The I-81 Challenge

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.

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Station 1

The I-81 Challenge

Boards in this station provided information on the background, purpose, and process of *The I-81 Challenge.*

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What is *The I-81 Challenge*?

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

I-81 Corridor Study
NYSDOT

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

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

Public Participation Project
SMTC

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

Travel Demand Modeling
SMTC

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

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

Why is *The I-81 Challenge* needed?

AGING INFRASTRUCTURE

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

LOOKING FORWARD

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

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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.

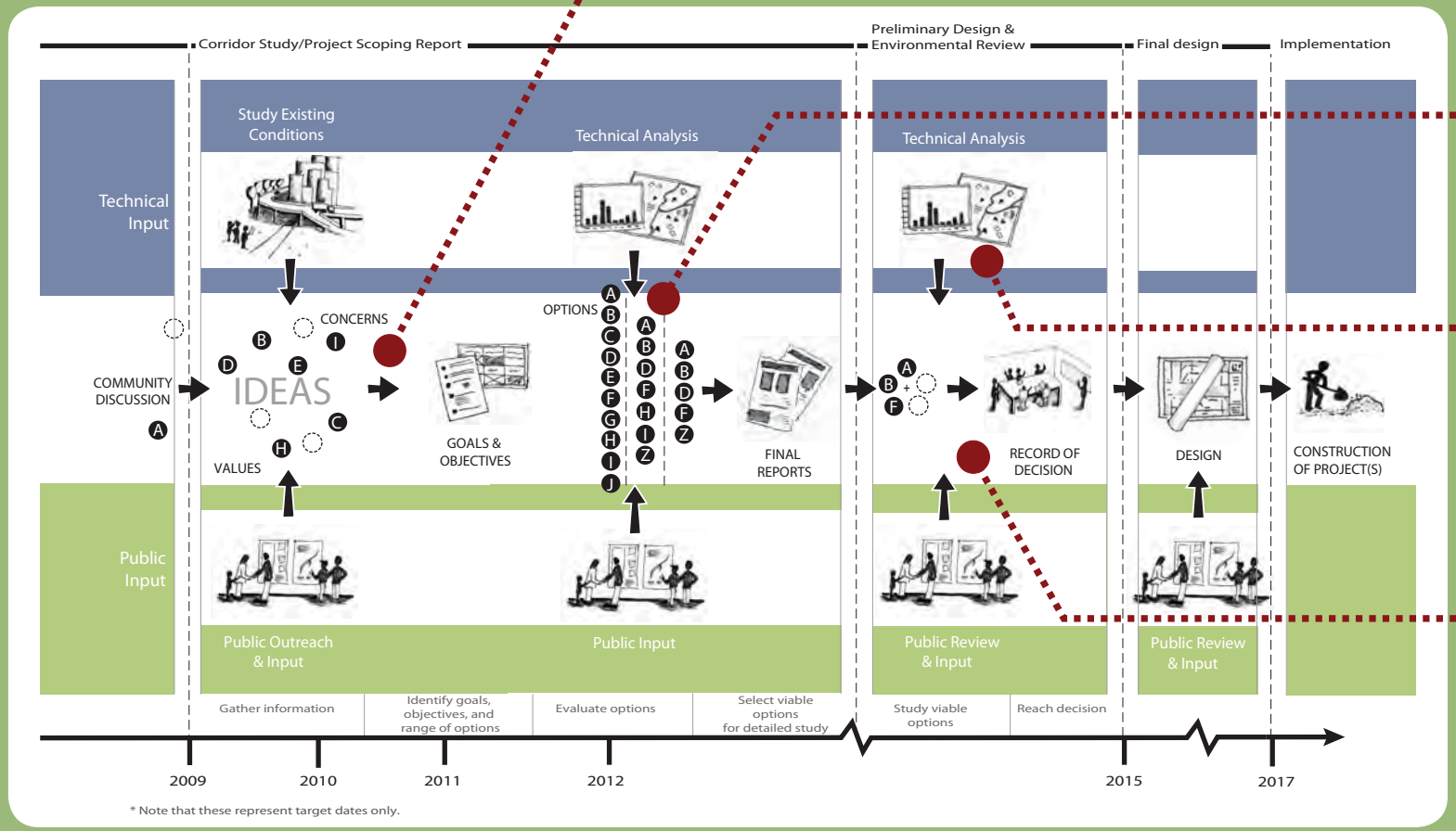
OPTIONS

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.

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).

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

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

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

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

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.

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STATION 2

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

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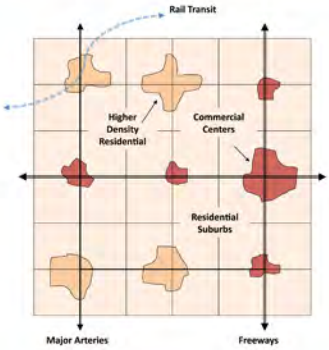
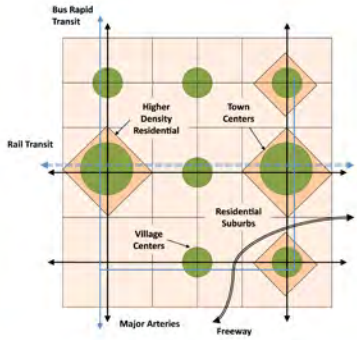
Transportation modeling

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.



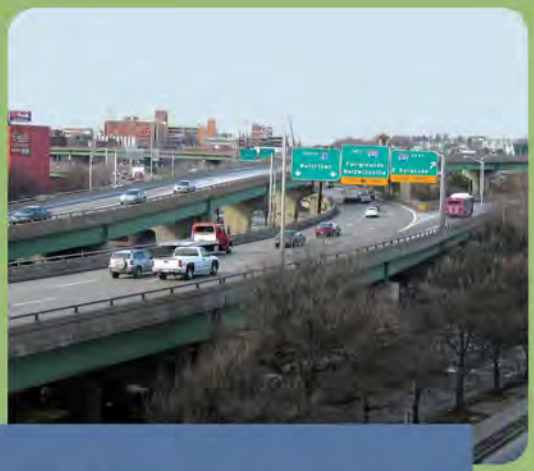
We also use models in transportation planning. These models are a series of complex mathematical equations that represent the choices, decisions, and behavior of thousands (or millions) of individual travelers.



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

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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

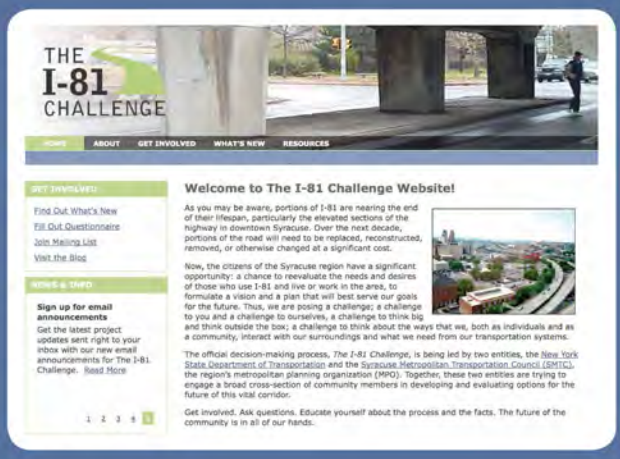
- Fact sheets and newsletters
- Website and social media
- Educational videos

STUDY COMMITTEES

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

ELECTED OFFICIAL OUTREACH

- Notification to local, state, and federal elected officials



LIMITED ENGLISH PROFICIENCY AND ENVIRONMENTAL JUSTICE OUTREACH

- Translation and interpreters
- Targeted outreach

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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/*

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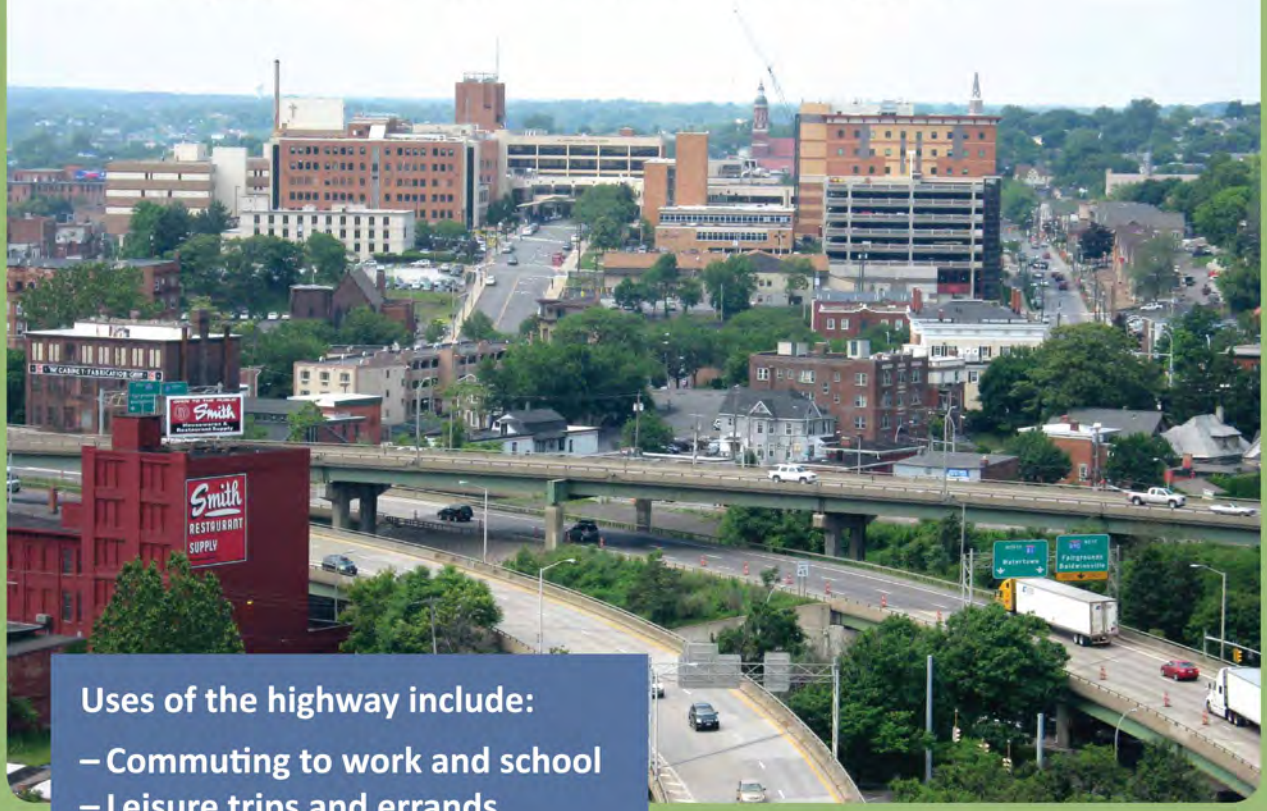
Public involvement key findings: I-81 and the Syracuse region

I-81 is part of what defines the region



Uses of the highway include:

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

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

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

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

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

Public involvement key findings: deficiencies and needs

Major public concerns about I-81:

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

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

Public involvement key findings: travel time tolerance

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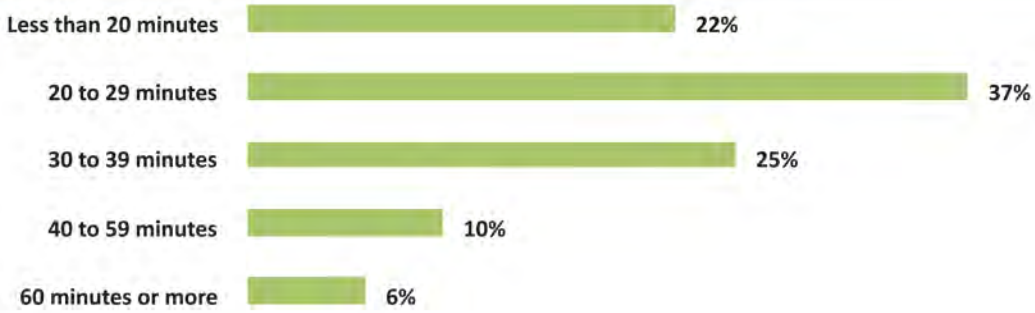
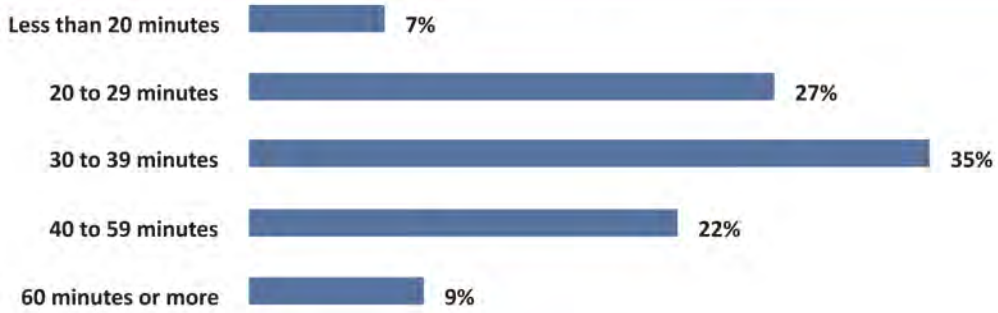
We often refer to Syracuse as a "20-Minute City," but our 2011 questionnaire showed that is only true for less than 25% of us and that overall, the residents of our region could support a slight increase in overall travel time in the Syracuse region in the future.

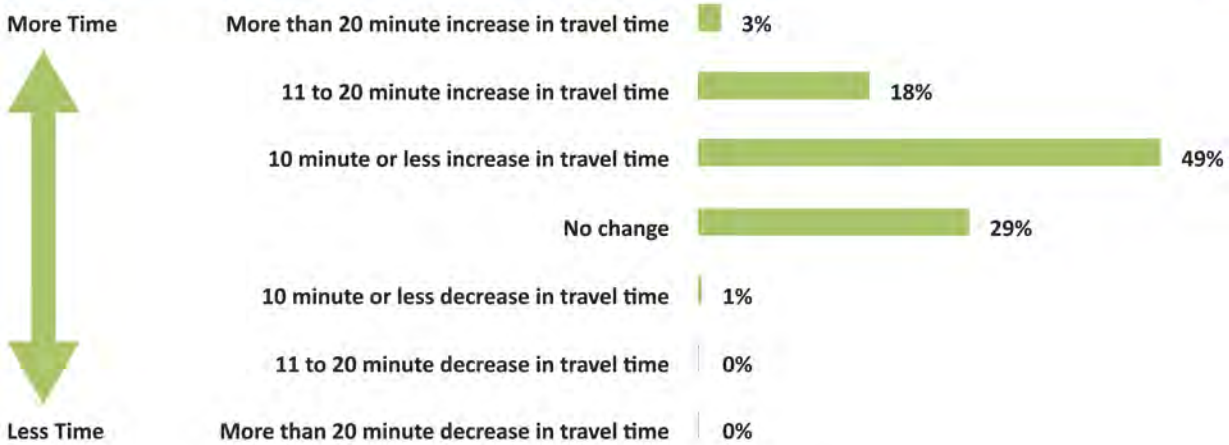
Current travel time in the Syracuse region



Tolerable future travel time



Tolerable change in travel time



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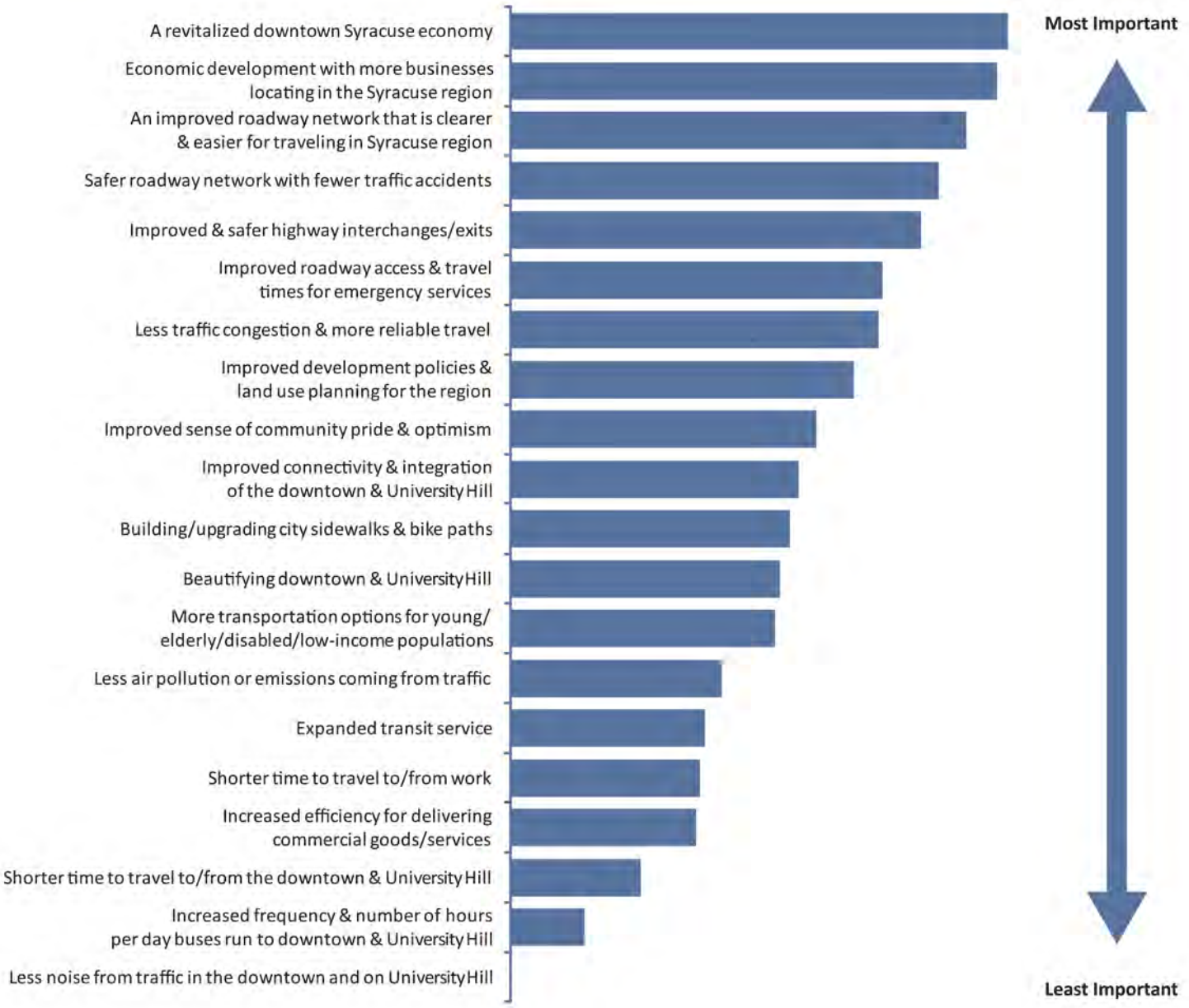
Public involvement key findings: benefits of an improved I-81 corridor

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



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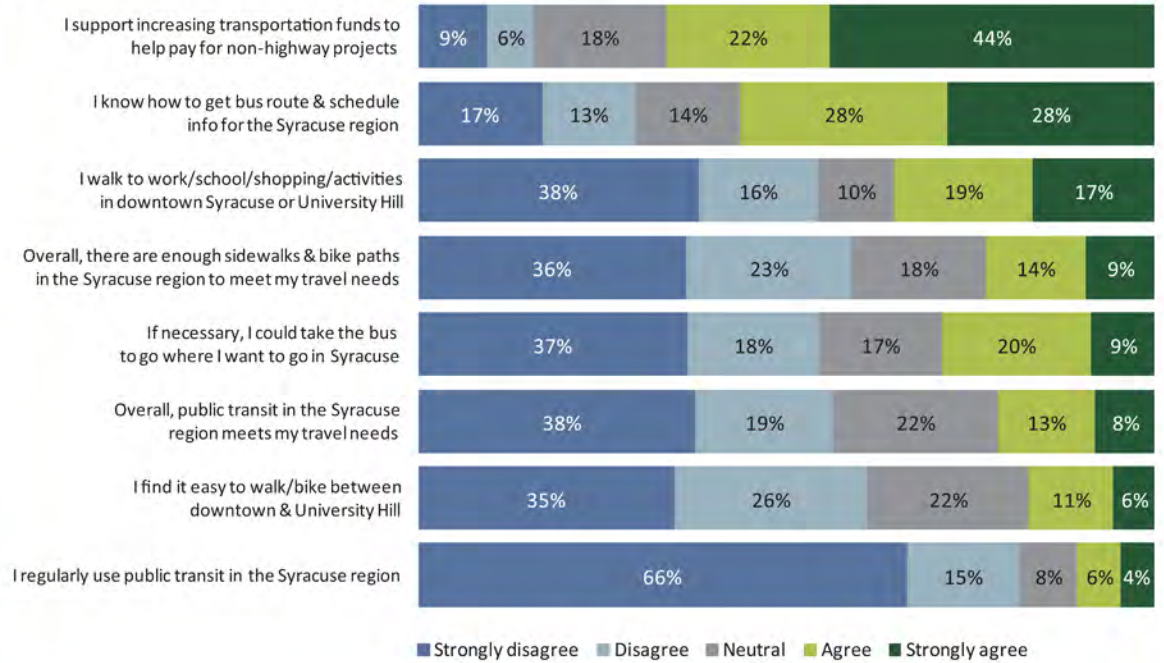
Public involvement key findings: the role of transit

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.

TRANSIT OPINIONS



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NEXT EXIT

Spring 2011 Workshop Review

Your Visions

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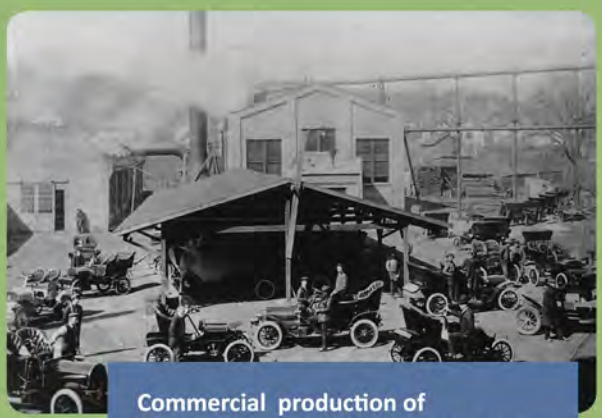
Our early transportation system

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

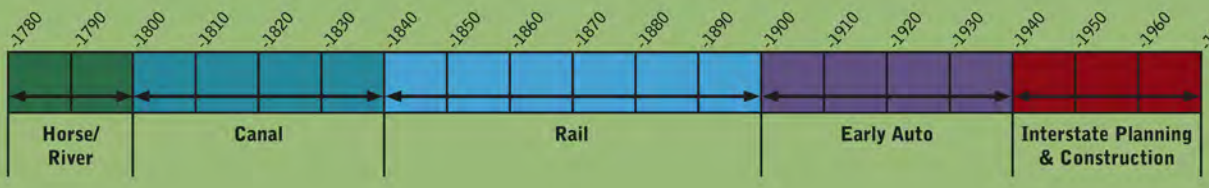
The Erie Canal, completed in 1825, ran through Syracuse and spurred economic development in the region

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



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A Century of Transition

Junction of the Erie Canal and the Oswego Canal - circa 1912

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.

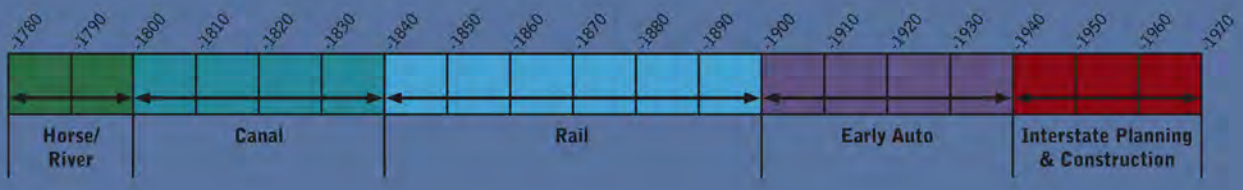

Empire State Express crossing South Salina


Early H. H. Franklin Truck - circa 1905


Salina Street - 300 block - circa 1912

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.



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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

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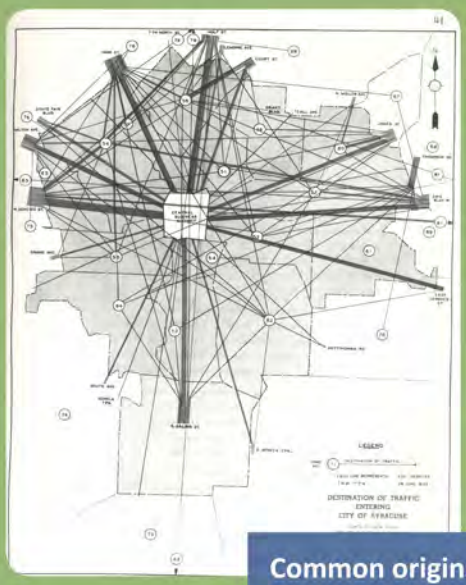
Highway routing

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



Common origins and destinations

Location of areas identified for urban renewal

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 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.

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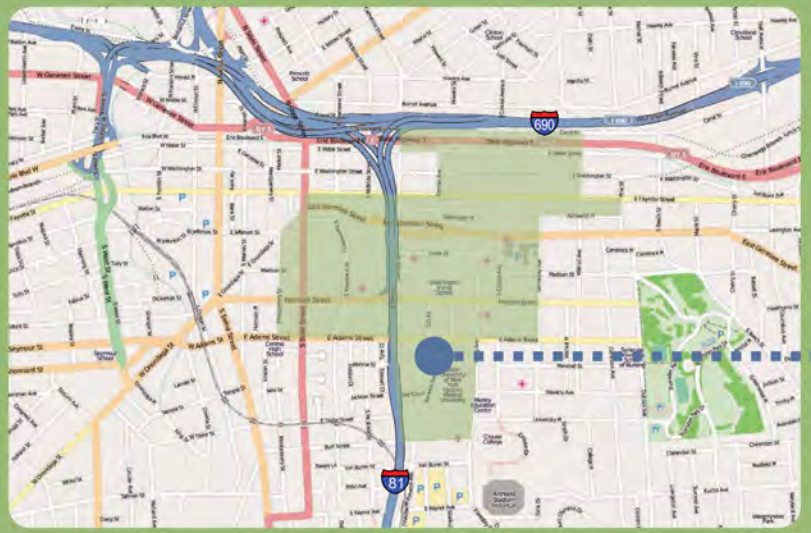
I-81 and the 15th Ward

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.



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.

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

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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

1965

Cars on I-690 near I-81 interchange after construction

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The Evolution of Transportation in the Syracuse Region

This video is about 17 minutes long

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

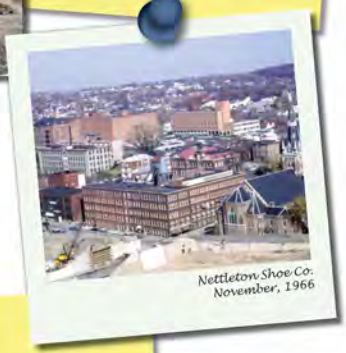
Your stories about I-81

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

When the plans for I-81 were proposed, we were told that this would be a "boon" to the city, because Syracuse would be the only city in the path of the road that would have exits allowing easy access to the Syracuse business district. No other city, Watertown, Binghamton etc. would have such an advantage. This was the "way of the future" for 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 walk under it everyday to go to school at Upstate Medical University in addition to driving on it at least once a week. In my opinion, it is outdated and an awful eyesore that divides the city in half. The street design around the aging sections is terrible, with little thought given for pedestrian crossings and safe vehicle merging. I have personally come very close to being hit by cars exiting and entering the highway due to bad lines of sight and terrible road layout. In addition, nearly every week I have witnessed some close call involving a pedestrian and a vehicle in the areas around the highway. If the highway was removed, life around the Upstate campus would be greatly improved, both in safety and in the aesthetics of the area.

When I was 12 my family moved to Syracuse around 1964. My dad worked on I-81. He would drive us down to see the piles and piles of debris that used to be people's homes. At the time, Salina Street and Warren Street had stores like K-mart, Grants, Woolworths, Dey Brothers and many more retail. After they opened I-81 the city of Syracuse became a virtual ghost town for retail.



My earliest memories of I-81 were seeing the blinking lights of Syracuse as we crested the hill by the Onondaga Nation returning from some hockey game/ tournament down south. It was a nice feeling, knowing we were just about home. A nice view.

I remember driving down Pulaski to Little York for my family reunion when I was young, 12 or 13 years old. My aunt and uncle "oohed" and "aahed" about how much easier the trip became.

I remember the protests and court battles by people in the 15th Ward trying to save not only their neighborhood, but also the strong culture that bonded them together. The city and the Governor succeeded in demolishing and dividing the [city] in half to make way for I-81. Your narrative points out that since the project was completed, there have been several important buildings added to that area. It fails to say that those buildings were not part of the original plans for the 15th Ward. Only the right-of-way for I-81 was the center of the construction plan. Those new buildings existed only in wishful drawings at City Hall. There was no funding available for any of those buildings in 1963-1966.

I was born and raised in a suburb of Buffalo, NY. I first encountered I-81 as I traveled back and forth to SUNY Delhi in the mid-1970s. To reach Syracuse meant we were half way home. Yet I was always drawn to the beauty of the hills south of this city. Eventually I chose to make Central New York my home.

Our transportation system today

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The I-81 Physical Conditions Analysis

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**

MAP OF STUDY AREAS

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

DID YOU KNOW?

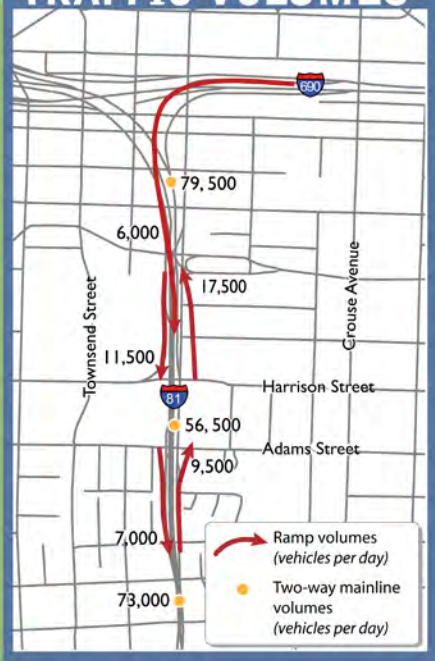
- Between 1974 and 2003 traffic increased at an annual rate of 3.3 - 5.4%.
- Since 2003 there has been little if any growth in traffic volumes.
- July and August have the highest traffic volumes, while January and February have the lowest.
- Heavy vehicles (trucks with at least 4 axles and buses) account 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.

ANNUAL AVERAGE DAILY TRAFFIC

VIADUCT AREA TRAFFIC VOLUMES



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.

Highway & bridge conditions

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

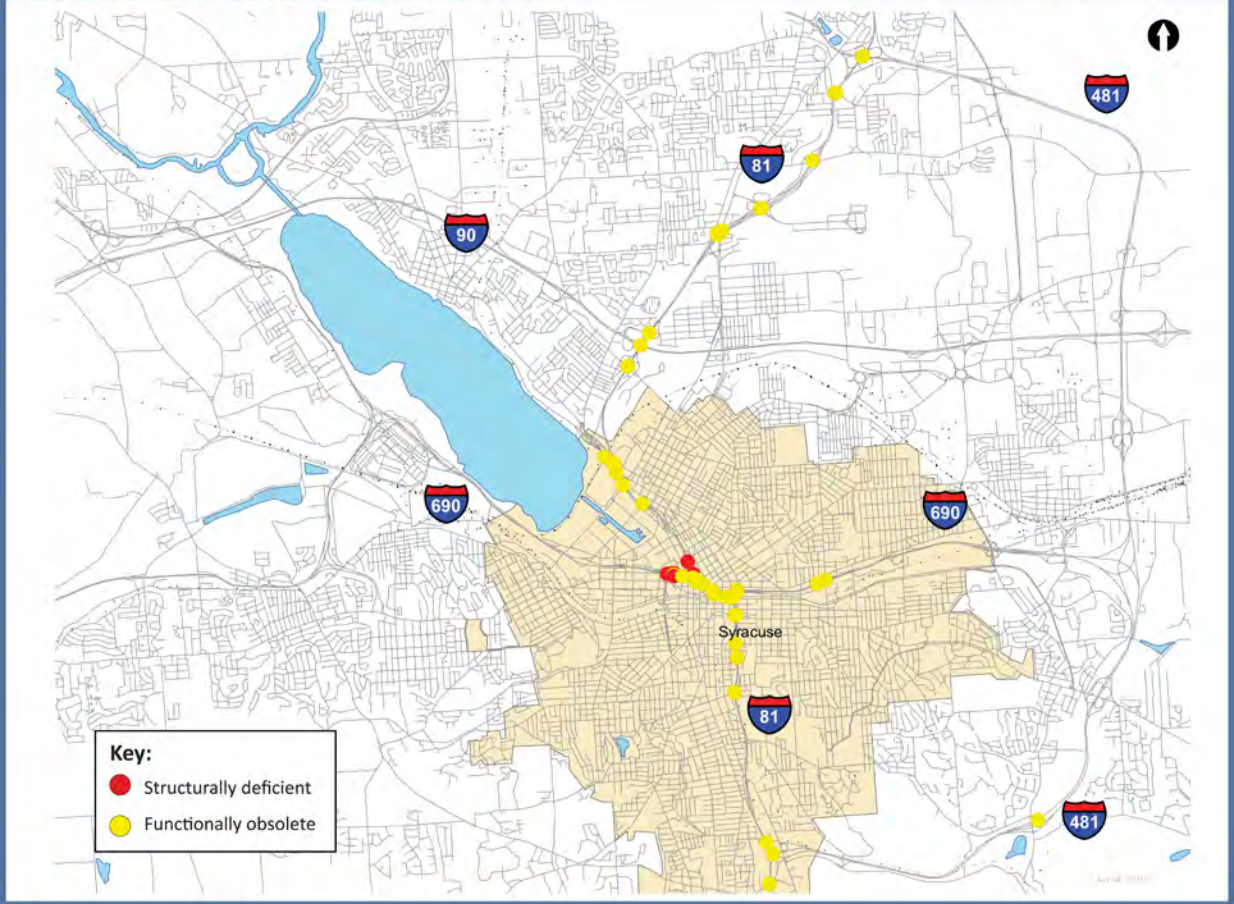
Recent inspections of the 76 bridges in the primary study area showed that:

- 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



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.

Section of Highway	Accident rate compared to statewide average
Northbound viaduct	300%
I-81 through I-690 interchange	500%
81 north of I-690 (Carousel Center area)	200%

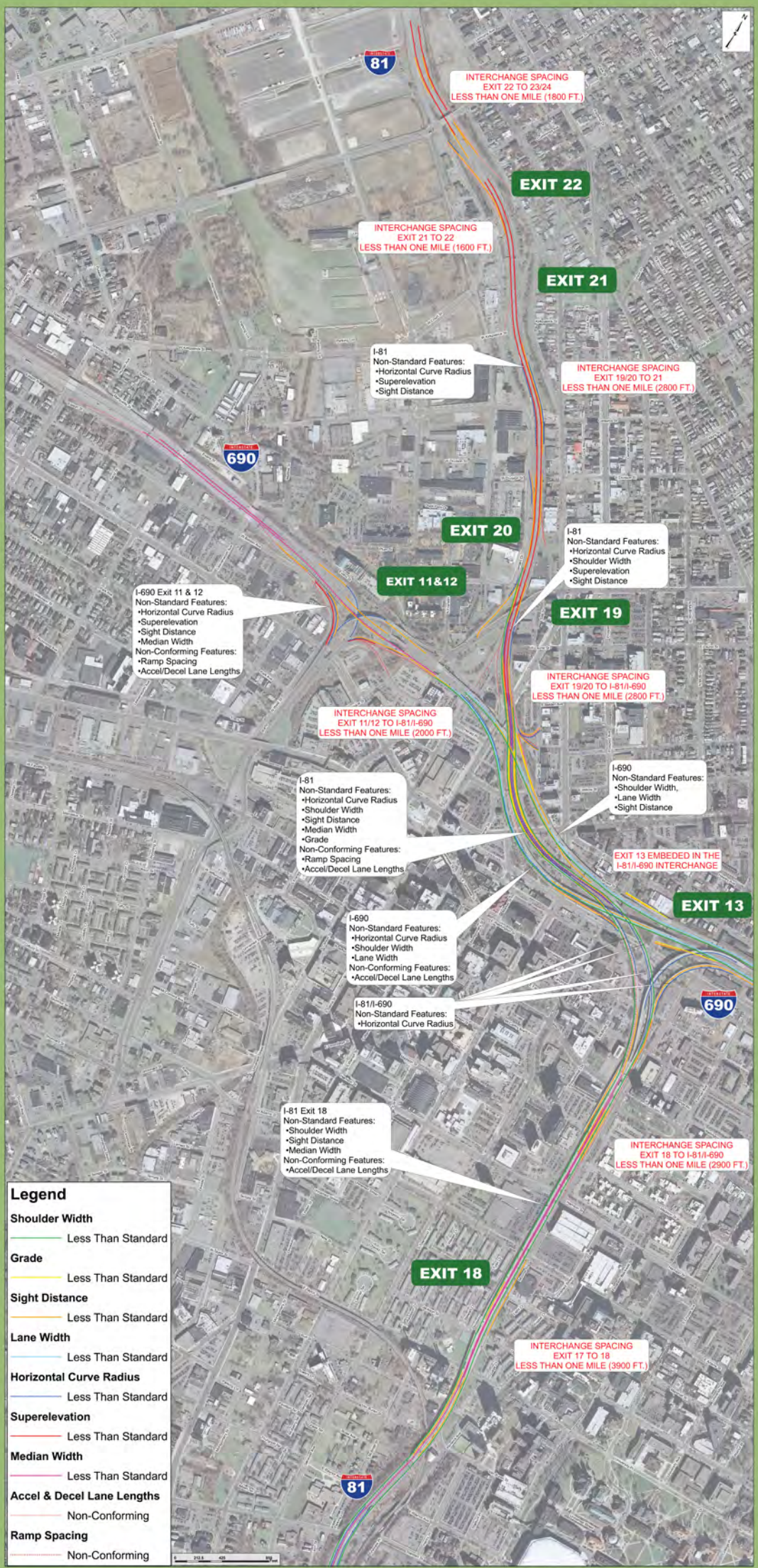
LOOK AT THE MAP

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.

Roadway deficiencies



Bridge, traffic and safety deficiencies

Back to TOC

Regional interstate traffic on I-81

INTERSTATE THROUGH TRAFFIC

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:

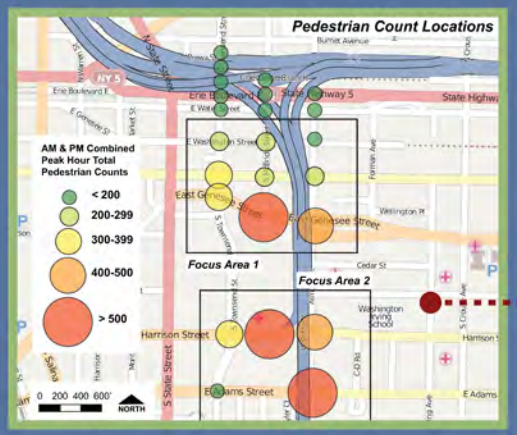
- 44,000 total vehicles per day on I-81 south of the southern I-481 interchange
- Of these 44,000 vehicles, 12% (5,400 vehicles per day) are currently traveling through the region without stopping

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

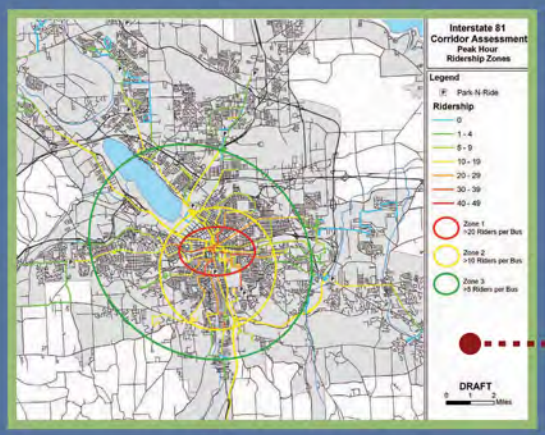
Planning for more than just cars

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



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



Centro operates almost 100 bus routes in Syracuse and Onondaga County

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

Hancock International Airport

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

Syracuse Regional Transportation Center

How we got here

Transportation often defined towns

Streetcars helped turn towns to cities

Transit fueled larger cities' growth

And then...our love affair with the car

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

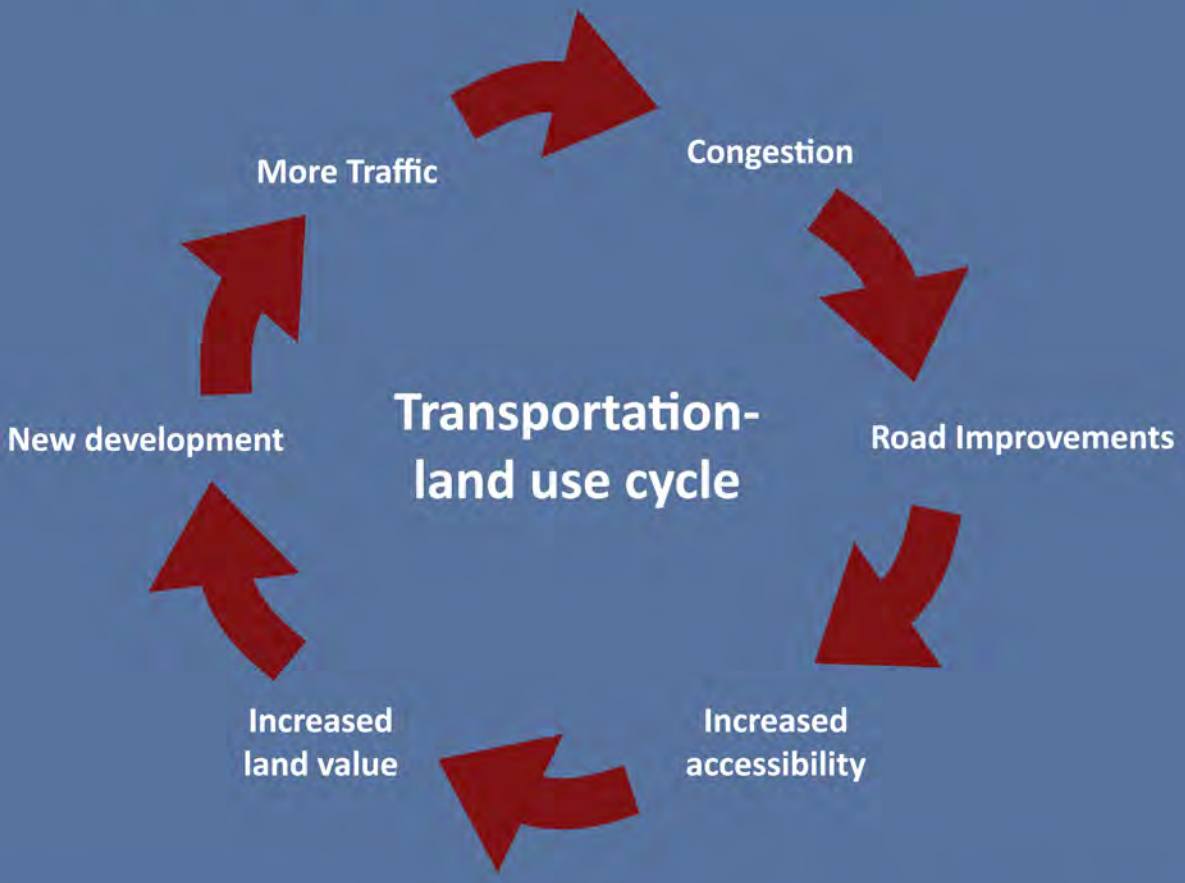
Unprecedented growth

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

Cities began to see the effects

Back to TOC

The transportation-land use cycle



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

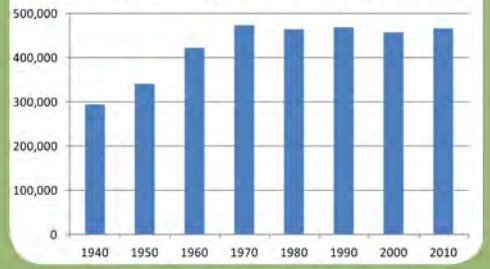
Back to TOC

Regional trends

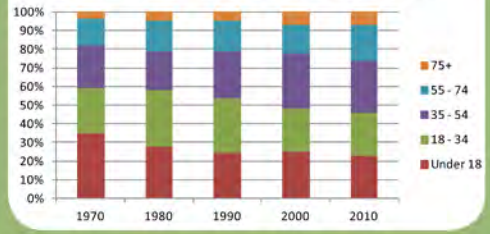
CHANGING DEMOGRAPHICS

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

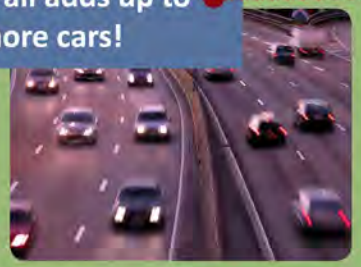
Onondaga County Population 1940-2010



Age Breakdown of Onondaga County Population 1970-2010



It all adds up to more cars!



UPS AND DOWNS IN THE REGION

Towns 1970-2010

Population up 42,000
Households up 50,000
Housing Units up 56,000

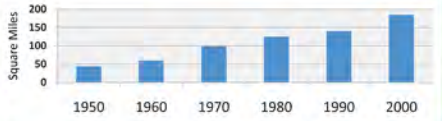
City of Syracuse 1970-2010

Population down 47,000
Households down 14,000
Housing Units down 7,000

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

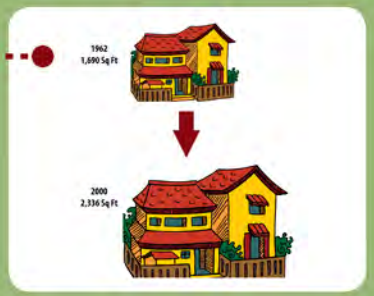
US Census Syracuse Urbanized Area



Syracuse Urbanized Area 1990 & 2000

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%



Charts and Data taken from: Onondaga County Sustainable Development Plan Presentation, prepared by SOCPA; Transportation and Land Use Presentation prepared by SMTC
Updated with 2010 Census data where available

Back to TOC

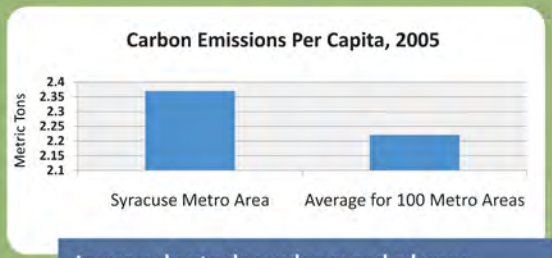
Regional challenges and opportunities

Challenges

A reduction in farmland

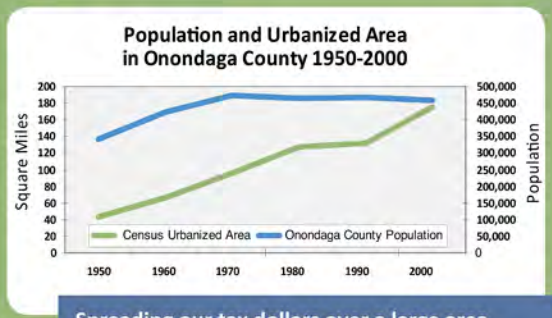
An inability to support mass transit

Demand for facilities and public services in new areas



Increased auto dependency and a larger carbon footprint

Abandoned neighborhoods and buildings



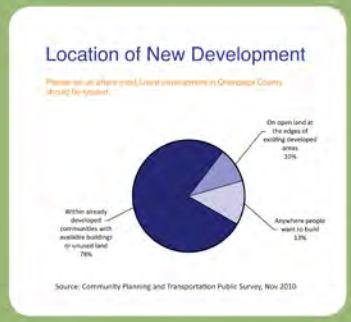
Spreading our tax dollars over a large area

Economic competitiveness

Opportunities

Focus on climate change and reducing pollution

Rising fuel cost = more interest in other modes/fuel efficiency

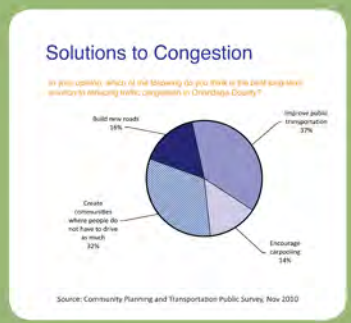


Connections between land use and public health

Government modernization and efficiency

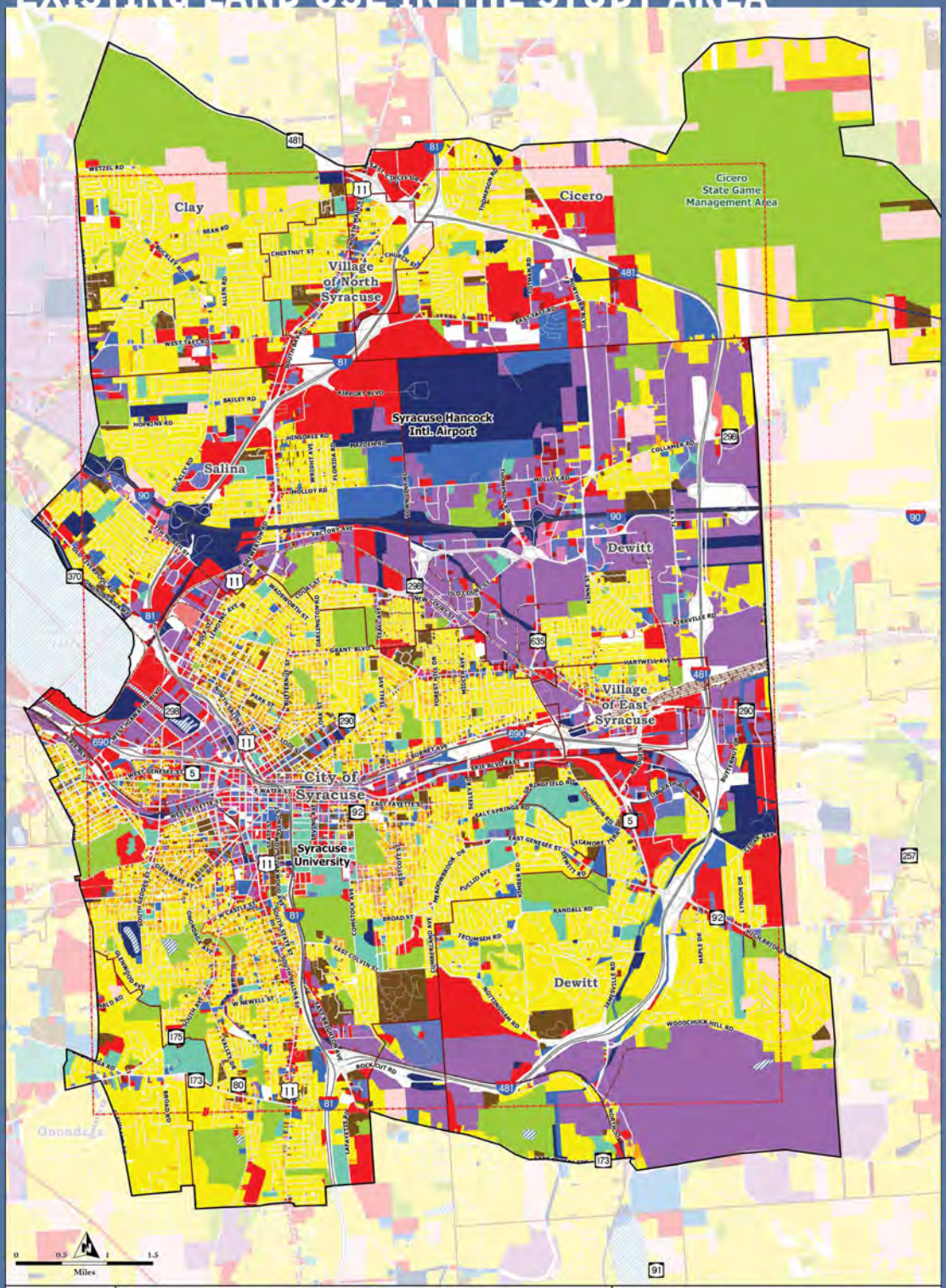
Smart growth

Protection of natural resources



Current land use

EXISTING LAND USE IN THE STUDY AREA



Legend

- Residential (Low Density)
- Residential (Medium Density)
- Residential (High Density)
- Downtown Commercial
- Commercial
- Neighborhood Commercial
- Tourist Commercial
- Large Scale Entertainment
- Industrial
- Institutional
- Transportation, Communication & Utilities
- Medical & Educational
- Agricultural
- Office
- Recreation / Open Space
- Water Body
- Social, Economic and Environmental Study Area
- Municipal Boundary
- Limits of Demographics and Population
- Railroads

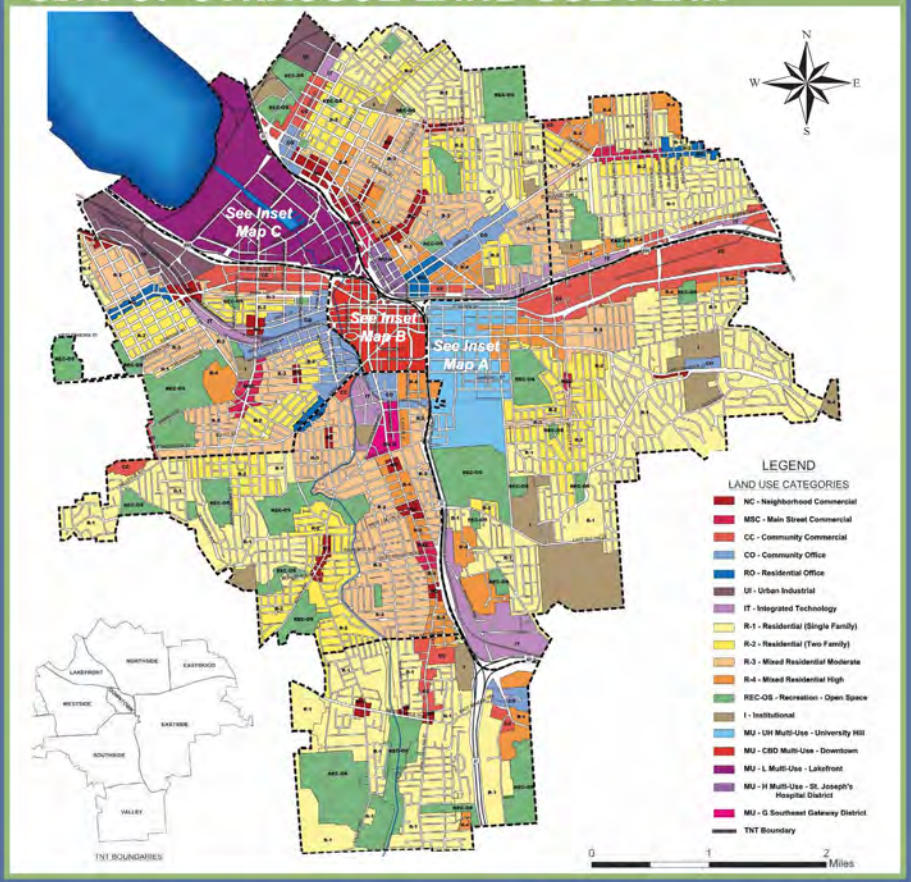
New York State Department of Transportation

New York State DOT I-81 Corridor Study

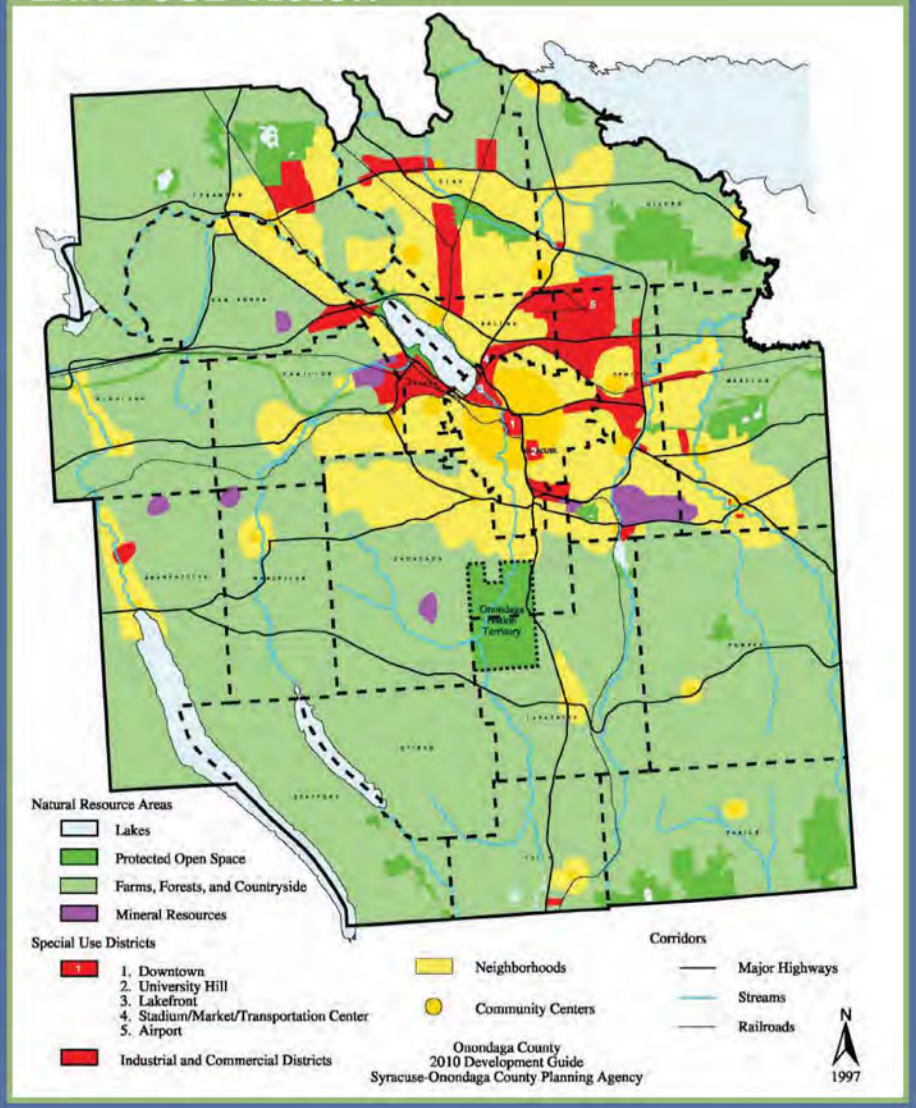
Study Area Boundary and Existing Land Use Map

Future land use

CITY OF SYRACUSE LAND USE PLAN



LAND USE VISION



Population & employment

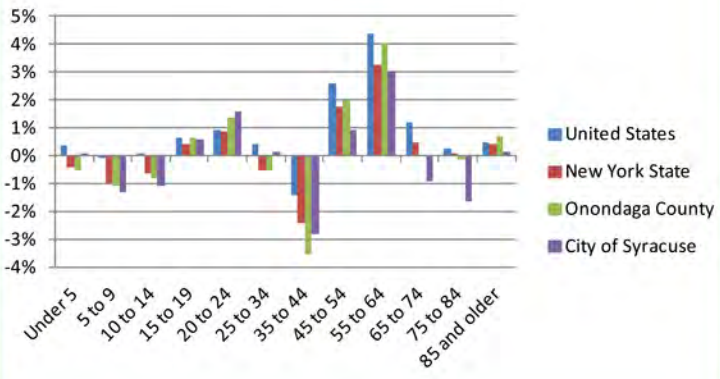
POPULATION

- 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%

Population

	1990	2000	2010	% Growth from 1990 to 2010
United States	248,709,873	281,421,906	308,745,538	19.4%
New York State	17,990,455	18,976,457	19,378,102	7.2%
Onondaga County	468,973	458,336	467,026	-0.4%
City of Syracuse	163,860	147,306	145,170	-12.9%

Population Change by Age 2000-2010



Total Employees

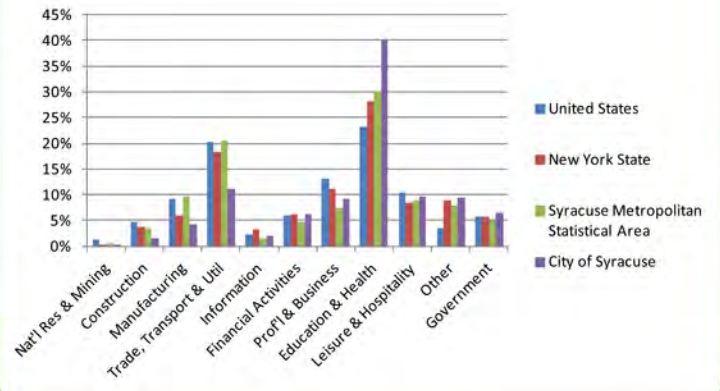
TOTAL EMPLOYEES

- 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

- 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

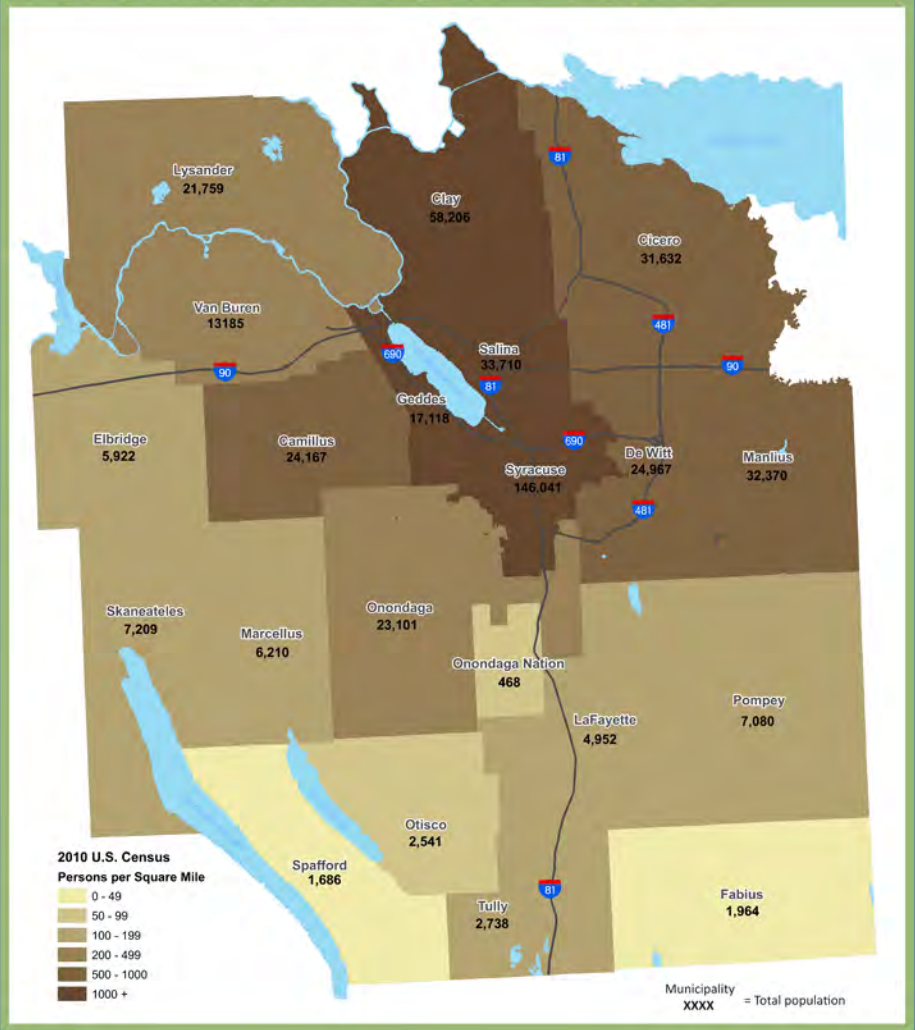
Percent of Employment by Industry 2009



Back to TOC

A closer look at population

POPULATION DENSITY BY TOWN



MEDIAN HOUSEHOLD INCOME BY TOWN

Regional commuting patterns

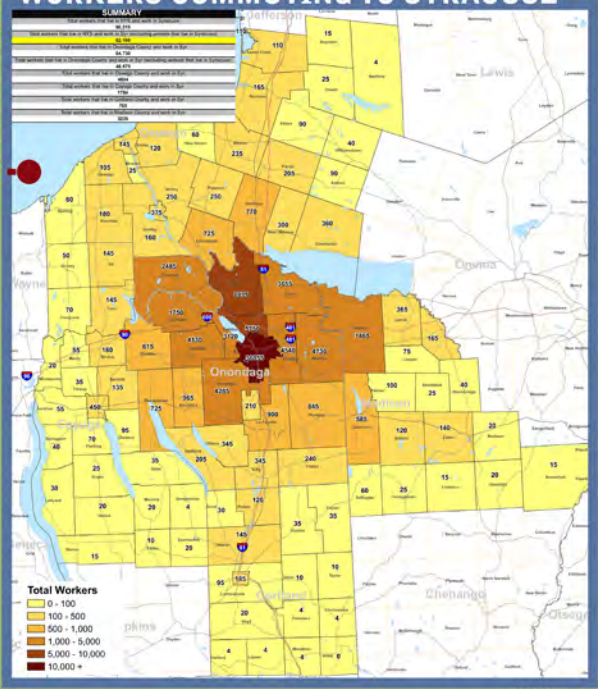
WORKERS COMMUTING TO ONONDAGA COUNTY

2008 ACS 3-Yr Data

COMMUTE PATTERNS

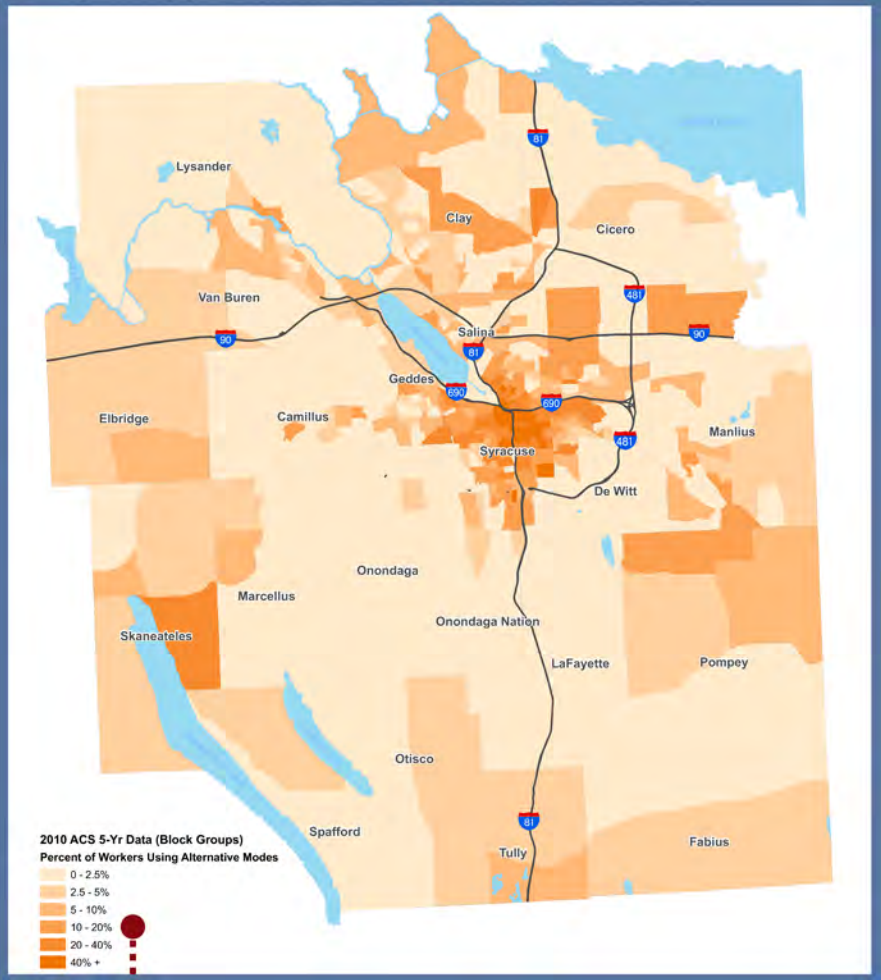
Onondaga County is a regional employment hub, and many of Onondaga County's jobs are located in the City of Syracuse.

WORKERS COMMUTING TO SYRACUSE



2000 Census

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.

Back to TOC

Learning from other urban highway projects

Cities across the nation have faced similar challenges:

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

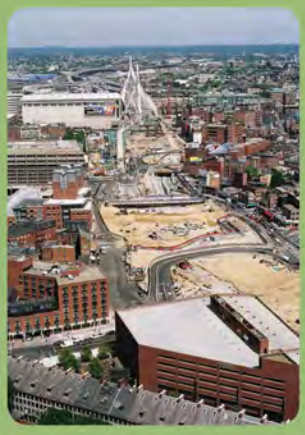
- Project benefited from strong public outreach effort that included neighborhood committees
- Visual impacts can be mitigated through aesthetically pleasing design – clean lines, narrow piers, bright colors and decorative features

Back to TOC

Bury the highway

CENTRAL ARTERY - THE BIG DIG: I-93

BOSTON, MA



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

Lessons learned

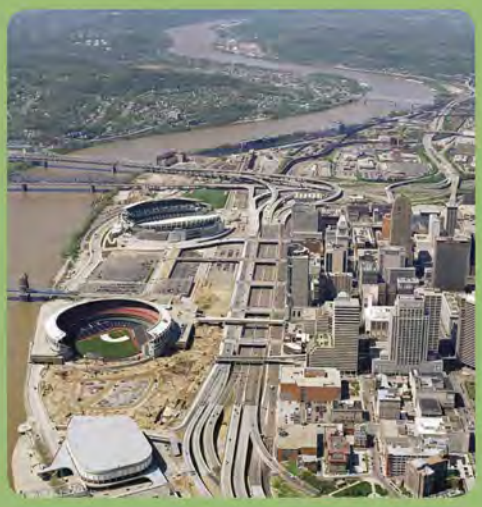
- Cost of burying a highway were significant - final costs of the project were 5 times the original estimate
- Payoffs of burying a highway were also great:
  - Improved connectivity between neighborhoods
  - Improved traffic circulation
  - Enhanced urban environment and stimulated economic development

Back to TOC

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

Back to TOC

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

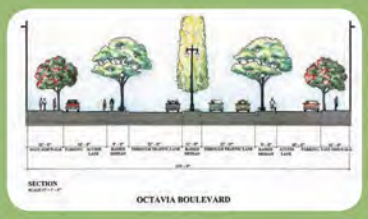
Lessons learned

- 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



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

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

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

Case Study	What people liked	Concerns if applied to Syracuse
Milwaukee **Reconstruct the highway** 	• 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 **Bury the highway** 	• 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 **Depress the highway** 	• 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 **Relocate the highway** 	• 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 **Remove the highway** 	• 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

Lessons Learned: Case Studies of Urban Freeways

This video is about 21 minutes long.

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

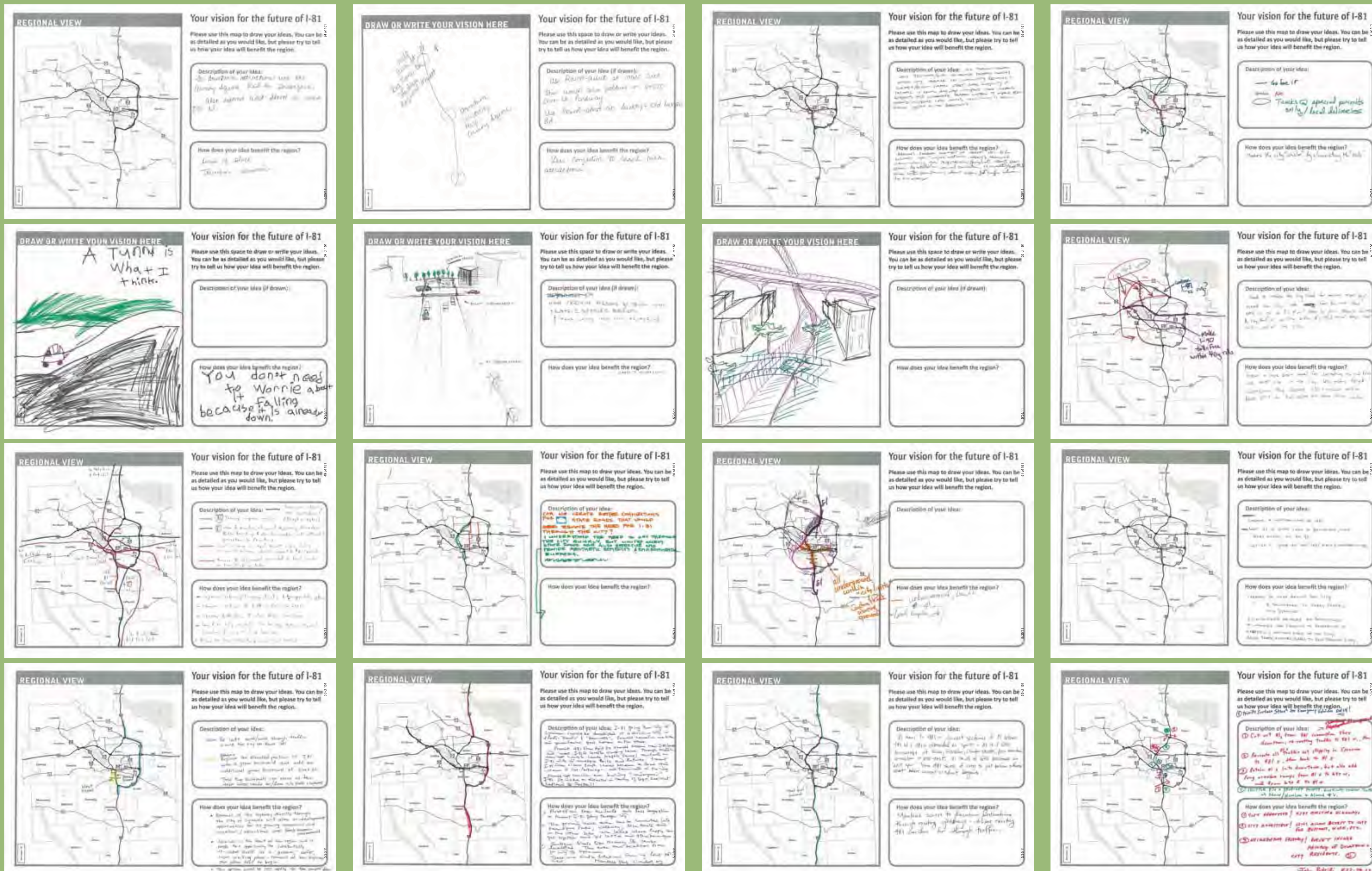
Station 3

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.

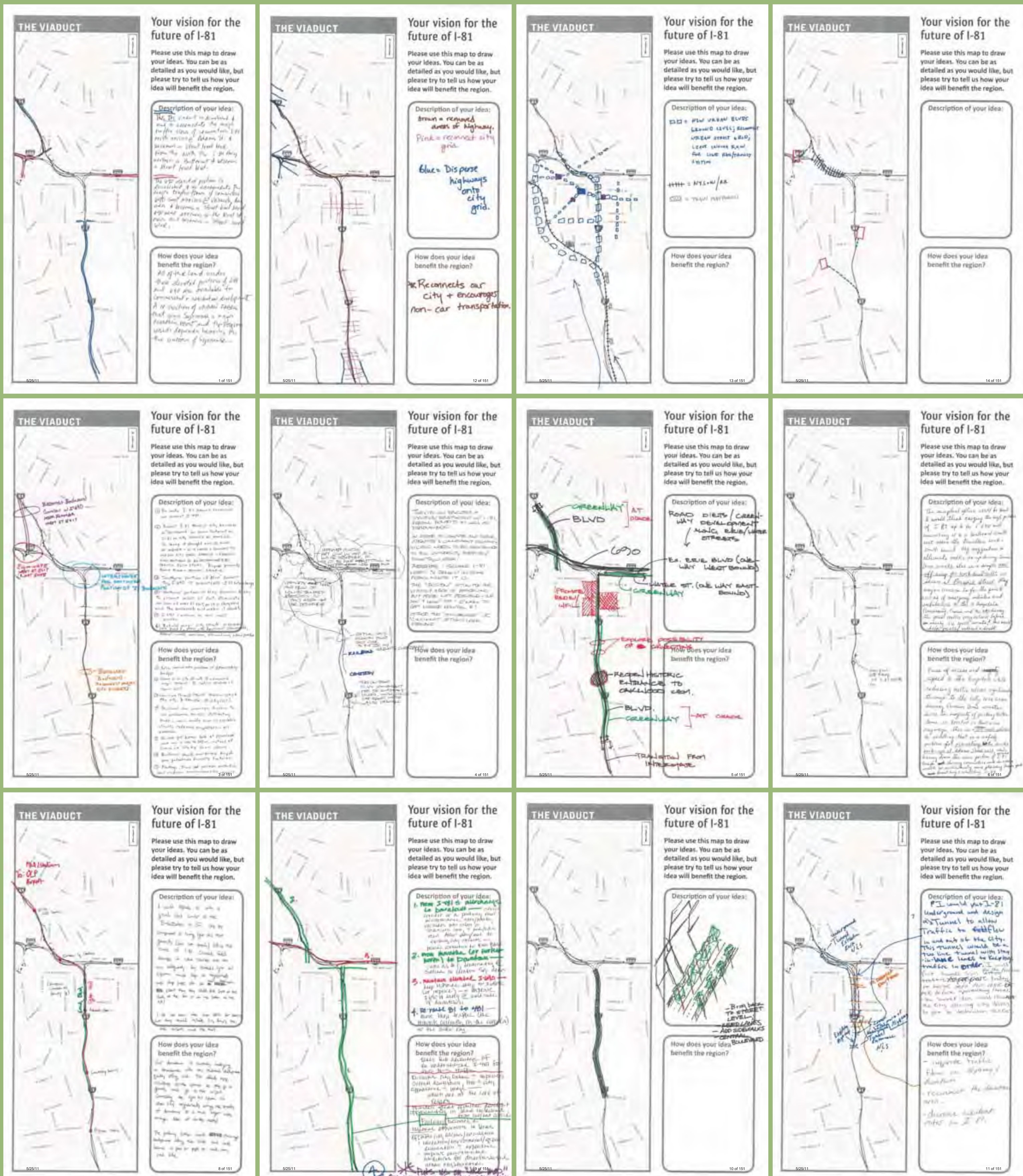
Back to TOC

Your visions for I-81



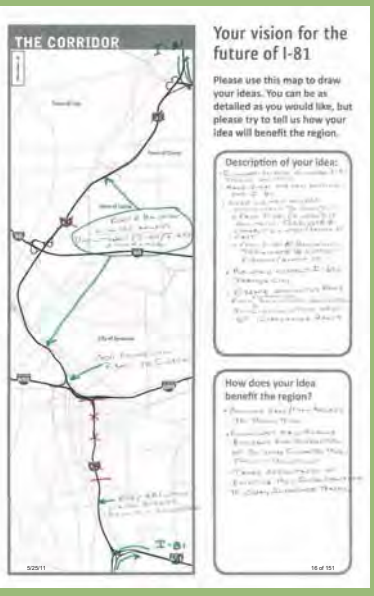
Back to TOC

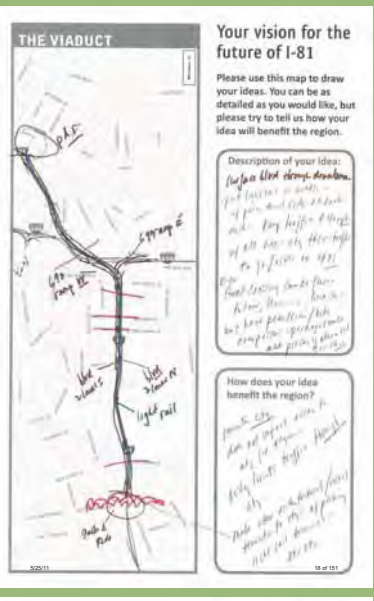
Your visions for I-81

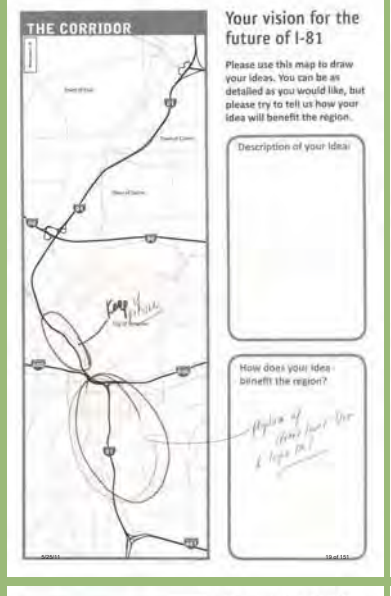


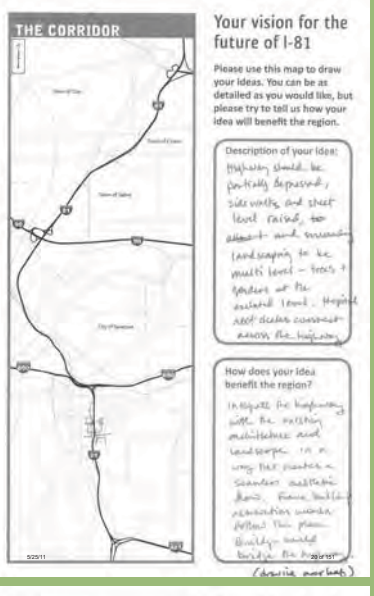
Back to TOC

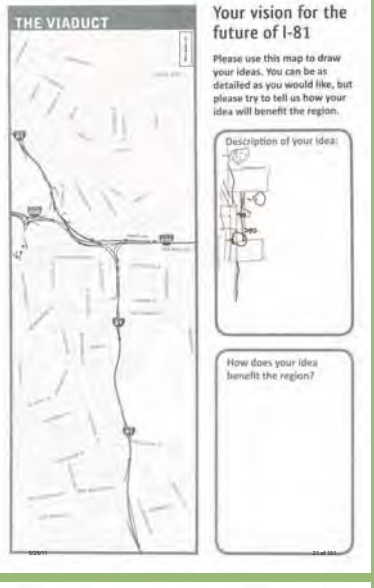
Your visions for I-81

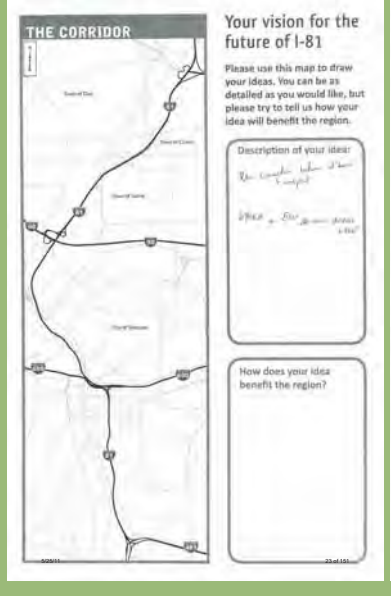


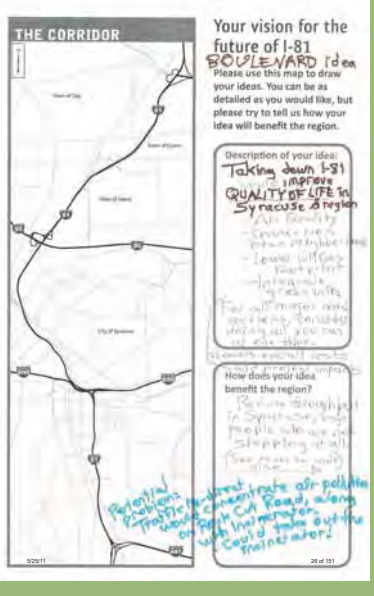


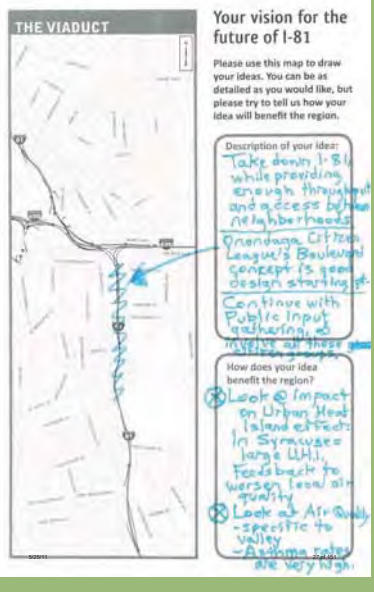


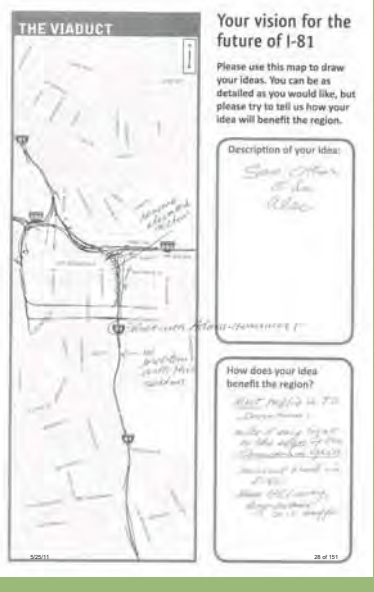












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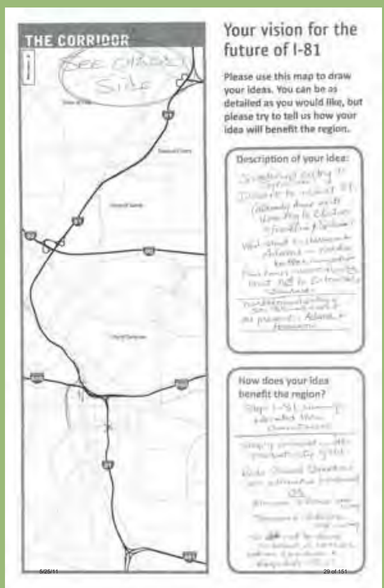
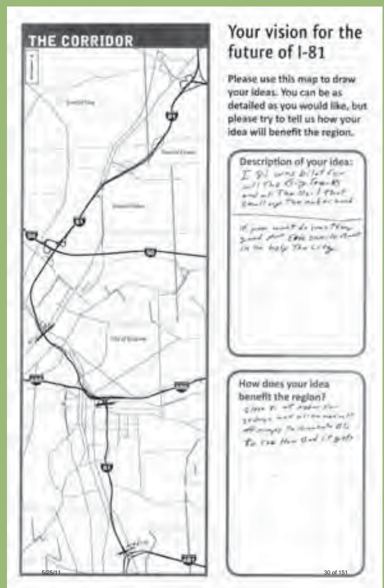
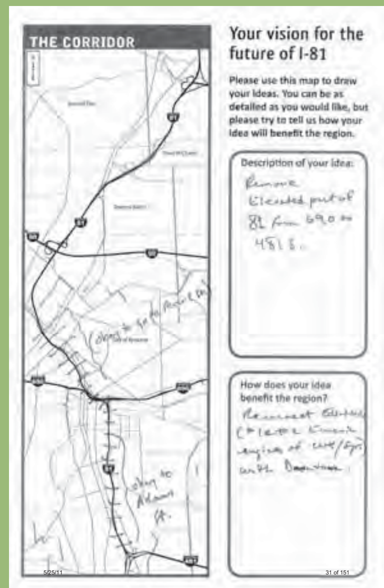
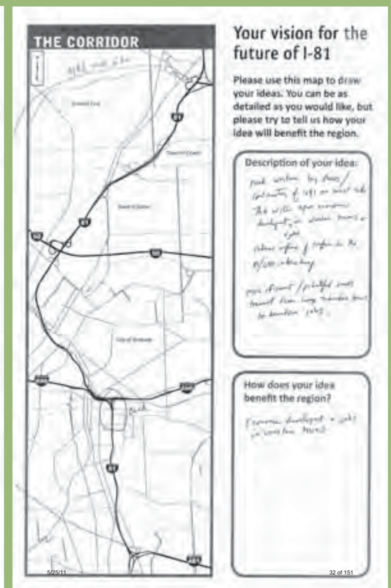
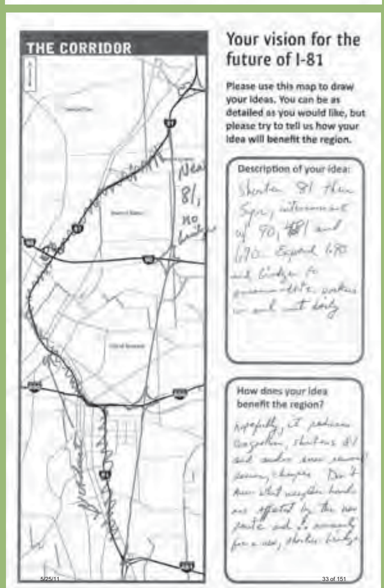
Your visions for I-81

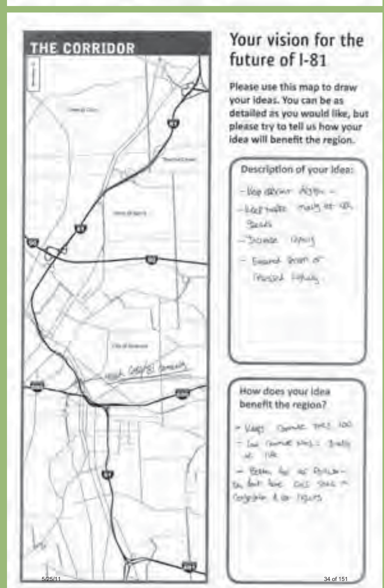


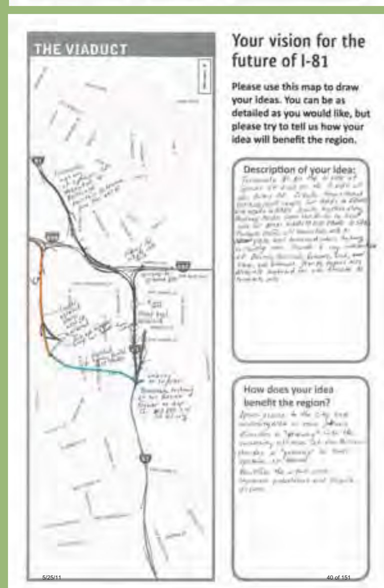


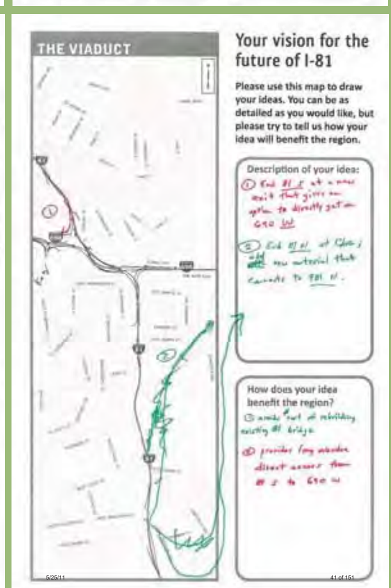


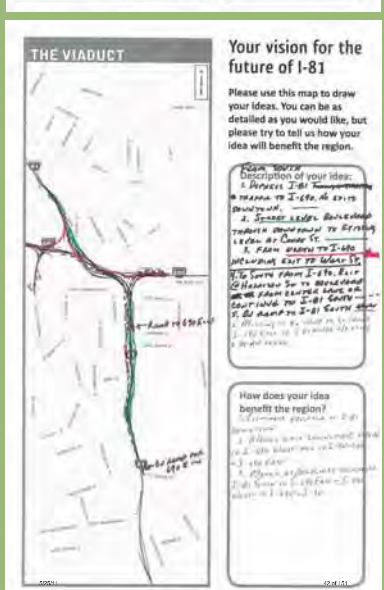


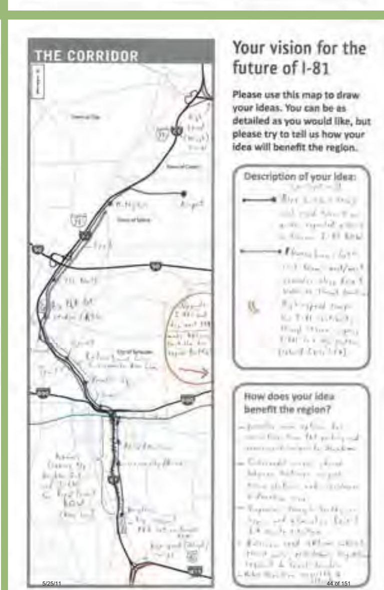


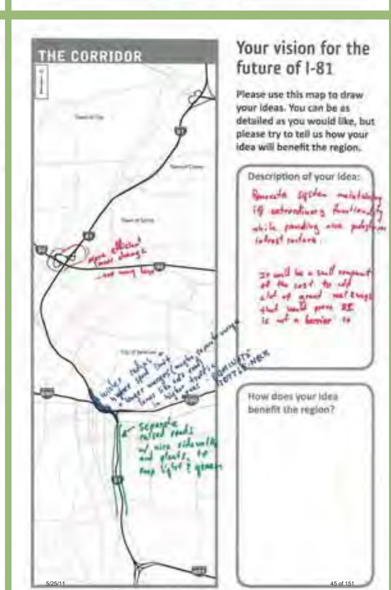












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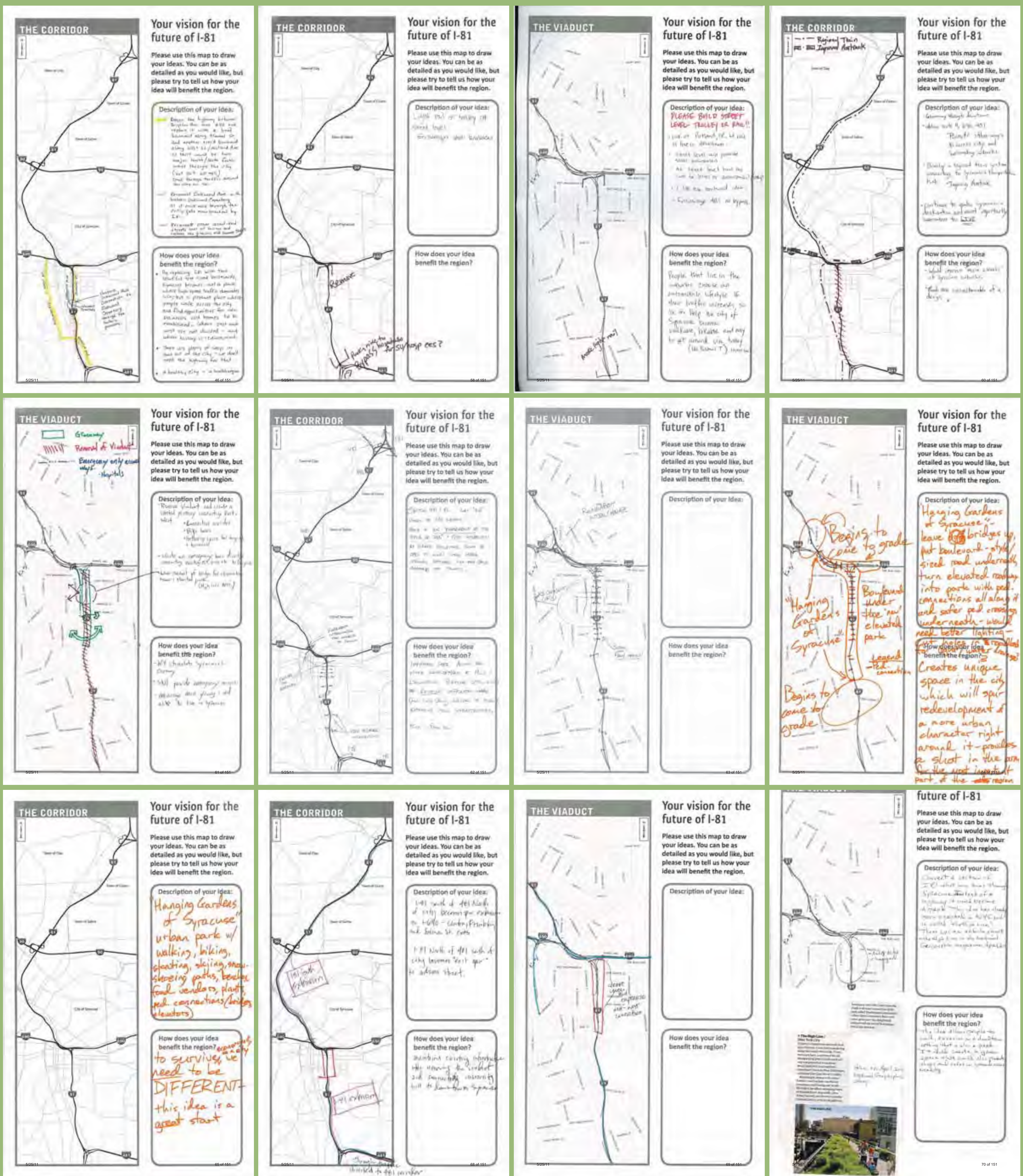
Your visions for I-81



Your visions for I-81

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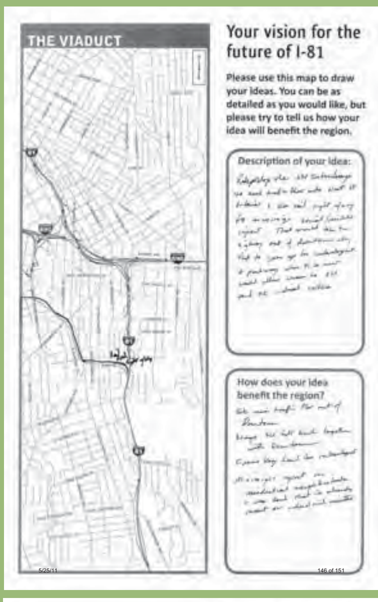

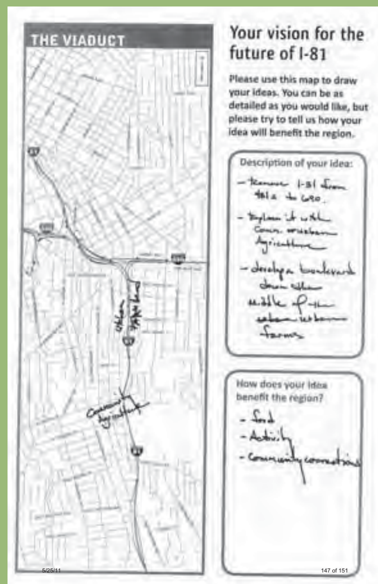

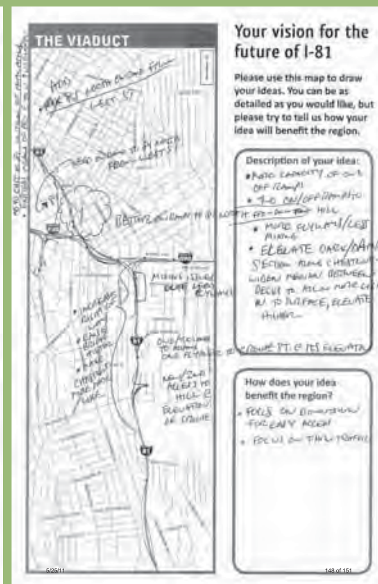

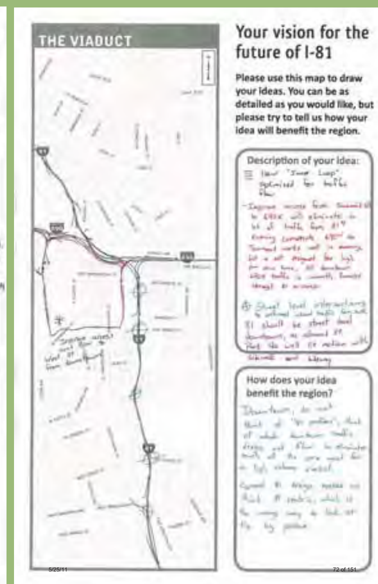

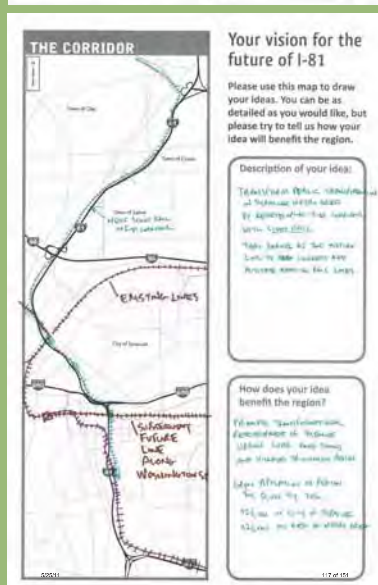

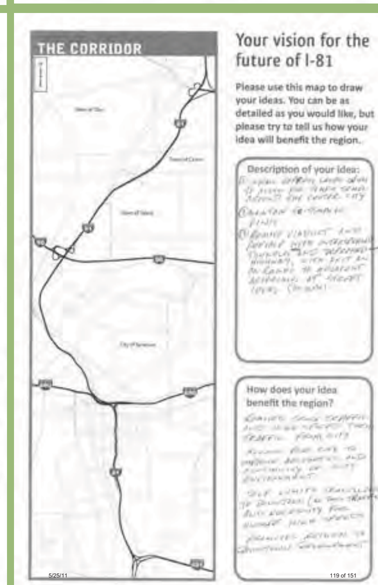

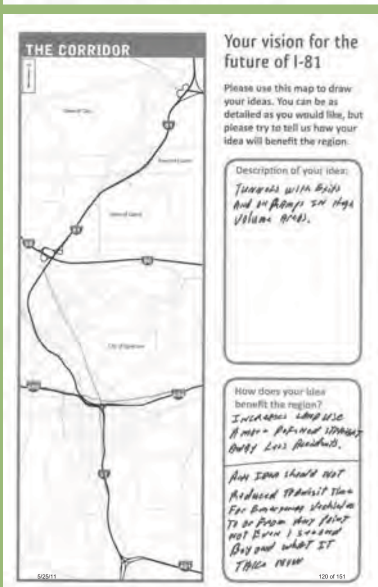

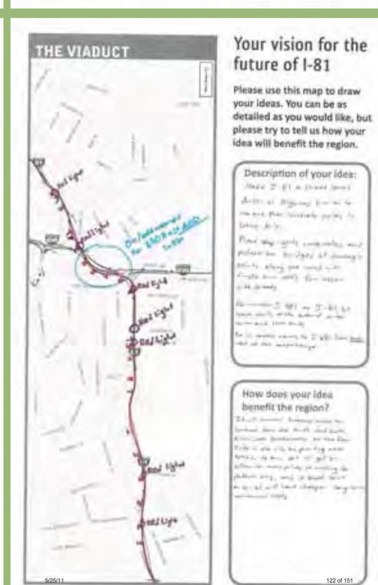

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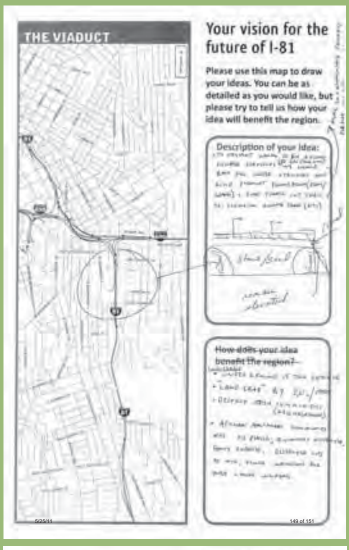
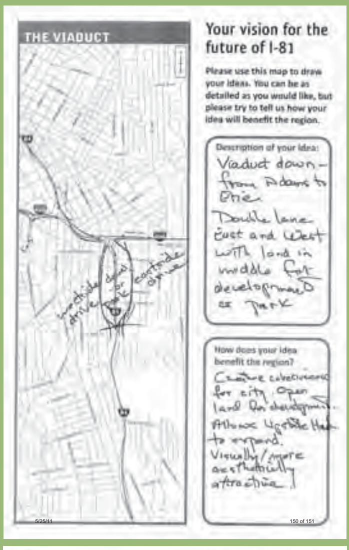
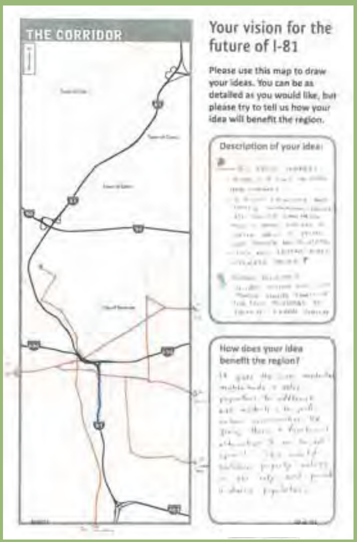
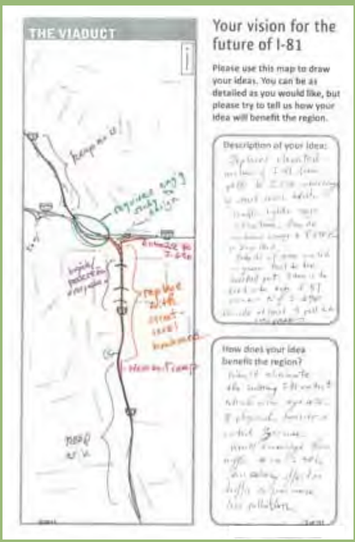
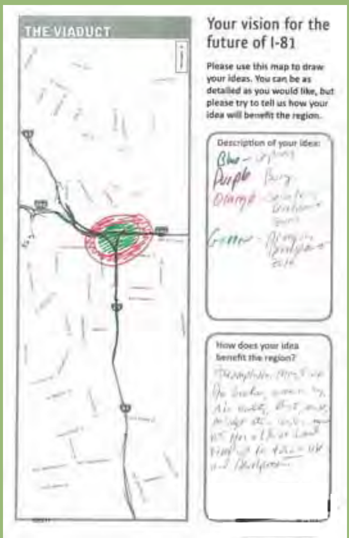
Your visions for I-81

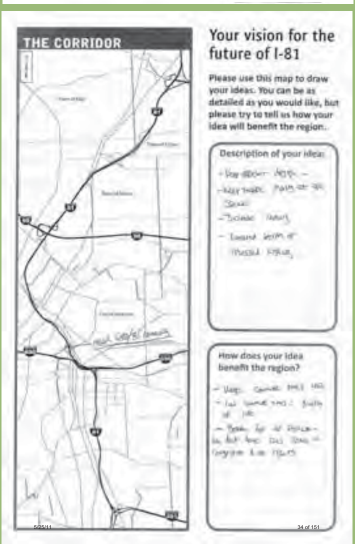


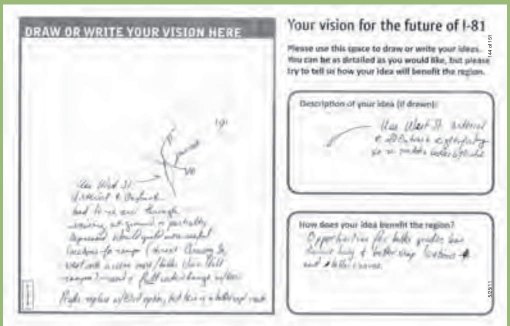


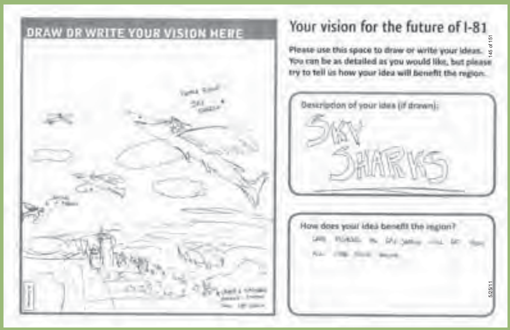


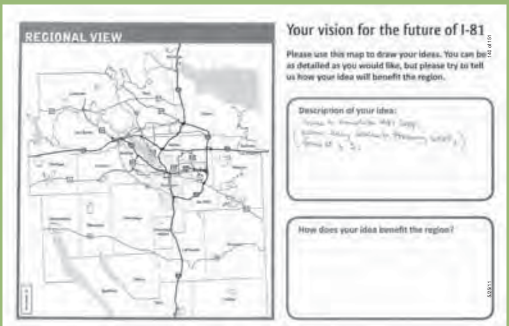


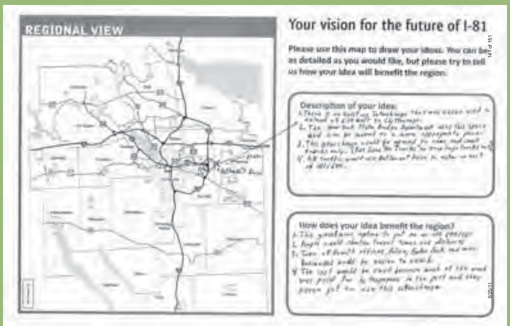


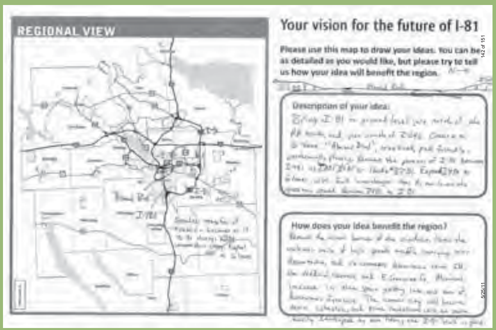


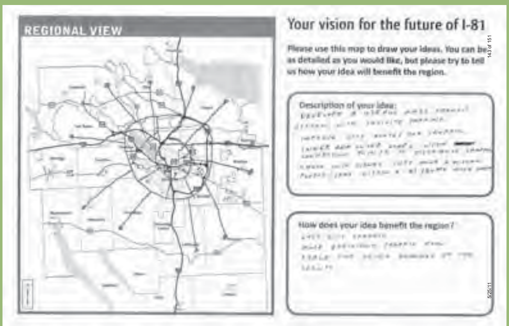












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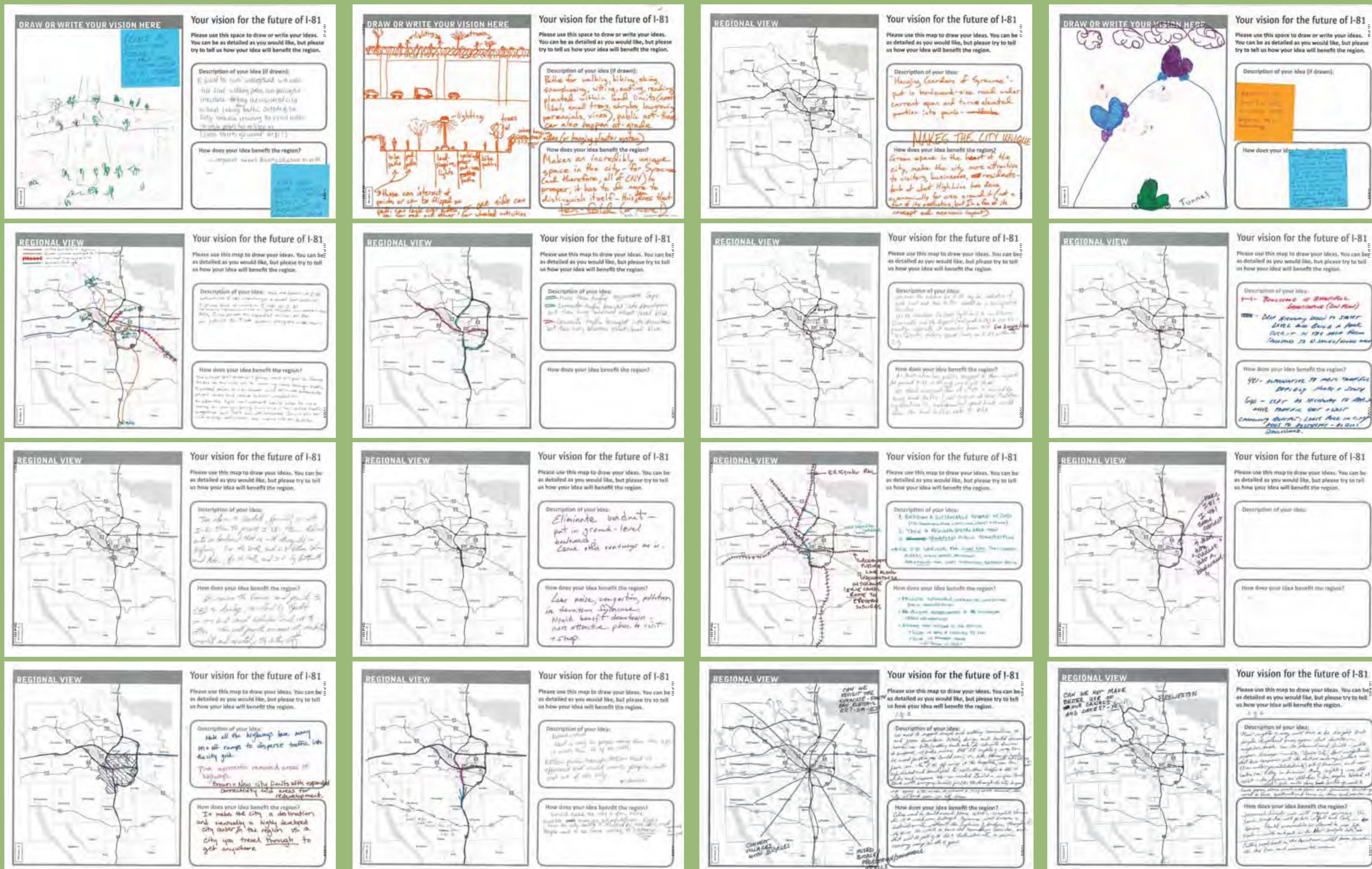
Your visions for I-81



Common categories of concepts

PUBLIC FEEDBACK

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

CATEGORIES

Similar concepts were grouped into six distinct categories.

COMMON CONCEPTS

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

Back to TOC

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

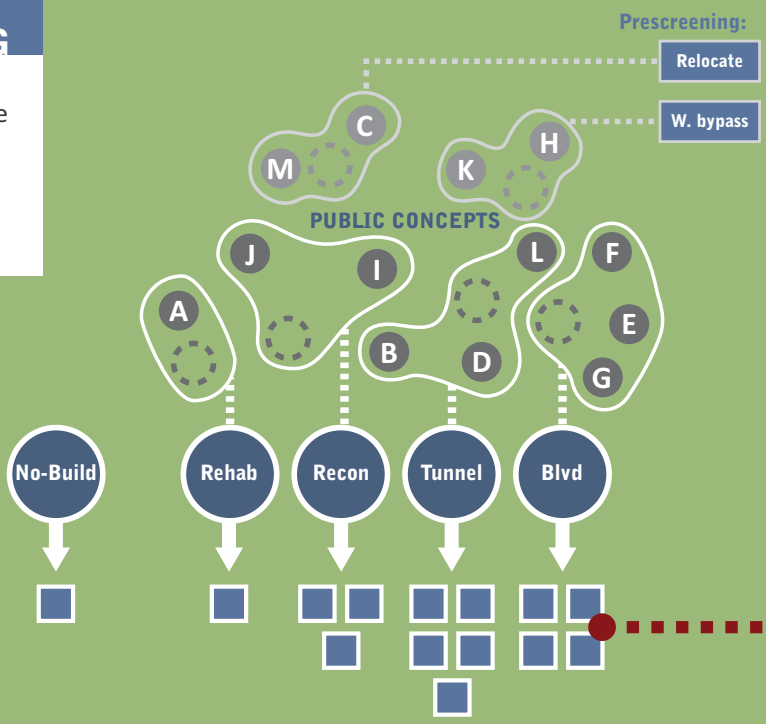
Pre-screen categories prior to stage 1 screening

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.

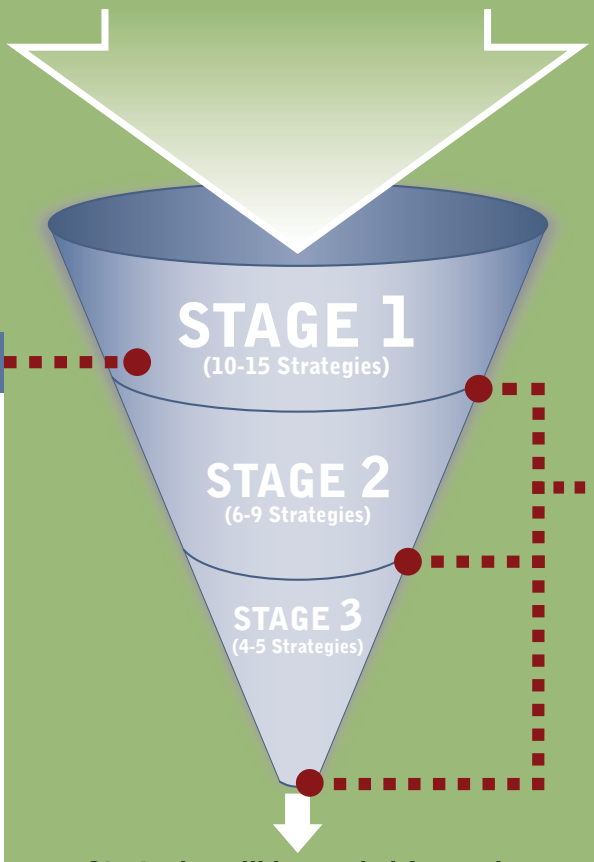
The screening process

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.



The next station describes how these specific strategies will be developed



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

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

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

Back to TOC

Pre-screening:
Relocate I-81 through downtown

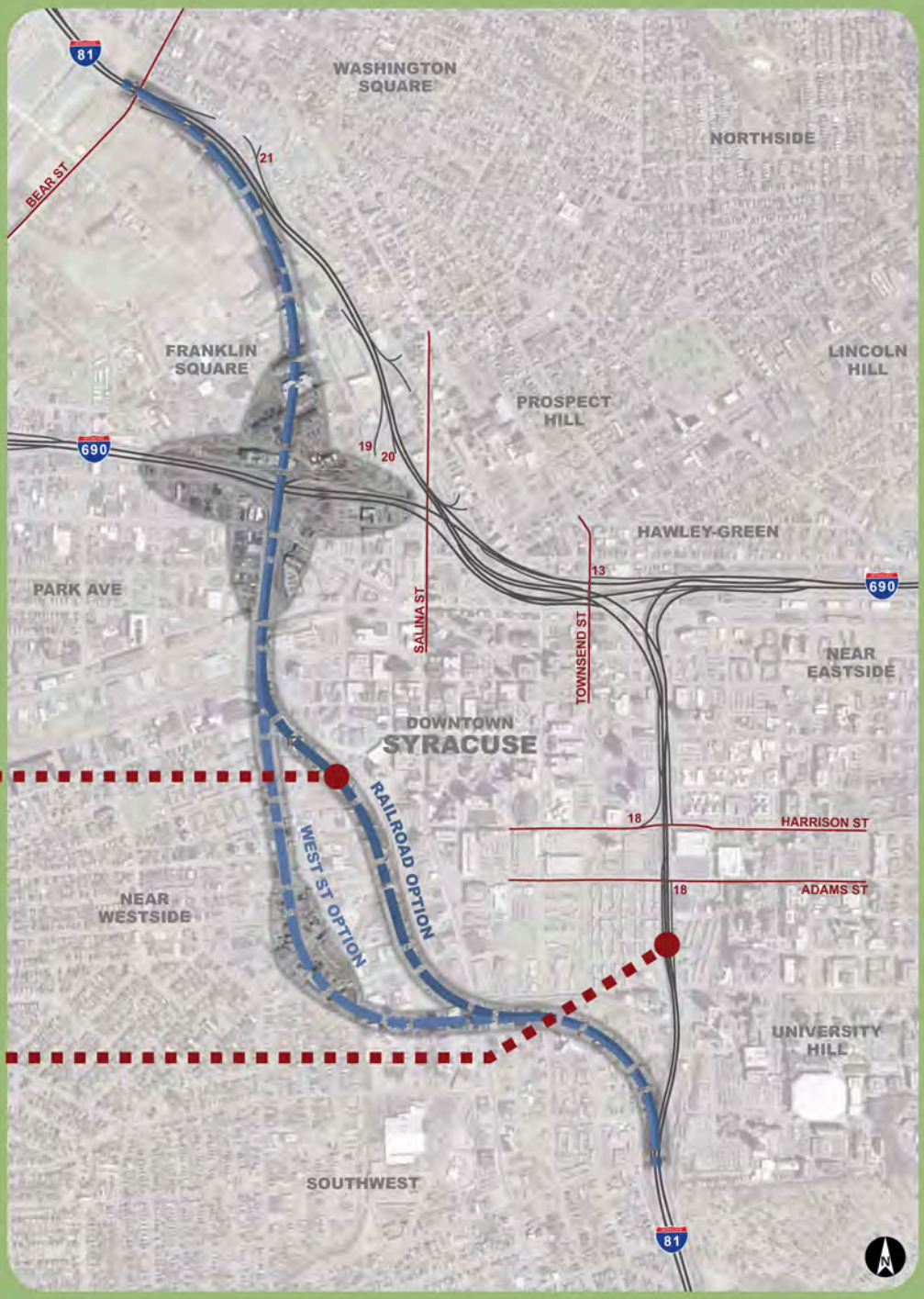
POTENTIAL IMPACTS:

PROPERTY:

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

COMMUNITY RESOURCES:

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



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

Could complement a boulevard on existing I-81 alignment

RECOMMENDATION:

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

Back to TOC

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 futher consideration

Back to TOC

Pre-screening:
Western bypass concepts

POTENTIAL IMPACTS:

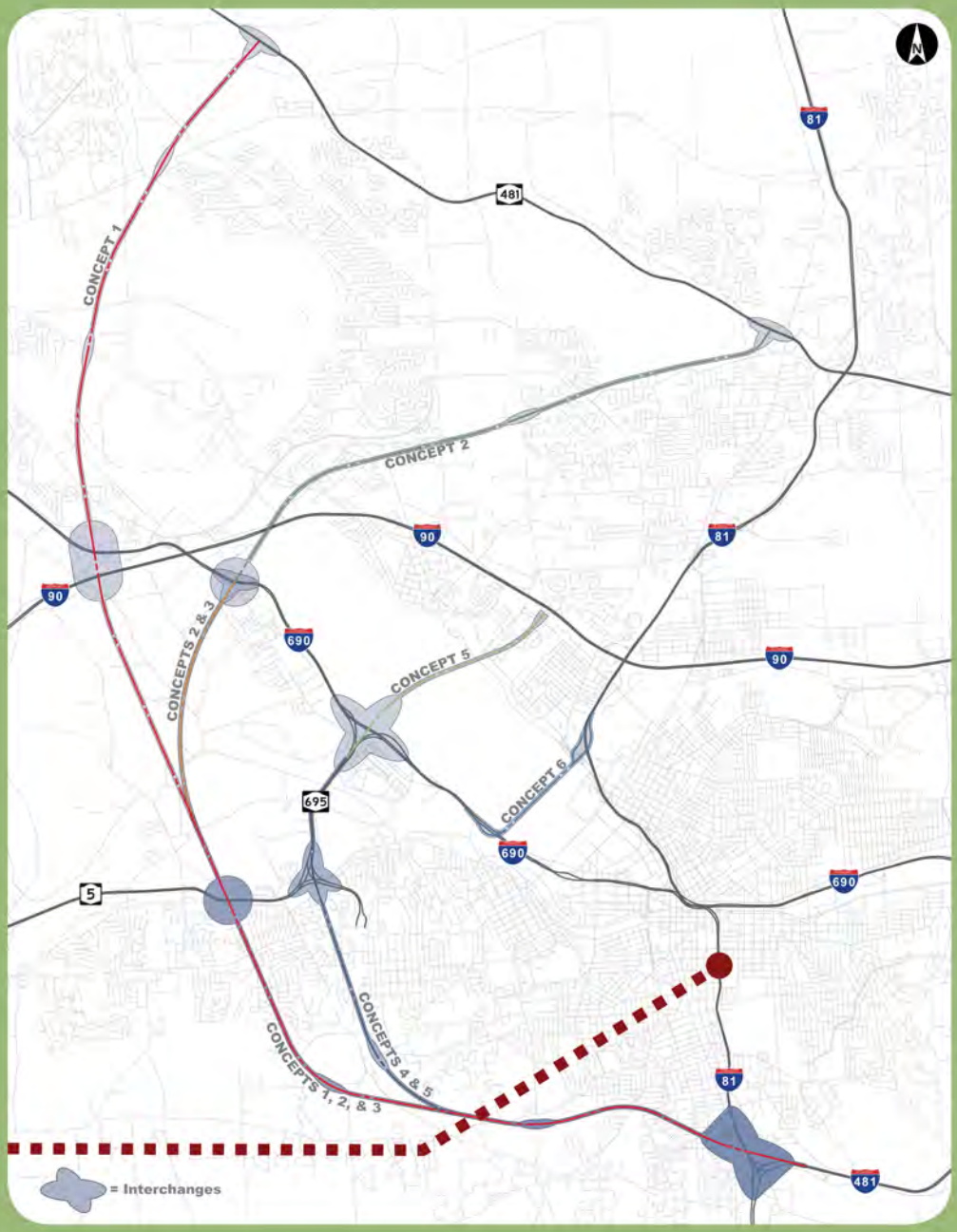
PROPERTY:
- Building to interstate highway standards requires 250'-400' swath of land through established city and town neighborhoods plus land for interchanges

COMMUNITY RESOURCES:
- Impacts various residential neighborhoods, schools, parks, and recreational facilities

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

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

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



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

RECOMMENDATION:

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

Recommendations for Stage 1 screening

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

- **Boulevard**
  - Optional, as part of a Boulevard Strategy:
    - Western bypass
    - West Street/railroad arterial
- **No-Build**
- **Reconstruction**
- **Rehabilitation**
- **Tunnel/Depressed highway**

Back to TOC

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)

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.

Back to TOC

No-Build strategy: defined

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

WHY CONSIDER THIS STRATEGY?

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

WHAT ISSUES WILL THIS STRATEGY ADDRESS?

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

No-Build strategy:
Future issues

Back to TOC

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

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

ROUTE 11 AREA (EXIT 26 & 27)

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

I-690 TO HIAWATHA BLVD

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

I-81/I-690 INTERCHANGE & VIADUCT AREA

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

I-81/I-481 INTERCHANGE

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

Back to TOC

Rehabilitation strategy: defined

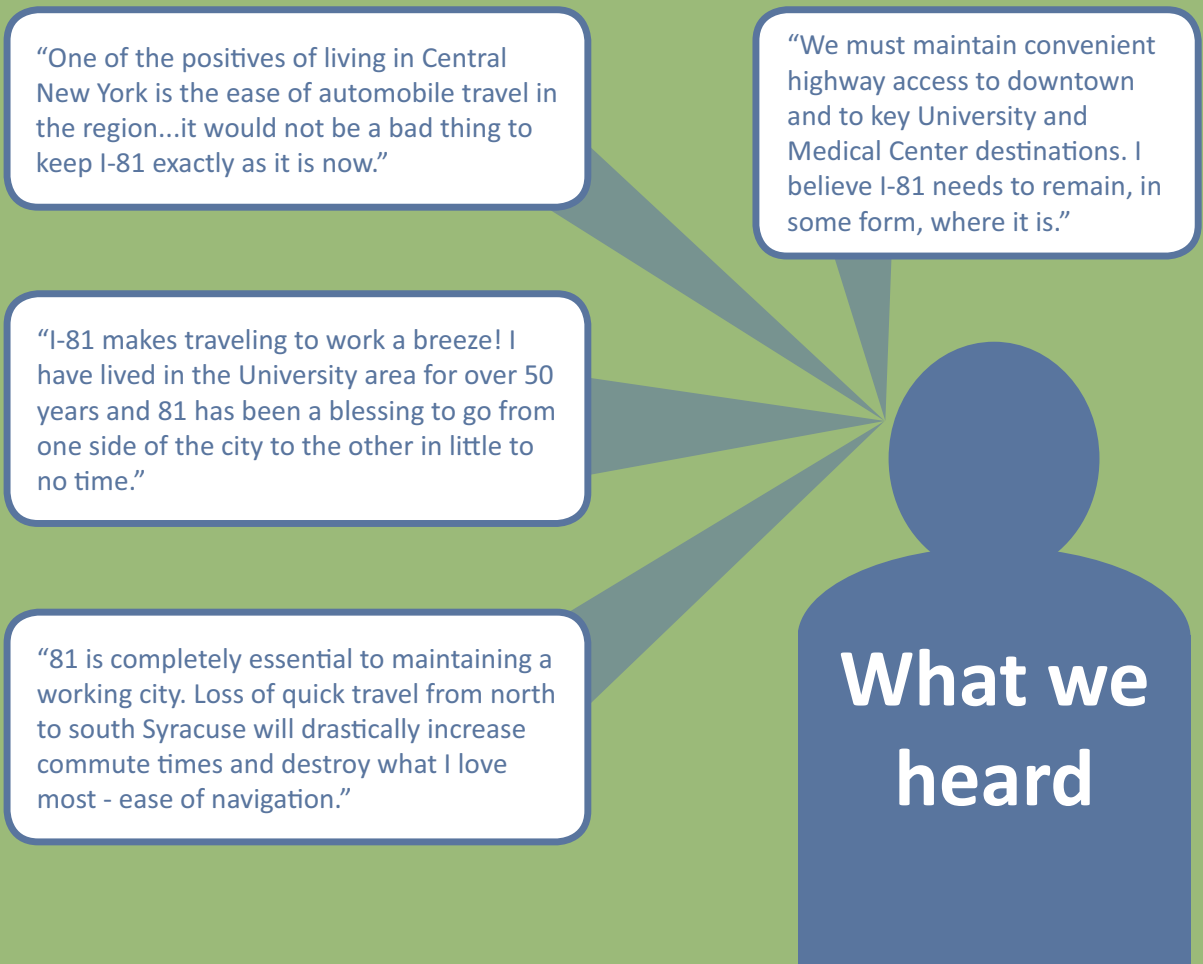
A rehabilitation strategy for I-81 would restore the current bridges and pavement to a "state of good repair" that would last for the next 30-40 years. Some parts of the I-81 viaduct might be widened or changed to improve safety. Some improvements to exit/entrance ramps to downtown and University Hill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



Rehabilitation strategy:
Elements for Stage 1 development

Back to TOC

TAFT RD TO I-481

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

ROUTE 11 AREA (EXIT 26 & 27)

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

7TH NORTH ST TO I-90

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

I-690 TO HIAWATHA BLVD

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

I-81/I-690 INTERCHANGE

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

VIADUCT AREA

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

I-81/I-481 INTERCHANGE

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

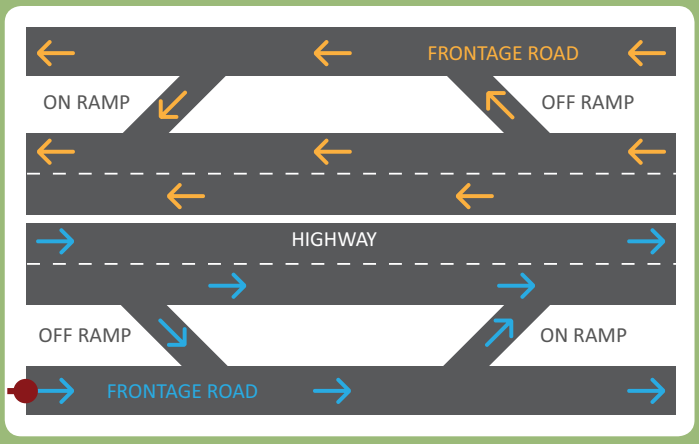
I-81/I-690 INTERCHANGE & VIADUCT AREA

- 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



Rumble strips and reflective pavement markings

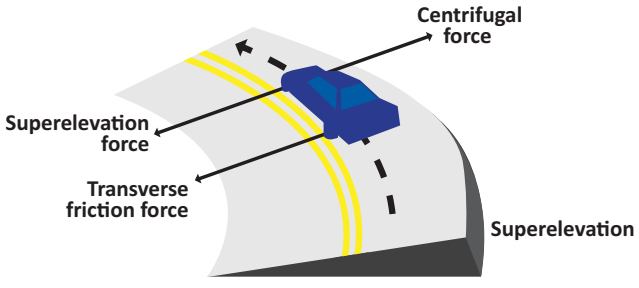
SAFETY AND OPERATIONAL IMPROVEMENTS

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

GEOMETRIC IMPROVEMENTS

- Straightening of sharp curves

Superelevation Diagram



I-81 north of downtown Syracuse

Back to TOC

Tell us what you think

Is there anything missing from this strategy?

Back to TOC

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

What we heard

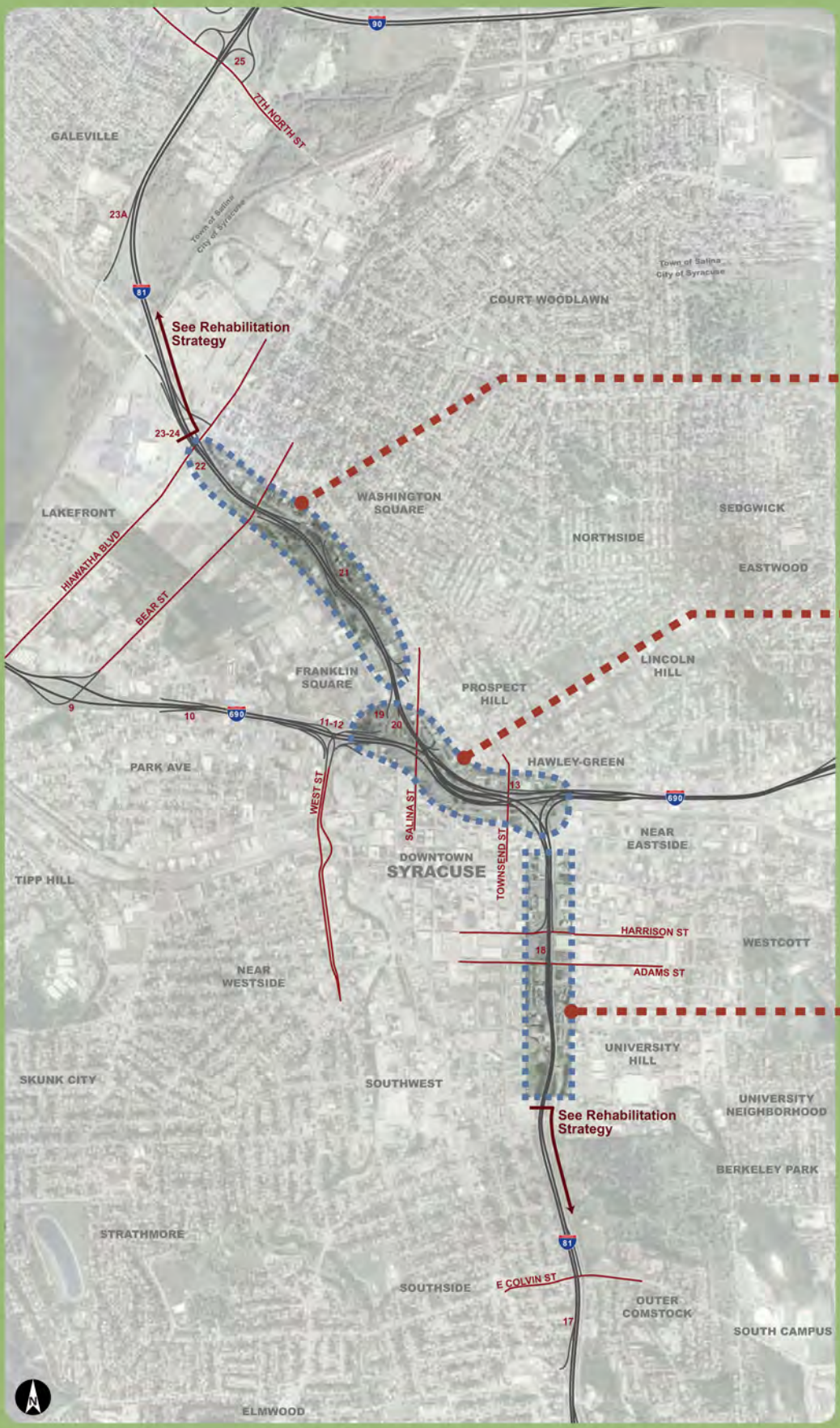
"Keep the current I-81 right-of-way through Syracuse, but make major improvements to the infrastructure (i.e additional lanes, carpool (HOV) lanes, fewer exits and entrance ramps, less curves, etc.). Improve signage, lighting, and safety, too."

"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."

Back to TOC

Reconstruction strategy:
Elements for Stage 1 development



I-690 to HIAWATHA BLVD

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

I-81/I-690 INTERCHANGE

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

VIADUCT AREA

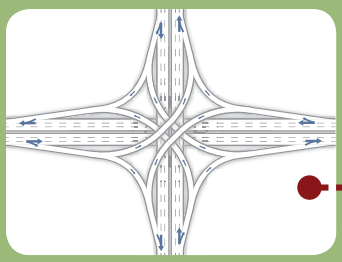
- Remove and replace viaduct bridge
- Identify bridge types with appropriate aesthetics and span lengths
- Review Exit 18 (Adams/Harrison) location for possible changes in relation to I-81/I-690 interchange
- Identify changes to Almond Street in relation to I-81/I-690 interchange

Reconstruction strategy: considerations

FRONTAGE ROADS

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

Frontage road along I-71



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

INTERCHANGE LAYOUT

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

HIGHWAY VIADUCT

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

Seattle viaduct rendering

Modern concrete bridge

Modern steel bridge

Back to TOC

Tell us what you think

Is there anything missing from this strategy?

Back to TOC

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?

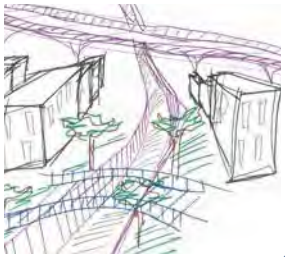
- Significant public support
- Addresses long-term issues of I-81
- Meets regional transportation needs through 2040

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

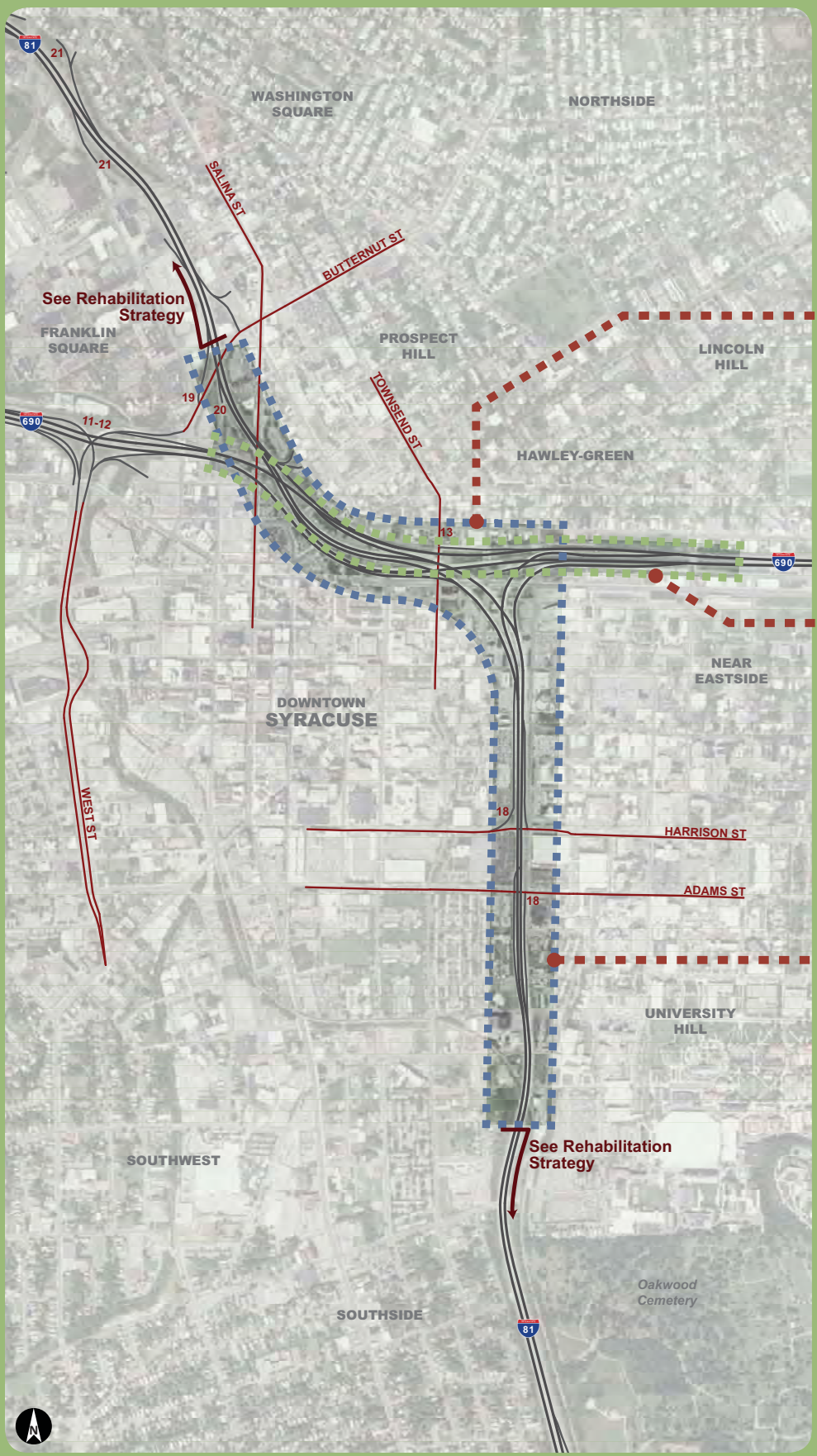
What we heard

"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

Back to TOC

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

Back to TOC

Tell us what you think

Is there anything missing from this strategy?

Back to TOC

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

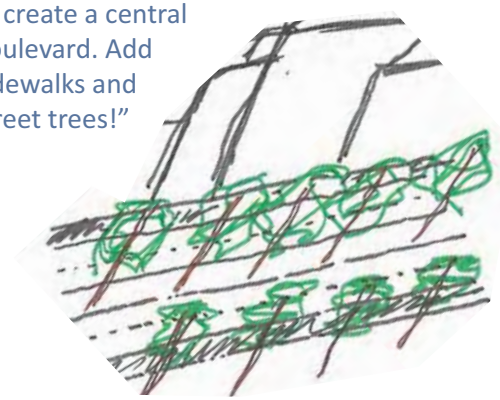
WHAT ISSUES WILL THIS STRATEGY ADDRESS?

- 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."

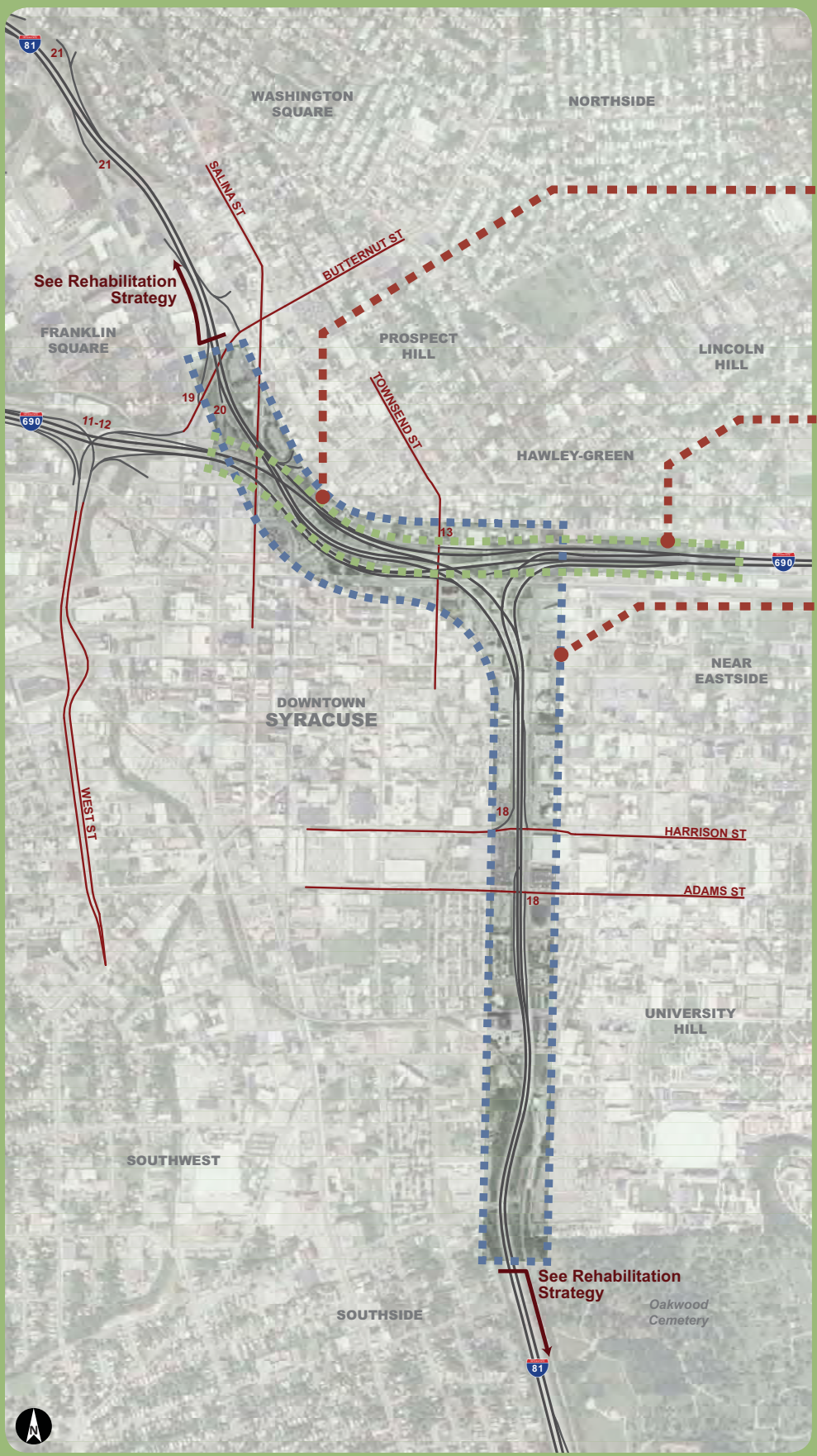
"Bring I-81 to street level to create a central boulevard. Add sidewalks and street trees!"



What we heard

Boulevard strategy:
Elements of Stage 1 development

Back to TOC



I-81/I-690 INTERCHANGE

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

I-690: UNIVERSITY AVE TO WEST ST

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

I-81: OAKWOOD CEMETERY TO BUTTERNUT ST

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

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

NORTHERN & SOUTHERN BOULEVARD LIMITS

Review other terminus suggestions for the boulevard concept including:

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

Boulevard strategy: Associated concepts

LOCAL STREET CONSIDERATIONS

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

ROUTE 5/695

- Rebuild/reconnect ramps and interchange

WESTERN BYPASS (OPTIONAL)

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

I-81/I-481 INTERCHANGE

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

I-81/I-481 INTERCHANGE

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

I-481

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

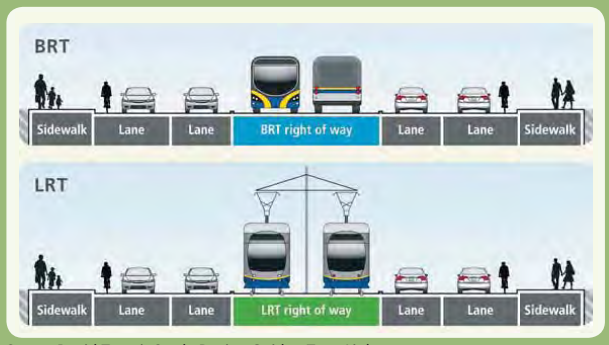
WEST ST AND RAILROAD CORRIDOR (OPTIONAL)

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

Boulevard strategy: considerations

BOULEVARD CONSIDERATIONS

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



Surrey Rapid Transit Study Design Guide - TransLink

West Side Highway - New York, NY

Harbor Drive - Portland, OR

Embarcadero - San Francisco, CA

Octavia Boulevard - San Francisco, CA

Octavia Boulevard - San Francisco, CA

Embarcadero - San Francisco, CA

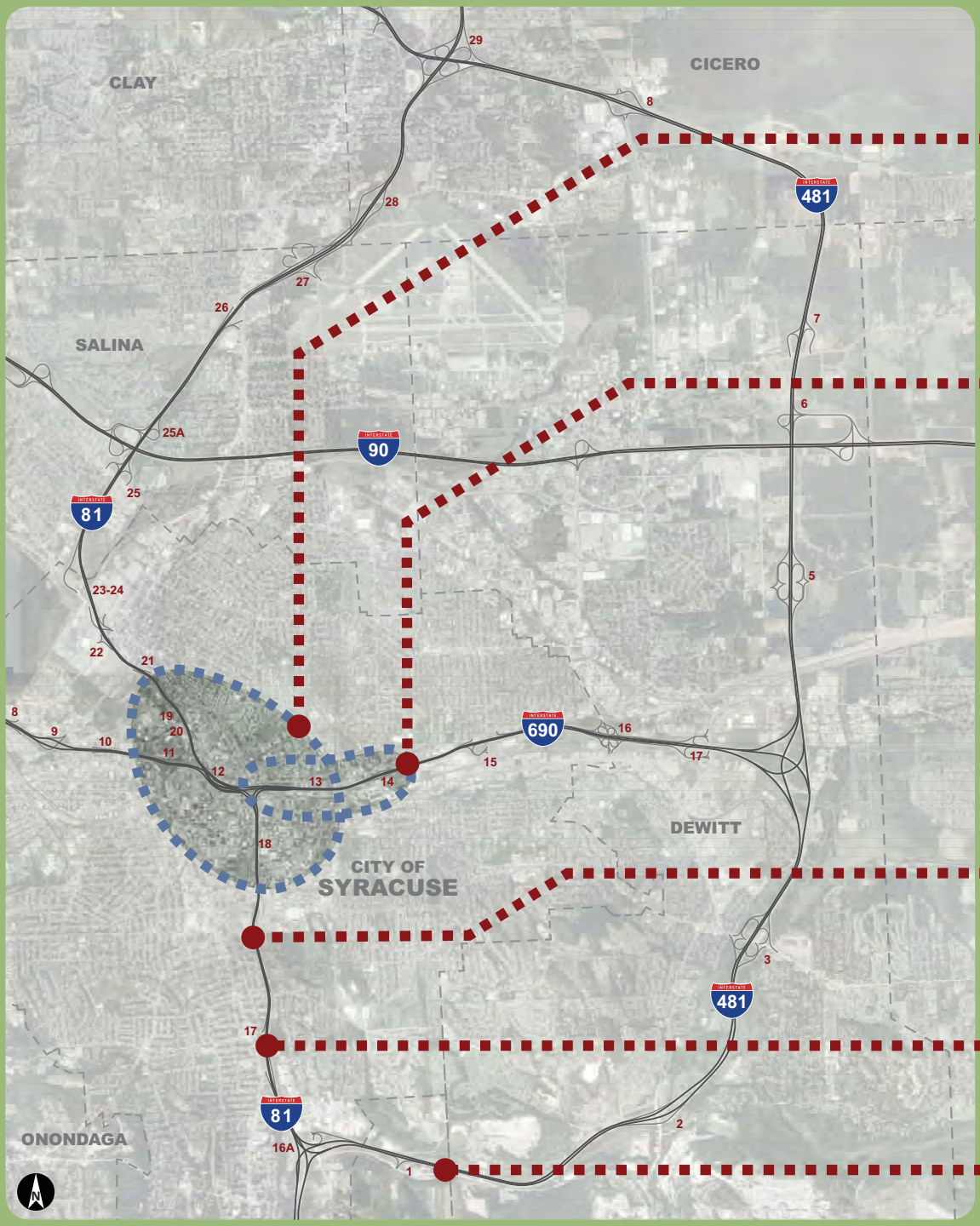
Back to TOC

Tell us what you think

Is there anything missing from this strategy?

Common concepts

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



Develop surface street modifications to facilitate interstate access and improved connectivity

Consider frontage road for improved access to University Hill

Consider a new Castle St interchange (full or partial)

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

Consider a new I-481 interchange for University Hill Access

OTHER REGION-WIDE STRATEGIES:

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

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.

Existing Transit System

Transit Benefits

Image Source: CENTRO

ECONOMIC

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

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

Image Source: CENTRO

Image Source: SMTC

ENVIRONMENTAL

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

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

Transit Benefits

Image Source: CENTRO

QUALITY OF LIFE

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

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

Image Source: CENTRO

ENERGY

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

Image Source: CENTRO

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

Transit System Analysis: NEEDS

The I-81 Challenge project presents an opportunity to evaluate and improve the future of the transportation system for all modes and users.
An improved transit system can help:

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

Image Source: CENTRO


Image Source: CENTRO

Back to TOC

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

Transit System Analysis: GOALS & OBJECTIVES

GOAL: **IMPROVE SERVICE AND MOBILITY WITHIN THE CITY OF SYRACUSE**

OBJECTIVE:

A Improve and expand service between key destinations in the City, including residential areas, employment centers, health care facilities, educational institutions, and cultural resources.

B Reduce single-vehicle trips and parking demand in the downtown and on University Hill by generating new ridership through increased mobility within, and between, those areas.

C Develop transit corridors to support sustainable land use and economic growth within the City.

D Make transit more attractive by reducing transit travel time, improving transit stops and on-board amenities, providing rider information, and branding key corridors.

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

OBJECTIVE:

A Reduce regional transit travel time to be more comparable to commuter vehicle travel time.

B Expand direct service between suburban communities and major employment centers in the City, in particular, downtown and University Hill.

C Provide the potential for transit-oriented development in suburban communities.

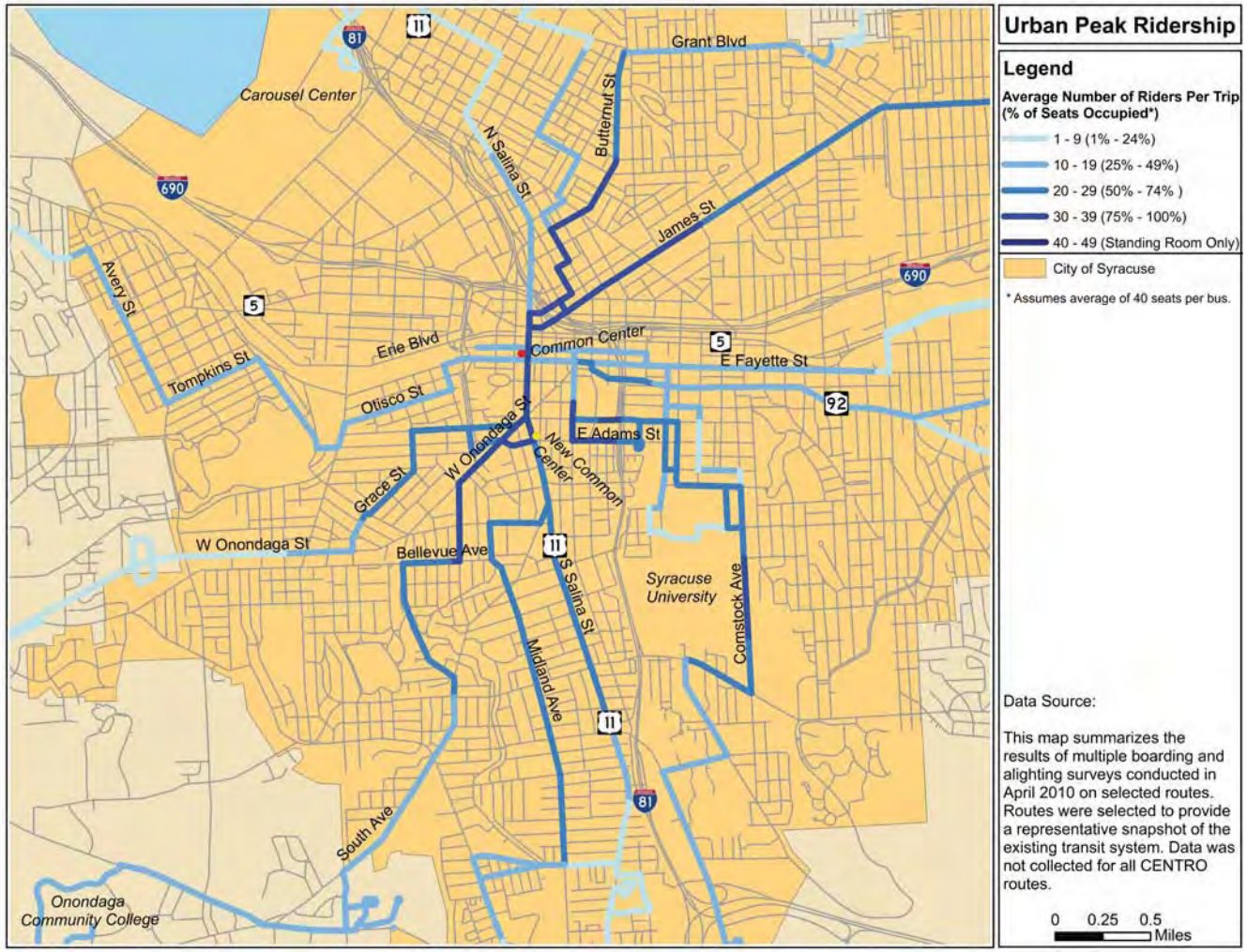
D Make transit more attractive to suburban commuters by providing transit-stop and on-board amenities.

Are there other needs this transit system analysis should consider?

Back to TOC

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

Urban Peak Ridership



Urban Peak Ridership

Legend

Average Number of Riders Per Trip (% of Seats Occupied*)

- 1 - 9 (1% - 24%)
- 10 - 19 (25% - 49%)
- 20 - 29 (50% - 74%)
- 30 - 39 (75% - 100%)
- 40 - 49 (Standing Room Only)
- City of Syracuse

* Assumes average of 40 seats per bus.

Data Source:

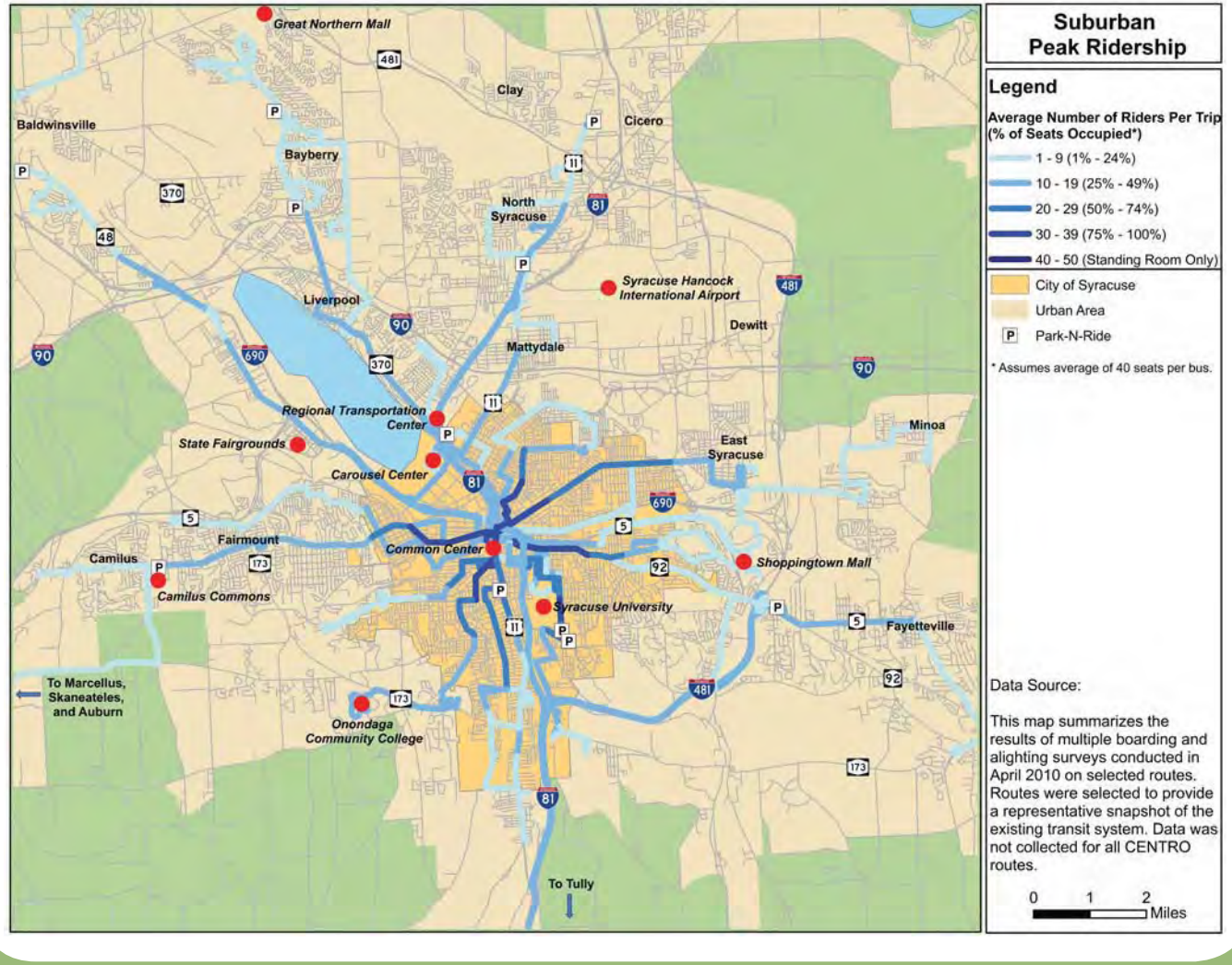
This map summarizes the results of multiple boarding and alighting surveys conducted in April 2010 on selected routes. Routes were selected to provide a representative snapshot of the existing transit system. Data was not collected for all CENTRO routes.

0 0.25 0.5 Miles

MAP CONCLUSIONS

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

Suburban Peak Ridership



MAP CONCLUSIONS

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

Transit Enhancements

Image Source: Ian Fisher

BUS-ONLY LANES

WHAT IS IT?

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

WHAT ARE THE BENEFITS?

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

Estimated Average Cost
New Lane Construction: $2,000,000/mile*
Restripe Existing Lane: $25,000/mile*

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

BUS PULL-OUTS

WHAT IS IT?

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

WHAT ARE THE BENEFITS?

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

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

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


Image Source: Stantec Consulting Services, Inc.

Transit Enhancements

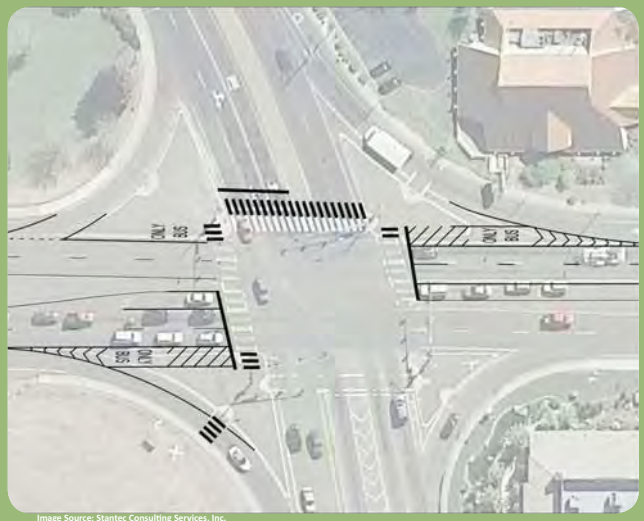


Image Source: Stantec Consulting Services, Inc.

QUEUE JUMP LANES

WHAT IS IT?

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

WHAT ARE THE BENEFITS?

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

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

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

TRANSIT SIGNAL PRIORITY

WHAT IS IT?

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

WHAT ARE THE BENEFITS?

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

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

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

Image Source: Chris Phan October 2005

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

Back to TOC

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

Rider Amenities

Image Source: Stantec Consulting Services, Inc.

Image Source: ABC 7 San Francisco, CA

Rider amenities increase accessibility and usability of the transit system.

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

Image Source: NJ TRANSIT

Image Source: NJ TRANSIT

IN-THE-WORKS

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

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

Image Source: WMATA

What amenities are important to you?

Back to TOC

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

Back to TOC

Transit Corridor Enhancements

BUS RAPID TRANSIT (BRT)

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

ADVANTAGES

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

DISADVANTAGES

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

LIGHT RAIL TRANSIT (LRT)

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

ADVANTAGES

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

DISADVANTAGES

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

Image Source: Los Angeles County Metropolitan Transportation Authority

Image Source: Stantec Consulting Services, Inc.

Back to TOC

LOW Intensity BRT Example:
Mixed Traffic with Queue Jumpers
CDTA BusPlus: Albany, NY

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

Image Source: Times Union

Image Source: Times Union

Image Source: CDTA

BUSPLUS FACTS:

Location: Albany – Schenectady, NY

Length: 17 miles – 18 stations

Time to Construct: 2 years

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

Opened: 2011

Cost to Maintain: $15 million per year

Ridership: 10,000 per day

Fare: One-way pass $2.00
All-day pass $4.00

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

SUCCESS STORY

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

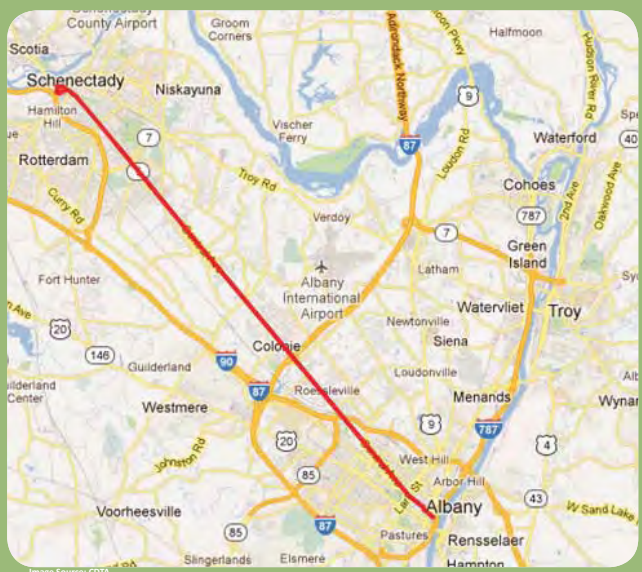


Image Source: CDTA

MEDIUM Intensity BRT Example:
Bus-Only Lanes
RTA HealthLine: Cleveland, OH

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.

Image Source: Steven Litt, The Plain Dealer

Image Source: Joshua Gunter, The Plain Dealer

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 R.O.W.

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.

Image Source: Cleveland RTA

Back to TOC

HIGH Intensity BRT Example:
Designated Transit Way
Los Angeles Metro Orange Line

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

Image Source: Metro Transportation Library and Archive

Image Source: user lensovet:Wikipedia.com

ORANGE LINE FACTS:

Location: Los Angeles, CA

Length: 14 miles – 14 stations

Time to Construct: 3 years

Construction Cost: $322 million total*
$23 million per mile*

Opened: 2005

Annual Operating Costs: $24 million

Ridership: 25,485 per day

Fare: One-way pass $1.50
All-day pass $5.00

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

SUCCESS STORY

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

Image Source: Los Angeles County Metro

What do you think?

I like BRT because...

I don't like BRT because...

LOW Intensity LRT Example:
Streetcar Circulator
Little Rock River Rail

RIVER RAIL FACTS:

Location: Little Rock, AK

Length: 3.4 miles – 15 stations

Time to Construct: 1.5 years

Construction Cost: $27 million total*
$8 million per mile*

Opened: 2004

Annual Operating Costs: $450,000

Ridership: 800 per weekday
1,500 Saturday

Fare: One-way pass $1.00
All-day pass $2.00

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

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.

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.

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

Image Source: Central Arkansas Transit Authority

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

Back to TOC

MEDIUM Intensity LRT Example:
Existing Rail
New Jersey Transit River Line

TRANSIT FACTS:

Location: Camden – Trenton, NJ

Length: 34 miles – 20 stations

Time to Construct: 5 years

Construction Cost: $1.1 billion total*
$32.4 million per mile*

Opened: 2004

Annual Operating Costs: $18 million

Ridership: 9,000 per day

Fare: One-way pass $1.50
All-day pass: N/A

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

SUCCESS STORY

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

Image Source: Stantec Consulting Services, Inc.

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

Image Source: Stantec Consulting Services, Inc.

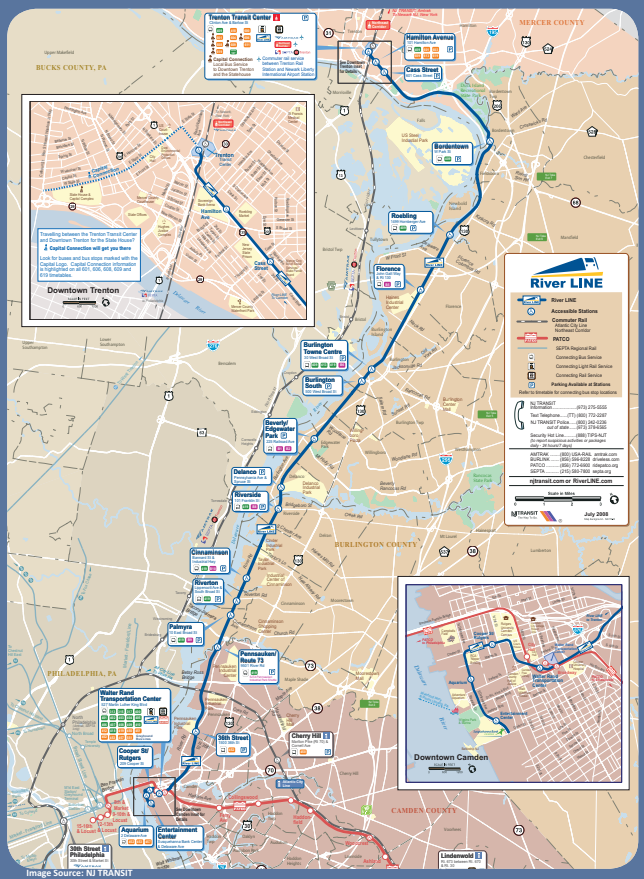


Image Source: NJ TRANSIT

HIGH Intensity LRT Example:
New Rail
Phoenix Metro Light Rail

METRO FACTS:

Location: Phoenix – Tempe – Mesa, AZ

Length: 20 miles – 32 stations

Time to Construct: 3.5 years

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

Opened: 2008

Annual Operating Costs: $37 million

Ridership: 38,700 per day

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

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

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.

Image Source: Arizona Passenger Rail Association

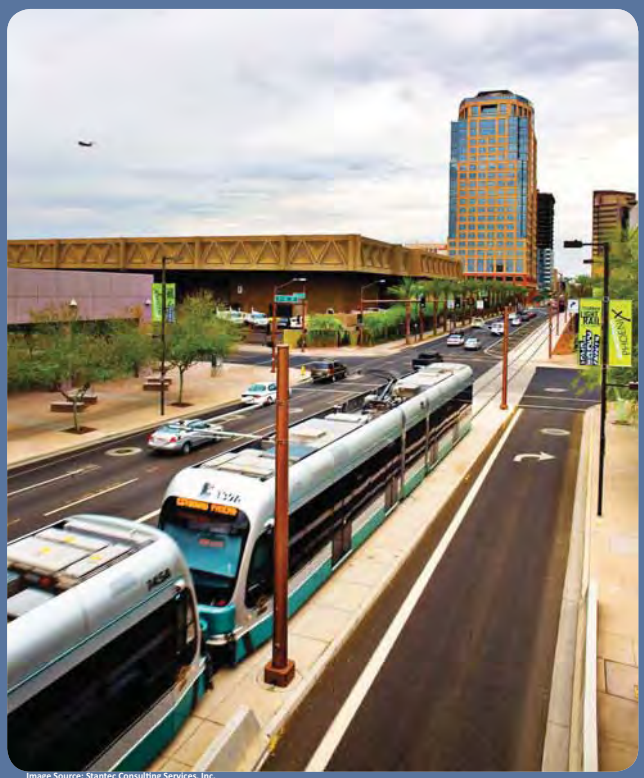


Image Source: Stantec Consulting Services, Inc.

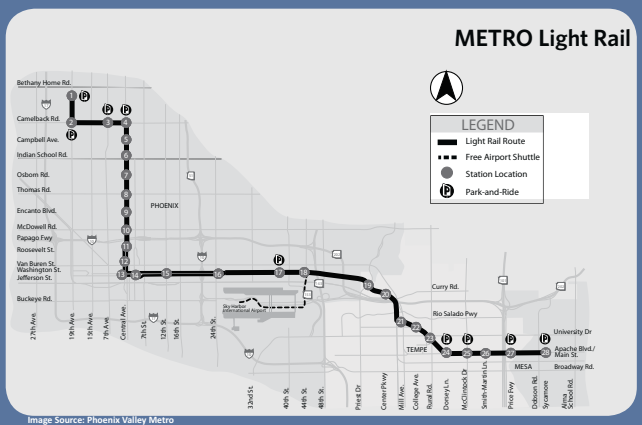


Image Source: Phoenix Valley Metro

Back to TOC

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?

Back to TOC

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

Back to TOC

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:

Back to TOC

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.

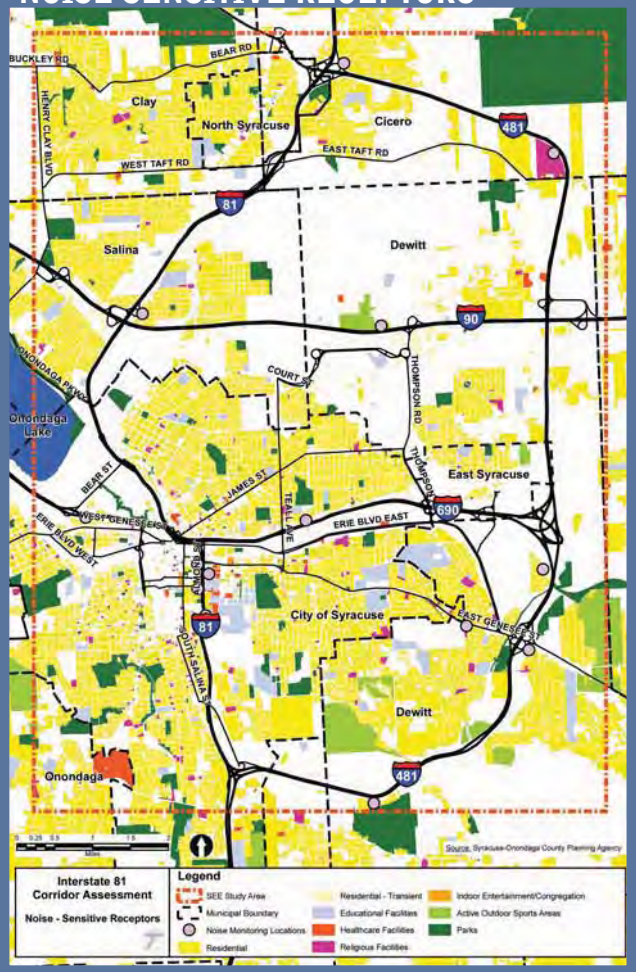
Environmental and Community Resources

Back to TOC

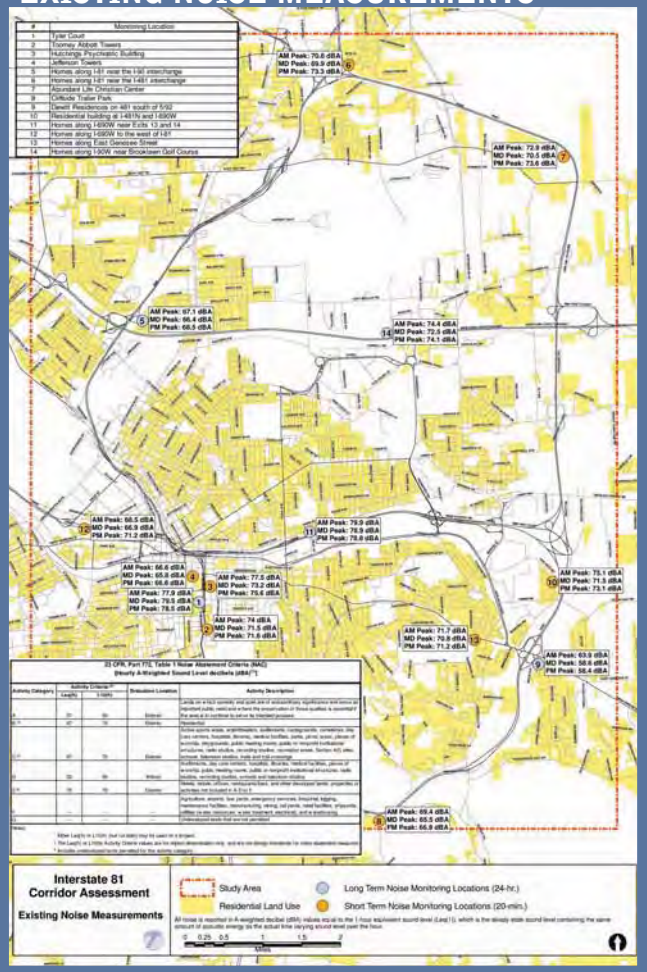
Noise & air quality

Back to TOC

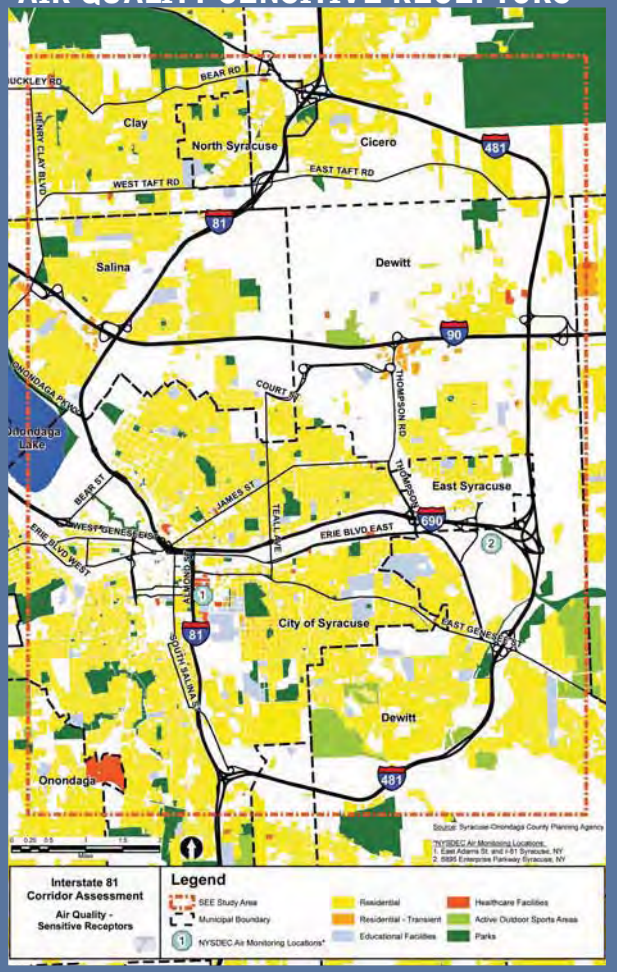
NOISE SENSITIVE RECEPTORS



EXISTING NOISE MEASUREMENTS



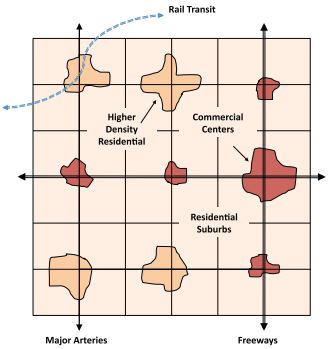
AIR QUALITY SENSITIVE RECEPTORS



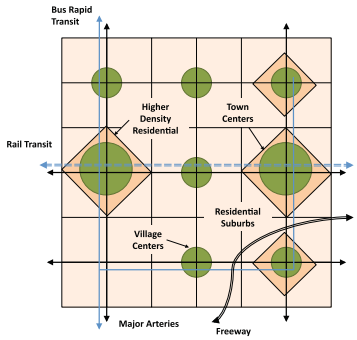
Back to TOC

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.



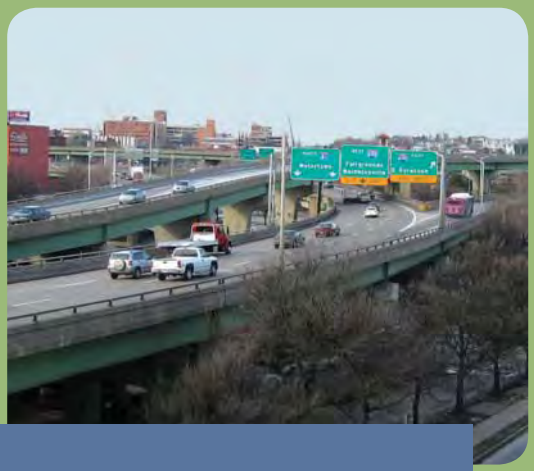
We also use models in transportation planning. These models are a series of complex mathematical equations that represent the choices, decisions, and behavior of thousands (or millions) of individual travelers.



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

Back to TOC

Regional Travel Demand Model

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

Population
Household vehicles
Parking
HOV lanes
Income data
Land use
Jobs
Road network
Tolls and fares
Transit system
Speed limits

Inputs

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

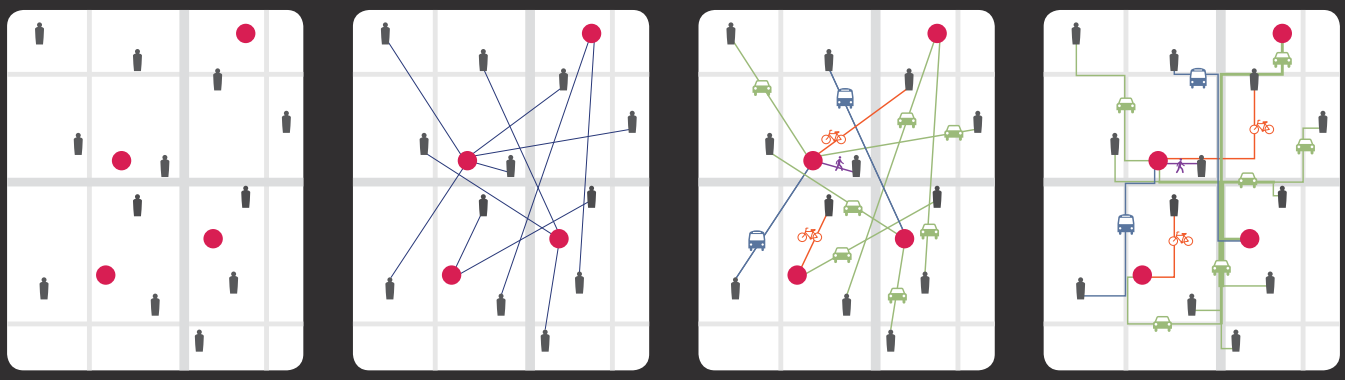
Regional Travel Demand Model

1 TRIP GENERATION
– How many trips will be made?

2 TRIP DISTRIBUTION
– Where will the trips come from and go to?

3 MODE SPLIT
– How many people will drive, take the bus, walk, bike, etc.?

4 NETWORK ASSIGNMENT
– What routes will be used for the trips?



Outputs

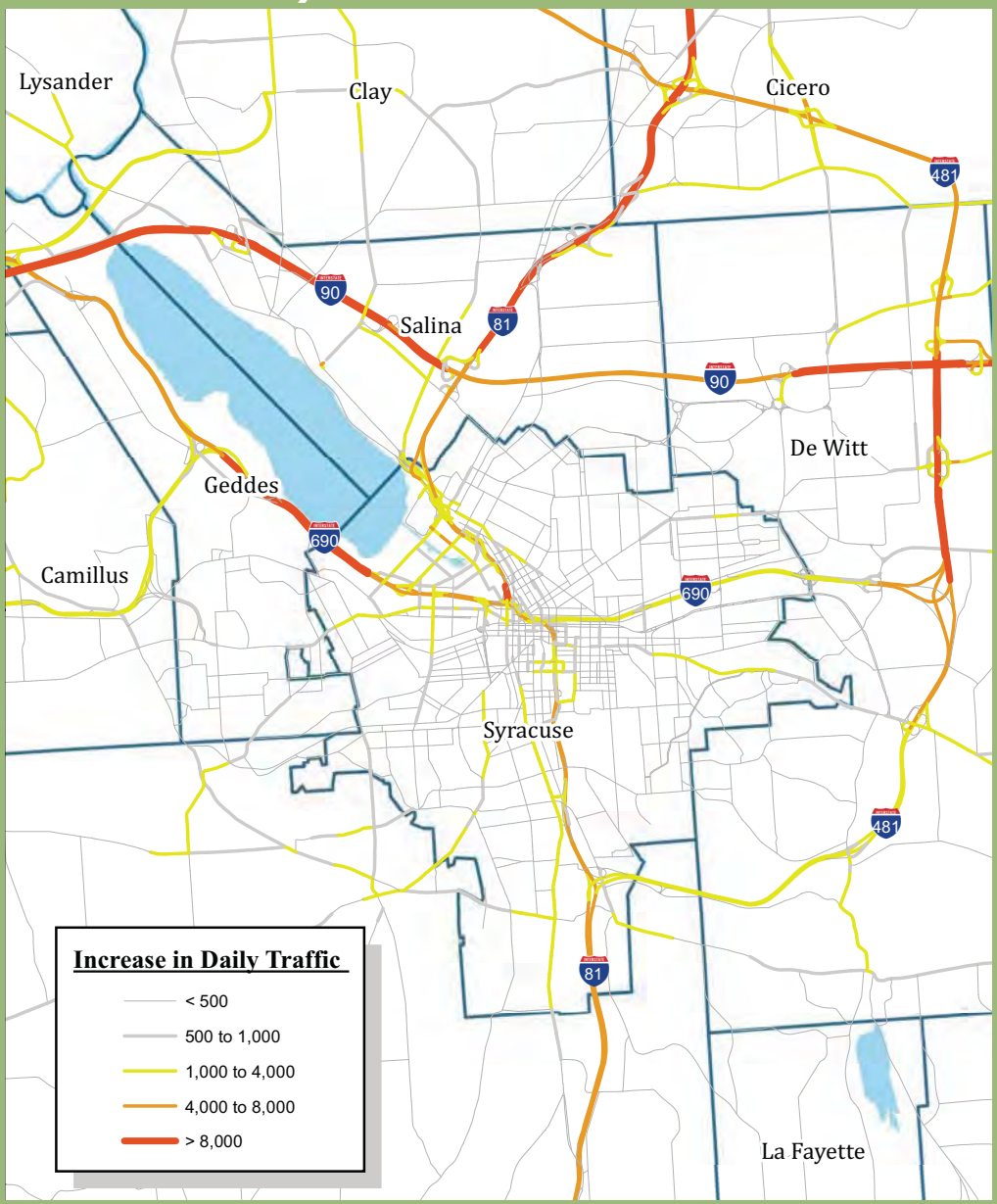
Number of transit riders
Number of vehicles
Travel time
Number of trips
Congestion and delay
Number of miles traveled

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

Modeling the future

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

PROJECTED GROWTH IN TRAFFIC VOLUMES (2007 TO 2040)*



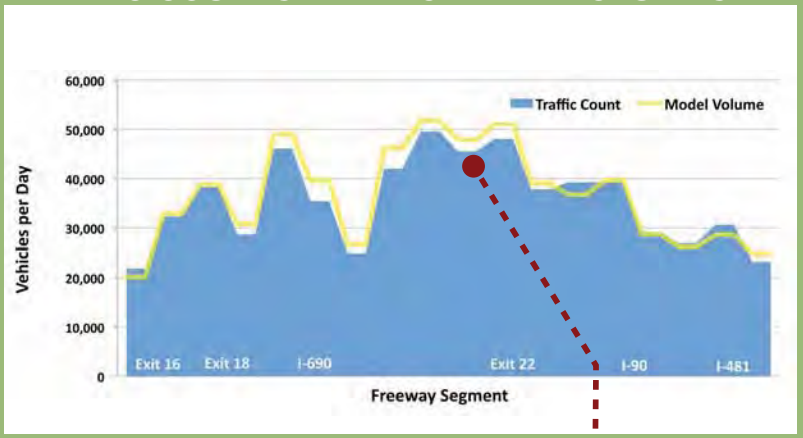
* Assumes no significant changes to I-81

Back to TOC

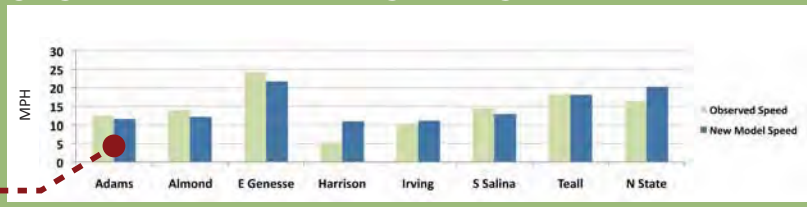
Modeling the present

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

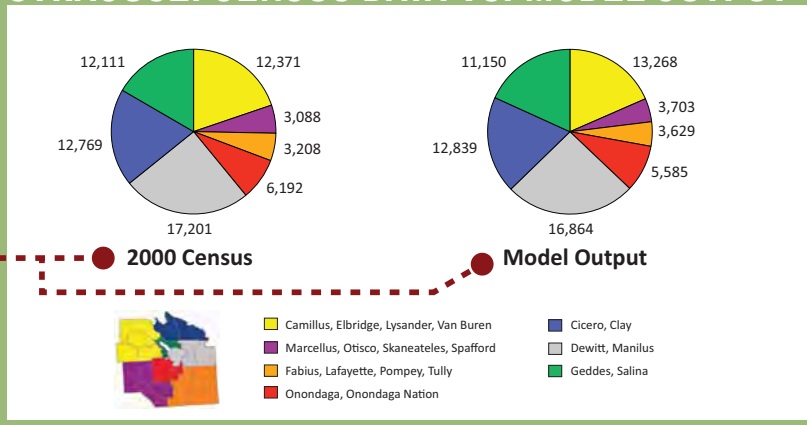
I-81 NORTHBOUND TRAFFIC FLOWS: TRAFFIC COUNTS AND MODELED VOLUMES



MODEL ARTERIAL SPEEDS COMPARED TO OBSERVED ARTERIAL SPEEDS



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



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.

Back to TOC

Microsimulation model

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

What can we do with microsimulation models?

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


I-81/I-690 Interchange
Congestion and Queuing Due to Almond St Queuing and Poor Ramp Geometry

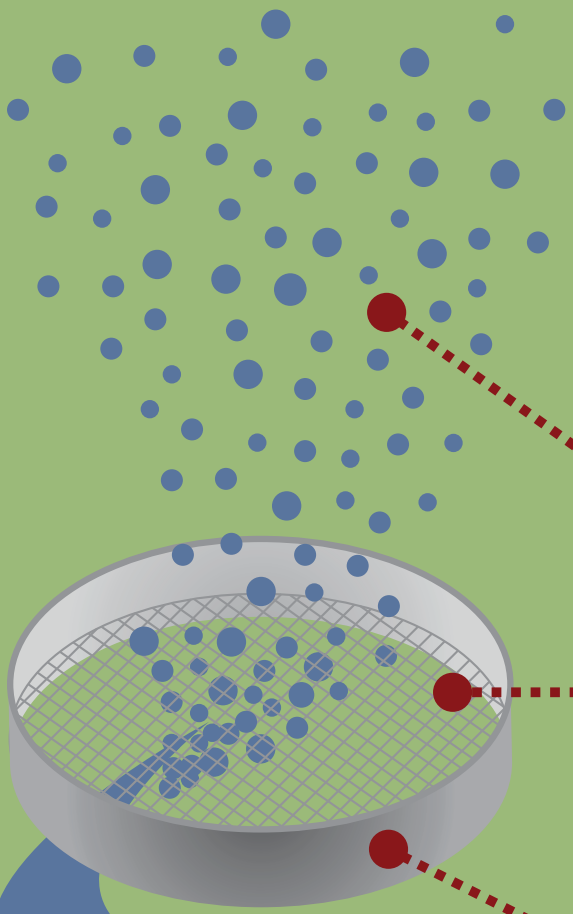

I-81 Southbound Exit Ramp
Congestion and Queuing Extend Along Ramp onto I-81


Almond St Looking North
Queues from East Adams St Extend Along Almond St

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

Back to TOC

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



IDEAS

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

STRATEGIES

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

EVALUATION

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

SOLUTIONS

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

FUTURE OF I-81

What should the solution for I-81 accomplish?

Back to TOC

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

Back to TOC

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

Example:

GOAL:
Preserve or enhance environmental health

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".

Objectives:

Objectives are the specific and practical steps we can take to achieve our goals. Using the goal above, one objective is to "Maintain or improve air quality".

OBJECTIVE:
Maintain or improve air quality

EVALUATION CRITERIA:
Change in emissions and air pollutants

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.

OPTION A:
2% Increase

OPTION B:
No Change

OPTION C:
2% Decrease

Evaluation Criteria

Goal: Improve Public Safety

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

Goal: Maintain or Improve Economic Opportunities

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

Goal: Exercise Fiscal Responsibility

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

Goal: Share Burdens and Benefits

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

Evaluation Criteria

Goal: Enhance the Transportation Network

Objectives:	How it could be measured:	Example outputs:
Eliminate structural deficiencies using treatment strategies that provide the lowest life cycle maintenance costs and restore bridge condition ratings, where applicable, to good condition for at least 30 years.	Restore bridge condition ratings to greater than 5.0.	Number of bridges with condition greater than 5.0. Anticipated maintenance cost over life cycle of structure.
Improve existing geometric design through the application of appropriate design standards and the reduction of non-standard elements and/or geometries.	Quantify reduction/elimination of non-standard features. Quantify reduction/elimination of non-conforming features.	Number of non-standard features . Number of non-conforming features.
Identify alternative mode improvements in the vicinity of I-81.	Qualitatively evaluate bicycle and pedestrian improvements and compare. Quantify transit mode share improvements using the Regional Travel Demand Model.	Qualitative evaluation of bike and pedestrian infrastructure. Transit mode share for trips in the Syracuse Metropolitan Planning Area shown by “commuter” and “urban” routes.

Goal: Preserve or Enhance Environmental Health

Objectives:	How it could be measured:	Example outputs:
Support local, regional, and state environmental initiatives.	Provide stormwater management facilities for water quantity and water quality. Quantify Context Sensitive Solutions applied. Quantify Green Streets principles applied.	Opportunities to incorporate green infrastructure – rank low, medium, and high. Opportunities to incorporate Context Sensitive Solutions and Green Streets principles using a scale of low, medium, and high.
Maintain or improve air quality (overall emissions and odor).	Quantify and compare reduction in emissions and air pollutants using the Regional Travel Demand Model.	Total tons of pollutants emitted (e.g., carbon monoxide, volatile organic compounds, and nitrous oxide).
Minimize air quality and noise impacts on adjacent neighbors.	Identify locations that exceed the National Ambient Air Quality Standards (NAAQS) and compare.	Assessment of positive and/or negative impacts of a strategy on air quality.
Minimize impacts on designated community landmarks and historic resources.	Quantify and compare impacts.	Does, or will strategy impact community landmarks and historic resources.
Minimize storm water impacts and improve water quality.	Each strategy must mitigate impacts in accordance with SPDES.	Change in amount of impervious areas (asphalt vs. grass).

Evaluation Criteria

Goal: Enhance Region-Wide Mobility

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

Goal: Support Community Quality of Life

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

What do you think?

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.

Back to TOC

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

Back to TOC

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

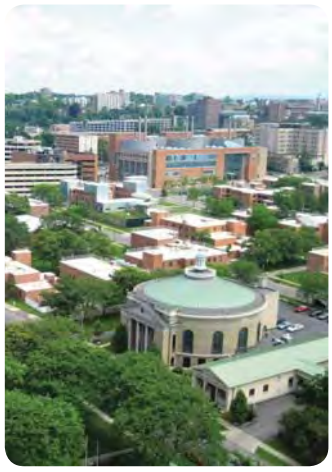
Purpose and Need

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.

Back to TOC

Three routes through NEPA

1 Categorical Exclusion

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

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

2 Environmental Assessment

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

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

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

3 Environmental Impact Statements

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

Notice of Intent and Scoping

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

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

Draft EIS

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

Public Comment

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

Final EIS

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

Record of Decision (ROD)

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

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

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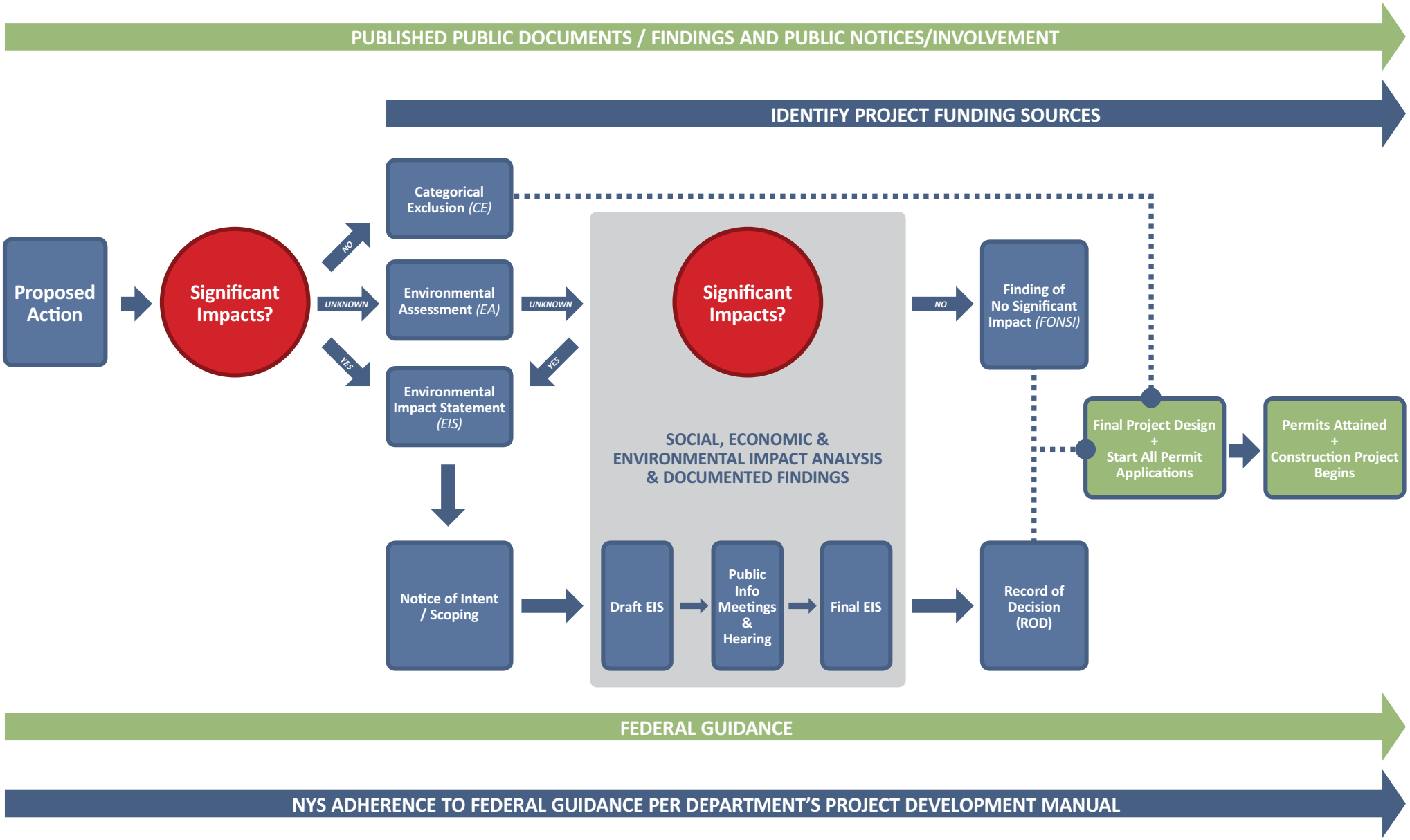
The NEPA process



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.

Stay a part of *The I-81 Challenge*

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WHAT'S NEXT?

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

YOUR ROLE

The I-81 Challenge is about and for you:

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

Public participation in *The 1-81 Challenge*

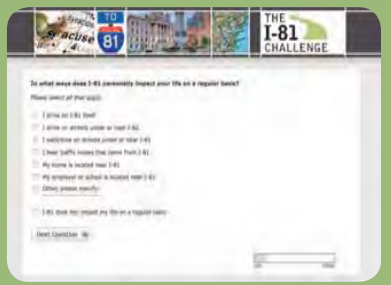
PUBLIC INVOLVEMENT

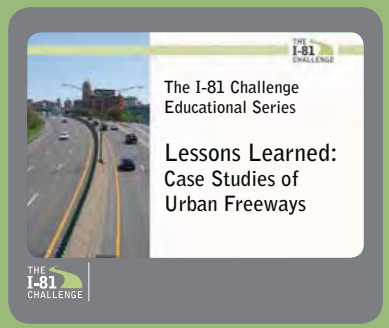
- Newsletters
- Fact sheets
- Educational videos
- Website
- Blog
- Facebook page
- Questionnaires
- Focus groups
- Project committees
- Public meetings

Find these resources and more information at:

www.thei81challenge.org

www.thei81challengeblog.org





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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?