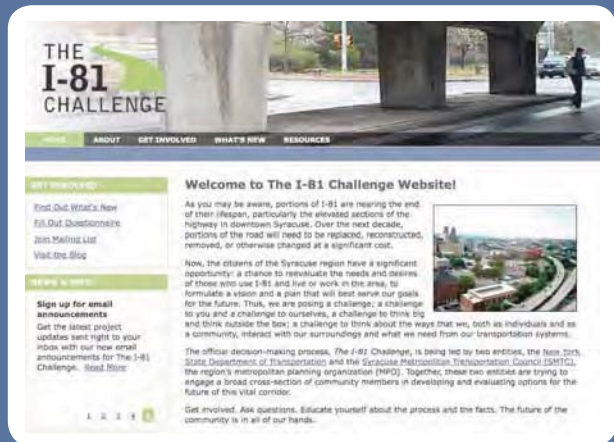
- Fact sheets and newsletters
- Website and social media
- Educational videos

STUDY COMMITTEES

- Study Advisory Committee
- Community Liaison Committee
- Municipal Liaison Committee

ELECTED OFFICIAL OUTREACH

- Notification to local, state, and federal elected officials



FALL 2011 NEWSLETTER



What's been happening with The I-81 Challenge?

The study team has been busy over the past several months. As you'll see from the focus of this newsletter, preparing for, conducting, and summarizing our May public workshops has been a major part of our work, but that is not all we have been doing. We convened our first Community and Municipal Liaison Committee meetings, where we received feedback from community organizations and municipalities about the progress of the I-81 Challenge. We also completed our second questionnaire. We've continued to update our website, blog, and Facebook page with new information about the I-81 Challenge, as well as adding relevant articles about similar projects in other cities.



Syracuse Metropolitan Transportation Council



New York State Department of Transportation

What is The I-81 Challenge?

You have probably read or heard that portions of I-81, particularly the elevated sections of the highway in downtown Syracuse, are nearing the end of their lifespan. Over the coming decades, portions of the highway will need to be replaced, reconstructed, removed, or otherwise changed.

The New York State Department of Transportation (NYSDOT), the Syracuse Metropolitan Transportation Council (SMTC), and a Study Advisory Committee (SAC) have begun a process to engage a broad cross section of community members in identifying, developing, and evaluating options for the future of this vital corridor. Over the next several years, this process, known as The I-81 Challenge, will advance community discussions about the future of I-81.

Using the community's input, along with information about the highway's existing conditions, a wide range of options for the future of I-81 and a set of goals and objectives are being generated. This broad range of options will be narrowed down to a small number of viable options through a combination of technical analysis and continued public involvement. The viable options will ultimately be refined and analyzed in further detail, and a formal environmental review process will begin. That process will lead to a decision, and to a project or projects that can be implemented.

It takes time to make a decision of this importance, and we need the public to stay involved every step of the way. Visit www.thei81challenge.org to find out how you can stay informed of project updates.

LIMITED ENGLISH PROFICIENCY AND ENVIRONMENTAL JUSTICE OUTREACH

- Translation and interpreters
- Targeted outreach



Public involvement for *The I-81 Challenge*

Input directly from the public has also been critical for the progress of *The I-81 Challenge*. More than 2,000 people have directly participated through the various public participation activities. To date, our work has included:



PUBLIC WORKSHOPS

- In May 2011, the SMTC and NYSDOT hosted the first series of public workshops
- More than 700 people participated in person, and more than 250 participated in the “virtual” workshop on the project website
- The workshop summary is available on the project website: <http://www.thei81challenge.org/>

FOCUS GROUPS

- The SMTC and the NYSDOT convened 23 focus groups throughout our region
- A total of 176 stakeholders participated

COMMUNITY EVENTS

- The SMTC and the NYSDOT have presented or distributed project information at community events throughout the region

SMALL GROUPS, COMMUNITY MEETINGS

- 21 organizations accepted the SMTC’s offer to discuss *The I-81 Challenge* at community meetings



QUESTIONNAIRES

- Two questionnaires allowed more than 1,000 people to answer questions about numerous topics, including their use of I-81 and desired goals for the future of the highway
- The questionnaire summary is available on the project website: <http://www.thei81challenge.org/>



Public involvement key findings: I-81 and the Syracuse region

I-81 is part of what defines the region



Uses of the highway include:

- Commuting to work and school
- Leisure trips and errands
- Long-distance travel

I-81's negative impacts on our region include:

- Perceived barrier and visually unappealing
- Source of pollution and promotes car-centric culture



I-81's positive impacts on our region include:

- Connections to key destinations
- Mobility and quick access
- Support for regional economy



Public involvement key findings: deficiencies and needs

Major public concerns about I-81:

- Substandard ramps and merge lanes
- Sharp curves
- Left-hand entrances/exits
- Dangerous merges
- Dangerous and/or congested intersections
- Congestion



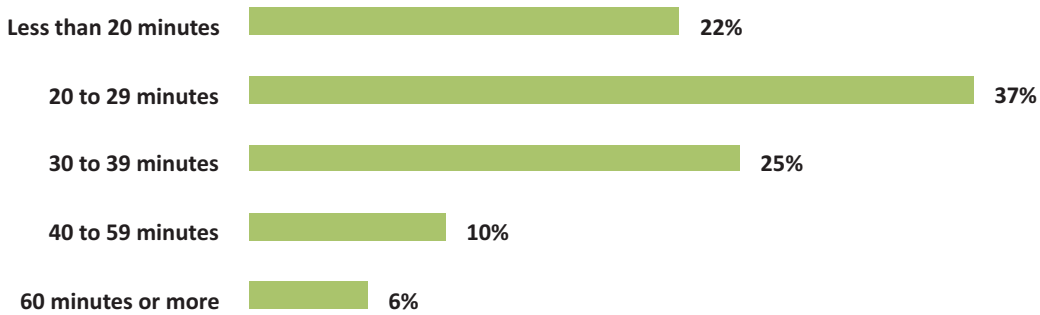
Public input corroborated technical analysis in Technical Memorandum #1: Physical Conditions Analysis



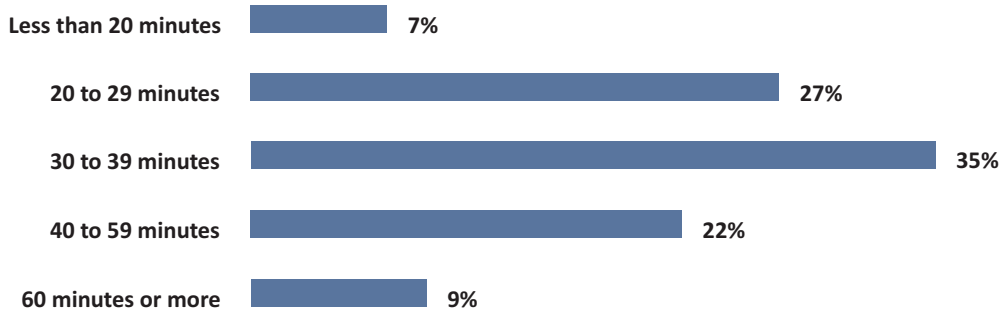
Public involvement key findings: travel time tolerance

We often refer to Syracuse as a “20-Minute City,” but our 2011 questionnaire showed that is only true for less than 25% of us and that overall, the residents of our region could support a slight increase in overall travel time in the Syracuse region in the future.

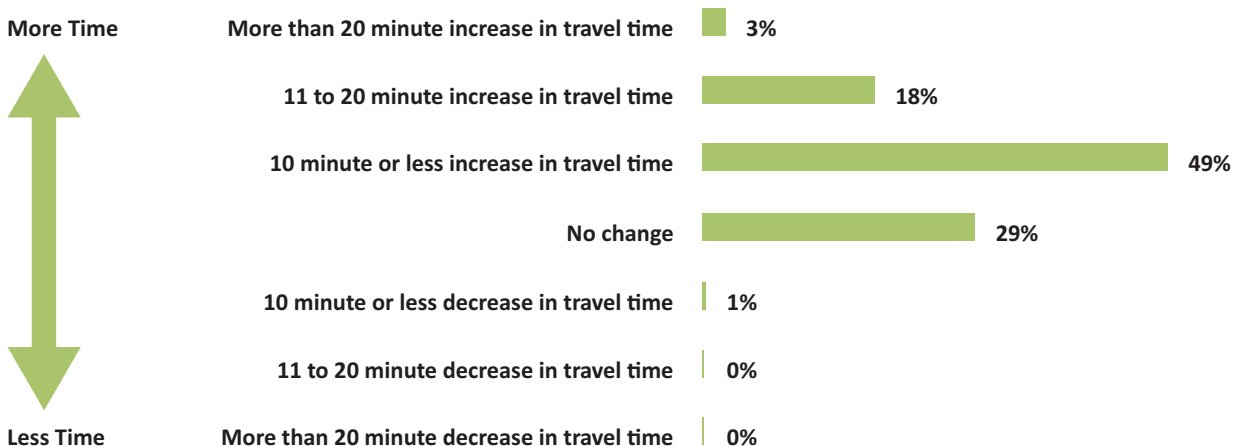
Current travel time in the Syracuse region



Tolerable future travel time



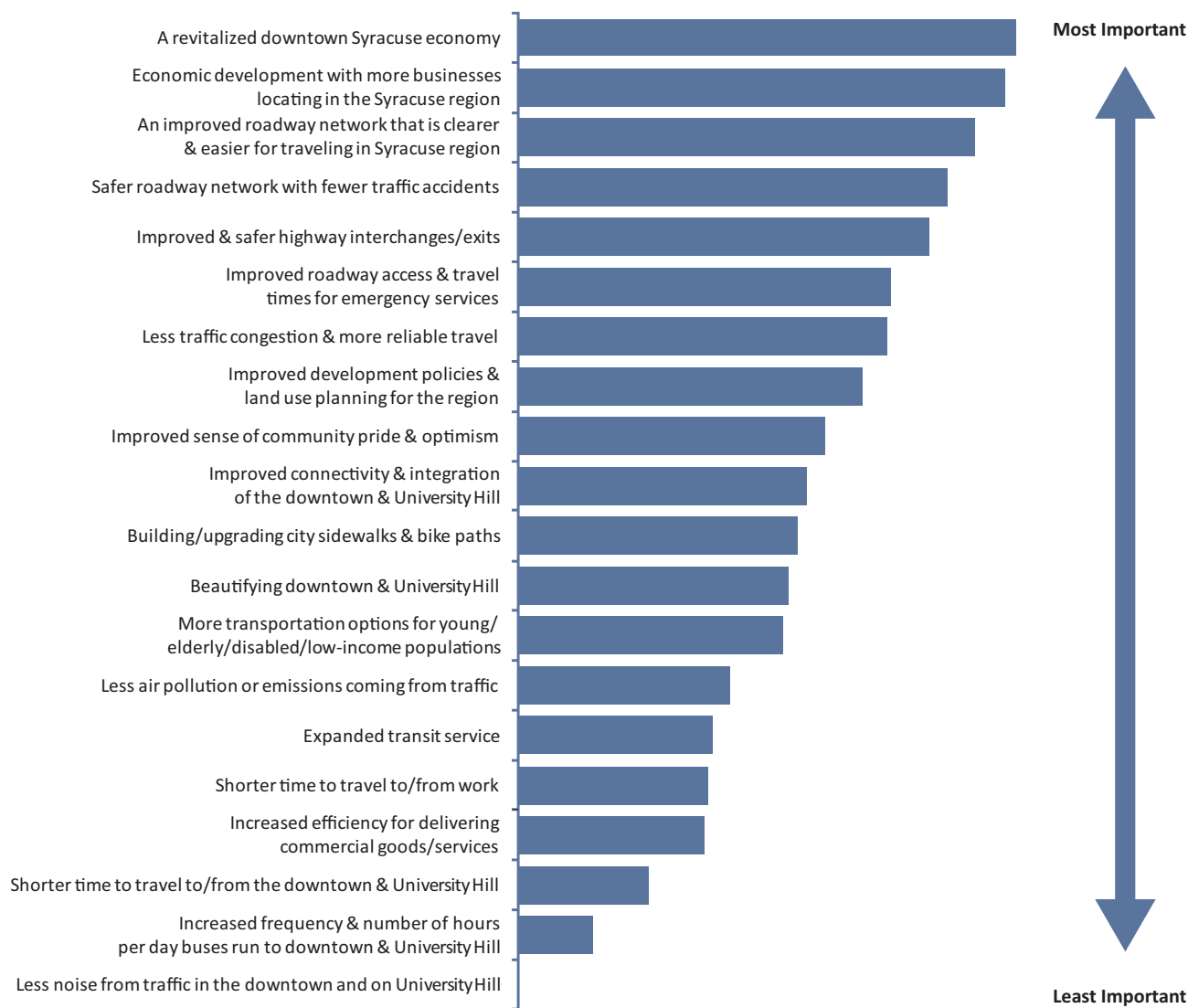
Tolerable change in travel time



Public involvement key findings: benefits of an improved I-81 corridor

Our 2011 questionnaire presented respondents with 20 possible benefits that could be realized from an improved I-81 corridor (irrespective of the specific future option selected). The graph below shows how residents of our region prioritized these benefits.

Prioritization of potential benefits

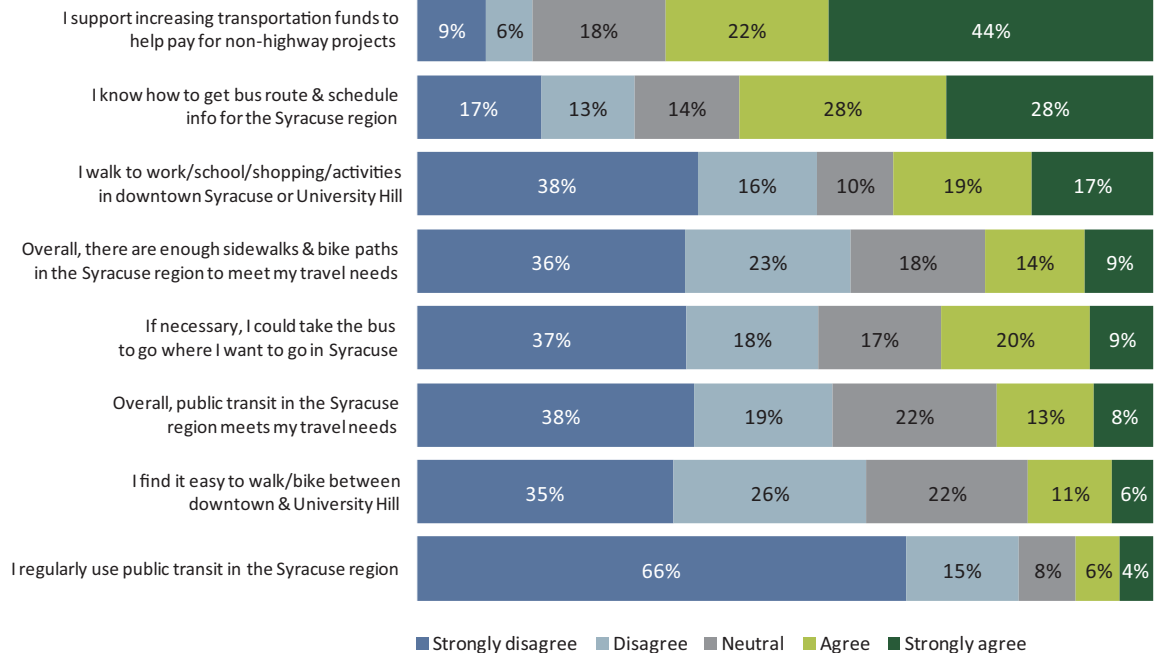


Public involvement key findings: the role of transit

Many of the visions developed at the 2011 Workshops emphasized the importance of transit to our region – from improving our current bus service to re-establishing commuter rail service to new services such as bus rapid transit and light rail.



TRANSIT OPINIONS

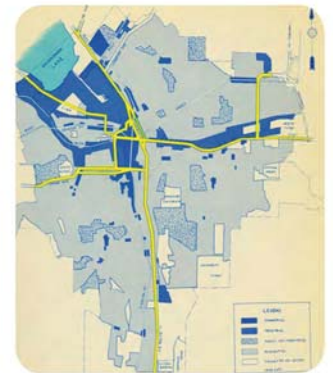
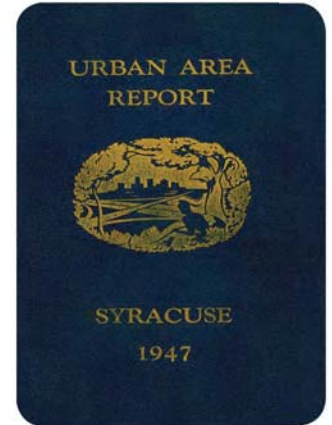


From our questionnaire, we learned that while only a small fraction of us use public transit regularly, we are largely supportive of increasing funding for non-highway projects.



The Evolution of Transportation in the Syracuse Region

This video is about 17 minutes long



The video will
be shown on
the hour and
at :20 and :40
past each hour





Lessons Learned: Case Studies of Urban Freeways

This video is about 21 minutes long.



The video will be shown on the hour (:00) and half hour (:30)



Your visions for I-81

<p>THE VIADUCT</p>	<p>Your vision for the future of I-81</p> <p>Please use this map to draw your ideas. You can be as detailed as you would like, but please try to tell us how your idea will benefit the region.</p> <p>Description of your idea: <i>Expanding the I-81 viaduct to include the area north of the current viaduct. This would allow for more space for businesses and agriculture. It is also a way to connect the viaduct to the surrounding area and to provide a way for the surrounding area to be developed.</i></p> <p>How does your idea benefit the region? <i>It will help the surrounding area to be developed and to provide a way for the surrounding area to be developed. It will also help to connect the viaduct to the surrounding area and to provide a way for the surrounding area to be developed.</i></p>	<p>THE VIADUCT</p>	<p>Your vision for the future of I-81</p> <p>Please use this map to draw your ideas. You can be as detailed as you would like, but please try to tell us how your idea will benefit the region.</p> <p>Description of your idea: <i>Remove I-81 from this area. Replace it with a greenway/bike trail. Develop a boulevard down the middle of the area with farms.</i></p> <p>How does your idea benefit the region? <i>Food, Activity, Community connection.</i></p>	<p>THE VIADUCT</p>	<p>Your vision for the future of I-81</p> <p>Please use this map to draw your ideas. You can be as detailed as you would like, but please try to tell us how your idea will benefit the region.</p> <p>Description of your idea: <i>Remove I-81 from this area. Replace it with a greenway/bike trail. Develop a boulevard down the middle of the area with farms.</i></p> <p>How does your idea benefit the region? <i>Food, Activity, Community connection.</i></p>	<p>THE VIADUCT</p>	<p>Your vision for the future of I-81</p> <p>Please use this map to draw your ideas. You can be as detailed as you would like, but please try to tell us how your idea will benefit the region.</p> <p>Description of your idea: <i>Remove I-81 from this area. Replace it with a greenway/bike trail. Develop a boulevard down the middle of the area with farms.</i></p> <p>How does your idea benefit the region? <i>Food, Activity, Community connection.</i></p>
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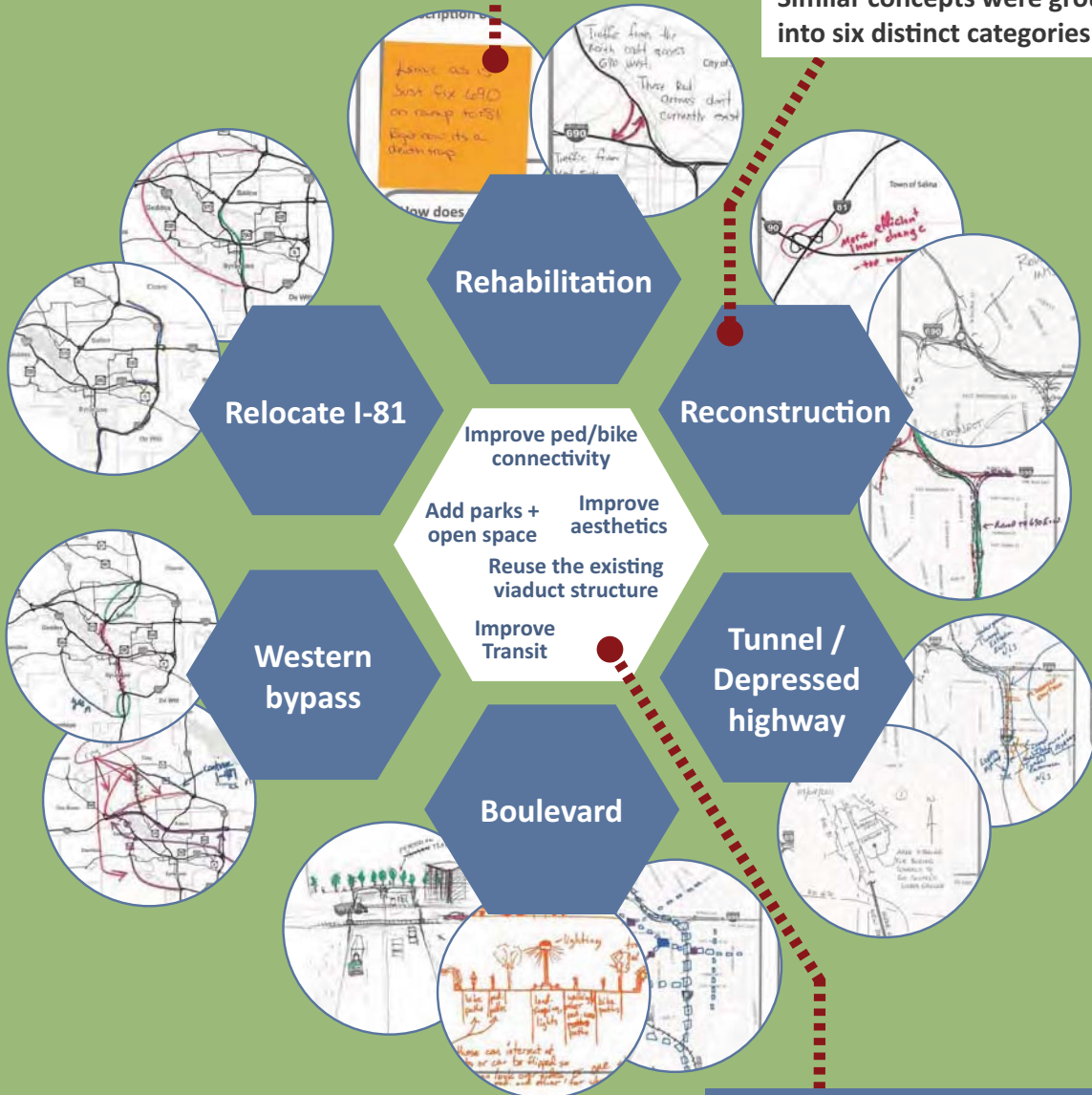
Common categories of concepts

PUBLIC FEEDBACK

Numerous ideas were shared at the May 2011 workshops ranging from spot-specific improvements to full reconstruction to transformation of the regional transportation system.

CATEGORIES

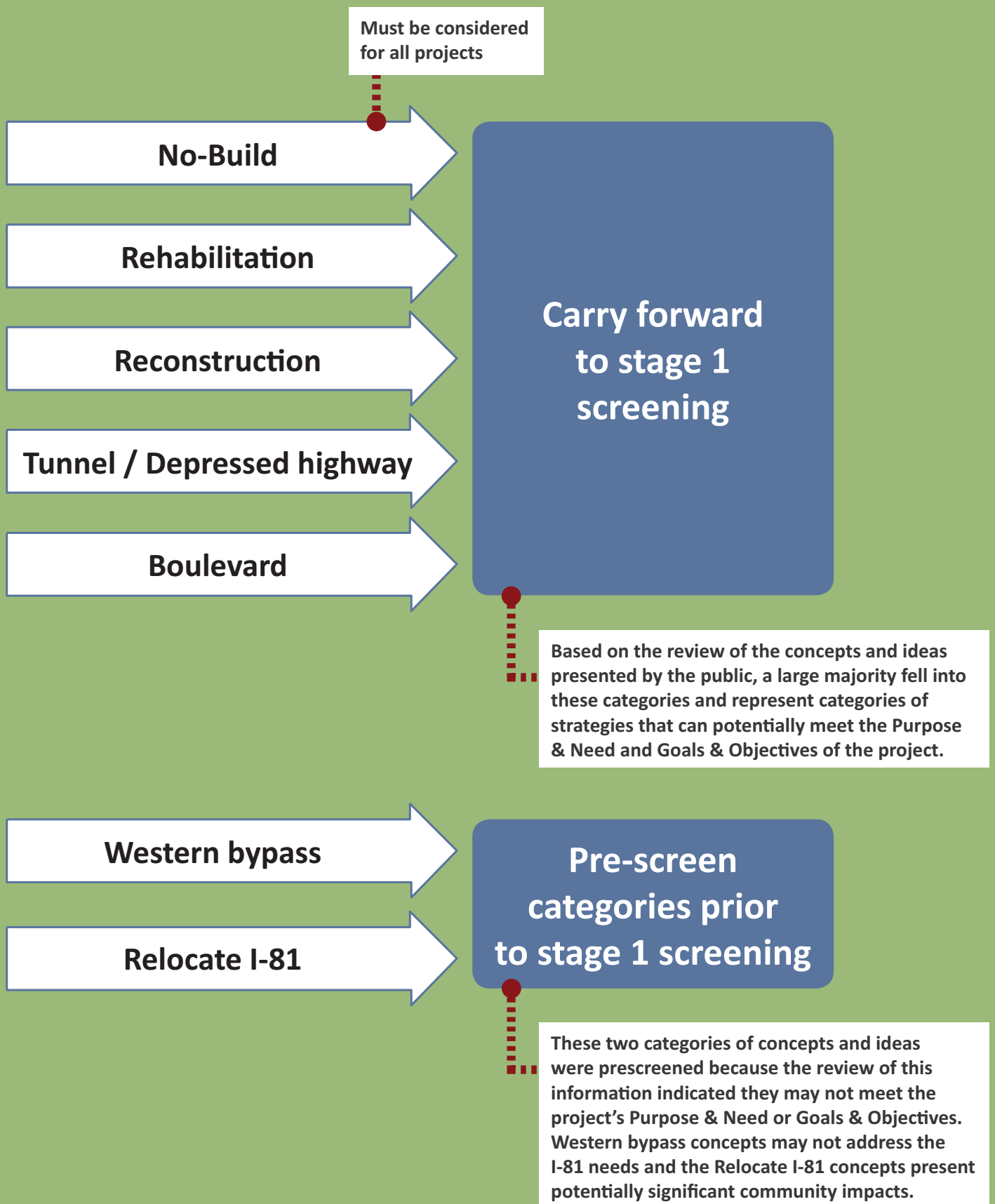
Similar concepts were grouped into six distinct categories.



COMMON CONCEPTS

Participants at the May 2011 workshops made many suggestions that could complement any of the six categories.

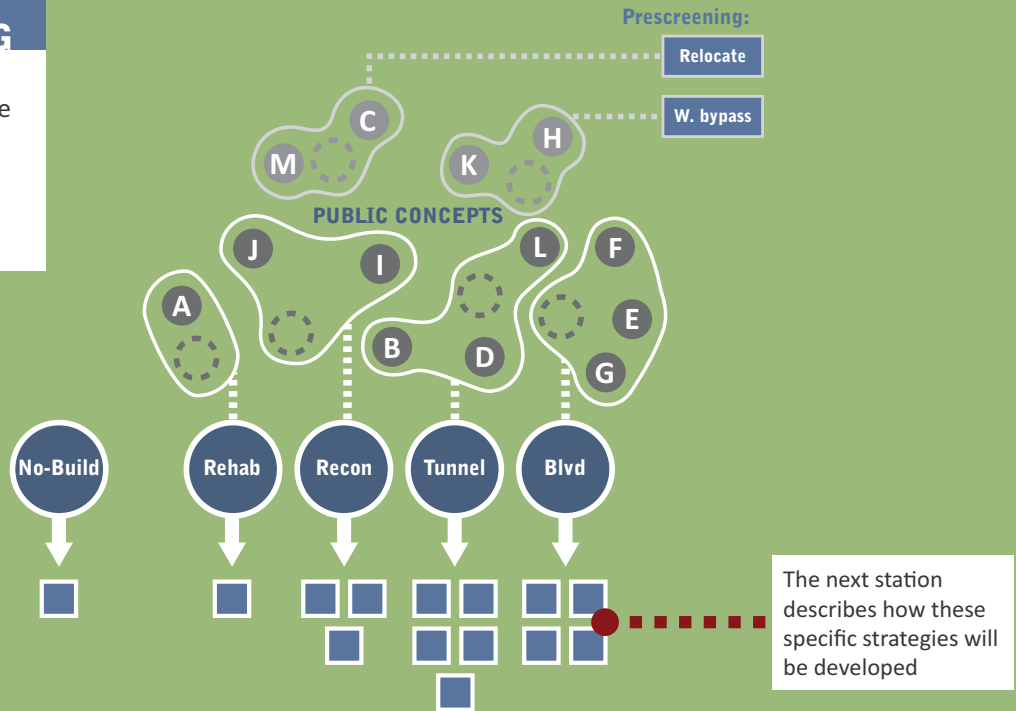
Moving to Stage 1 screening



The screening process

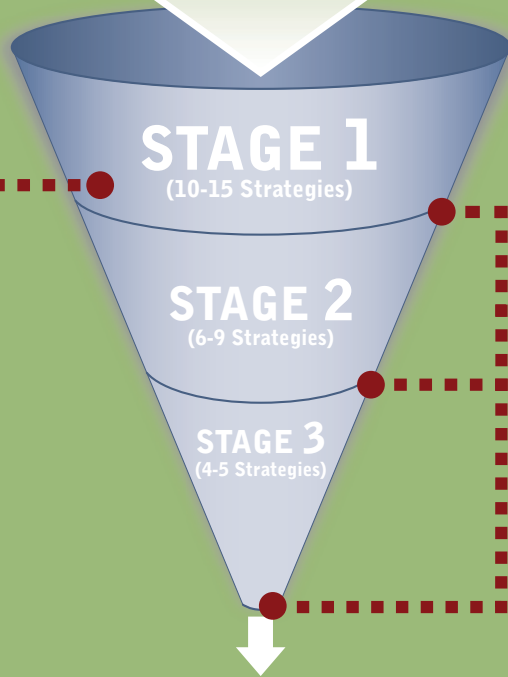
3 STAGES OF SCREENING

Three levels of screening/evaluation will be completed to narrow down the number of strategies. Each stage will increase the level of detail and refine each strategy in conformance with project needs and goals.



STAGE 1 SCREENING:

- Develop a variety of strategies within each category (10-15 strategies total)
- Develop concept-level illustrations
- Review engineering considerations; social, economic, and environmental impacts; and traffic conditions
- Quantify impacts, benefits, and costs
- Compare to Purpose & Need and Goals & Objectives
- Recommend strategies to progress to Stage 2



Evaluation criteria will be applied, and the public will be involved at each stage

Strategies will be carried forward to preliminary engineering/ Environmental Impact Statement (EIS) (Conclusion of Corridor Study)

Pre-screening: Relocate I-81 through downtown

POTENTIAL IMPACTS:

PROPERTY:

- Building to interstate highway standards requires 400' swath of land through the City plus property for interchanges
- Significant impacts to residential properties

COMMUNITY RESOURCES:

- Significant impacts to businesses and cultural centers: Huntington Family Center, Hopps Memorial CME Church, Atlas Health Care, and other office/industrial buildings
- Significant impacts to Franklin Square

NYS&W right-of-way is not a viable option because it is an active freight line. Consider alignment immediately west of rail line.

Could complement a boulevard on existing I-81 alignment



RECOMMENDATION:

- Consider a new arterial (non-interstate highway) along West St or adjacent to the NYS&W railroad alignment as part of a Boulevard Strategy [see more details in Station 4]

Pre-screening: Relocate I-81 north of I-690

POTENTIAL IMPACTS:

PROPERTY:

- Building to interstate highway standards requires 250'-400' swath of land through city neighborhoods plus land for interchanges and new connections to Carousel Center, Regional Transit Center, and Onondaga Lake Parkway

COMMUNITY RESOURCES:

- Impacts multiple neighborhoods and schools, Sisters of St. Francis Campus, and Cooper Crouse-Hinds complex

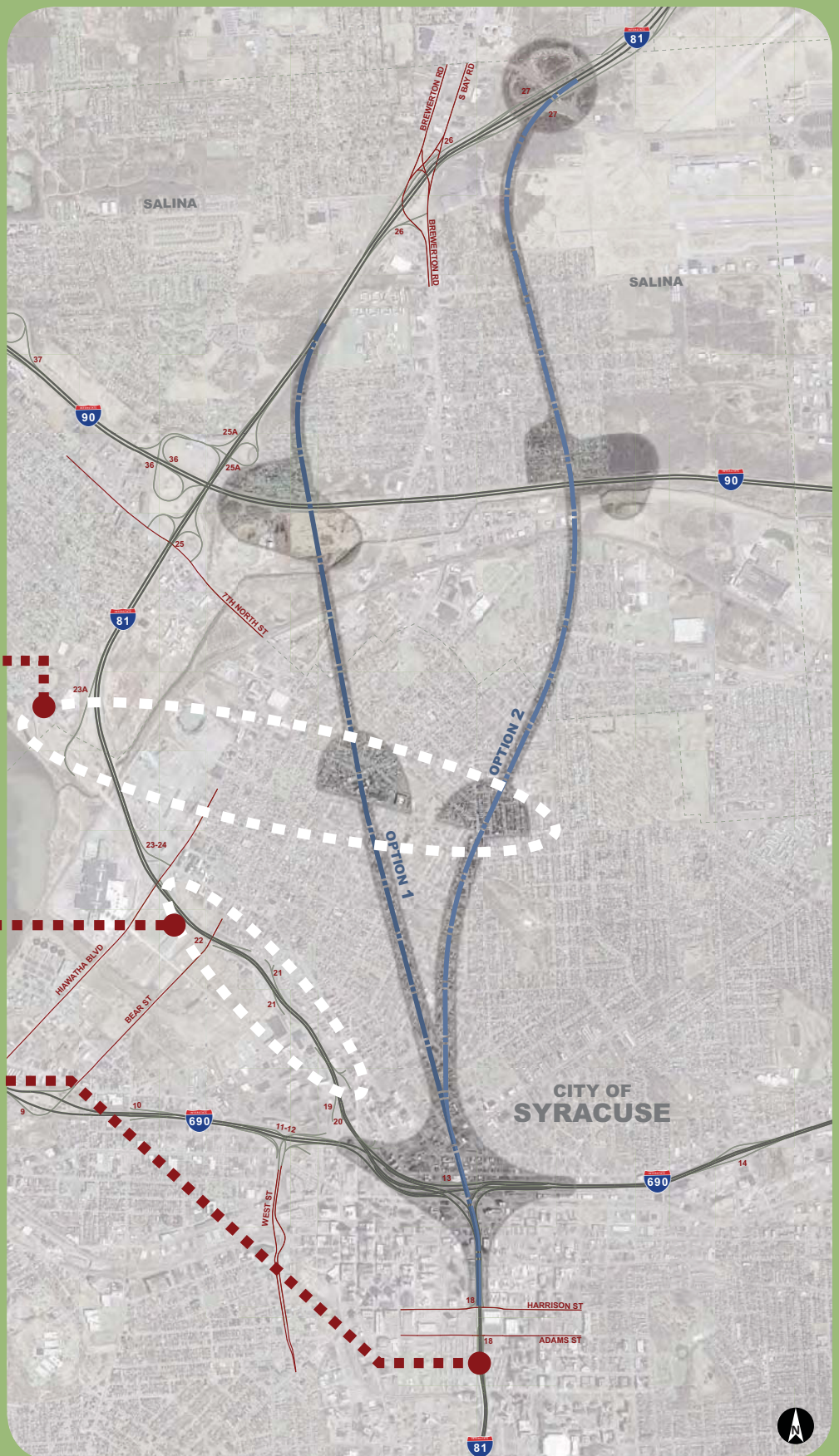
Connections would need to be re-established to Carousel Center, Regional Transit Center, and Onondaga Lake Parkway

It is unclear what might be done with existing I-81

Does not address issues in the viaduct area

RECOMMENDATION:

- Eliminate both concepts from further consideration



Pre-screening: Western bypass concepts

POTENTIAL IMPACTS:

PROPERTY:

- Building to interstate highway standards requires 250'-400' swath of land through established city and town neighborhoods plus land for interchanges

COMMUNITY RESOURCES:

- Impacts various residential neighborhoods, schools, parks, and recreational facilities

ECONOMIC:

- Impacts various medical, office, retail, and industrial facilities

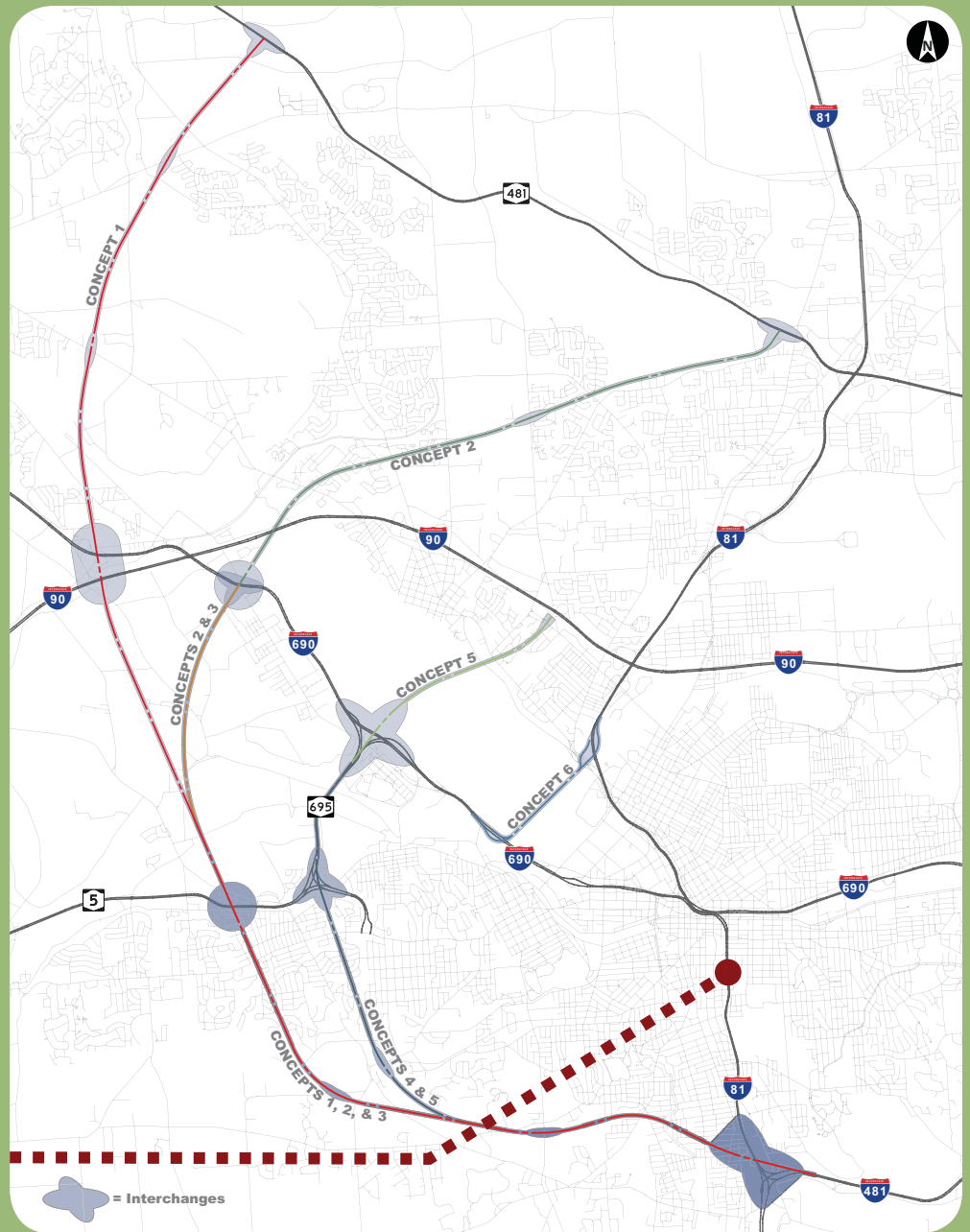
ENVIRONMENTAL:

- Varying Impacts to: Onondaga Lakefront, Tailing Pond Wetland Area/Old Erie Canal, and the Clay Marsh lands

TRAFFIC:

- Traffic volumes on any bypass concept are expected to be much too low to justify the anticipated cost to construct

The Western bypass concepts do not, by themselves, address the project needs for I-81 and the viaduct.



RECOMMENDATION:

- Consider bypass concept 4 from southern I-81/I-481 interchange (Exit 16A) to NYS Rt 5/695 in Fairmount as an optional part of a Boulevard Strategy [see more details in Station 4]
- Eliminate all other Western bypass concepts

Recommendations for Stage 1 screening

Based on the categorization of concepts and pre-screening, we recommend that five strategies progress to Stage 1 screening.

- **Boulevard**

Optional, as part of a Boulevard Strategy:

- Western bypass
- West Street/railroad arterial

- **No-Build**

- **Reconstruction**

- **Rehabilitation**

- **Tunnel/Depressed highway**



Tell us what you think

?

The board to the left summarizes our recommendations for the strategies that will progress to Stage 1 screening. Please provide your thoughts on these recommendations in the space below.

(You will have the opportunity to provide additional comments on each of the five proposed Stage 1 strategies in the next station)

No-Build strategy: defined

The “no-build” strategy would include only routine maintenance, including filling pavement cracks, patching holes in the viaduct deck, and maintaining the highway drainage system.

WHY CONSIDER THIS STRATEGY?

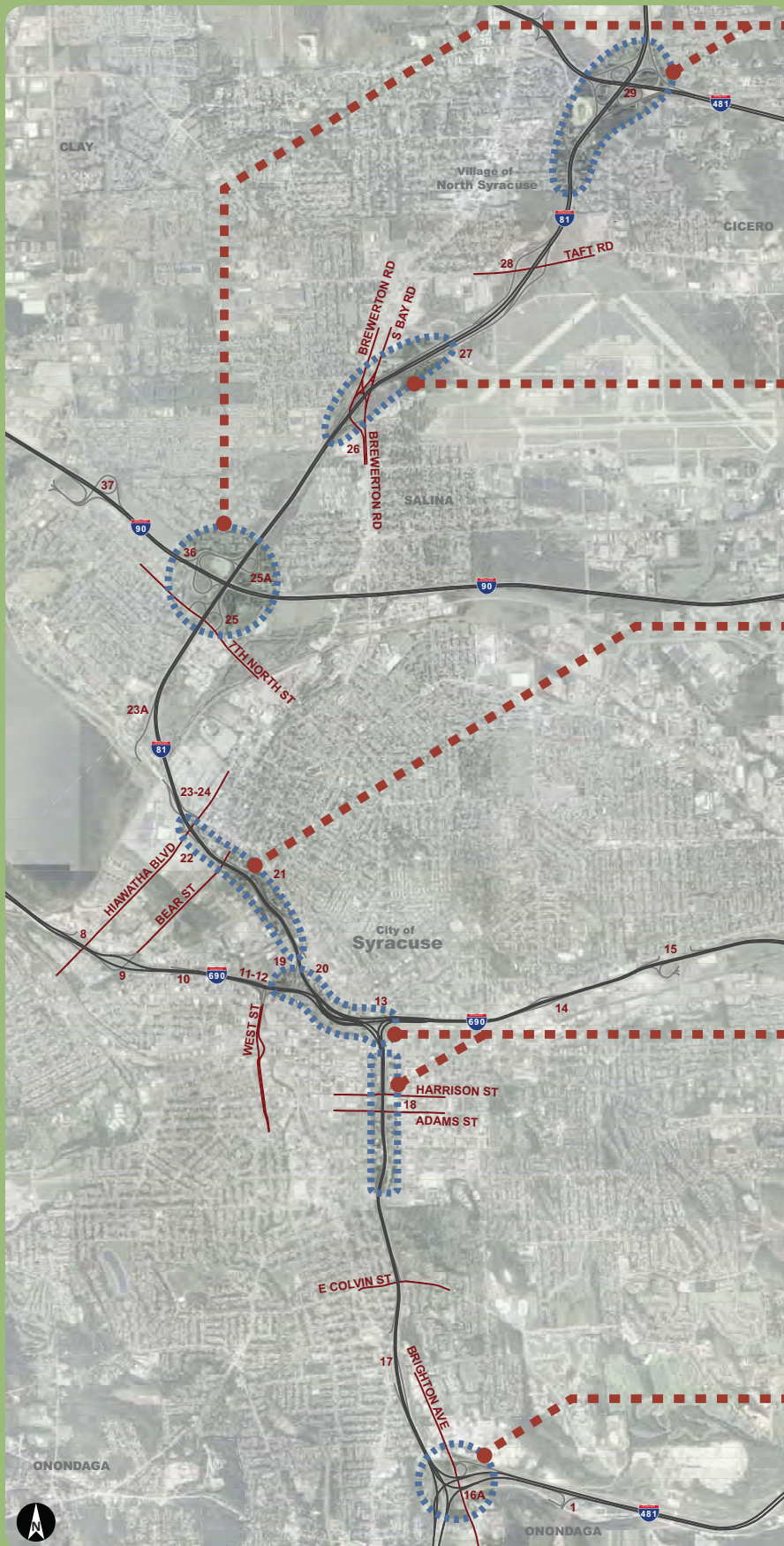
- Required under both federal and state environmental regulations
- Used as a benchmark against which other alternatives can be compared

WHAT ISSUES WILL THIS STRATEGY ADDRESS?

- Will not address long-term issues of I-81



No-Build strategy: Future issues



7TH NORTH ST TO I-90 & TAFT RD TO I-481

- Capacity conditions and congestion will increase
- Safety and accident occurrences will remain, if not increase as a result of increasing congestion
- Non-standard design features will continue to affect capacity and safety

ROUTE 11 AREA (EXIT 26 & 27)

- Traffic capacity will decrease from good to approaching capacity and will likely contribute to increased accident rates

I-690 TO HIAWATHA BLVD

- Capacity conditions and congestion will increase
- Safety and accident occurrences will remain, if not increase, as a result of increasing congestion
- Non-standard design features will continue to affect capacity, safety, and operations

I-81/I-690 INTERCHANGE & VIADUCT AREA

- Bridge conditions continue to deteriorate and require increased funding for out-of-date bridges
- Capacity conditions and congestion will increase
- Safety and accident occurrences will remain, if not increase, as a result of increasing congestion
- Non-standard design features will continue to affect capacity, safety, and operations

I-81/I-481 INTERCHANGE

- Safety and accident occurrences will remain, if not increase, as a result of increasing congestion
- Non-standard design features will continue to affect capacity and safety

Rehabilitation strategy: defined

A rehabilitation strategy for I-81 would restore the current bridges and pavement to a “state of good repair” that would last for the next 30-40 years. Some parts of the I-81 viaduct might be widened or changed to improve safety. Some improvements to exit/entrance ramps to downtown and University Hill might be made.

WHY CONSIDER THIS STRATEGY?

- Supported by public input
- Can be used along with No-Build as a benchmark for other strategies
- Addresses some issues with I-81

WHAT ISSUES WILL THIS STRATEGY ADDRESS?

- Long-term pavement and bridge conditions
- Some of the worst accident, safety, and congestion areas in the corridor
- Extension of the viaduct service life

“One of the positives of living in Central New York is the ease of automobile travel in the region...it would not be a bad thing to keep I-81 exactly as it is now.”

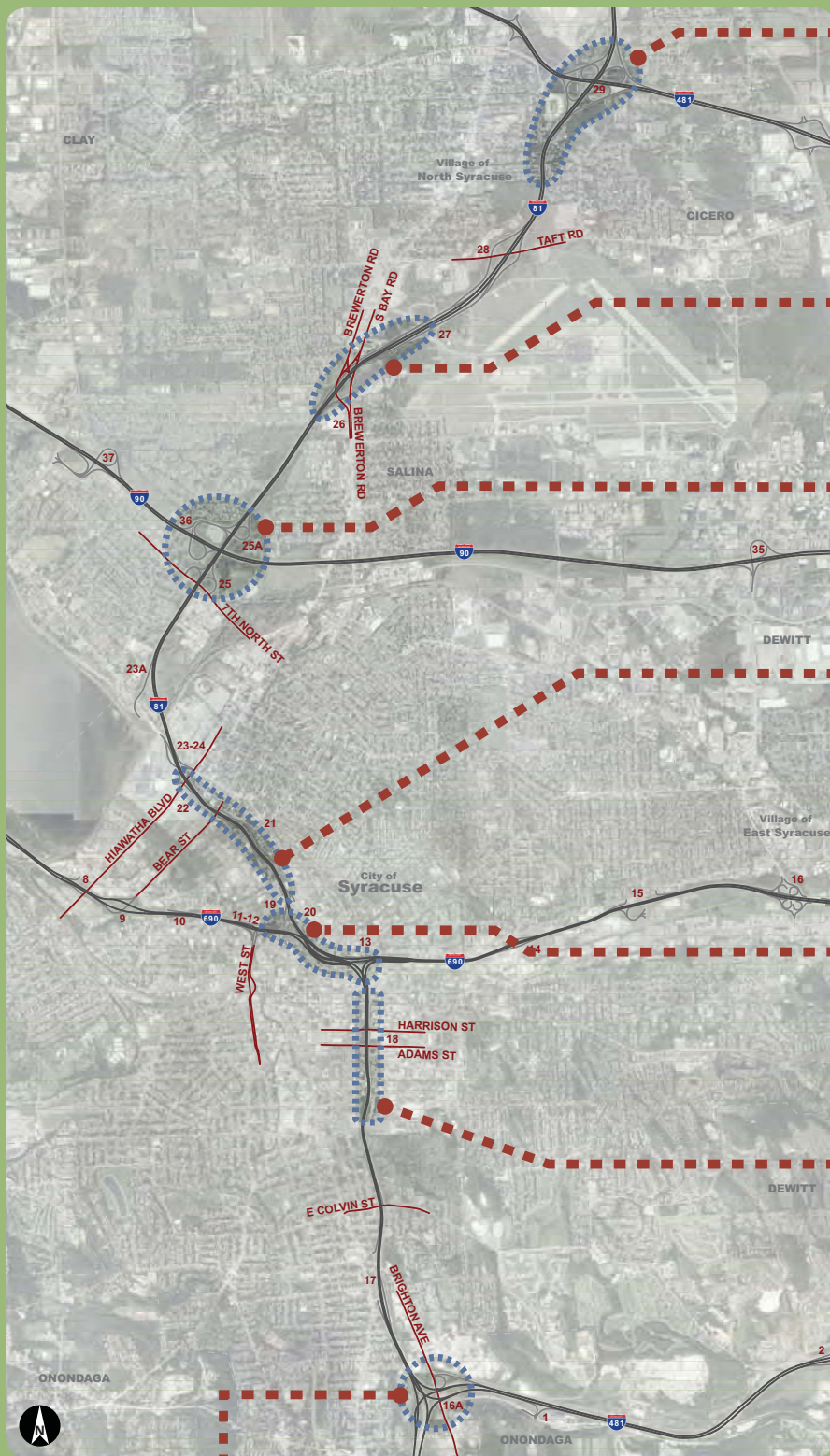
“We must maintain convenient highway access to downtown and to key University and Medical Center destinations. I believe I-81 needs to remain, in some form, where it is.”

“I-81 makes traveling to work a breeze! I have lived in the University area for over 50 years and 81 has been a blessing to go from one side of the city to the other in little to no time.”

“81 is completely essential to maintaining a working city. Loss of quick travel from north to south Syracuse will drastically increase commute times and destroy what I love most - ease of navigation.”

What we heard

Rehabilitation strategy: Elements for Stage 1 development



TAFT RD TO I-481

- Develop frontage road for I-81 through the interchange with I-481 to improve weaving conditions
- Review accident history for the Priority Investigation Location to determine if mainline curve contributes to high accident rate

ROUTE 11 AREA (EXIT 26 & 27)

- Review accident history for two Priority Investigation Locations to determine if mainline curve or weaving contributes to high accident rate

7TH NORTH ST TO I-90

- Develop frontage road system to improve weaving conditions
- Provide shoulder-edge rumble strips

I-690 TO HIAWATHA BLVD

- Increase length of ramps
 1. State St to I-81 northbound
 2. Court St to I-81 northbound
 3. I-81 southbound to Genant St
- Remove on-ramp from Genant St to I-81 southbound
- Provide shoulder-edge rumble strips

I-81/I-690 INTERCHANGE

- Increase length of ramps
 1. I-690 eastbound to I-81 southbound
 2. Pearl St ramp to I-81 northbound
 3. I-81 northbound to I-690 westbound

VIADUCT AREA

- Increase length of three of four ramps
 1. Harrison St to I-81 northbound
 2. I-81 southbound to Harrison/Almond
 3. Adams/Almond St to I-81 northbound
- Widen bridge southbound to provide two lanes for southbound ramp to Harrison St
- Improve capacity on Almond St

I-81/I-690 INTERCHANGE & VIADUCT AREA

- Widen bridges to provide shoulders
- Provide skid-resistant pavement
- Provide reflectorized pavement markings
- Provide shoulder-edge rumble strips

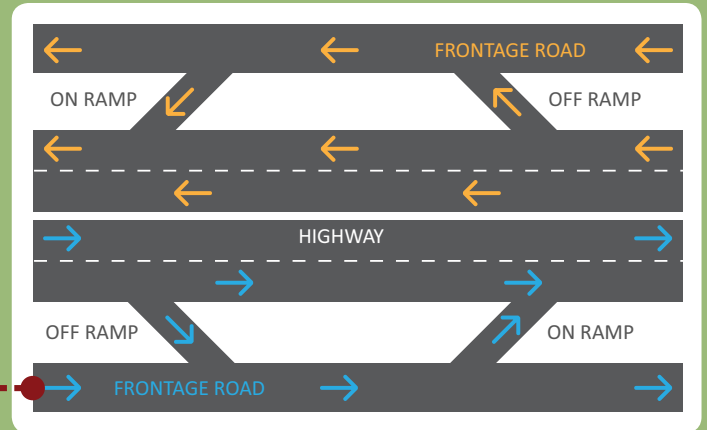
I-81/I-481 INTERCHANGE

- Improve interchange lighting
- Provide reflectorized pavement markings
- Provide shoulder-edge rumble strips

Rehabilitation strategy: considerations

ACCESS IMPROVEMENTS

- Increase ramp spacing
- Use frontage roads - non-limited access roads that run parallel to high-speed roads or highways



Rumble strips and reflective pavement markings

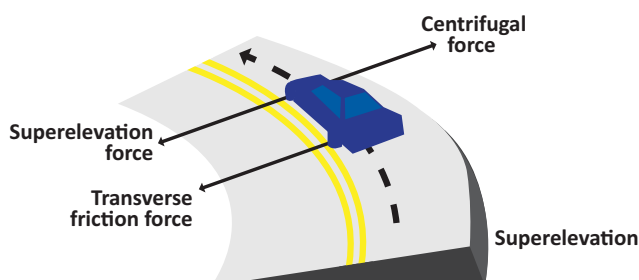
SAFETY AND OPERATIONAL IMPROVEMENTS

- Improved lighting
- Rumble strips
- Bridge widening to provide shoulders
- Skid-resistant pavement
- Reflective pavement markings

GEOMETRIC IMPROVEMENTS

- Straightening of sharp curves

Superelevation Diagram



I-81 north of downtown Syracuse



Tell us what you think



Is there anything missing from this strategy?

Reconstruction strategy: defined

A reconstruction strategy for I-81 would remove the existing viaduct structure and build a new I-81 viaduct within the general vicinity of the current highway. The I-81/I-690 interchange would be rebuilt. Some highway curves would be straightened.

WHY CONSIDER THIS STRATEGY?

- Significant public support
- Addresses long-term issues with I-81
- Meets regional transportation needs through 2040

WHAT ISSUES WILL THIS STRATEGY ADDRESS?

- Long-term pavement and bridge conditions
- High accident locations
- Congestion at I-690 interchange
- Most or all non-standard features
- Aesthetic/built environment improvements in the current viaduct area

“Keep the current I-81 right-of-way through Syracuse, but make major improvements to the infrastructure (i.e additional lanes, carpool (HOV) lanes, fewer exits and entrance ramps, less curves, etc.). Improve signage, lighting, and safety, too.”

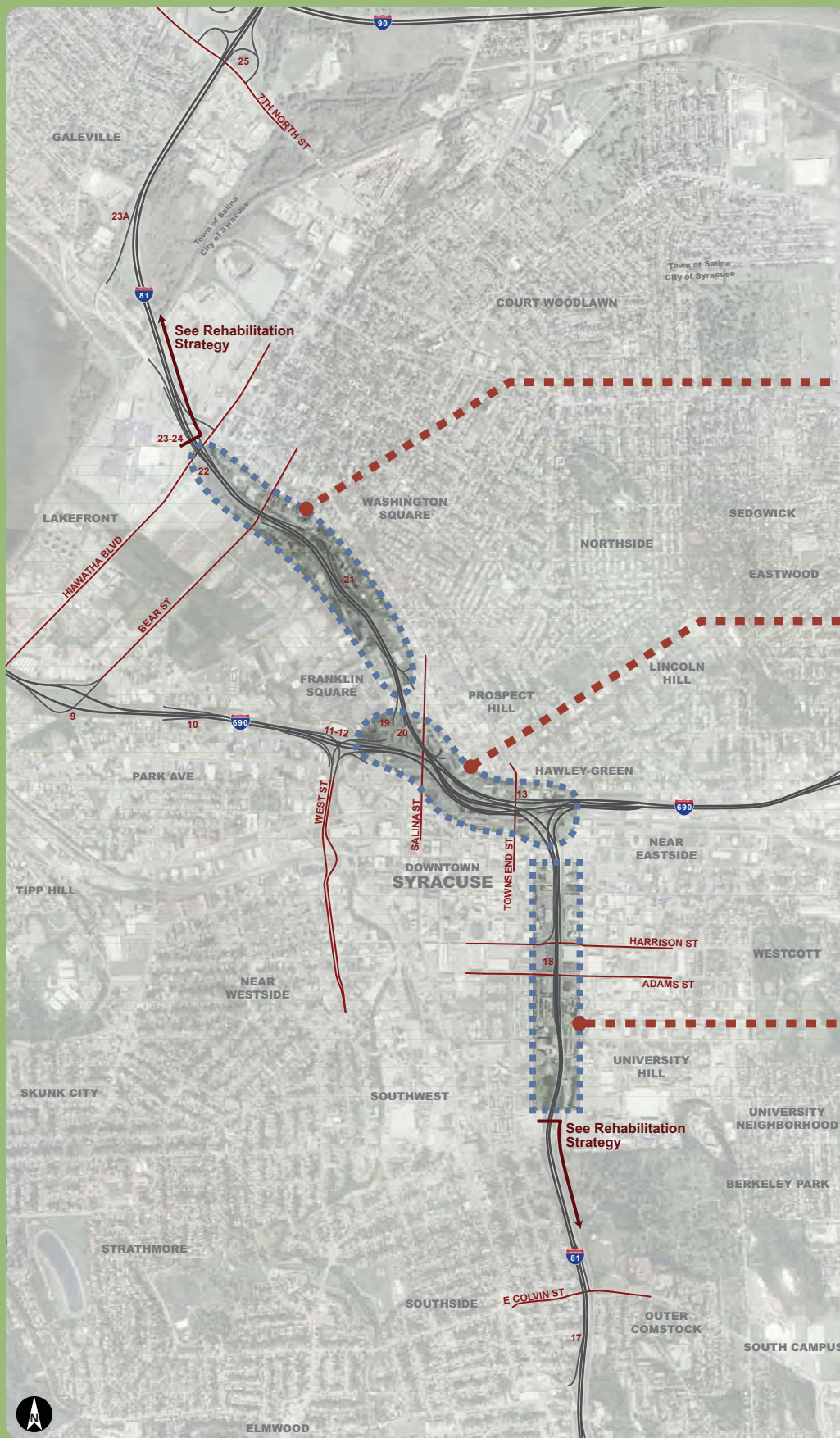
“The bridge works, so keep it. Improve the design, widen the highway, and address the design deficiencies of the on ramps and interchanges.”

“Renovate the existing system, maintaining its extraordinary functionality. Improve the interchanges, and enhance the pedestrian environment around the interstate. Eliminate bottlenecks by widening the roadway and lengthening merge lanes.”



What we heard

Reconstruction strategy: Elements for Stage 1 development



I-690 TO HIAWATHA BLVD

- Straighten I-81 mainline curves
- Develop new ramp system and/or provide a frontage road

I-81/I-690 INTERCHANGE

- Evaluate interchange options
- Straighten mainline curves
- Eliminate left-hand entrances
- Improve ramp spacing
- Improve local surface street connections

VIADUCT AREA

- Remove and replace viaduct bridge
- Identify bridge types with appropriate aesthetics and span lengths
- Review Exit 18 (Adams/Harrison) location for possible changes in relation to I-81/I-690 interchange
- Identify changes to Almond Street in relation to I-81/I-690 interchange

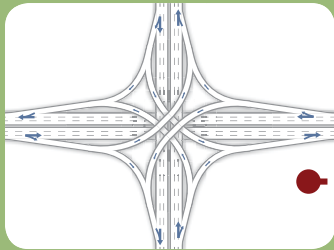
Reconstruction strategy: considerations

FRONTAGE ROADS

- Frontage roads segregate local traffic from the higher speed through traffic
- Frontage roads are used most frequently on highways where their primary function is to distribute and collect traffic between local streets and interchanges



Frontage road along I-71



I-490/I-590 interchange, Rochester, NY

INTERCHANGE LAYOUT

- Interchange configuration and design is based on many factors including traffic volumes and patterns, environmental considerations, and cost
- The most common interchange configurations fill the least space, minimize structural complexity, minimize weaving, and fit the setting
- The most widely used directional interchange is a 4-level System Interchange layout

HIGHWAY VIADUCT

- A new viaduct would conform to current design standards
- Many cities have built new viaducts that are aesthetically pleasing



Seattle viaduct rendering



Modern concrete bridge



Modern steel bridge



Tell us what you think



Is there anything missing from this strategy?

Tunnel/Depressed highway strategy: defined

A tunnel/depressed highway strategy would remove the viaduct and lower I-81 below grade in a tunnel and/or depressed right-of-way. This strategy would require the reconstruction of I-81 on either end of the tunnel/depressed highway.

WHY CONSIDER THIS STRATEGY?

- Significant public support
- Addresses long-term issues of I-81
- Meets regional transportation needs through 2040

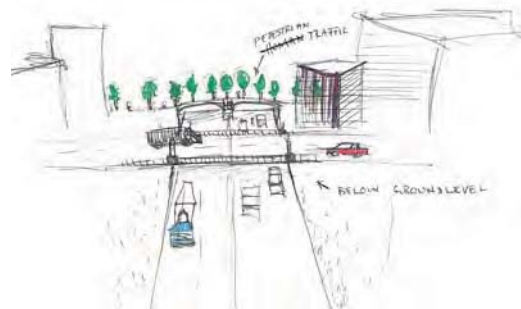
WHAT ISSUES WILL THIS STRATEGY ADDRESS?

- Long-term pavement and bridge conditions
- Accidents
- Non-standard features
- Aesthetic/built environment improvements in the current viaduct area

"I would put I-81 underground and design a tunnel to allow traffic to flow in and out of the city. A tunnel would improve traffic flow, reconnect the downtown area, and decrease accident rates on I-81."

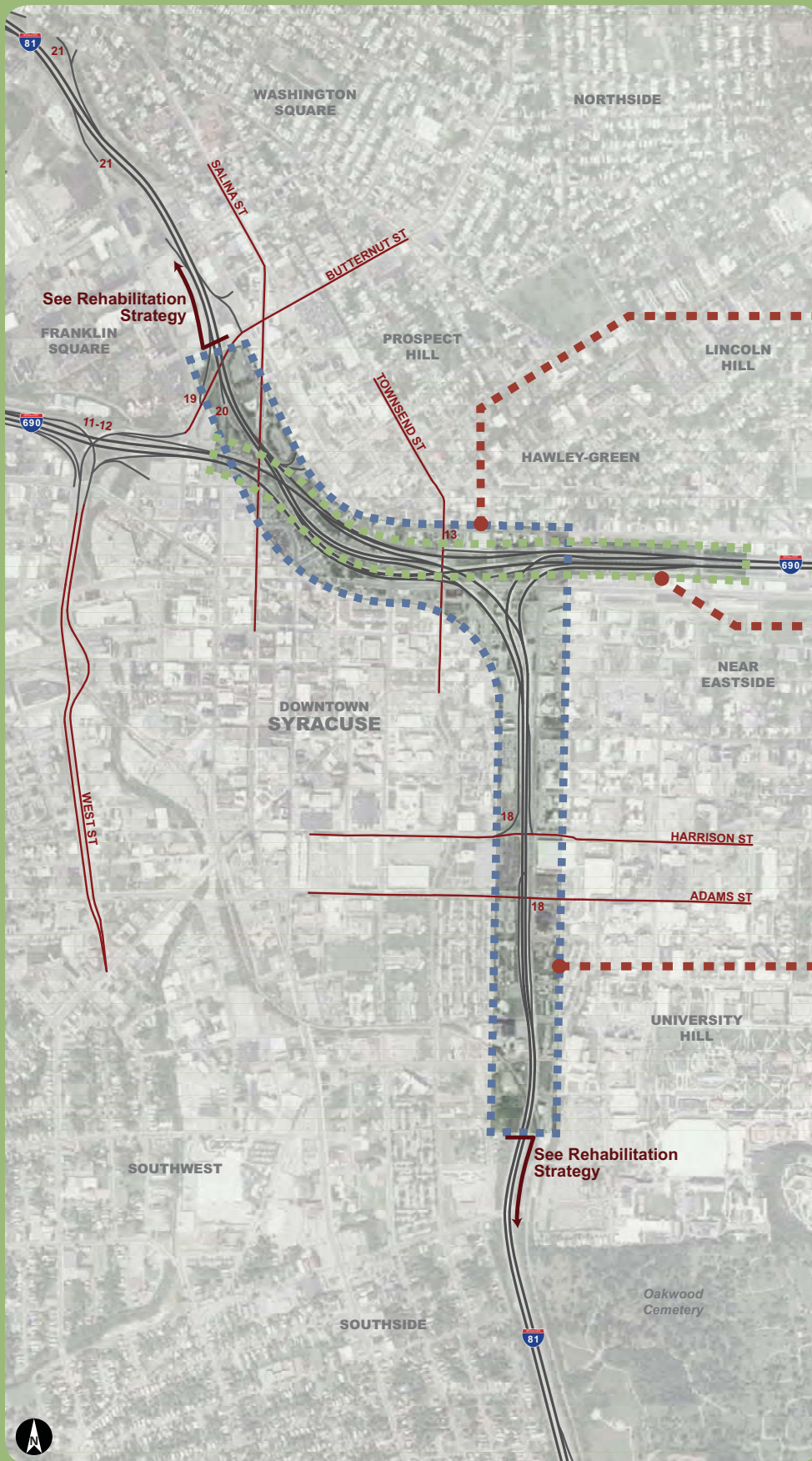


"Create a tunnel for the highway. Then, above ground, use the open space for parks and paths for walking and biking. This strategy would create a unique space in the city and help Syracuse distinguish itself."



What we heard

Tunnel/Depressed Highway strategy: Elements of Stage 1 development



I-81/I-690 INTERCHANGE

- Re-establish all connections between I-81 and I-690
- Provide primary access to downtown and University Hill

I-690: CROUSE AVE TO WILLOW ST

- Investigate tunnel concepts from Crouse Ave to Willow St

I-81: NYS&W RAILROAD TO BUTTERNUT ST

- Investigate and develop 5 tunnel/depressed highway concepts for I-81 from the NYS&W railroad to Butternut St

NORTHERN & SOUTHERN BOULEVARD LIMITS

Review other terminus suggestions including:

- City of Syracuse north city line
- I-90 (Thruway) interchange (Exit 25A)
- Castle St (tunnel and depressed highway)
- Colvin St (tunnel)
- Oakwood Cemetery (depressed highway)

Tunnel/Depressed highway strategy: considerations

TUNNEL CONSIDERATIONS

- Grade change
 - Lowering roadway would require a significant transition length
- Local access
 - Re-establish downtown access and University Hill connections
 - Modifications to existing street network necessary for tunnel portal and approaches
- Maintenance issues
 - Drainage
 - Ventilation
 - Fire and emergency systems



Sample tunnel cross section



Central Artery - Boston, MA



Fort Washington Way - Cincinnati, OH



Rochester Inner Loop - Rochester, NY



Tell us what you think



Is there anything missing from this strategy?

Boulevard strategy: defined

A boulevard strategy would require major modification to the regional highway system. The I-81 viaduct would be removed and replaced by a non-interstate boulevard. I-481 would be redesignated as I-81. This strategy would include reconstruction of I-81 on either end of the boulevard and significant changes to the I-81/I-481 interchanges.

WHY CONSIDER THIS STRATEGY?

- Significant public support
- Addresses structural issues of the I-81 viaduct
- Regional transportation needs

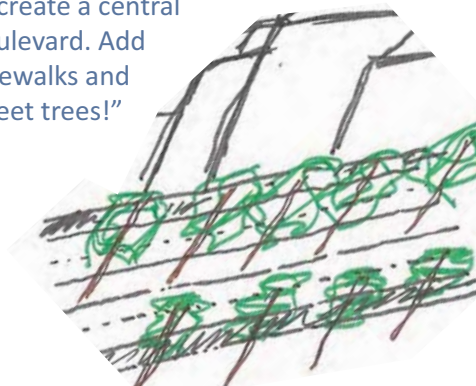
WHAT ISSUES WILL THIS STRATEGY ADDRESS?

- Long-term pavement and bridge conditions
- Accidents
- Non-standard features
- Aesthetic/built environment improvements in the current viaduct area

"Convert I-81 to a street-level arterial highway, similar to the one in Utica, NY. The highway should have turn lanes for major crossroads, and crosswalks or pedestrian bridges at strategic points. This option would be cheaper to maintain and would create more access points for travelers."

"A boulevard would eliminate the viaduct, which is an eyesore and physical barrier in central Syracuse. It would also calm traffic and reduce noise and pollution."

"Bring I-81 to street level to create a central boulevard. Add sidewalks and street trees!"



What we heard

Boulevard strategy: Elements of Stage 1 development



I-81/I-690 INTERCHANGE

- Re-establish all connections between I-81 and I-690
- Establish connections to the boulevard
- Provide primary access to downtown and University Hill

I-690: UNIVERSITY AVE TO WEST ST

- Review boulevard from University Ave to West St
- Review boulevard from Route 5 to West St

I-81: OAKWOOD CEMETERY TO BUTTERNUT ST

Investigate and/or develop 4 different boulevard options. Details will include:

- Cross section options (width, # of lanes, green space)
- Southern terminus options (Castle St to Jackson St)
- Northern terminus options (Erie Boulevard, Almond St, or through the interchange)

NORTHERN & SOUTHERN BOULEVARD LIMITS

Review other terminus suggestions for the boulevard concept including:

- I-481 northern interchange (Exit 29)
- I-90 (Thruway)
- Route 370 (Onondaga Lake Parkway)
- City streets including - Hiawatha Blvd, Spencer St, Court St, and Butternut St
- I-481 southern interchange (Exit 16A)
- Brighton Ave
- Colvin St

Boulevard strategy: Associated concepts

LOCAL STREET CONSIDERATIONS

- Reconnect street grid
- Rebuild major streets to boulevard standards
- Better/more connections to State roads
- Improve traffic signal coordination
- Review one-way streets
- Consider roundabouts

ROUTE 5/695

- Rebuild/reconnect ramps and interchange

WESTERN BYPASS (OPTIONAL)

- Consider extending bypass from I-81/I481 interchange (Exit 16A) to NYS Route 5/695 in Fairmount

I-81/I-481 INTERCHANGE

- Rebuild/reconnect ramps and interchange
- Approximate new I-81 mainline



I-81/I-481 INTERCHANGE

- Rebuild/reconnect ramps and interchange
- Approximate new I-81 mainline

I-481

- Re-designate I-481 as I-81
- Review I-690 and I-481 for capacity issues and potential widening

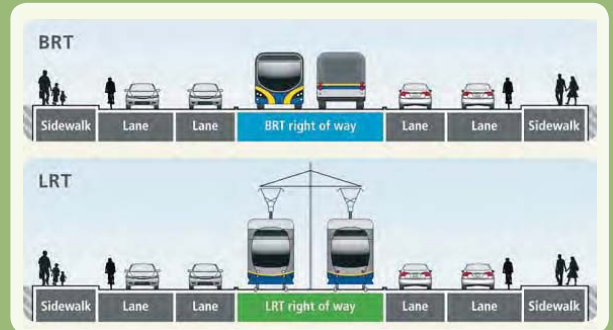
WEST ST AND RAILROAD CORRIDOR (OPTIONAL)

- Investigate the NYS & W Railroad and West St corridor for circulation improvements and/or a possible I-81/I-690 connector

Boulevard strategy: considerations

BOULEVARD CONSIDERATIONS

- Street network changes
 - Elevated to at-grade transition
 - Upgrading of existing arterials
 - New thoroughfares
- Traffic capacity enhancements
 - Review alternative access locations
 - Street grid improvements
- Alternative transportation modes
 - Reserved right-of-way for transit
 - Sidewalks and bike lanes
 - Pedestrian safety
- Improved aesthetics



Surrey Rapid Transit Study Design Guide - TransLink



West Side Highway - New York, NY



Harbor Drive - Portland, OR



Embarcadero - San Francisco, CA



Octavia Boulevard - San Francisco, CA



Octavia Boulevard - San Francisco, CA



Embarcadero - San Francisco, CA



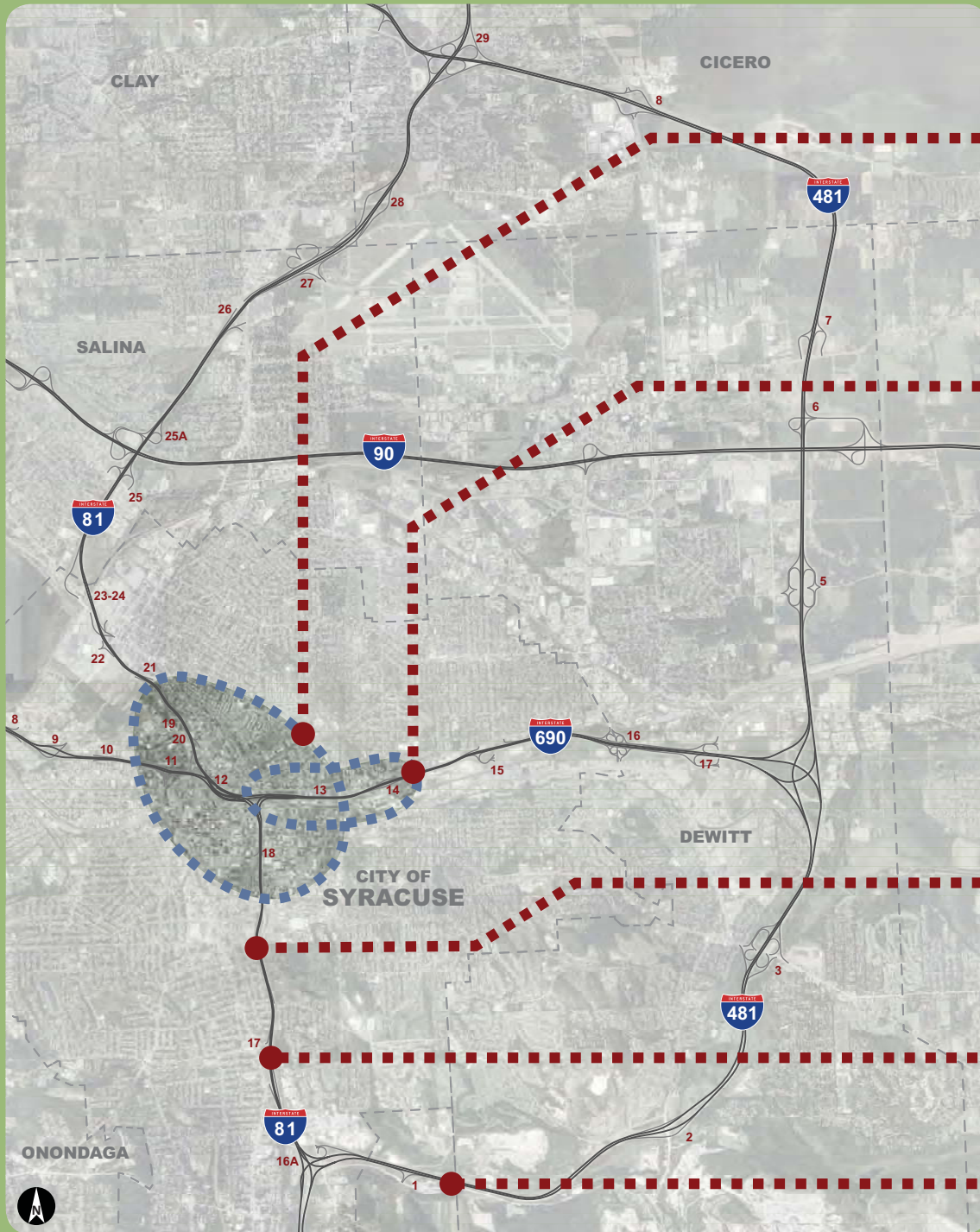
Tell us what you think



Is there anything missing from this strategy?

Common concepts

These concepts represent additional improvements that could be incorporated into any strategy



Develop surface street modifications to facilitate interstate access and improved connectivity

Consider frontage road for improved access to University Hill

Consider a new Castle St interchange (full or partial)

Consider improvements to Exit 17 (State St/Salina St/Brighton Ave), including the Colvin St northbound on-ramp, for improved east side/University Hill access

Consider a new I-481 interchange for University Hill Access

OTHER REGION-WIDE STRATEGIES:

- Review improvements to transit system for improved mobility in downtown core and improved peak hour commuter ridership (see Station 5)
- Review bicycle and pedestrian improvements
- Ensure Americans with Disabilities Act (ADA) guidelines are followed

Existing Transit System



Transit Benefits



Image Source: CENTRO

ECONOMIC

- Every \$1 billion invested in public transportation capital and operations creates and supports an average of 36,000 jobs.
- For every \$1 invested in public transportation, \$4 is generated in economic returns.
- Transit corridors support sustainable economic growth.

Source: American Public Transportation Association: www.publictransportation.org



Image Source: CENTRO

ENVIRONMENTAL

- Public transportation in the US saves as much CO₂ as would be produced from the generation of electricity for 4.9 million households.
- If an individual switches a 20-mile roundtrip commute to public transportation, his or her annual CO₂ emissions will decrease by 4,800 pounds per year.
- Expanded public transit strategies coordinated with combining travel activity, land use development, and operational efficiencies can reduce greenhouse gases by 24 percent.

Source: American Public Transportation Association: www.publictransportation.org



Image Source: SMTC

Transit Benefits



Image Source: CENTRO

QUALITY OF LIFE

- Americans living in areas served by public transportation save 785 million hours in travel time and 640 million gallons of fuel annually.
- When Americans use public transportation, they walk more. Walking increases fitness levels, leading to healthier citizens and less strain on the health care system.
- Transit provides a means of transportation and access to opportunities for all, including the elderly, persons with disabilities, and low-income communities.

Source: American Public Transportation Association; www.publictransportation.org



Image Source: CENTRO

ENERGY

- Public transportation saves the US the equivalent of 4.2 billion gallons of gasoline annually.
- An individual can achieve an average annual savings of more than \$10,000 by taking public transportation instead of driving, and by living with one less car.
- Household residents living within proximity of public transportation drive an average of 4,400 fewer miles annually.



Image Source: CENTRO

Why is a Transit System Analysis Part of *The I-81 Challenge*?

TRANSIT SYSTEM ANALYSIS: NEEDS

The I-81 Challenge project presents an opportunity to evaluate and improve the future of the transportation system for all modes and users.

An improved transit system can help:

- Reduce congestion within the City, particularly along corridors adjacent to I-81 and I-690.
- Facilitate sustainable economic development within the City, including the planned development in University Hill.
- Reduce parking demand downtown and on University Hill.
- Improve connectivity and integration of the downtown with University Hill.
- Increase transportation options for young, elderly, persons with disabilities, and low-income populations.
- Decrease noise and air pollution generated from traffic.



Image Source: CENTRO

Image Source: CENTRO

Why is a Transit System Analysis Part of *The I-81 Challenge*?

TRANSIT SYSTEM ANALYSIS: GOALS & OBJECTIVES

GOAL: IMPROVE SERVICE AND MOBILITY WITHIN THE CITY OF SYRACUSE

- OBJECTIVE: A** Improve and expand service between key destinations in the City, including residential areas, employment centers, health care facilities, educational institutions, and cultural resources.
- B** Reduce single-vehicle trips and parking demand in the downtown and on University Hill by generating new ridership through increased mobility within, and between, those areas.
- C** Develop transit corridors to support sustainable land use and economic growth within the City.
- D** Make transit more attractive by reducing transit travel time, improving transit stops and on-board amenities, providing rider information, and branding key corridors.

GOAL: IMPROVE SUBURBAN COMMUTER SERVICES TO DOWNTOWN SYRACUSE AND UNIVERSITY HILL

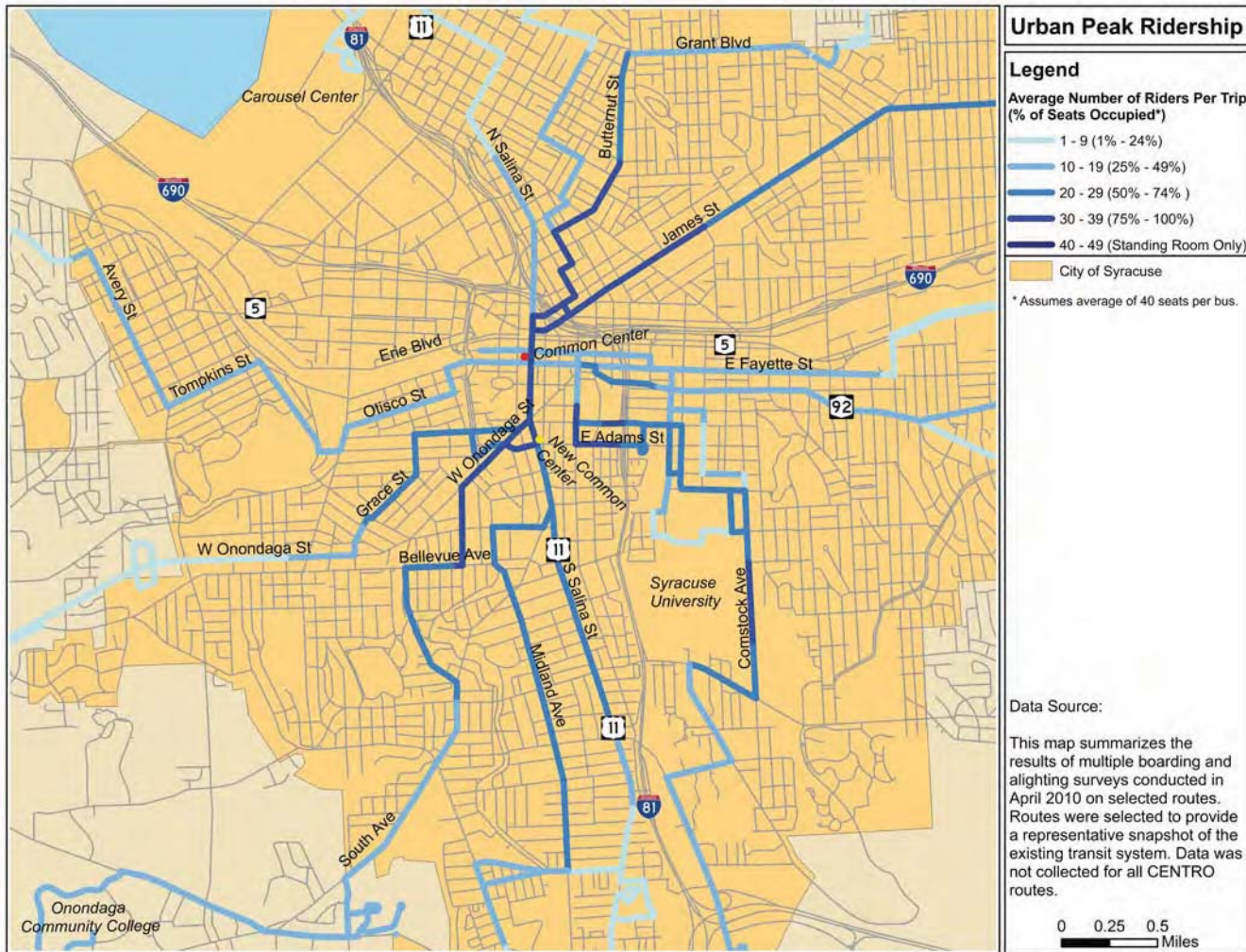
- OBJECTIVE: A** Reduce regional transit travel time to be more comparable to commuter vehicle travel time.
- B** Expand direct service between suburban communities and major employment centers in the City, in particular, downtown and University Hill.
- C** Provide the potential for transit-oriented development in suburban communities.
- D** Make transit more attractive to suburban commuters by providing transit-stop and on-board amenities.



Are there other needs this transit system analysis should consider?

 Write your ideas on a post-it note and add them to this board.

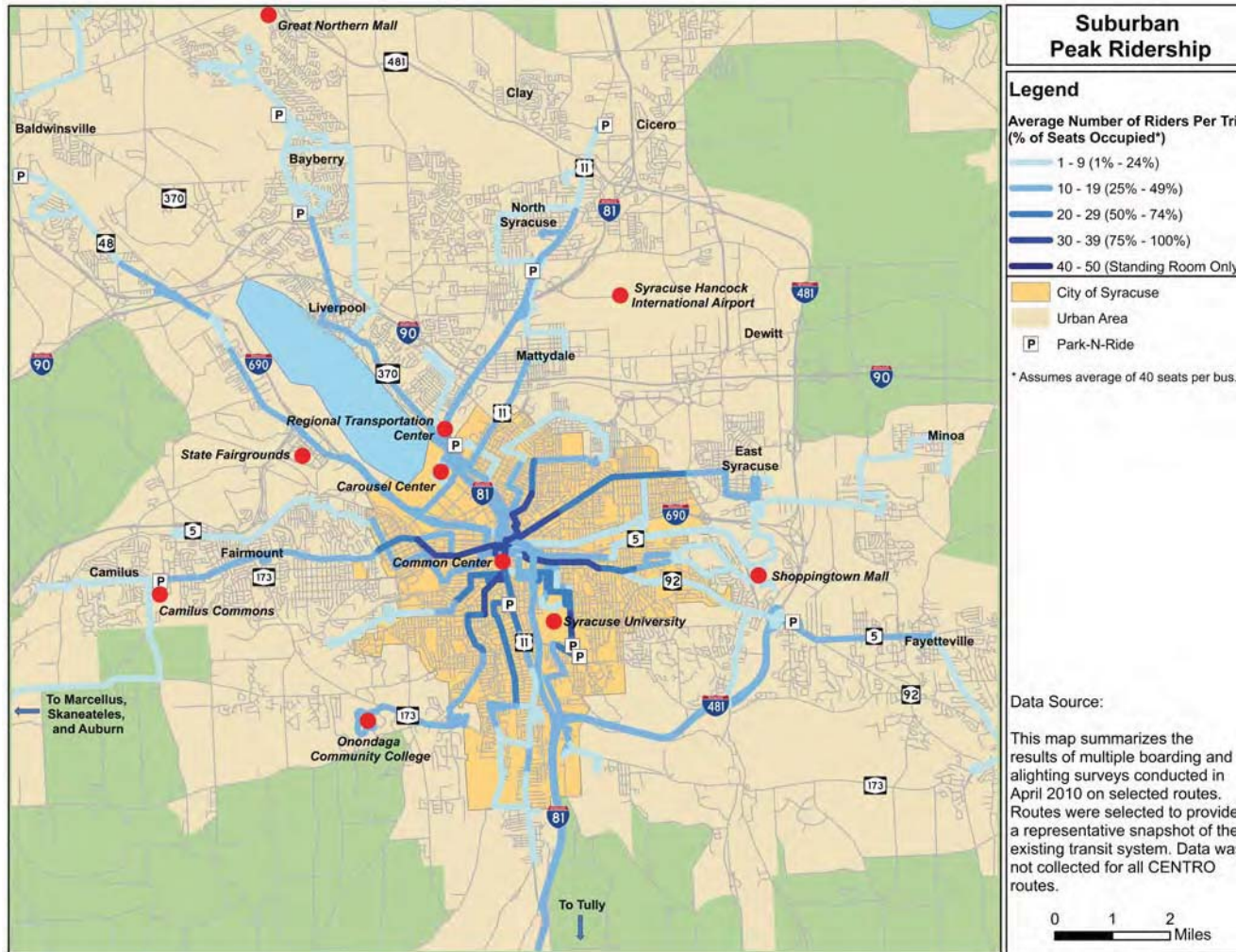
Urban Peak Ridership



MAP CONCLUSIONS

- Ridership decreases significantly with every one-half mile away from the Common Center.
- Major corridors into downtown, including James Street, Butternut Street, S. Salina Street, Midland Ave., and W. Onondaga Street, and routes around Syracuse University, operate at or close to capacity.
- Onondaga Community College and Syracuse University generate sustained ridership farther away from the downtown core.

Suburban Peak Ridership



MAP CONCLUSIONS

- In general, the suburban commuter routes are less than 50% occupied.
- Park and Rides and express routes do not generate a significant number of riders.
- Routes to Fayetteville, East Syracuse, Camillus, North Syracuse, and Liverpool have the highest occupancy, outside of the City boundaries, of the suburban routes; however, even these routes generally operate well below capacity outside of the City.

Transit Enhancements



Image Source: Ian Fisher

BUS-ONLY LANES

WHAT IS IT?

- A travel or parking lane that is restricted to buses during certain times of the day.

WHAT ARE THE BENEFITS?

- Can be designated by a combination of striping, colored pavement, and signing.
- Can be applied in urban and suburban environments, on arterials and freeways.
- Reduces transit travel time by allowing buses to bypass congestion.

Estimated Average Cost

New Lane Construction: \$2,000,000/mile*

Restripe Existing Lane: \$25,000/mile*

*Cost does not include Engineering or R.O.W.

BUS PULL-OUTS

WHAT IS IT?

- A small shoulder area that is provided at a bus stop.

WHAT ARE THE BENEFITS?

- Helps to maintain traffic flow along congested corridors by providing an area for buses to pull out of travel lane to pick up or drop off passengers.

Estimated Cost Per Pull-Out: \$30,000*

*Cost does not include Engineering or R.O.W.



Image Source: Stantec Consulting Services, Inc.

Transit Enhancements

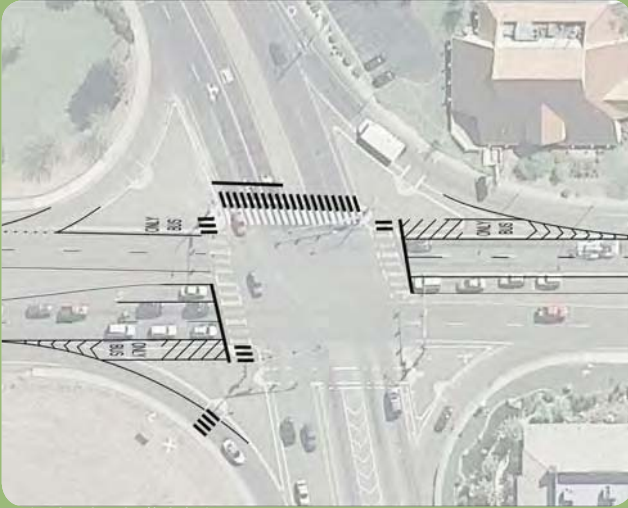


Image Source: Stantec Consulting Services, Inc.

QUEUE JUMP LANES

WHAT IS IT?

- Short bus-only lanes that are provided in advance of a signalized intersection and combined with transit signal priority.

WHAT ARE THE BENEFITS?

- Allows a bus to bypass intersection queuing and re-enter the travel lanes ahead of other vehicles.
- Provides a reduction in travel time for buses along corridors with multiple traffic signals.

Estimated Cost Per Intersection:
\$100,000 - \$300,000*

*Cost does not include Engineering or R.O.W.

TRANSIT SIGNAL PRIORITY

WHAT IS IT?

- Typically applied when using queue jump or bus-only lanes.

WHAT ARE THE BENEFITS?

- Utilize separate signal heads that show white bars, rather than colors, to avoid confusing drivers.
- Can also incorporate sensors that adjust the operation of the signal to allow buses to flow along the corridor with less impedance.

Estimated Cost Per Intersection:
\$8,000 – \$35,000*

*Cost does not include Engineering or R.O.W.



Image Source: Chris Phan October 2005



What enhancements would you like to see to the current transit system?

 Write your ideas on a post-it note and add them to this board.

Rider Amenities



Image Source: Stantec Consulting Services, Inc.



Image Source: ABC 7 San Francisco, CA

Rider amenities increase accessibility and usability of the transit system.

- Real-time rider information provided at transit stops, or via smart phone applications, web sites, or call-in numbers.
- Posted schedules at bus stops.
- Concrete pads, benches, or bus shelters.
- Larger climate-controlled bus shelters at high-volume stops.
- Use a color or name to brand a corridor.
- Establish major commuter park and rides with amenities such as coffee/news stands.
- On-board amenities:
 - Free Wi-Fi
 - Larger, more comfortable seating
 - Work surfaces/tray tables
 - Cup holders
 - Televisions



Image Source: NJ TRANSIT



Image Source: NJ TRANSIT

IN-THE-WORKS

By 2014 Centro intends to install real-time transit information on all its buses, including:

- Real-time bus arrival information system with dynamic message signs & web-services;
- Automated on-vehicle stop announcement;
- Automated passenger counters.



Image Source: WMATA



What amenities are important to you?



Write your ideas on a post-it note and add them to this board.

Transit Corridor Enhancements

BUS RAPID TRANSIT (BRT)

Bus rapid transit, or BRT, combines the flexibility of bus service with features of rail transit to provide a premium level of service and enhanced reliability. BRT systems typically operate at higher speeds and have fewer stops than regular bus service, and can operate in mixed-flow travel lanes, bus-only lanes, or on separate transit-ways.

ADVANTAGES

- Typically about half the cost of LRT for a similar travel time benefit.
- Slightly lower than LRT operating/maintenance costs.
- Can be established more quickly, require less infrastructure reconstruction and can be implemented in pieces.
- More flexible – can accommodate route changes.

DISADVANTAGES

- Less proven track record in attracting transit-oriented development.
- Not seen to be as permanent as LRT.
- Sometimes viewed as less attractive than LRT – resulting in lower ridership.

LIGHT RAIL TRANSIT (LRT)

Light rail transit, or LRT, combines aspects of traditional commuter/passenger rail with streetcars. LRT systems typically operate at higher speeds and capacity than bus systems, and can operate in designated transit lanes with transit priority signals, in mixed-traffic lanes, or on existing or abandoned rail lines.

ADVANTAGES

- Seen as more permanent than BRT.
- Sometimes viewed as more attractive and reliable than BRT – resulting in higher ridership.
- Proven track record of attracting transit-oriented development.
- Slightly faster travel times than BRT.

DISADVANTAGES

- Typically about double the cost of a similar BRT system.
- Slightly higher operating/maintenance cost than BRT.
- Competition for federal funding is strong – more expensive systems may be more difficult to justify and take longer to implement.



Image Source: Los Angeles County Metropolitan Transportation Authority



Image Source: Stantec Consulting Services, Inc.

LOW Intensity BRT Example: Mixed Traffic with Queue Jumpers

CDTA BusPlus: Albany, NY

CDTA's BusPlus BRT system operates along a 17-mile stretch of Route 5 between Albany and Schenectady. The BRT vehicles travel in mixed traffic and utilize queue jumpers at major signalized intersections, and stop at 18 upgraded/branded stations, resulting in a significant travel time improvement over the existing route which had 90 stops. The system also incorporates GPS tracking which is used to provide arrival information at the stations.



Image Source: Times Union



Image Source: Times Union



Image Source: CDTA

BUSPLUS FACTS:

Location: Albany – Schenectady, NY

Length: 17 miles – 18 stations

Time to Construct: 2 years

Construction Cost: \$34 million total*
\$2 million per mile*

Opened: 2011

Cost to Maintain: \$15 million per year

Ridership: 10,000 per day

Fare: One-way pass \$2.00

All-day pass \$4.00

*Construction Cost does not include Engineering or R.O.W.

SUCCESS STORY

Ridership along the Route 5 corridor has increased 10 – 15%, with the biggest share in ridership coming from the BusPlus route.

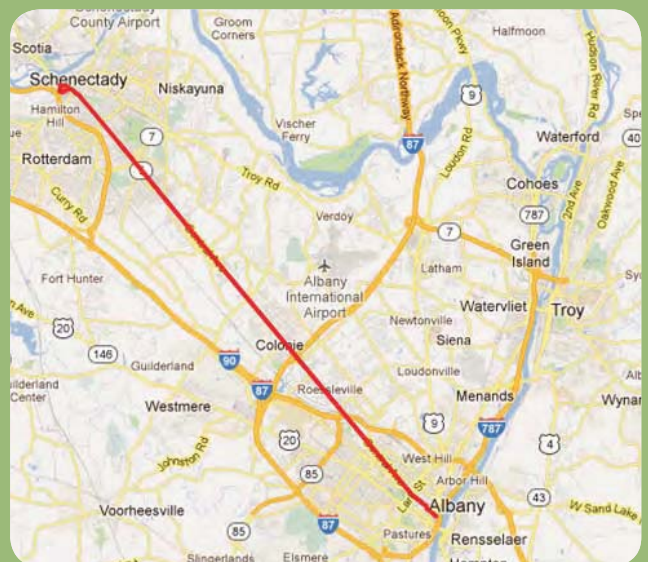


Image Source: CDTA

HIGH Intensity BRT Example: Designated Transit Way

Los Angeles Metro Orange Line

The 14-mile Orange Line utilizes a completely separate transit-way that follows a part of a former railroad line. The system utilizes buses that are 20 feet longer and can hold 50% more passengers than a standard bus.



Image Source: Metro Transportation Library and Archive



Image Source: user lensovnet/Wikipedia.com

ORANGE LINE FACTS:

- Location:** Los Angeles, CA
- Length:** 14 miles – 14 stations
- Time to Construct:** 3 years
- Construction Cost:** \$322 million total*
\$23 million per mile*
- Opened:** 2005
- Annual Operating Costs:** \$24 million
- Ridership:** 25,485 per day
- Fare:** One-way pass \$1.50
All-day pass \$5.00

*Construction Cost does not include Engineering or R.O.W.

SUCCESS STORY

Several transit-oriented developments were planned at completion of the Orange Line. Furthermore, there was a 24% increase in boardings between 2006 and 2008.



Image Source: Los Angeles County Metro



What do you think?



I like BRT because...



I don't like BRT because...

LOW Intensity LRT Example: Streetcar Circulator

Little Rock River Rail

RIVER RAIL FACTS:

- Location:** Little Rock, AK
- Length:** 3.4 miles – 15 stations
- Time to Construct:** 1.5 years
- Construction Cost:** \$27 million total*
\$8 million per mile*
- Opened:** 2004
- Annual Operating Costs:** \$450,000
- Ridership:** 800 per weekday
1,500 Saturday
- Fare:** One-way pass \$1.00
All-day pass \$2.00

*Construction Cost does not include Engineering or R.O.W.

The 3.4-mile River Rail Streetcar system operates between Little Rock and North Little Rock, connecting major points of interest in both cities, including a ballpark, convention center, museums, courthouses, riverfront attractions, and loft apartments, among others. The service utilizes five vintage replica trolleys, powered by overhead electric, that operate on track within the traffic flow.

SUCCESS STORY

Economic impacts of the River Rail were felt even before its opening. Two loft apartment buildings and the River Market were proposed once the streetcar route was finalized. The streetcar system has become a tourist attraction, boosting activity within the cities during the weekends.



Image Source: John Smatlak <http://www.railwaypreservation.com/vintagetrolley/littlerock.htm>

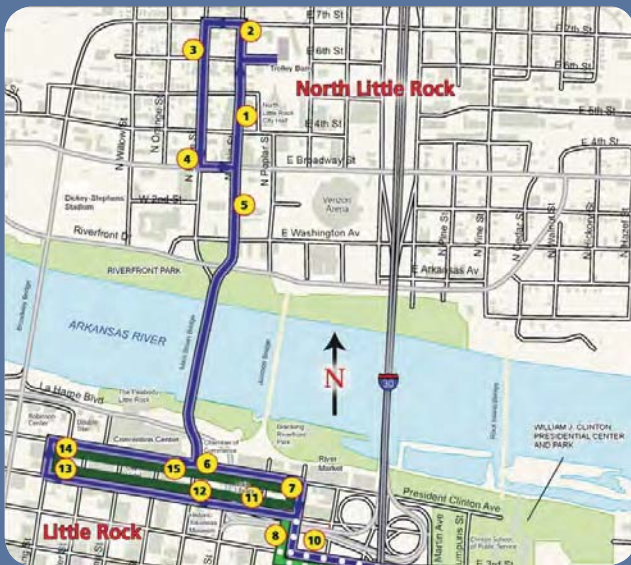


Image Source: Central Arkansas Transit Authority



Image Source: John Smatlak <http://www.railwaypreservation.com/vintagetrolley/littlerock.htm>

MEDIUM Intensity LRT Example: Existing Rail

New Jersey Transit River Line

TRANSIT FACTS:

- Location:** Camden – Trenton, NJ
- Length:** 34 miles – 20 stations
- Time to Construct:** 5 years
- Construction Cost:** \$1.1 billion total*
\$32.4 million per mile*
- Opened:** 2004
- Annual Operating Costs:** \$18 million
- Ridership:** 9,000 per day
- Fare:** One-way pass \$1.50
All-day pass: N/A

*Construction Cost does not include Engineering or R.O.W.

The River LINE is a 34-mile light rail corridor that connects the cities of Camden and Trenton, and passes through many suburban communities in between. It operates mostly along a lightly used freight railroad line that was upgraded for passenger service and is the first LRT system in the US to utilize self-propelled diesel-electric vehicles.



Image Source: Stantec Consulting Services, Inc.

SUCCESS STORY

The politically driven project was highly controversial due to the low ridership projections, but the service has exceeded the predicted ridership every year since opening.



Image Source: Stantec Consulting Services, Inc.

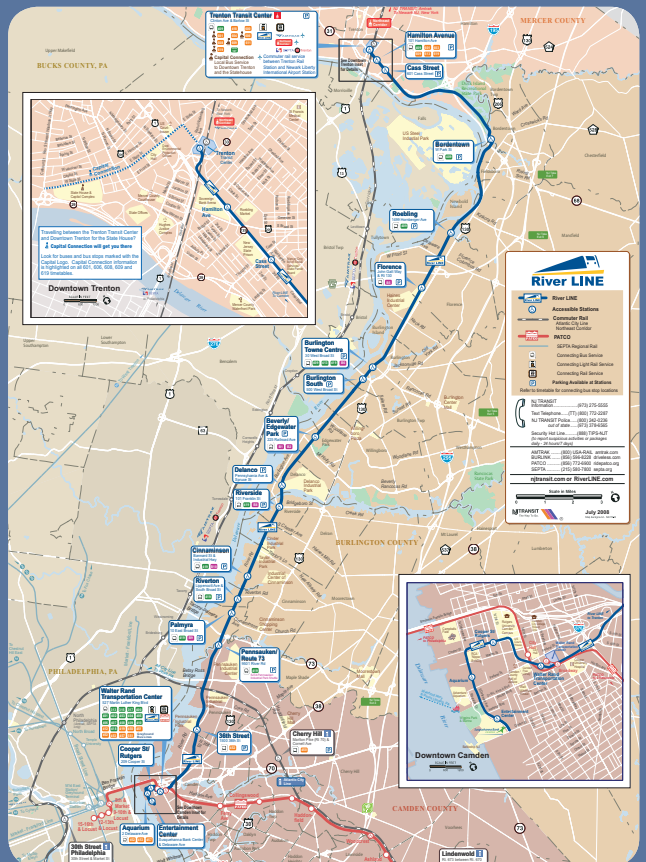


Image Source: NJ TRANSIT

HIGH Intensity LRT Example: New Rail

Phoenix Metro Light Rail

METRO FACTS:

Location: Phoenix – Tempe – Mesa, AZ

Length: 20 miles – 32 stations

Time to Construct: 3.5 years

Construction Cost: \$1.4 billion total*
\$70 million per mile*

Opened: 2008

Annual Operating Costs: \$37 million

Ridership: 38,700 per day

Fare: One-way pass \$1.50
All-day pass \$3.50

*Construction Cost does not include Engineering or R.O.W.

The 20-mile light rail corridor serves Phoenix, Tempe, and Mesa with low-floor vehicles powered by overhead electrical lines. The vehicles operate in a two-way configuration in the center of city streets, or on the outside of the street in one-way couplets. The system required significant reconstruction of the city streets to incorporate the rail lines and stations.



Image Source: Arizona Passenger Rail Association

SUCCESS STORY

Since construction of the METRO Light Rail, \$4 billion has been spent on transit-oriented developments along the corridor.

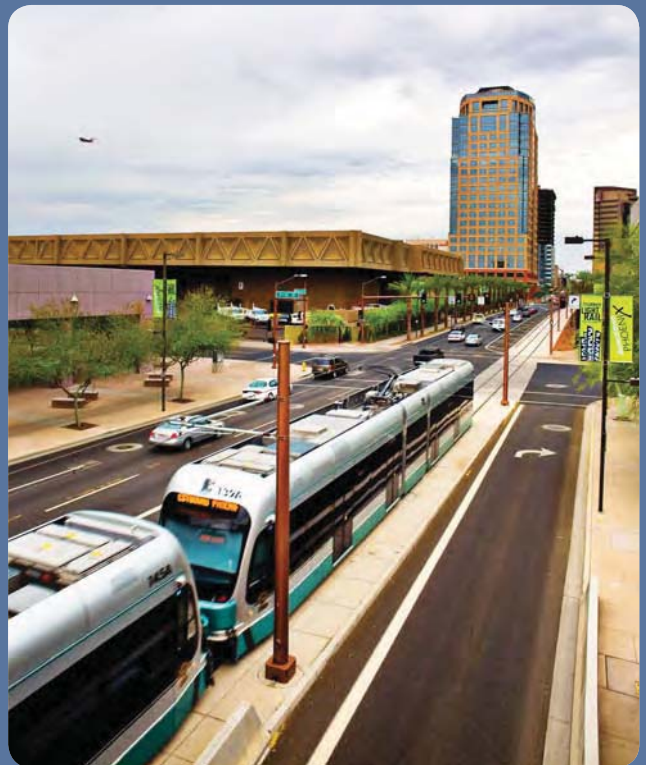


Image Source: Stantec Consulting Services, Inc.

METRO Light Rail

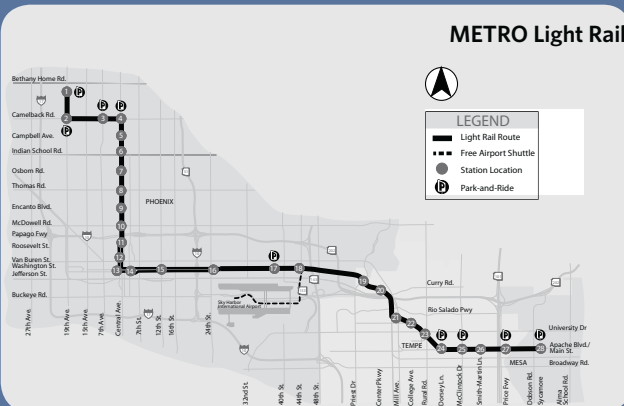


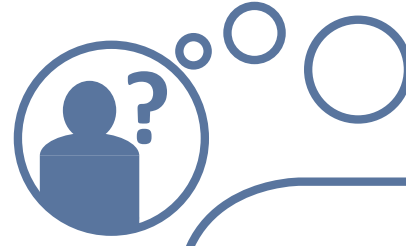
Image Source: Phoenix Valley Metro



What do you think?



I like LRT because...



I don't like LRT because...



Where would you like to see enhancements in the Syracuse Area?



Write your ideas on a post-it note and add them to this board.

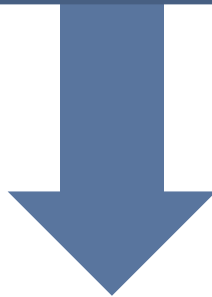


Tell us what you think

Please take a moment to fill out a transit survey:

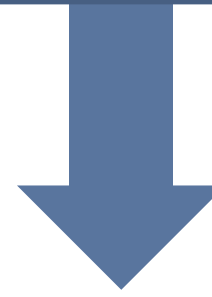
RIDER SURVEY

Do you currently use transit?
Whether you use transit every
day, or just occasionally, please
fill out this survey:



NON-RIDER SURVEY

Don't Ride Transit? Don't worry,
we want to hear from you as
well. Please fill out this survey:



Environmental and Community Resources

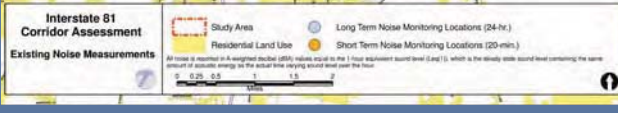
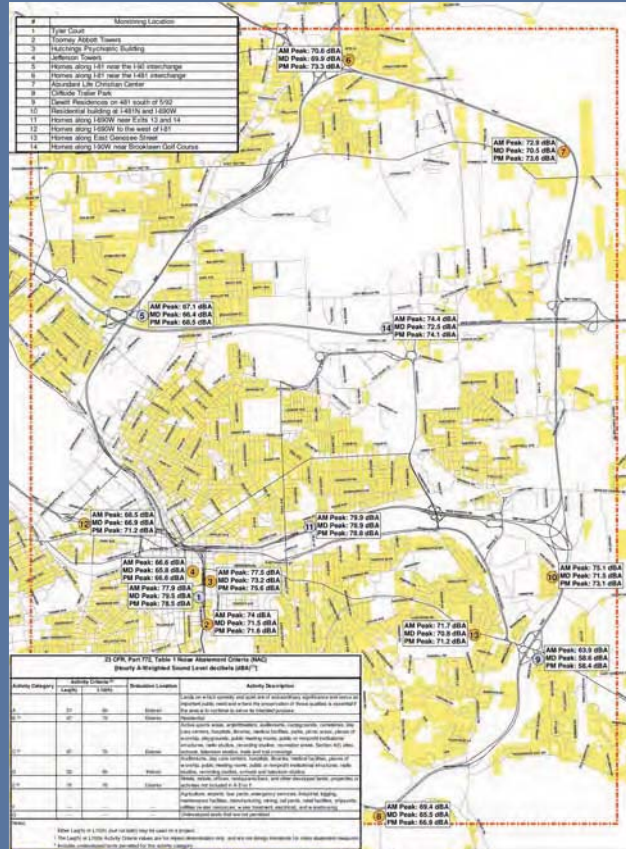


Noise & air quality

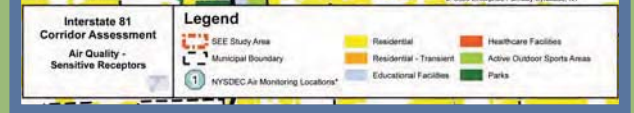
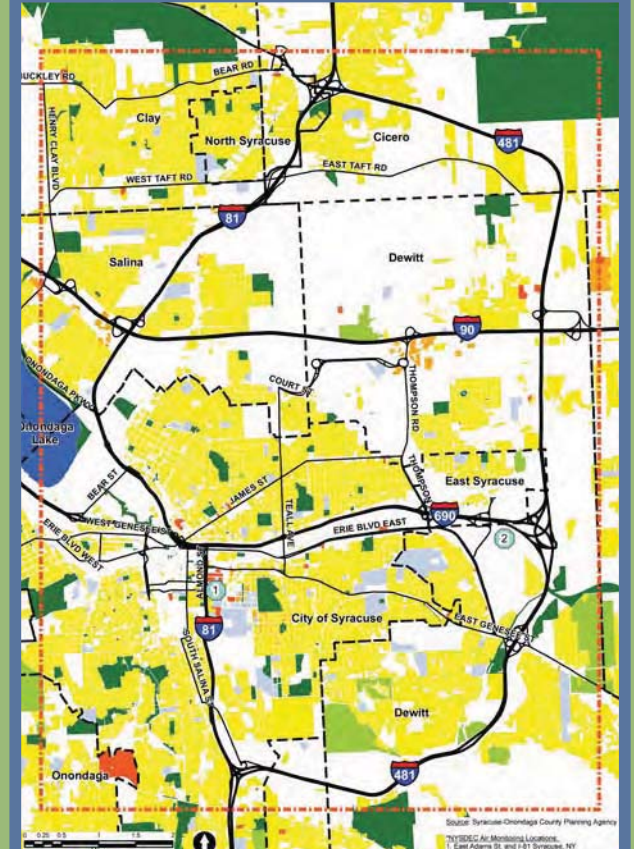
NOISE SENSITIVE RECEPTORS



EXISTING NOISE MEASUREMENTS

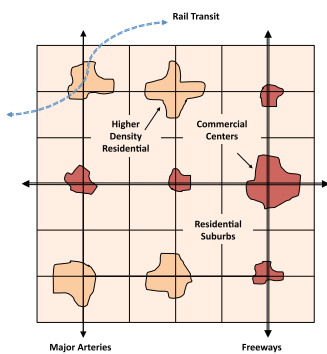


AIR QUALITY SENSITIVE RECEPTORS



Transportation modeling

You've probably seen or heard about models throughout your life – whether physical models such as a train or a building or more abstract models like those used to give us weather forecasts. What they have in common is that they represent real world objects or processes.



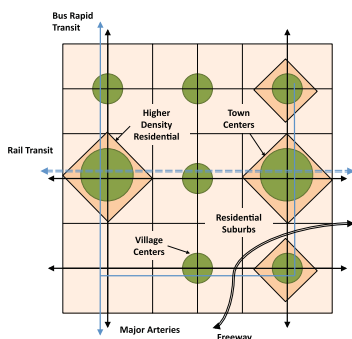
HOW DO THEY KNOW?

Ever heard that new transit service will take X number of cars off the road? Or that building a new road will cut travel time by X minutes? Ever wondered how planners know that?

It all comes from a model...



We also use models in transportation planning. These models are a series of complex mathematical equations that represent the choices, decisions, and behavior of thousands (or millions) of individual travelers.

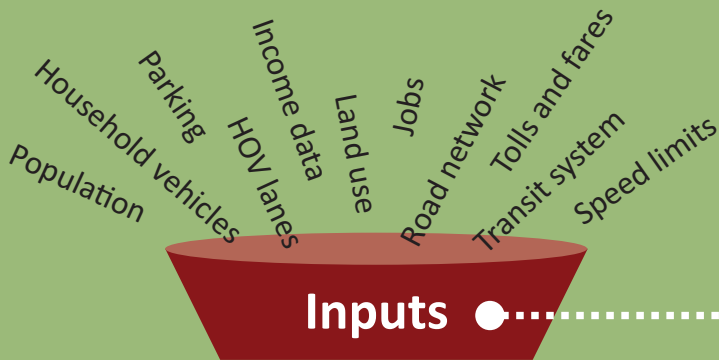


MODELS HELP US:

- Know where, when and how people are traveling
- Understand what and where our transportation needs are now and in the future
- Evaluate different strategies and investments to meet those needs
- Determine the impacts of strategies and investments on system performance, air quality, travel time, and land use, just to name a few

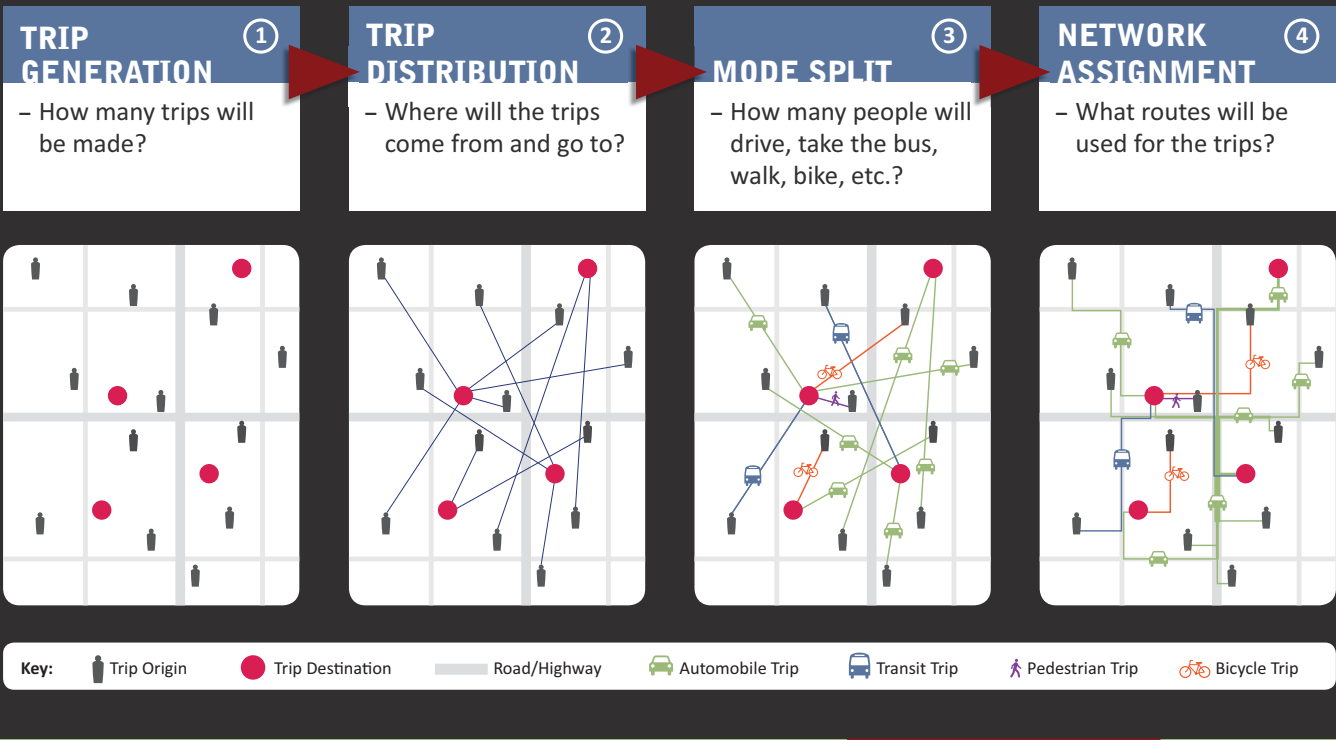
Regional Travel Demand Model

The Regional Travel Demand Model is a computer software package that replicates our regional transportation system

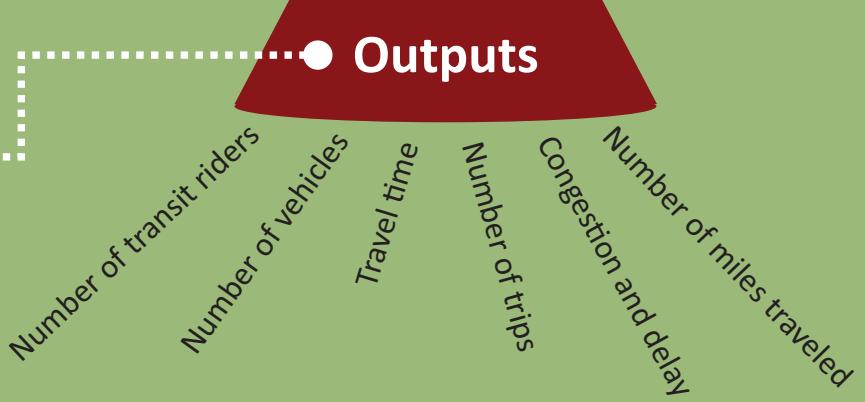


SMTC's model is a "Four Step Model" that takes inputs such as population and economic forecasts, the geographic dispersion of people and jobs throughout the region, and a description of the transportation system – the roads and transit system.

Regional Travel Demand Model



The model outputs, to be used in impact analyses to evaluate transportation system alternatives, include the amount of travel, the performance of the transportation system, and mode usage.



Modeling the future

The model can accurately replicate the existing conditions, and it can then be used to predict future travel patterns and demands based on changes in the transportation system, changes in the land use, and changing demographics

PROJECTED GROWTH IN TRAFFIC VOLUMES (2007 TO 2040)*

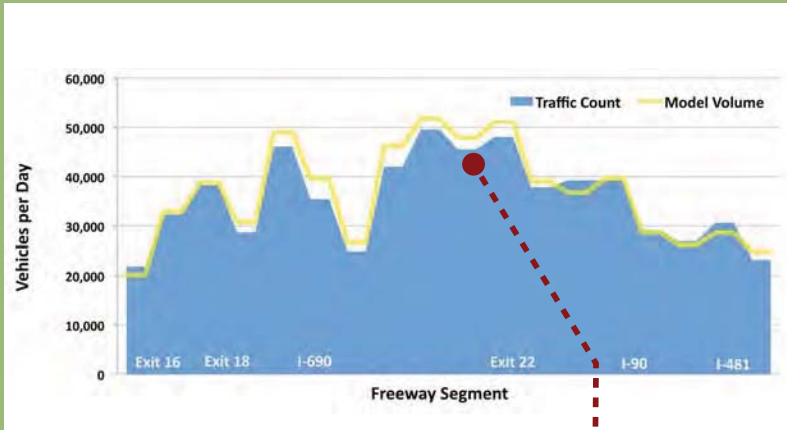


* Assumes no significant changes to I-81

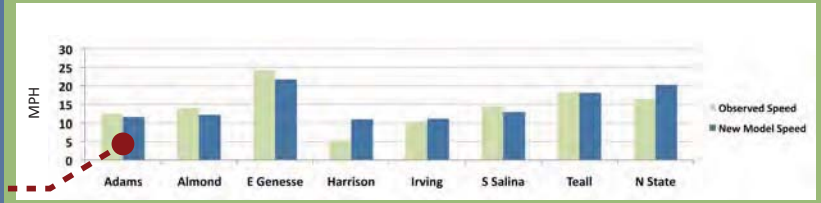
Modeling the present

The first step in using the Regional Travel Demand Model for The I-81 Challenge is to simulate the current “real world”

I-81 NORTHBOUND TRAFFIC FLOWS: TRAFFIC COUNTS AND MODELED VOLUMES



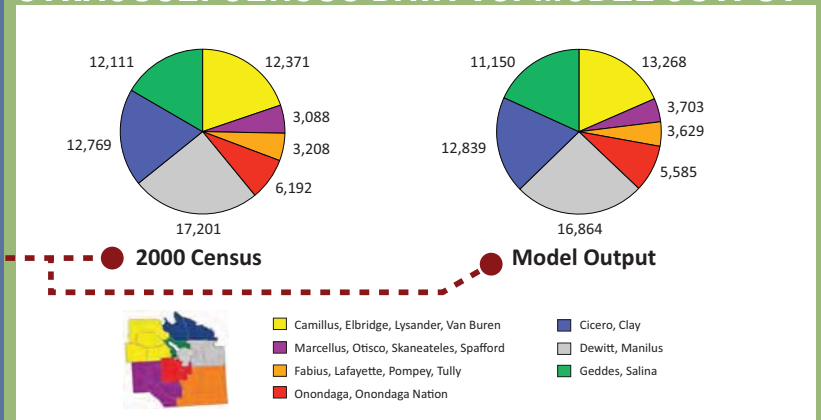
MODEL ARTERIAL SPEEDS COMPARED TO OBSERVED ARTERIAL SPEEDS



WHY THE DIFFERENCE?

Modeling peoples’ travel behavior is a difficult undertaking since behavior is variable and complex. Travel models are developed from and compared to a wide variety of data sources, so travel models can’t be expected to match any one source exactly.

DAILY WORK TRIPS BY DISTRICT GOING TO SYRACUSE: CENSUS DATA VS. MODEL OUTPUT





Microsimulation model

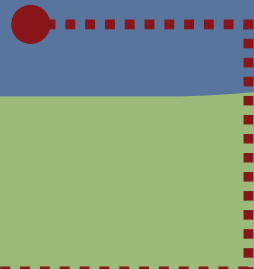
Microsimulation models allow us to understand detailed operational aspects of our transportation system. We can examine how traffic flows on a segment of highway, around a sharp curve, or through an intersection or interchange. While the regional model looks at overall demand, microsimulation models focus on the interactions and behaviors of individual vehicles.

What can we do with microsimulation models?

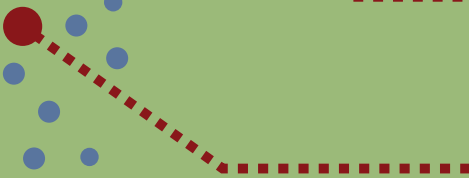
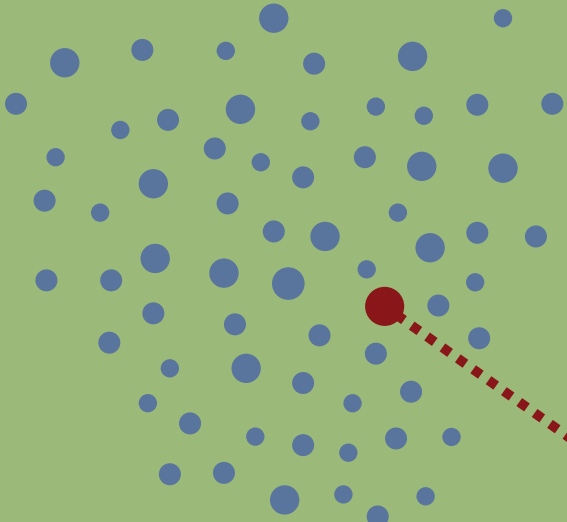
- Understand current operations on the highway: “How, why and where does congestion occur?”
- Evaluate the operational impacts of proposed changes: “What would happen if we changed X?”



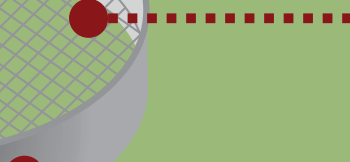
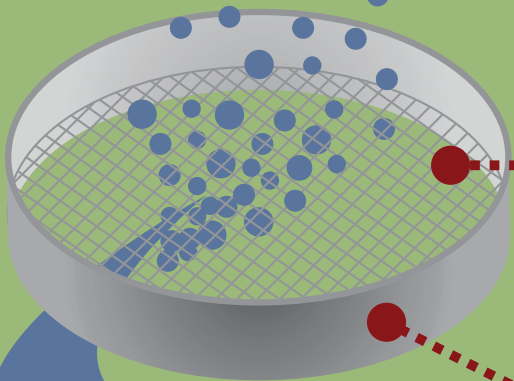
How can we evaluate possibilities for the future of I-81?



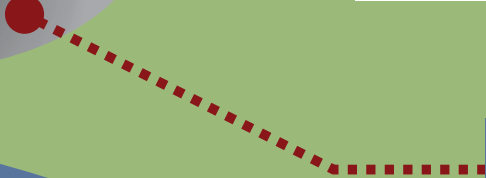
After we established goals, we developed criteria to measure and evaluate different possibilities to see which one(s) will best achieve our common goals.



IDEAS
Many different ideas have been generated about future options for I-81



STRATEGIES
Strategies were identified based on initial screening of ideas from the public

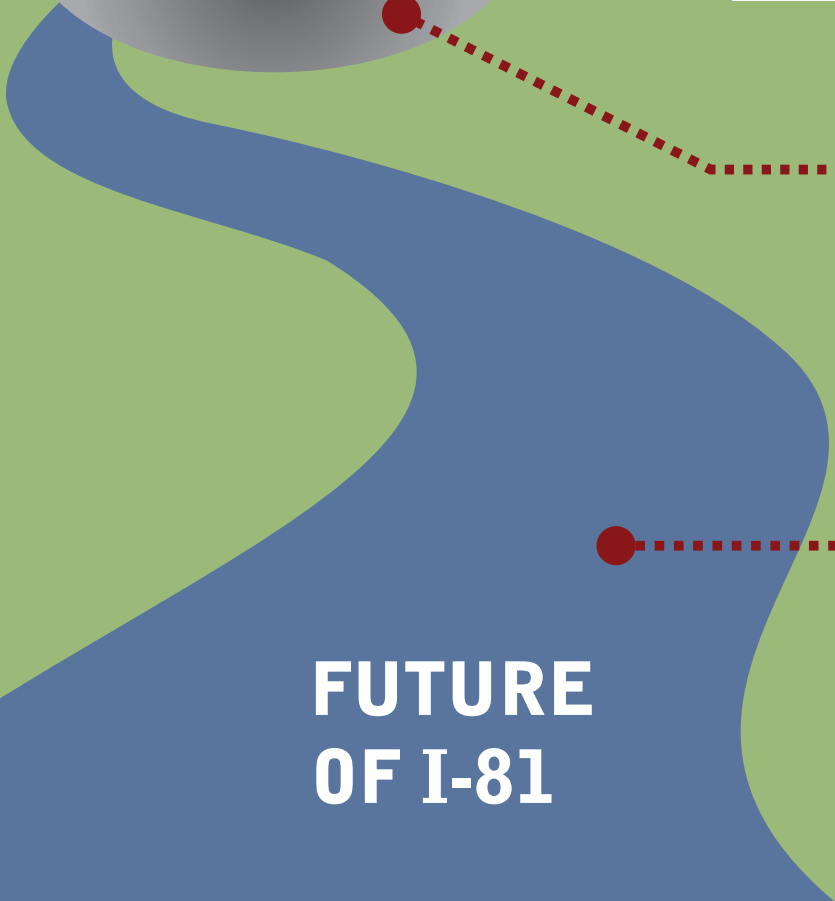


EVALUATION
The list of evaluation criteria will be used to reduce possible strategies to a smaller list of potentially viable options



SOLUTIONS
A project or projects that may be implemented will emerge from the list of potentially viable options

FUTURE OF I-81



What should the solution for I-81 accomplish?

The first step in identifying what should ultimately happen with I-81 was determining what is important for us as a region and the role we want I-81 to play in our future.

In the many conversations we have had with communities, elected officials, and other stakeholders, certain key goals have emerged.

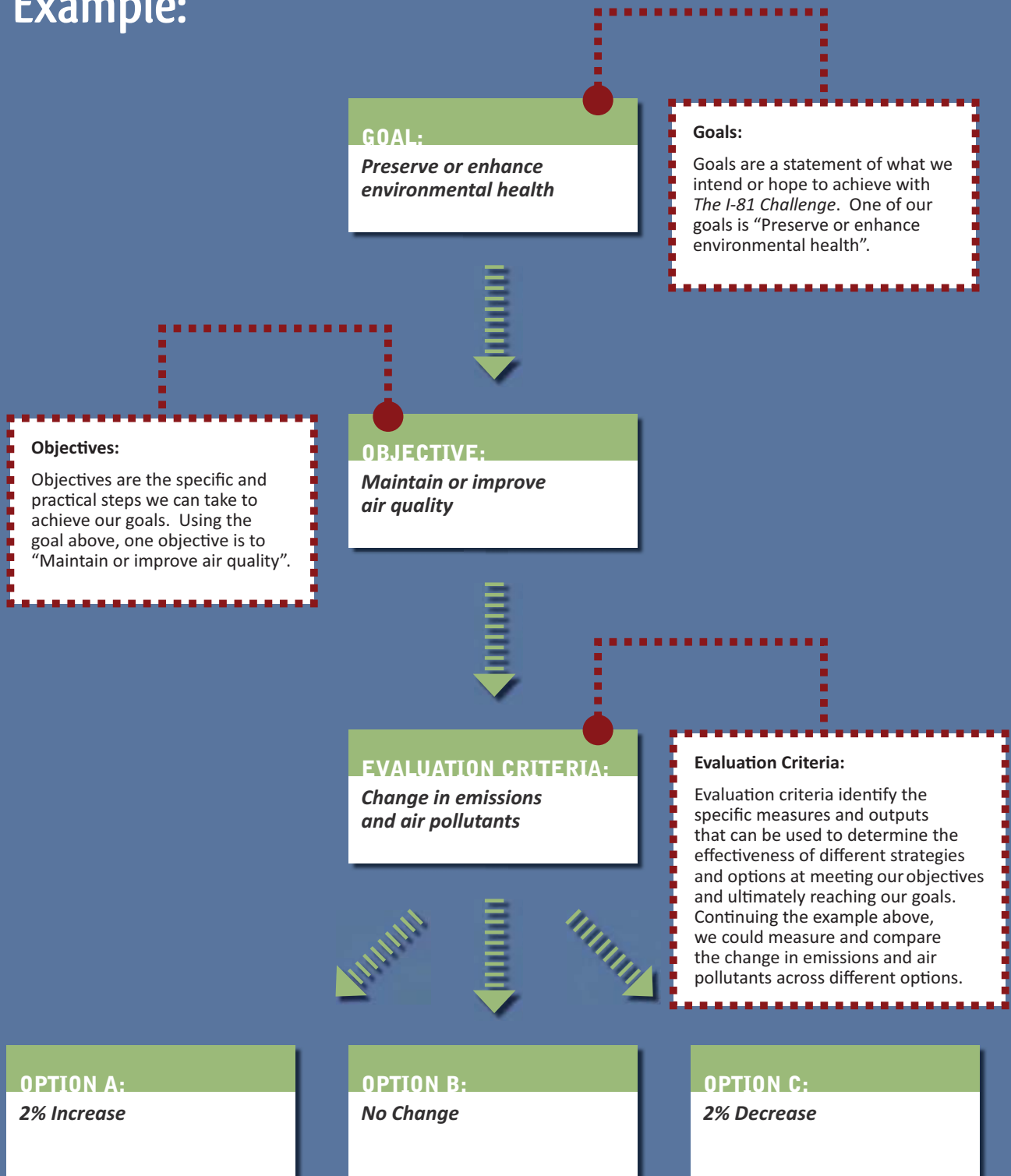


The goals for *The I-81 Challenge* are:

- Improve public safety
- Maintain or improve economic opportunities
- Exercise fiscal responsibility
- Share the burdens and benefits of any solution equitably
- Enhance the transportation network
- Preserve or enhance environmental health
- Enhance region-wide mobility
- Support community quality of life

Goals, Objectives and Evaluation Criteria: what are they, and how are they used?

Example:



Evaluation Criteria

Goal: Improve Public Safety

Objectives:	How it could be measured:	Example outputs:
Reduce accident occurrences to at or below the statewide average (SWA) for similar facilities.	Quantify results of accident countermeasures by comparing before/after rates to SWA.	Expected reduction in accident rates to future No-Build strategy.
Improve the safety of alternative modes of transportation (pedestrian, bicycle, transit).	Qualitatively review each strategy and compare operational changes to reduce excessive speeds.	Expected reduction in bicycle/pedestrian and car crashes in immediate vicinity of Almond Street. Expected vehicle speeds in vicinity of Almond Street.

Goal: Maintain or Improve Economic Opportunities

Objectives:	How it could be measured:	Example outputs:
Maintain or improve the overall economic environment and infrastructure.	Qualitatively evaluate economic environment and compare.	Net impact to regional economy (non-construction).
Maintain or improve economic opportunities by addressing multi-modal access.	Qualitatively evaluate multi-modal opportunities and compare.	Identify benefit of multi-modal improvements.
Improve transportation system efficiency and reliability, and reduce travel costs.	Reduce and compare Vehicle Miles Traveled and delay, and other congestion reduction measures.	Number or percentage of congested road segments in the Syracuse metropolitan area.

Goal: Exercise Fiscal Responsibility

Objectives:	How it could be measured:	Example outputs:
Minimize capital costs by ensuring that transportation system investments are cost effective.	Compare overall costs of strategy to conformance with project goals.	Projected capital cost of project.

Goal: Share Burdens and Benefits

Objectives:	How it could be measured:	Example outputs:
Share the burden of impacts during construction and long term across stakeholders (e.g. suburbs, adjacent neighborhoods, low-income communities, Onondaga Nation).	Identify community-scale impacts and compare to EJ areas, neighborhoods, etc.	Noise, air quality, congestion, sustainable development, property value, and property impacts.
Share the benefits across stakeholders (e.g. suburbs, adjacent neighborhoods, low-income communities, Onondaga Nation).	Identify community-scale impacts and compare to EJ areas, neighborhoods, etc.	Noise, air quality, congestion, sustainable development, property value, and property impacts.

Evaluation Criteria

Goal: Enhance the Transportation Network		
Objectives:	How it could be measured:	Example outputs:
Eliminate structural deficiencies using treatment strategies that provide the lowest life cycle maintenance costs and restore bridge condition ratings, where applicable, to good condition for at least 30 years.	Restore bridge condition ratings to greater than 5.0.	Number of bridges with condition greater than 5.0. Anticipated maintenance cost over life cycle of structure.
Improve existing geometric design through the application of appropriate design standards and the reduction of non-standard elements and/or geometries.	Quantify reduction/elimination of non-standard features. Quantify reduction/elimination of non-conforming features.	Number of non-standard features . Number of non-conforming features.
Identify alternative mode improvements in the vicinity of I-81.	Qualitatively evaluate bicycle and pedestrian improvements and compare. Quantify transit mode share improvements using the Regional Travel Demand Model.	Qualitative evaluation of bike and pedestrian infrastructure. Transit mode share for trips in the Syracuse Metropolitan Planning Area shown by “commuter” and “urban” routes.
Goal: Preserve or Enhance Environmental Health		
Objectives:	How it could be measured:	Example outputs:
Support local, regional, and state environmental initiatives.	Provide stormwater management facilities for water quantity and water quality. Quantify Context Sensitive Solutions applied. Quantify Green Streets principles applied.	Opportunities to incorporate green infrastructure – rank low, medium, and high. Opportunities to incorporate Context Sensitive Solutions and Green Streets principles using a scale of low, medium, and high.
Maintain or improve air quality (overall emissions and odor).	Quantify and compare reduction in emissions and air pollutants using the Regional Travel Demand Model.	Total tons of pollutants emitted (e.g., carbon monoxide, volatile organic compounds, and nitrous oxide).
Minimize air quality and noise impacts on adjacent neighbors.	Identify locations that exceed the National Ambient Air Quality Standards (NAAQS) and compare.	Assessment of positive and/or negative impacts of a strategy on air quality.
Minimize impacts on designated community landmarks and historic resources.	Quantify and compare impacts.	Does, or will strategy impact community landmarks and historic resources.
Minimize storm water impacts and improve water quality.	Each strategy must mitigate impacts in accordance with SPDES.	Change in amount of impervious areas (asphalt vs. grass).

Evaluation Criteria

Goal: Enhance Region-Wide Mobility

Objectives:	How it could be measured:	Example outputs:
Improve peak period mobility and reduce delay on the highway system (primary, secondary, and city streets) by providing acceptable operating speeds, improving level of service.	Compare levels of service to future null condition and the project design criteria.	Level of Service at key intersections or links, and operating speed.
Preserve regional mobility by maintaining travel times.	Quantify average travel time.	Average commute time to work.
Improve access to key destinations (i.e. the airport, hospitals, and downtown businesses).	Quantify travel times to key destinations.	Average trip time during peak periods to selected destinations.
Improve connectivity of alternative modes of transportation (pedestrian, bicycle, transit).	Qualitatively evaluate improvements to intermodal connectivity and compare.	Where connectivity points are impacted, improvements will be identified.

Goal: Support Community Quality of Life

Objectives:	How it could be measured:	Example outputs:
Minimize impact to community resources.	Quantify impacts (number of resources) and compare.	Identify the impacts of each strategy on community resources.
Encourage sustainable land use patterns within the city and county.	Qualitatively evaluate land use opportunities, including opportunities for transit oriented development (TOD), and compare.	Assess opportunity for employment and population growth within, and outside, the City of Syracuse considering sustainability principles.
Enhance connectivity between University Hill and downtown.	Qualitatively evaluate changes to connectivity/barrier effect for each strategy and compare.	Compare the connectivity advantage of each strategy.
Encourage Smart Growth: sustainable regional land use patterns that minimize suburban sprawl, which increases demand for infrastructure and services.	Qualitatively evaluate smart growth opportunities.	Assess opportunity for employment and population growth within, and outside, the City of Syracuse considering sustainability principles.
Improve the visual built environment through Context Sensitive Solutions that contribute to roadside/street ambiance, community character, and public safety.	Qualitatively evaluate Context Sensitive Solution opportunities.	Opportunities to incorporate Context Sensitive Solutions – rank low, medium, and high.
Promote other planning and development visions and initiatives (county, city, and region).	Qualitatively evaluate conformance to local and regional land use plans.	Strategy supports or complies with Onondaga County's Development Guide or the City of Syracuse's Comprehensive Plan - rank low, medium and high.



What do you think?



A large, empty rounded rectangular box with a dark blue border, intended for writing or drawing a response.

How has my input been used?

In the past, you have told us:

Your problems, issues, and concerns related to I-81
–
What is important to you for our transportation system
–
What you hope *The I-81 Challenge* will achieve
–
Your ideas and visions for our highway, our city, and our region

We have listened and used what you told us to:

Clarify the issues and problems that *The I-81 Challenge* needs to resolve
–
Develop a set of goals and objectives that will guide our process
–
Identify a set of possible future strategies that solve the challenges of I-81, incorporate your ideas, and make progress towards our future goals



What's next?

**Your input today
will help us:**

**Verify that we will be moving forward
with the most appropriate set of
strategies for our region**

–

**Elaborate on these strategies by
adding, subtracting and refining
specific components**

**What you can expect from
us in the coming months:**

**Your ideas and input
reflected in our work**

–

**Results of our analysis of these
strategies and a limited number of
specific viable options for each**

–

**Additional opportunities for
you to provide input**



Environmental review

The I-81 Challenge still has a long way to go. In the longer term, you can expect to see increasingly refined and detailed analysis of strategies and an effort to build consensus around the limited number of strategies that will progress to a formal environmental review.

The National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 was the first major U.S. environmental law and establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment.

For transportation projects receiving federal funding, NEPA requires the Federal Highway Administration (FHWA) and other transportation agencies to consider potential impacts to the social and natural environment and to make this information available to the public for comment before the implementation of the proposals.

In addition to evaluating the potential environmental effects, FHWA must take into account the transportation needs of the public in reaching a decision that is in the best overall public interest.



Key components of the NEPA process

Purpose and Need

The purpose and need statement is a full and honest explanation of why an agency, or project sponsor, is considering an action and is essential in establishing a basis for the development of the range of reasonable alternatives that will be considered (strategies). It is a statement of the problem and evidence that supports that the problem exists.

Alternatives (Strategy) Analysis

The alternatives analysis is a basic requirement of NEPA and describes the process that was used to develop, evaluate, and eliminate potential alternatives to addressing the problem identified in the purpose and need. Agencies are not required to consider every potential alternative; however, they are responsible for developing the full range of alternatives. Agencies must provide opportunities for the involvement of participating agencies and the public in developing the alternatives and must consider the input provided by these groups.

- The “no-build” alternative is included as a benchmark against which the impacts of other alternatives can be compared.
- The preferred alternative is the alternative which the agency believes would fulfill the purpose needed.

Environmental Assessment

NEPA requires consideration of the direct, indirect, and cumulative impacts of a proposed action and its alternatives on the environment. Potential measures to mitigate adverse environmental effects also must be considered.

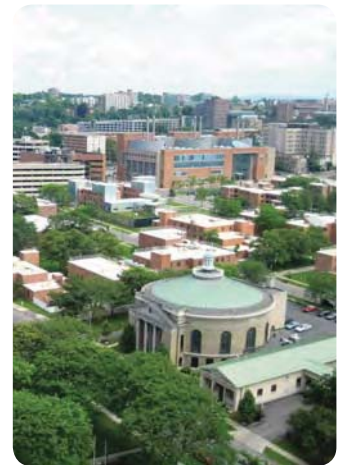
Interagency Coordination

The NEPA process includes requirements for interagency coordination and cooperation. The lead federal agency works cooperatively with other federal and state agencies during the environmental review process.

Public Involvement

Handled correctly, public participation in the NEPA process will improve acceptance of the final decision and, at minimum, provide agencies with the best information possible for making a decision. The amount and type of public involvement will vary depending on the complexity and degree of controversy involved in a project. Elements include:

- Scoping meetings and public hearings.
- Early and continuing opportunities for the public to be involved in the identification of social, economic, and environmental impacts, as well as impacts associated with relocation of individuals, groups, or institutions.
- Reasonable notice to the public of public information meetings, a public hearing or the opportunity for a public hearing.



Three routes through NEPA

1

Categorical Exclusion

Under NEPA, transportation projects that do not individually or cumulatively have significant environmental effects are classified as categorical exclusions (CEs).



The Spencer Street bridge is an example of a project subject to the Categorical Exclusion process.

2

Environmental Assessment

Where the significance of environmental impacts are unknown, a federal agency may prepare an environmental assessment (EA). An EA is meant to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact (FONSI).

FONSI – Official document that briefly explains why the project will not have significant impacts and identifies the selected alternative.



Route 281 in Cortlandville, NY is an example of a project subject to the Environmental Assessment process.

3

Environmental Impact Statements

NEPA requires a federal agency to prepare an environmental impact statement (EIS) when there is a proposal for a major federal action that significantly affects the quality of the human environment. An EIS includes a detailed evaluation of the proposed action and alternatives. The purpose of an EIS is to serve as a tool to promote environmentally sensitive decision making.

Notice of Intent and Scoping

Notice of Intent (NOI) – Official notice published in the *Federal Register* to notify and involve cooperating and participating agencies and individuals about the proposed action and to identify the issues that will be analyzed.

Scoping – An early and open process involving the public and other stakeholders to review a project's purpose and need statement and to identify alternatives and significant issues to be analyzed.

Draft EIS

Draft EIS – Official document with a detailed description of the proposal, the purpose and need, reasonable alternatives, the affected environment, and presents an analysis of the anticipated beneficial and adverse environmental effects of the alternatives. A preferred alternative can be identified at the Draft EIS stage.

Public Comment

Public Comment – Once a Draft EIS is published, the public has an opportunity to review and submit official comments. The typical comment period is 45 - 60 days from the date of public notice in the *Federal Register*.

Final EIS

The final EIS includes responses to any issues raised through review of the Draft EIS. The Final EIS must identify the preferred alternative. After responding to comments, the agency must circulate the Final EIS for review. Agencies cannot make a final decision until 30 days after the Final EIS is filed.

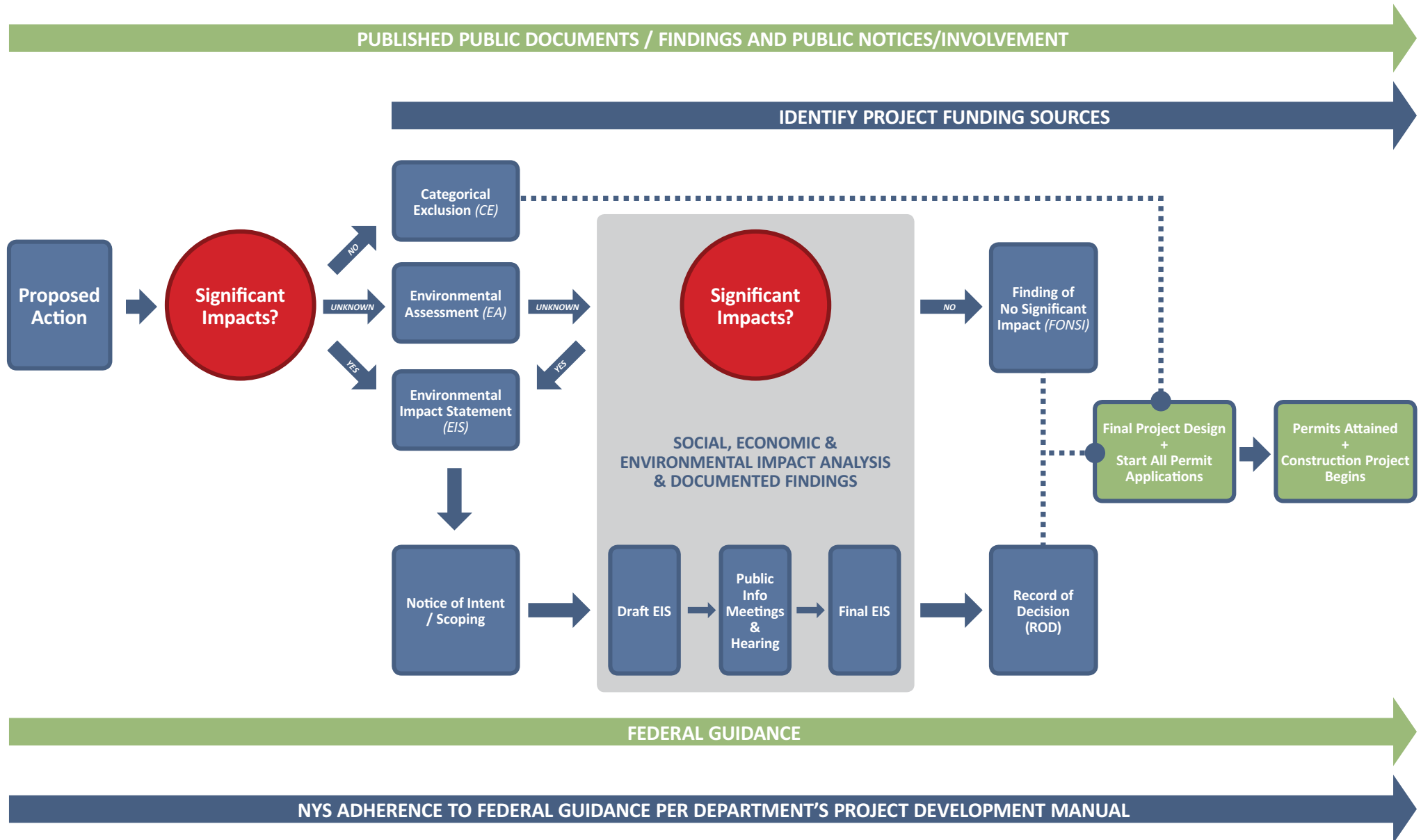
Record of Decision (ROD)

The ROD is the final step in the EIS process. It documents the preferred alternative, presents the basis for the decision, identifies other alternatives considered and why they were not selected, lists and identifies all environmental commitments, and adopts and summarizes a monitoring and enforcement program, if applicable, for any mitigation.



The Tappan Zee Bridge is an example of a project subject to the Environmental Impact Statement process.

The NEPA process



Stay a part of *The I-81 Challenge*



WHAT'S NEXT?

- Additional public meetings
- Additional questionnaires
- Increased web and social media presence
- Additional newsletters



YOUR ROLE

The I-81 Challenge is about and for you:

- Tell others what you have learned
- Let them know how to take *The I-81 Challenge*
- And most of all stay involved!



Public participation in *The I-81 Challenge*

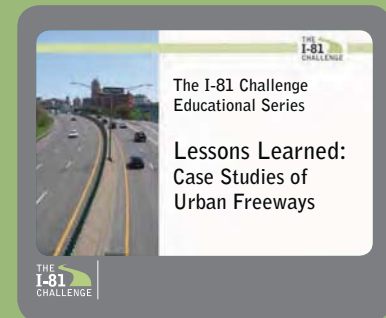
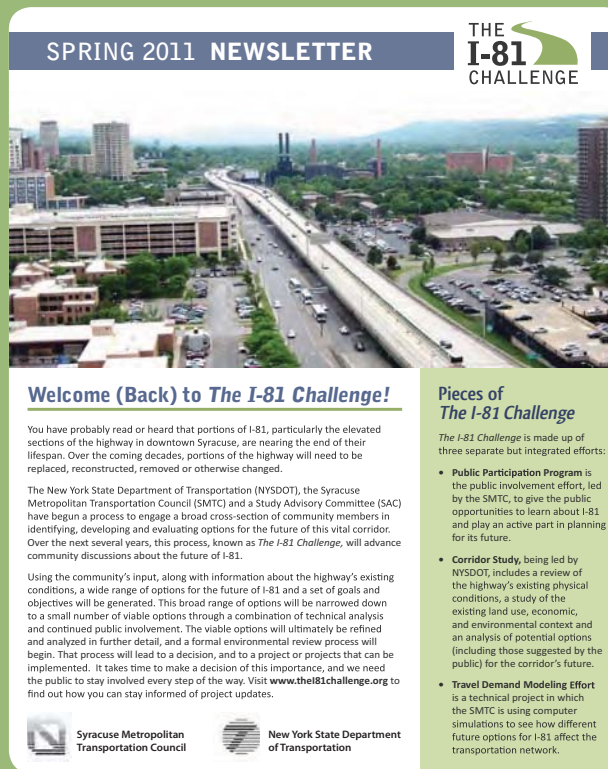
PUBLIC INVOLVEMENT

- Newsletters
- Fact sheets
- Educational videos
- Website
- Blog
- Facebook page
- Questionnaires
- Focus groups
- Project committees
- Public meetings

Find these resources and more information at:

www.thei81challenge.org

www.thei81challengeblog.org





Tell us what you think

Take a minute to fill out a meeting evaluation

What did you think of your experience today?

What did you learn?

What could we do better next time?

Is there anything else you want us to know?

