May 2012 Public Meeting:
Informational Boards

These boards were prepared for and displayed during the second public meeting for *The I-81 Challenge*. The meeting was hosted by Syracuse Metropolitan Transportation Council (SMTC) and the New York State Department of Transportation (NYSDOT) and held in May of 2012. *The I-81 Challenge* is the official decision-making process for determining the future of I-81 in the greater Syracuse region.

This public meeting built upon feedback received during the first series of public workshops held in May 2011. The meeting featured eight stations with the enclosed informational boards as well as interactive exercises and educational videos. Each station was staffed with project team members with relevant expertise.
Table of Contents

Station 1: The I-81 Challenge
These boards provided information on the The I-81 Challenge background, purpose, and process.

Station 2: The I-81 Challenge to Date
These boards provided a review of key information about the project, the work completed to-date, and background information from the 2011 public workshops.

Station 3: Your Visions
These boards reviewed the nearly 150 “visions” received from the public at the May 2011 workshops and illustrated the process used to categorize these visions, pre-screen some visions, and arrive at the list of strategies recommended for further study. Attendees were asked to provide their comments on the process and the recommendations for further study.

Station 4: Possible Future Strategies
These boards explored in more detail the five potential strategies recommended for further study. They provided a definition and explored key characteristics and considerations for each strategy, and attendees were given the opportunity to write and post their thoughts.

Station 5: Our Transit System
These boards provided information about our current transit system and the benefit transit offers to our region and described different potential transit improvement strategies. The public was invited to provide input about current needs and potential enhancements to the transit system and to share their views about which transit amenities were most important.

Station 6: Evaluating Future Strategies
These boards described how local natural, historical, and socio-economic resources, as well as the results of traffic modeling, will be used in the evaluation of strategies. This station provided an opportunity for the public to comment on the proposed evaluation matrix, which listed the study goals and objectives, and proposed metrics that could be used to compare strategies.

Station 7: What’s Next?
These boards explained what will come next in the study process and provided an overview of the National Environmental Policy Act (NEPA) review process.

Station 8: Staying Involved
These boards described ways to continue to participate in The I-81 Challenge and gave an opportunity to provide feedback about the meeting.
Station 1

The I-81 Challenge

Boards in this station provided information on the background, purpose, and process of *The I-81 Challenge.*
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
- 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
- Inform public about process
- Engage agencies, organizations, and individuals across the community in public dialogue

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

Travel Demand Modeling
- 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.

**VIABLE 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.

* Note that these represent target dates only.
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*

<table>
<thead>
<tr>
<th>AGENCY</th>
<th>FUNDS</th>
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</thead>
<tbody>
<tr>
<td><strong>NYS DOT</strong></td>
<td></td>
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<tr>
<td>Statewide Planning &amp; Research (SPR):</td>
<td>$1,500,000</td>
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<tr>
<td>SAFETEA-LU:</td>
<td>$5,000,000</td>
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<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>$6,500,000</strong></td>
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<tr>
<td><strong>SMTC</strong></td>
<td></td>
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<tr>
<td>SPR:</td>
<td>$450,000</td>
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<tr>
<td>Metropolitan Planning:</td>
<td>$608,130</td>
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<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>$1,058,130</strong></td>
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</tbody>
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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.
Station 2

The I-81 Challenge to Date

These boards provided a review of key information about the project, the work completed to-date, and background information from the 2011 public workshops.
The I-81 Challenge to Date
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.

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.

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...

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

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

The Pulse: TRAVEL TIME SAVINGS
- The Public Involvement Program is an ongoing effort to involve the public throughout the implementation of the I-81 Challenge, ensuring the project will reflect the needs and desires of the community.
- The project team has been working to identify opportunities for public involvement, including meetings, workshops, and online engagement.

What is The I-81 Challenge?

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LIMITED ENGLISH PROFICIENCY AND ENVIRONMENTAL JUSTICE OUTREACH
- Translation and interpreters
- Targeted outreach

Welcome to The I-81 Challenge Website!
The I-81 Challenge is a collaborative effort between the State of New York, the City of Syracuse, and the Syracuse Metropolitan Transportation Council (SMTC) to improve transportation options along the I-81 corridor.

Get involved. Visit the website to learn more about The I-81 Challenge and how you can get involved.

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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
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

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Less than 20 minutes</td>
<td>22%</td>
</tr>
<tr>
<td>20 to 29 minutes</td>
<td>37%</td>
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<tr>
<td>30 to 39 minutes</td>
<td>25%</td>
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<tr>
<td>40 to 59 minutes</td>
<td>10%</td>
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<tr>
<td>60 minutes or more</td>
<td>6%</td>
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### Tolerable future travel time

<table>
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<td>30 to 39 minutes</td>
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<tr>
<td>40 to 59 minutes</td>
<td>22%</td>
</tr>
<tr>
<td>60 minutes or more</td>
<td>9%</td>
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### Tolerable change in travel time

<table>
<thead>
<tr>
<th>Change in Travel Time</th>
<th>Percentage</th>
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</thead>
<tbody>
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<td>3%</td>
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<tr>
<td>11 to 20 minute increase in travel time</td>
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<tr>
<td>10 minute or less increase in travel time</td>
<td>49%</td>
</tr>
<tr>
<td>No change</td>
<td>29%</td>
</tr>
<tr>
<td>Less Time</td>
<td></td>
</tr>
<tr>
<td>10 minute or less decrease in travel time</td>
<td>1%</td>
</tr>
<tr>
<td>11 to 20 minute decrease in travel time</td>
<td>0%</td>
</tr>
<tr>
<td>More than 20 minute decrease in travel time</td>
<td>0%</td>
</tr>
</tbody>
</table>
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.

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.
Spring 2011 Workshop Review

Your Visions
Our early transportation system

Before canals were built, rough trails, roads and natural waterways were the only ways to travel.

The Erie Canal, completed in 1825, ran through Syracuse and spurred economic development in the region.

Today’s transportation system was influenced by the location of the canals and railways of the past.

By the late 1830s, steam powered railroads had come to Syracuse.

Commercial production of automobiles began in the early 1900s.
A Century of Transition

**THE ERIE CANAL**
The Erie Canal created a major economic corridor that sparked canal building across the nation. It established New York as a leader in transportation development.

**RAILROADS & STREETCARS**
Railroads began to operate in the 1830’s and soon became the preferred method for shipping. Rail was also important for moving people. Up to 1941, Syracuse operated a dense network of streetcars and interurban trains connecting neighborhoods and other towns with downtown.

**EARLY AUTO**
By the early 1900s, Syracuse streets began to experience congestion associated with the railroads, streetcars and newly introduced automobiles. To improve road conditions the Delaware & Lackawana Railroad began operating on an elevated structure and the New York Central Railroad was shifted north and elevated along the alignment of today’s I-690.
Interstate highway planning

1944 Federal Highway Act
- Began a new era of highway building
- Provided significant federal funding for new highway construction across the nation

The 1955 Yellow Book
- Mapped out what became the interstate highway system
- Located interstate highways through and near major urban centers

Federal-Aid Highway Act of 1956
- Authorized $25 billion dollars to construct 41,000 miles of the original interstate system
- Provided federal funds for majority of construction costs
While the federal government laid out general locations of highways, it was up to state and local officials to determine the exact alignment of the new highways.

Key factors that influenced the routes of our current highways:

- Location of existing transportation rights of way
- Location of areas identified for urban renewal
- Common origins and destinations

I-81 was aligned along Almond Street. This alignment allowed for an elevated structure and coincided with the location of the Near East Side Urban Renewal Area.

**WHAT WAS URBAN RENEWAL?**

Urban renewal refers to efforts to revitalize what were considered blighted city areas during the 1940s-1970s.

Urban renewal usually included:
- Relocation of businesses
- Demolition of buildings
- Displacement of people
I-81 and the 15th Ward

I-81 is often cited as the primary force in the loss of the 15th Ward neighborhood. However, it is important to understand that I-81 is only part of the story.

Syracuse, like many cities, experienced controversy around the locations of the highways built during this era. In Syracuse, the controversy involved a variety of concerns including environmental protection, historical and neighborhood preservation, race, and class.

In 1963, Syracuse Mayor William F. Walsh began a major urban renewal effort in the 15th Ward that displaced 1,300 residents and would ultimately make way for a museum, a new police headquarters, a state hospital, a middle-income housing complex and the I-81 viaduct.*

* Source: The Post-Standard, syracusethenandnow.org
The construction of I-81

I-81 was completed in 3 segments, over a ten-year period from 1959-1969

- The first segment, completed in 1959, stretched from Brewerton to the northern end of downtown Syracuse
- The southern segment north to Adams Street opened in 1962
- The last link, which included the viaduct, opened in 1969

1964 - Townsend Street
1966
1967
Cars on I-690 near I-81 interchange after construction
This video is about 17 minutes long

The video will be shown on the hour and at :20 and :40 past each hour
Your stories about I-81

Some of the stories you told us about I-81 at the 2011 workshops.

When plans for I-81 were proposed, we were told that this would be a "boom to the city," because Syracuse would be the only city in the path of the road. That would mean more allowing easy access to the Syracuse business district. An other city would have been an advantage. This was the "way of the future." Now Syracuse, the end to all our problems.

I moved to Syracuse a year and a half ago, and the elevated section of I-81 is a constant part of my life. I live on one side of the highway and work on the other side. I really don't enjoy the traffic. I'm on the Syracuse Medical University campus and I have to drive on it at least once a week. In my opinion, it is part of an unfull circle that makes the city in half. The street design around the mag section is terrible. I walk, and in winter, walk on ice. I have personally come very close to being hit by cars driving on entering the highway to the left lanes of bright and complex road layout. In conclusion, every single week I have witnessed some vehicle or other colliding with a pedestrian or vehicle in the area around the highway. If the highway was removed, the area around the interstate moves would be greatly improved, both in safety and in the aesthetics of the area.

My earliest memories of I-81 were seeing the glowing lights of Syracuse as we crossed the hill by the Onondaga River returning from some hockey game, tournament, downtown, at home. It was a nice feeling knowing we were just about home. A nice view.

I remember driving downtown Polish to Little York for a family reunion when I was young. It was a 3-year-old, my aunt and uncle "coached" us and "taught" about how much easier the trip became.

I remember the protests and court battles by people in the city about trying to save not only their neighborhood, but also the streets that bounded them together. The city and the Governor succeeded in demolishing and dividing the ECLJ in half. The city then said it was the center of the reconstruction plan. Those new buildings existed only in wishful drawings at City Hall. There was no funding available for any of those buildings in 1982-1986.

I was born and raised in a school in Binghamton. I first encountered I-81 as I traveled back and forth to Central New York in the nineties. To reach Syracuse meant we were half way home. Yet I was always drawn to the beauty of the hills between the city. Eventually I chose to make Central New York my home.
Our transportation system today
The I-81 Physical Conditions Analysis is one piece of *The I-81 Challenge*. It includes:

- A technical analysis of the highway’s existing physical and operational conditions
- A review of existing land use and the social, economic and environmental context

**WHY IS THERE MORE THAN ONE STUDY AREA?**

- The primary study area provides a narrow focus for the analysis of physical infrastructure (e.g. roadways, bridges, ramps) of I-81 and adjacent sections of I-690.
- A broad view will help us understand I-81’s role and function in our region. We need to consider land use, economic development, and environmental issues within this broader regional context.
Traffic volumes on I-81

To determine how busy I-81 is, we calculate traffic volumes using vehicle counting stations.

**Annual Average Daily Traffic**

**Viaduct Area Traffic Volumes**

**Did You Know?**
- Between 1974 and 2003 traffic increased at an annual rate of 3.3 - 5.4%.
- Since 2003 there has been little if any growth in traffic volumes.
- July and August have the highest traffic volumes, while January and February have the lowest.
- Heavy vehicles (trucks with at least 4 axles and buses) account for 9% of total traffic during the morning rush hour and 8% during the evening rush hour.

**What is AADT?**
- Average Annual Daily Traffic—referred to commonly as AADT—is calculated by measuring the total number of vehicles passing a point or segment of a highway, in both directions, for one year, divided by the number of days in the year.

**I-81 Yearly Traffic—2-Way AADT**

Note: No data available between 1985 and 1990 at the south station.
Data was collected at continuous count stations located approximately 15 miles north and approximately 10 miles south of the corridor.
NYSDOT conducts periodic inspections to determine pavement and bridge conditions

**HIGHWAYS**

A surface rating survey completed in 2008 found:

- The majority of the pavement in the primary study area to be in "good" condition.
- However, given their age, the majority of the highways will need either a major rehabilitation or reconstruction by 2040.

**BRIDGES**

Recent inspections of the 76 bridges in the primary study area showed that:

- 46 bridges classified as functionally obsolete do not meet current bridge design standards.
  - 18 of these bridges are located in the viaduct section of I-81.
- 7 bridges classified as structurally deficient are in need of major rehabilitation or replacement.
  - 1 of these bridges is located in the viaduct section of I-81.

Assuming only routine maintenance, most of these functionally obsolete and structurally deficient bridges will be in a state of serious deterioration by 2020.

**BRIDGE CONDITIONS**

The structurally deficient bridges shown on this map have been/ or are scheduled to be repaired/ replaced.

Key:

- Structure deficient
- Functionally obsolete
Design, congestion & safety deficiencies

SAFETY, CONGESTION, & DESIGN DEFICIENCIES

DESIGN
When I-81 was constructed in the 1950s and 1960s, highway design standards were different from today. Significant portions of I-81 do not meet today’s design standards. These areas have:
- poor sight distances
- sharp curves
- limited ramp spacing

CONGESTION
Highways within the Syracuse region generally have sufficient capacity for current traffic volumes. Certain areas along I-690 and I-81 in the downtown area experience congestion and slow travel speeds during peak periods. Any disruption due to maintenance or accidents can cause severe traffic congestion.

SAFETY
Highways in the primary study area have a relatively high rate of accidents when compared to statewide averages.

<table>
<thead>
<tr>
<th>Section of Highway</th>
<th>Accident rate compared to statewide average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound viaduct</td>
<td>300%</td>
</tr>
<tr>
<td>I-81 through I-690 interchange</td>
<td>500%</td>
</tr>
<tr>
<td>81 north of I-690 (Carousel Center area)</td>
<td>200%</td>
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</table>

LOOK AT THE MAP
Do you see any correlation between design deficiencies, accident rates, and congestion? Highway sections not meeting current design standards generally coincide with areas of increased congestion and high accident rates.

WHAT IS LEVEL OF SERVICE?
Level of Service (LOS) is a way of measuring how well traffic moves along a highway or through an interchange. Letter grades (A-F) are used to designate LOS. LOS A, B, or C means there is sufficient highway capacity for the current traffic. Traffic flows well. LOS D, E or F means that traffic volume is approaching or exceeding capacity. Traffic slows down and delays occur.
Regional interstate traffic on I-81

In April 2010, an analysis was done to understand how much I-81 traffic is passing through our region without stopping along 3 possible routes: I-81, I-81 to I-90 (Thruway) via I-690, and I-481.

The data were collected on a typical weekday using Automated License Plate Reader cameras.

The analysis revealed:
- 44,000 total vehicles per day on I-81 south of the southern I-481 interchange
- Of these 44,000 vehicles, 12% (5,400 vehicles per day) are currently traveling through the region without stopping.

The results suggest that diverting regional interstate through traffic to I-481 or other alternative interstate routes will have little impact on I-81 through Syracuse.

Additional traffic data is likely to be collected to assist in the assessment of different options for I-81.
Planning for more than just cars

Networks of local streets, paths and trails provide space for pedestrians and bicyclists

Centro provides transit service for those without or who choose not to use a car

Some of the busiest pedestrian areas are the Upstate Medical Center, Syracuse University, and the commercial, residential, and office area on East Genesee Street

Centro operates almost 100 bus routes in Syracuse and Onondaga County

Our airport serves long distance travelers and allows for the shipment of goods

Our rail system brings passengers and freight into and out of our region

Hancock International Airport

Syracuse Regional Transportation Center
How we got here

GROWTH OF CITIES AND TOWNS

- The American city emerged from changes in the economy and means of travel
- Transportation allows access to development opportunities
- Transportation defined the location – and form - of our cities and towns

Streetcars helped turn towns to cities

Unprecedented growth

Transit fueled larger cities’ growth

And the Post World War II Interstate System led to...

And then…our love affair with the car

Cities began to see the effects
The transportation-land use cycle

More Traffic → Congestion → Road Improvements → Increased accessibility → Increased land value → New development → More Traffic

**THE CYCLE RESULTS IN:**
- Unanticipated sprawl
- Decentralization
- Auto dependency
- Overabundance of parking
- Loss of green space and farmland

**RECENT CHANGES IN PERSPECTIVE:**
- Re-balancing community and mobility needs
- Changing settlement patterns and travel modes
- Focusing on walkable, urban places
Regional trends

CHANGING DEMOGRAPHICS
- Steady population
- Fewer persons per household
- More households
- More vehicles per household
- Fewer transit and walking trips

EXPANDING URBANIZED AREA
- Urban land increased 92% since 1970
- 50 square miles added in the 1990s
- City out-migration accelerated
- Rural towns began to suburbanize

It all adds up to more cars!

UPS AND DOWNS IN THE REGION
- Towns 1970-2010
  - Population up 43,000
  - Households up 50,000
  - Housing Units up 56,000

- City of Syracuse 1970-2010
  - Population down 47,000
  - Households down 14,000
  - Housing Units down 7,000

IMPACT ON TRANSPORTATION AND LAND USE
- Regionally, vehicle miles traveled are rising
- Average commute time has risen to 20 minutes
- Trend toward suburbanization
- Home size up 40%
Regional challenges and opportunities

**Challenges**
- A reduction in farmland
- An inability to support mass transit
- Demand for facilities and public services in new areas
- Increased auto dependency and a larger carbon footprint
- Abandoned neighborhoods and buildings
- Spreading our tax dollars over a large area

**Opportunities**
- Focus on climate change and reducing pollution
- Rising fuel costs in other modes/fuel efficiency
- Connections between land use and public health
- Government modernization and efficiency
- Economic competitiveness
- Smart growth
- Protection of natural resources
Future land use

CITY OF SYRACUSE LAND USE PLAN

LAND USE VISION

Inset Maps: Multi-Use Districts
Natural Resource Areas
- Lakes
- Protected Open Space
- Forests, Forests, and Countryside
- Mineral Resources
Special Use Districts
- 1. Downtown
- 2. University Hill
- 3. Lakewright
- 4. Stadium/Market/Transportation Center
- 5. Airport

Industrial and Commercial Districts

Neighborhoods
Corridors
- Major Highways
- Streams
- Railroads

Onondaga County
2010 Development Guide
 Syracuse-Onondaga County Planning Agency

1997
**Population & employment**

**Population**
- Between 1980 and 2010, Onondaga County lost roughly 23% of its people aged 18 to 34.
- The largest increase in population for City of Syracuse is among 55 to 64 year olds, up 3% since 2000.
- 29% of City of Syracuse’s population is under 19 years old.
- According to the 2010 Census, Onondaga County population increased 1.9% since 2000, while the City of Syracuse decreased less than 1%.

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>% Growth from 1990 to 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>248,709,673</td>
<td>281,421,935</td>
<td>308,745,538</td>
<td>19.4%</td>
</tr>
<tr>
<td>New York State</td>
<td>17,908,455</td>
<td>19,878,457</td>
<td>19,378,162</td>
<td>7.2%</td>
</tr>
<tr>
<td>Onondaga County</td>
<td>468,973</td>
<td>456,335</td>
<td>467,626</td>
<td>-0.4%</td>
</tr>
<tr>
<td>City of Syracuse</td>
<td>163,060</td>
<td>147,305</td>
<td>145,170</td>
<td>-12.9%</td>
</tr>
</tbody>
</table>

**Population Change by Age 2000-2010**

**Total Employees**
- Total employment in the City of Syracuse has decreased 13% between 2002 and 2009, from 114,134 to 99,169.
- More than 94% of Onondaga County’s working residents also work in the county.

**Percent of Employment by Industry 2009**
- Education and health sector represents 17% of total employment in Syracuse MSA, or 44,544 employees.
- Syracuse University and the State University of New York (SUNY) Upstate Medical University, alone employ more than 12,500 people.
A closer look at population

POPULATION DENSITY BY TOWN

MEDIAN HOUSEHOLD INCOME BY TOWN

2010 U.S. Census
Permits per Square Mile
0 - 49
50 - 99
100 - 199
200 - 499
500 - 1000
1000 +

2010 ACS 5-Year Data (Tracts)
Median Household Income
$0 - $20,000
$20,000 - $40,000
$40,000 - $60,000
$60,000 - $80,000
$80,000 +
Regional commuting patterns

WORKERS COMMUTING TO ONONDAGA COUNTY

COMMUTE PATTERNS
Onondaga County is a regional employment hub, and many of Onondaga County’s jobs are located in the City of Syracuse.

WORKERS COMMUTING TO SYRACUSE

PERCENT COMMUTING BY ALTERNATIVE MODES

USE OF ALTERNATIVE MODES
In 2010, the highest percentages of commuters using alternative modes (i.e., biking, walking, riding a motorcycle, or taking transit) were found in the City of Syracuse.
Learning from other urban highway projects

Cities across the nation have faced similar challenges:

- Syracuse, NY
- Boston, MA
- Providence, RI
- Milwaukee, WI
- Cincinnati, OH
- San Francisco, CA

These projects’ outcomes can offer insights for
The I-81 Challenge
Reconstruct the highway

THE MARQUETTE INTERCHANGE: I-794/I-43/I-94
MILWAUKEE, WI

SIMILARITIES TO I-81
- Designated as an interstate highway
- Carried through and local traffic
- Did not meet design standards
- Included an interchange with other interstate highways
- Located in a similar climate

DIFFERENCES FROM I-81
- Project focused primarily on an interchange
- Major alterations of highway network not considered

SO WHAT HAPPENED?
- Complete reconstruction of Marquette Interchange in downtown Milwaukee
- Project emphasized community involvement to develop a community-sensitive solution
- The new design is considered more attractive and traffic flow has improved

Lessons learned
- Project benefited from strong public outreach effort that included neighborhood committees
- Visual impacts can be mitigated through aesthetically pleasing design – clean lines, narrow piers, bright colors and decorative features
Bury the highway

CENTRAL ARTERY - THE BIG DIG: I-93
BOSTON, MA

Lessons learned
- Cost of burying a highway were significant - final costs of the project were 5 times the original estimate
- Payoffs of burying a highway were also great:
  - Improved connectivity between neighborhoods
  - Improved traffic circulation
  - Enhanced urban environment and stimulated economic development

SIMILARITIES TO I-81
- Designated as an interstate highway
- Carried through and local traffic
- Perceived as a barrier between neighborhoods

DIFFERENCES FROM I-81
- Carried twice the traffic volumes
- Located in an older and more densely populated city with greater development pressures
- Separated sections of the city from the waterfront

SO WHAT HAPPENED?
- I-93 was torn down and an expanded interstate was relocated under the same footprint
- The elevated section of the highway was replaced by public space, improving connectivity to the waterfront and North End neighborhood
- The project also focused on upgrading and expanding public transit
Depress the highway

FORT WASHINGTON WAY: I-71
CINCINNATI, OH

SIMILARITIES TO I-81
- Designated as an interstate highway
- Carried through and local traffic
- Carried comparable traffic volume
- Perceived as a barrier between neighborhoods

DIFFERENCES FROM I-81
- Existed as a depressed rather than elevated highway
- Separated downtown from the riverfront

SO WHAT HAPPENED?
- The project included highway widening and the elimination of several exits and entrances to simplify and improve traffic flow
- The total right-of-way width was substantially reduced
- Reclaimed space was developed as a waterfront park and professional sports venues
- Streets crossing the highway were redesigned to include broad sidewalks and landscaping

Lessons learned
- Project benefited from effective stakeholder involvement
- Project benefited from extensive planning - 25 alternatives were explored
- Integration of economic development and improved riverfront access contributed to broad support
Relocate the highway

THE “I-WAY”: I-195
PROVIDENCE, RI

SIMILARITIES TO I-81
- Designated as an interstate highway
- Carried through and local traffic
- Included an interchange with another interstate highway

DIFFERENCES FROM I-81
- Carried higher traffic volumes
- Did not include regional alternatives or bypasses
- Separated sections of city from a waterfront area

SO WHAT HAPPENED?
- The elevated I-195 highway was relocated from downtown Providence to a nearby industrial corridor
- The project opened up valuable redevelopment areas and allowed the city to reconnect parts of the downtown street grid

Lessons learned
- Relocation allowed for existing road to remain operational, minimizing traffic disruptions
- Project benefited from extensive public outreach – media, websites and podcasts
- Focus on urban design, riverfront connections, and redevelopment opportunities fostered public support
Remove the highway

CENTRAL FREEWAY - OCTAVIA BOULEVARD
SAN FRANCISCO, CA

**SIMILARITIES TO I-81**
- Carried comparable traffic volumes
- Existed as an elevated freeway in an urban area

**DIFFERENCES FROM I-81**
- Not designated as an interstate highway
- Carried no through traffic (spur to downtown)
- Previously closed due to earthquake

**SO WHAT HAPPENED?**
- In 1989, an earthquake damaged the freeway forcing it to close temporarily
- In 1996, the freeway was repaired and reopened
- Ultimately, a proposal to replace the freeway with a boulevard gained support, and it was redesigned as Octavia Boulevard
- At its opening, the new boulevard carried about half the volume of the freeway it replaced

**Lessons learned**
- Surrounding street and transit network was able to absorb significant traffic
- A boulevard can:
  - Carry high traffic volumes
  - Spur development
  - Provide a pedestrian and bicycle-friendly environment
Reactions to what others have done

At the 2011 workshops, we presented five case studies about how other cities have addressed urban highway issues similar to what we face now. Despite the fundamental differences between the outcomes, several important themes emerged from your comments and are reflected in the goals for *The I–81 Challenge*. We heard a desire to:

- Improve the aesthetics and design of infrastructure and neighborhoods
- Enhance mobility, access, and connectivity
- Improve safety
- Improve quality of life
- Find solutions that are “outside the box”
- Promote economic development
- Support alternative modes of transportation
- Make effective use of limited financial resources
- Ensure proper maintenance of infrastructure
- Preserve neighborhoods and homes
# Case Study Likes and Concerns

<table>
<thead>
<tr>
<th>Case Study</th>
<th>What people liked</th>
<th>Concerns if applied to Syracuse</th>
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</table>
| **Milwaukee**              | • Improved aesthetics and design  
                            • Maintained the function of the interstate  
                            • Increased safety  
                            • Cost-effective  
                            • Less disruptive to local communities  
                            • Significant public involvement | • Maintenance of the status quo  
                            • No significant aesthetic improvement  
                            • Significant impacts on surrounding neighborhoods  
                            • No improvement in quality of life  
                            • No focus on economic development  
                            • Cost |
| **Boston**                 | • City beautification  
                            • Inclusion of a “signature project”  
                            • Access and connectivity  
                            • Removal of the highway as a barrier  
                            • Improved highway function  
                            • Emphasis on alternate modes  
                            • Potential for economic development | • Cost  
                            • Not appropriate for Syracuse  
                            • Potential maintenance problems  
                            • Continued emphasis on cars  
                            • Time needed for construction  
                            • Safety and security  
                            • Limited connectivity |
| **Cincinnati**             | • Reconnection and reintegration of the city  
                            • Improved aesthetics and design  
                            • Quality of life improvements  
                            • Cost  
                            • New development opportunities  
                            • Maintained the function of the highway | • Drainage and maintenance issues  
                            • Minimal or no improvement over the existing condition  
                            • Cost  
                            • Potential negative impacts on economy, environment, and neighborhoods  
                            • No significant safety improvements  
                            • Not a pedestrian friendly environment |
| **Providence**             | • Redevelopment and reintegration of downtown  
                            • Removal of the highway from downtown  
                            • Maintained function of the highway  
                            • Quality of life improvements  
                            • Minimal disruption during construction | • Potential negative local impacts  
                            • Might shift the problem to another neighborhood  
                            • Cost  
                            • Possible negative impact on traffic and congestion  
                            • Less convenient |
| **San Francisco**          | • Promotion of alternative modes of travel  
                            • Improved aesthetics and design  
                            • Opportunity for economic development and neighborhood reintegration  
                            • Removal of the highway as a barrier  
                            • Cost-effective | • Loss of the highway function downtown  
                            • Increased traffic congestion on local streets  
                            • Would shift traffic to other regional highways  
                            • Would discourage people from going downtown and encourage people to leave the city  
                            • Would reduce walkability and provide a less safe environment for pedestrians |
This video is about 21 minutes long.

The video will be shown on the hour (:00) and half hour (:30)
Station 3

Your Visions

These boards reviewed the nearly 150 “visions” received from the public at the May 2011 workshops and illustrated the process used to categorize these visions, pre-screen some visions, and arrive at the list of strategies recommended for further study. Attendees were asked to provide their comments on the process and the recommendations for further study.
Your visions for I-81
Your visions for I-81
Your visions for I-81
Your visions for I-81

Your vision for the future of I-81

Please use this map to draw your ideas. You can be as detailed or you would like, but please try to tell us what your ideas will benefit the region.

Description of your idea:

How does your idea benefit the region?

Your vision for the future of I-81

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 ideas will benefit the region.

Description of your idea:

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Your vision for the future of I-81

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Your vision for the future of I-81

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Description of your idea:

How does your idea benefit the region?

Your vision for the future of I-81

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 ideas will benefit the region.

Description of your idea:

How does your idea benefit the region?
Your visions for I-81
Your visions for I-81
Your visions for I-81

Your vision for the future of I-81:
Please use this map to draw your vision. You may be so detailed as you wish, but please try to tell us how your idea will benefit the region.

- Description of your idea:
- How does your idea benefit the region?
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- How does your idea benefit the region?
Numerous ideas were shared at the May 2011 workshops ranging from spot-specific improvements to full reconstruction to transformation of the regional transportation system.

Similar concepts were grouped into six distinct categories.

Participants at the May 2011 workshops made many suggestions that could complement any of the six categories.
Moving to Stage 1 screening

Must be considered for all projects

- No-Build
- Rehabilitation
- Reconstruction
- Tunnel / Depressed highway
- Boulevard

Carry forward to stage 1 screening

Based on the review of the concepts and ideas presented by the public, a large majority fell into these categories and represent categories of strategies that can potentially meet the Purpose & Need and Goals & Objectives of the project.

- Western bypass
- Relocate I-81

Pre-screen categories prior to stage 1 screening

These two categories of concepts and ideas were prescreened because the review of this information indicated they may not meet the project’s Purpose & Need or Goals & Objectives. Western bypass concepts may not address the I-81 needs and the Relocate I-81 concepts present potentially significant community impacts.
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

STAGE 1 (10-15 Strategies)

STAGE 2 (6-9 Strategies)

STAGE 3 (4-5 Strategies)

The next station describes how these specific strategies will be developed.

Prescreening:
- Relocate
- W. bypass

The screening process 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 impact 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
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)
These boards explored in more detail the five potential strategies recommended for further study. They provided a definition and explored key characteristics and considerations for each strategy, and attendees were given the opportunity to write and post their thoughts.
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 HIWATHA 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.”

“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.”

“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.”

What we heard
Rehabilitation strategy: Elements for Stage 1 development

**TAFT ROAD 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 or 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
Rehabilitation strategy: considerations

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

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

Image by Flickr user Churl

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 HIWATHA 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

**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
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.”
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/I-481 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-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 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
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

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
Station 5

Our Transit System

These boards provided information about our current transit system and the benefits transit offers to our region and described different potential transit improvement strategies. The public was invited to provide input about current needs and potential enhancements to the transit system and to share their views about which transit amenities were most important.
Existing Transit System
Transit Benefits

**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.

**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.
Transit Benefits

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.

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.
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.
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

- 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.

MAP CONCLUSIONS
**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.*

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**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.*
**Transit Enhancements**

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**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.I.

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**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.I.*
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

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

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.
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-waves.

**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.
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.

**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&D.

**SUCCESS STORY**

Ridership along the Route 5 corridor has increased 10 – 15%, with the biggest share in ridership coming from the BusPlus route.
The 6.8-mile Healthline utilizes 21 articulated rapid transit vehicles that can accommodate 47 sitting and 53 standing passengers, and incorporate GPS communication with text and audio announcements. The vehicles operate in bus-only lanes in the center of Euclid Avenue.

**HEALTHLINE FACTS:**

- **Location:** Cleveland, OH
- **Length:** 6.8 miles – 58 stations
- **Time to Construct:** 3 years
- **Construction Cost:** $112 million total*  
  $16.5 million per mile*
- **Opened:** 2008
- **Annual Operating Costs:** $7.2 Million
- **Ridership:** 12,500 per day
- **Fare:** One-way pass $2.25  
  All-day pass $5.00

*Construction Cost does not include Engineering or ROW.

**SUCCESS STORY**

Since the completion of the project, $4.3 billion has been spent on projects along the corridor, including loft apartments, retail, and office. The Healthline received its name through a partnership with the Cleveland Clinic and University Hospital.
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.

**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 ROW.

**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.
What do you think?

I like BRT because...

I don’t like BRT because...
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.
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 O&M.

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.

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.
**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.

**SUCCESS STORY**

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

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.
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:
Station 6
Evaluating Future Strategies

These boards described how local natural, historical, and socio-economic resources, as well as the results of traffic modeling, will be used in the evaluation of strategies. This station provided an opportunity for the public to comment on the proposed evaluation matrix, which listed the study goals and objectives, and proposed metrics that could be used to compare strategies.
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.

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

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...*
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.

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.
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)*

Increase in Daily Traffic
- < 500
- 500 to 1,000
- 1,000 to 4,000
- 4,000 to 8,000
- > 8,000

* 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 Output**

**Camillus, Elbridge, Lysander, Van Buren**

**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**

**Model Arterial Speeds Compared to Observed Arterial Speeds**
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
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
Example:

**GOAL:**
*Preserve or enhance environmental health*

**OBJECTIVE:**
*Maintain or improve air quality*

**EVALUATION CRITERIA:**
*Change in emissions and air pollutants*

**Options:**

**OPTION A:**
2% Increase

**OPTION B:**
No Change

**OPTION C:**
2% Decrease

**Goals:**
Goals are a statement of what we intend or hope to achieve with *The I-81 Challenge*. One of our goals is “Preserve or enhance environmental health.”

**Evaluation Criteria:**
Evaluation criteria identify the specific measures and outputs that can be used to determine the effectiveness of different strategies and options at meeting our objectives and ultimately reaching our goals. Continuing the example above, we could measure and compare the change in emissions and air pollutants across different options.
### Evaluation Criteria

#### Goal: Improve Public Safety

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

#### Goal: Maintain or Improve Economic Opportunities

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

#### Goal: Exercise Fiscal Responsibility

<table>
<thead>
<tr>
<th>Objectives</th>
<th>How it could be measured</th>
<th>Example outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimize capital costs by ensuring that transportation system investments are cost effective.</td>
<td>Compare overall costs of strategy to conformance with project goals.</td>
<td>Projected capital cost of project.</td>
</tr>
</tbody>
</table>

#### Goal: Share Burdens and Benefits

<table>
<thead>
<tr>
<th>Objectives</th>
<th>How it could be measured</th>
<th>Example outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share the burden of impacts during construction and long term across stakeholders (e.g. suburbs, adjacent neighborhoods, low-income communities, Onondaga Nation).</td>
<td>Identify community-scale impacts and compare to EJ areas, neighborhoods, etc.</td>
<td>Noise, air quality, congestion, sustainable development, property value, and property impacts.</td>
</tr>
<tr>
<td>Share the benefits across stakeholders (e.g. suburbs, adjacent neighborhoods, low-income communities, Onondaga Nation).</td>
<td>Identify community-scale impacts and compare to EJ areas, neighborhoods, etc.</td>
<td>Noise, air quality, congestion, sustainable development, property value, and property impacts.</td>
</tr>
</tbody>
</table>
## Goal: Enhance the Transportation Network

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>How it could be measured:</th>
<th>Example outputs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminate structural deficiencies using treatment strategies that</td>
<td>Restore bridge condition ratings to greater than 5.0.</td>
<td>Number of bridges with condition greater than 5.0.</td>
</tr>
<tr>
<td>provide the lowest life cycle maintenance costs and restore bridge</td>
<td></td>
<td>Anticipated maintenance cost over life cycle of structure.</td>
</tr>
<tr>
<td>condition ratings, where applicable, to good condition for at least 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve existing geometric design through the application of appropriate</td>
<td>Quantify reduction/elimination of non-standard features.</td>
<td>Number of non-standard features.</td>
</tr>
<tr>
<td>design standards and the reduction of non-standard elements and/or</td>
<td></td>
<td>Number of non-conforming features.</td>
</tr>
<tr>
<td>geometries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify alternative mode improvements in the vicinity of I-81.</td>
<td>QUALITATIVELY EVALUATE BICYCLE AND PEDESTRIAN IMPROVEMENTS AND COMPARE.</td>
<td>Qualitative evaluation of bike and pedestrian infrastructure.</td>
</tr>
<tr>
<td></td>
<td>QUANTIFY TRANSIT MODE SHARE IMPROVEMENTS USING THE REGIONAL TRAVEL DEMAND MODEL.</td>
<td>Transit mode share for trips in the Syracuse Metropolitan Planning Area shown by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“commuter” and “urban” routes.</td>
</tr>
</tbody>
</table>

## Goal: Preserve or Enhance Environmental Health

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>How it could be measured:</th>
<th>Example outputs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support local, regional, and state environmental initiatives.</td>
<td>PROVIDE STORMWATER MANAGEMENT FACILITIES FOR WATER QUANTITY AND WATER QUALITY.</td>
<td>OPPORTUNITIES TO INCORPORATE GREEN INFRASTRUCTURE – RANK LOW, MED, AND HIGH.</td>
</tr>
<tr>
<td></td>
<td>QUANTIFY CONTEXT SENSITIVE SOLUTIONS APPLIED.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>QUANTIFY GREEN STREETS PRINCIPLES APPLIED.</td>
<td></td>
</tr>
<tr>
<td>Maintain or improve air quality (overall emissions and odor).</td>
<td>QUANTIFY AND COMPARE REDUCTION IN EMISSIONS AND AIR POLLUTANTS USING THE REGIONAL TRAVEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DEMAND MODEL.</td>
<td>TOTAL TONS OF POLLUTANTS Emitted (E.G., carbon monoxide, volatile organic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMPOUNDS, AND NITROUS OXIDE).</td>
</tr>
<tr>
<td>Minimize air quality and noise impacts on adjacent neighbors.</td>
<td>IDENTIFY LOCATIONS THAT EXCEED THE NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) AND</td>
<td>ASSESSMENT OF POSITIVE AND/OR NEGATIVE IMPACTS OF A STRATEGY ON AIR QUALITY.</td>
</tr>
<tr>
<td></td>
<td>COMPARE.</td>
<td></td>
</tr>
<tr>
<td>Minimize impacts on designated community landmarks and historic resources.</td>
<td>QUANTIFY AND COMPARE IMPACTS.</td>
<td>DOES, OR WILL STRATEGY IMPACT COMMUNITY LANDMARKS AND HISTORIC RESOURCES.</td>
</tr>
<tr>
<td>Minimize storm water impacts and improve water quality.</td>
<td>EACH STRATEGY MUST MITIGATE IMPACTS IN ACCORDANCE WITH SPDES.</td>
<td>CHANGE IN AMOUNT OF IMPERVIOUS AREAS (ASPHALT VS. GRASS).</td>
</tr>
</tbody>
</table>
## Goal: Enhance Region-Wide Mobility

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>How it could be measured:</th>
<th>Example outputs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>Compare levels of service to future null condition and the project design criteria.</td>
<td>Level of Service at key intersections or links, and operating speed.</td>
</tr>
<tr>
<td>Preserve regional mobility by maintaining travel times.</td>
<td>Quantify average travel time.</td>
<td>Average commute time to work.</td>
</tr>
<tr>
<td>Improve access to key destinations (i.e. the airport, hospitals, and downtown businesses).</td>
<td>Quantify travel times to key destinations.</td>
<td>Average trip time during peak periods to selected destinations.</td>
</tr>
<tr>
<td>Improve connectivity of alternative modes of transportation (pedestrian, bicycle, transit).</td>
<td>Qualitatively evaluate improvements to intermodal connectivity and compare.</td>
<td>Where connectivity points are impacted, improvements will be identified.</td>
</tr>
</tbody>
</table>

## Goal: Support Community Quality of Life

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>How it could be measured:</th>
<th>Example outputs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimize impact to community resources.</td>
<td>Quantify impacts (number of resources) and compare.</td>
<td>Identify the impacts of each strategy on community resources.</td>
</tr>
<tr>
<td>Encourage sustainable land use patterns within the city and county.</td>
<td>Qualitatively evaluate land use opportunities, including opportunities for transit oriented development (TOD), and compare.</td>
<td>Assess opportunity for employment and population growth within, and outside, the City of Syracuse considering sustainability principles.</td>
</tr>
<tr>
<td>Enhance connectivity between University Hill and downtown.</td>
<td>Qualitatively evaluate changes to connectivity/barrier effect for each strategy and compare.</td>
<td>Compare the connectivity advantage of each strategy.</td>
</tr>
<tr>
<td>Encourage Smart Growth: sustainable regional land use patterns that minimize suburban sprawl, which increases demand for infrastructure and services.</td>
<td>Qualitatively evaluate smart growth opportunities.</td>
<td>Assess opportunity for employment and population growth within, and outside, the City of Syracuse considering sustainability principles.</td>
</tr>
<tr>
<td>Improve the visual built environment through Context Sensitive Solutions that contribute to roadside/street ambiance, community character, and public safety.</td>
<td>Qualitatively evaluate Context Sensitive Solution opportunities.</td>
<td>Opportunities to incorporate Context Sensitive Solutions – rank low, medium, and high.</td>
</tr>
<tr>
<td>Promote other planning and development visions and initiatives (county, city, and region).</td>
<td>Qualitatively evaluate conformance to local and regional land use plans.</td>
<td>Strategy supports or complies with Onondaga County’s Development Guide or the City of Syracuse’s Comprehensive Plan - rank low, medium and high.</td>
</tr>
</tbody>
</table>
What do you think?
Station 7

What’s Next?

These boards explained what will come next in the study process and provided an overview of the National Environmental Policy Act (NEPA) review process.
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 Cortlandt, 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.

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

4. **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.
Station 8

Staying Involved

These boards described ways to continue to participate in *The I-81 Challenge* and gave an opportunity to provide feedback about the meeting.
Stay a part of
The I-81 Challenge

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!

WHAT’S NEXT?

- Additional public meetings
- Additional questionnaires
- Increased web and social media presence
- Additional newsletters
Public participation in The 1-81 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

SPRING 2011 NEWSLETTER

Welcome (Back) to 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 useful life. Over the next several years, this process, known as The I-81 Challenge, will advance community discussions about the future of I-81.

Over the next several years, this process, known as The I-81 Challenge, will advance community discussions about the future of I-81. That process will lead to a decision, and a project or projects that can be implemented. It is our goal to make decisions of big importance, and we need the public to stay involved every step of the way. For more information, visit www.thei81challenge.org.

Pieces of The I-81 Challenge

The I-81 Challenge is made up of three major components: an integrated effort:

- Public participation program
- The I-81 Challenge is made up of three major components:
- Travel Demand Modeling effort

Travel Demand Modeling effort

- Public participation program
- The I-81 Challenge is made up of three major components:
- Travel Demand Modeling effort

- New York State Department of Transportation
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?