The *New Mix:*
Project Advisory Committee (PAC) Meeting #7
March 12, 2025

Agenda

- **Welcome Back!**
- **PEL Study Overview**
- **Design Progression and Level 3 Analysis**
- **Range of Reasonable Alternatives**
- **Interactive Activity**
- **Next Steps**

84 new mix | CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

Since Our Last Meeting…

You have been:

Providing input for the New Mix Program's PEL Study.

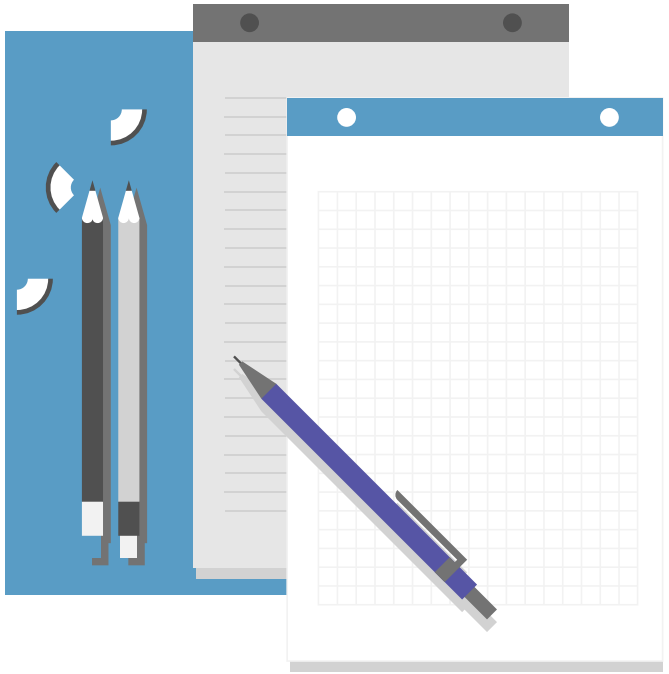
Checking email for information about the New Mix Program.

We have been:

Obtaining Input from PAC members, stakeholders, and the public.

Developing and Evaluating the Preliminary Alternatives in Level 3.

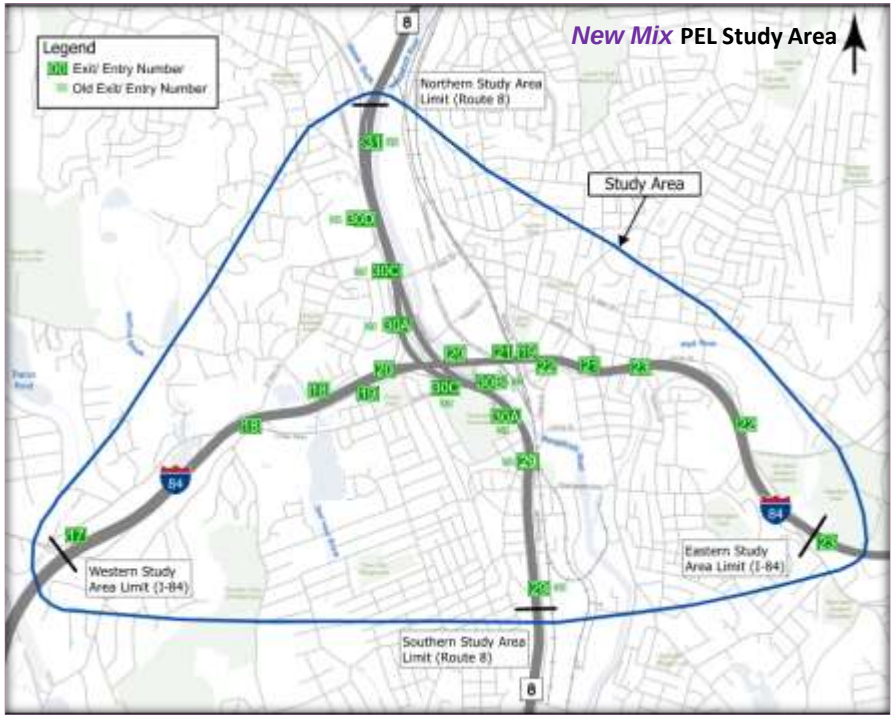
Finalizing the PEL Study and identifying the Range of Reasonable Alternatives to advance to NEPA.



PEL Study Overview

New Mix PEL Study Overview

The ***New Mix*** is a long-term program of projects set to improve the safety and functionality of the I-84 / Route 8 Interchange (the Mixmaster) in Waterbury, CT.



New Mix Program Overall Schedule:

PEL Study

Identified the **Range of Reasonable Alternatives** to be further considered in NEPA

Completed in 2025

National Environmental Policy Act (NEPA)

The Environmental Review Process for compliance with environmental laws. Identifies a **Preferred Alternative.**

2-4 years

Permitting and Design

State/Federal Permit Procurement and advanced design of the **Preferred Alternative**

4-6 years

Construction

Includes Breakout Projects

Initiating early 2030s

New Mix PEL Preliminary Purpose and Need Statement

The foundation of the PEL Study, identifying potential transportation solutions and benefits of future projects.

Mixmaster Needs (Problems)

Structural: I-84 Bridges will be in poor condition and anticipated to meet serviceable lifespan by 2045.

Geometric: Substandard shoulder widths, curves, clearances, stopping sight distance, etc.

Operational: Insufficient travel speeds, roadway capacity, lane merging distances, ramp spacing, etc.

Safety/Crash Reduction: Crash rate attributed to geometric/operational deficiencies and is 30% higher than state average.

New Mix Intended Outcomes

Improve System Performance & Air Quality by Reducing Congestion: Improve bridge conditions and functional ratings as well as provide capacity to improve travel speeds and time.

Maintain Critical System Linkages: Configure system ramp connections for high- and low-volume movements between I-84/Route 8.

Facilitate Connectivity & Equitable Mobility Through the Local Road & Multimodal Network: Improved pedestrian and bicycle facilities, green infrastructure, and safety countermeasures.

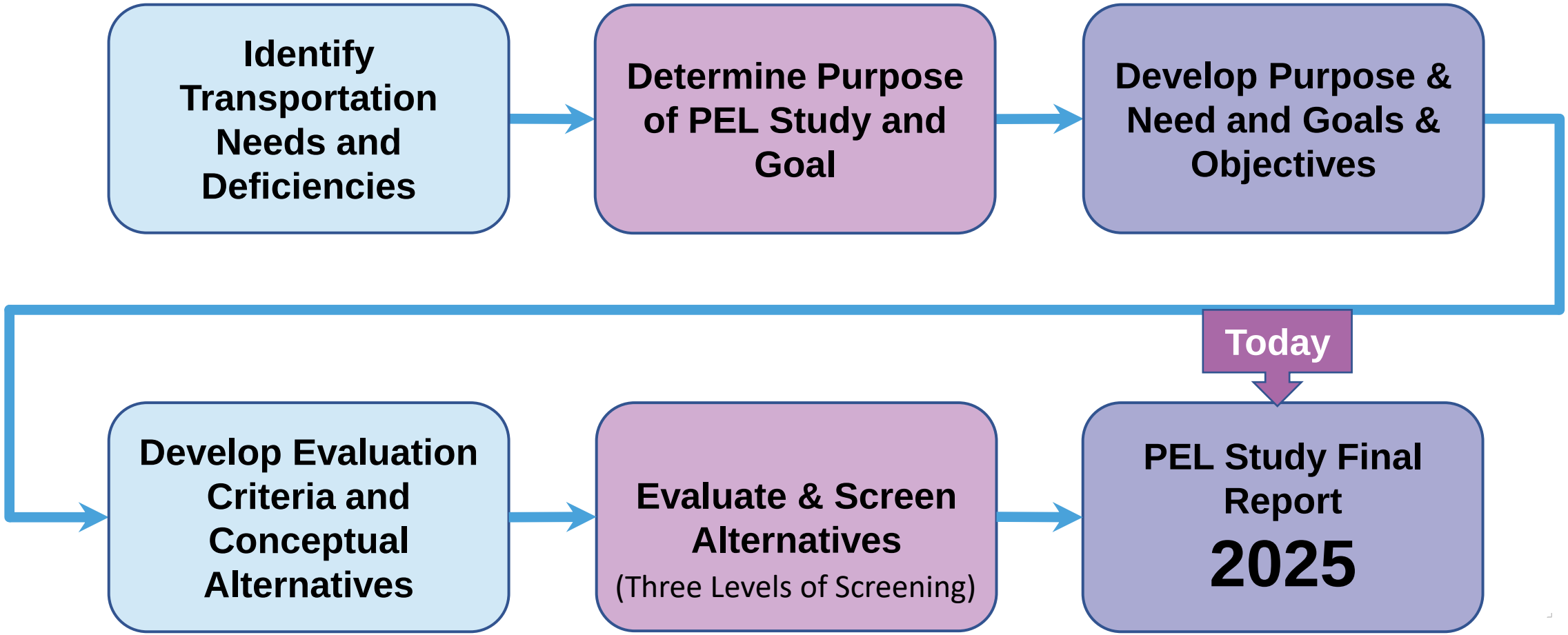
Reduce Crash Rate & Improve Safety: Eliminate/Improve substandard structural, geometric, and operational conditions.

Public input shaped the planning decisions made during the *New Mix* PEL Study

Input gathered to

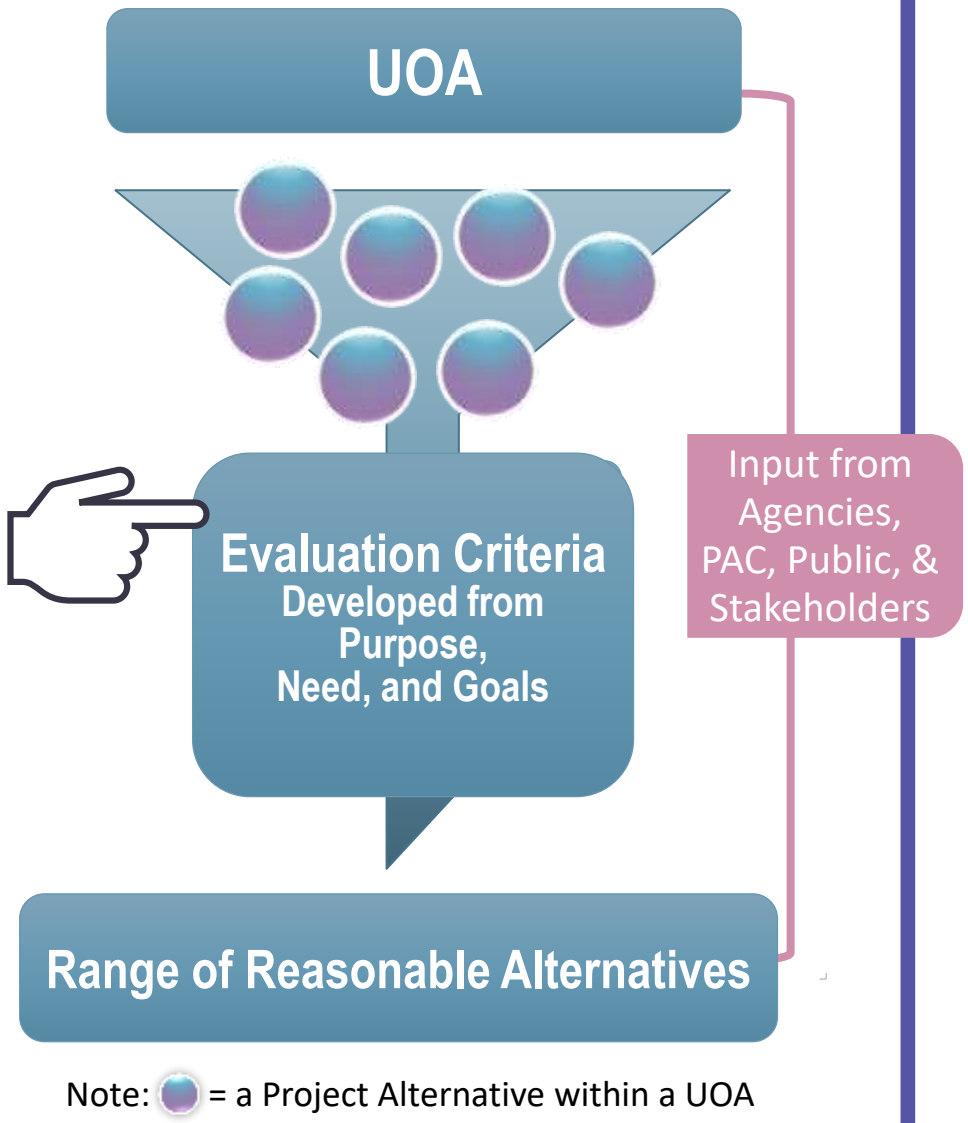
- Define the *New Mix* Program's vision, and Preliminary Purpose and Need Statement.
- Identify focus areas for the PEL Study and inform solutions that could work towards building a better functioning and more equitable transportation system within Waterbury.

The *New Mix* PEL Study Process



The *New Mix* PEL Process: Screening the Universe of Alternatives (UOA)

- **Level 1:** Evaluation of Fatal Flaws; based on **Purpose** and **Need** – Least Detail
- **Level 2** : Evaluation of the **Goals** of the project, informed through public outreach – Medium Detail
- **Level 3:** Evaluation of the ***impacts*** and **mitigation** opportunities identified – Most Detail
- Concludes with the identification of the **Range of Reasonable Alternatives** to advance to NEPA
- Public outreach occurs during all phases of the PEL



Design Progression and Level 3 Analysis

Updated Level 2 Screening Results

Initial Alternative	Rating	Results
No-Build[+]	●	N/A
Modern Crossover Interchange	▲	Advancing
Naugatuck River Shift	▲	Advancing
Keeping Route 8 Stacked	●	Not Advancing
Combined System Connections	●	Not Advancing
Modern Crossover Interchange with Route 8 Split to the South	●	Not Advancing
Interchange Shifted East	▼	Not Advancing
South City Bypass	▼	Not Advancing
Partial System Interchange with Freight Street Interchange	N/A	Not Advancing
Half Diverging Diamond	N/A	Not Advancing

[+] The No-Build Alternative is fatally flawed and failed to meet the criteria but was retained for evaluation in the subsequent screening level.

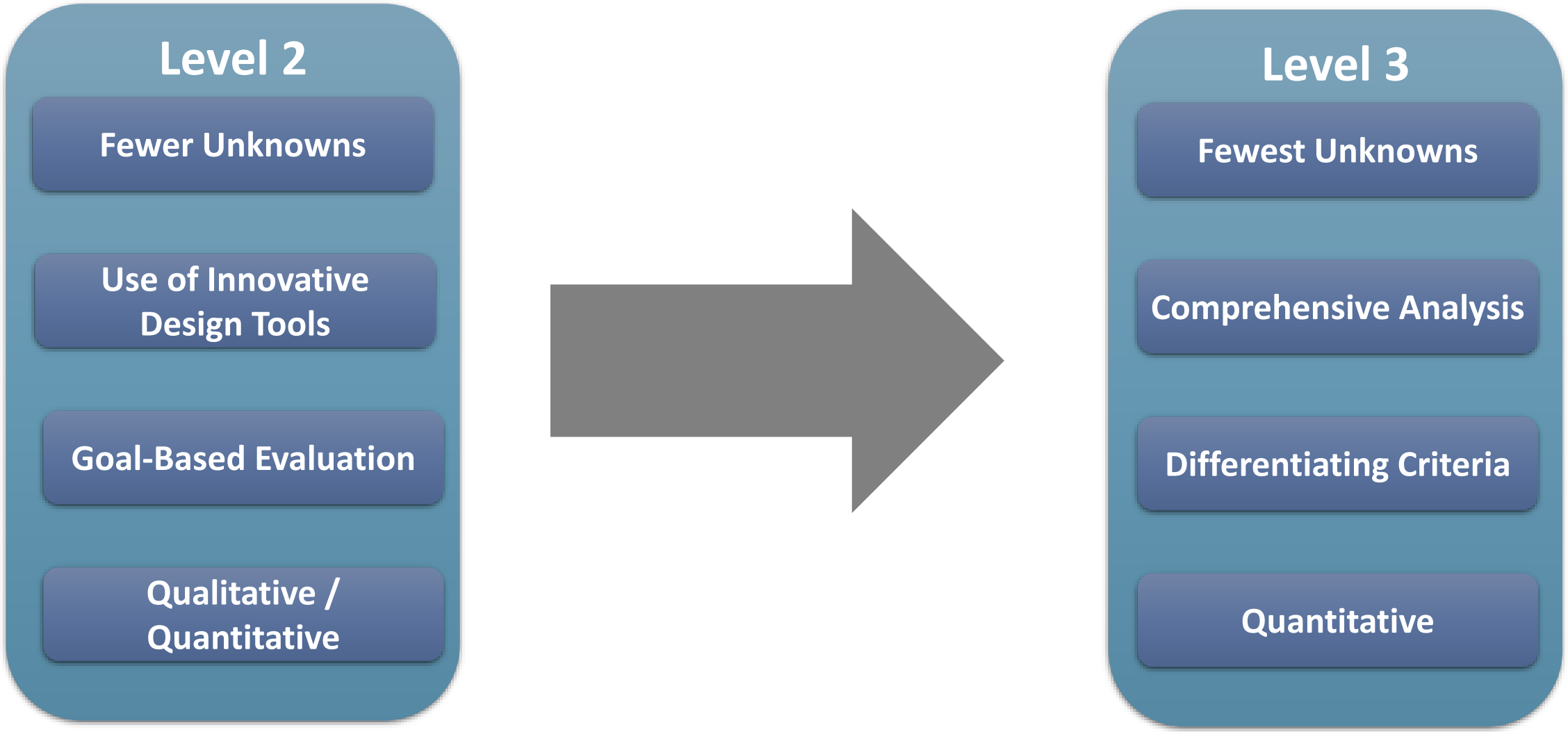
Keeping Route 8 Stacked:

- Eliminated after design progression identified increased costs and constructability issues.

Overall Rating	Transportation	Environmental / Community	Cost	Constructability
●	▲	▲	●	▼

Alternatives can be viewed on the website's Project Alternatives page: newmixwaterbury.com/project-alternatives/

Progression from Level 2 to Level 3



Level 3 Evaluation of Preliminary Alternatives

Key Considerations

To what degree can alternatives meet purpose & need and satisfy goals & objectives?

Safety, **Operations/Congestion**, and **System Connectivity/Mobility**:

- Reduce the potential for crash severity
- Reduce the potential number of individuals using I-84 for intracity travel
- Improve travel times

Environmental / Community Impacts**,** Benefits and additional goals:

- Minimize impact to surrounding environment
- Minimize impact to sensitive populations
- Allow for mobility equity improvements in the form of multimodal enhancements

Results of Evaluation: Key Considerations

Alternative	Safety	Operations and Congestion	System Connectivity and Mobility	Cost (Capital Costs)	Constructability	Environmental/ Community Impacts
No-Build Alternative	Worse than existing conditions because volumes on I-84 increase	No improvements, increasing congestion	No improvements, connectivity and mobility unchanged	N/A	N/A	None
Modern Crossover Interchange	Improved geometrics and ramp spacing help optimize weaving and merging movements	Improves freeway operations and reduces system total time delay	Increases connectivity, and mobility enhancements for all users	Baseline	Baseline	≈36 acres
Naugatuck River Shift	Improved geometrics and ramp spacing help optimize weaving and merging movements	Improves freeway operations and reduces system total time delay	Increases connectivity, and mobility enhancements for all users	± 2% – 7% more capital costs	± 0% – 17% more user costs	≈48 acres

The estimated cost of the Range of Reasonable Alternatives is between $3-5 Billion ($USD 2022)

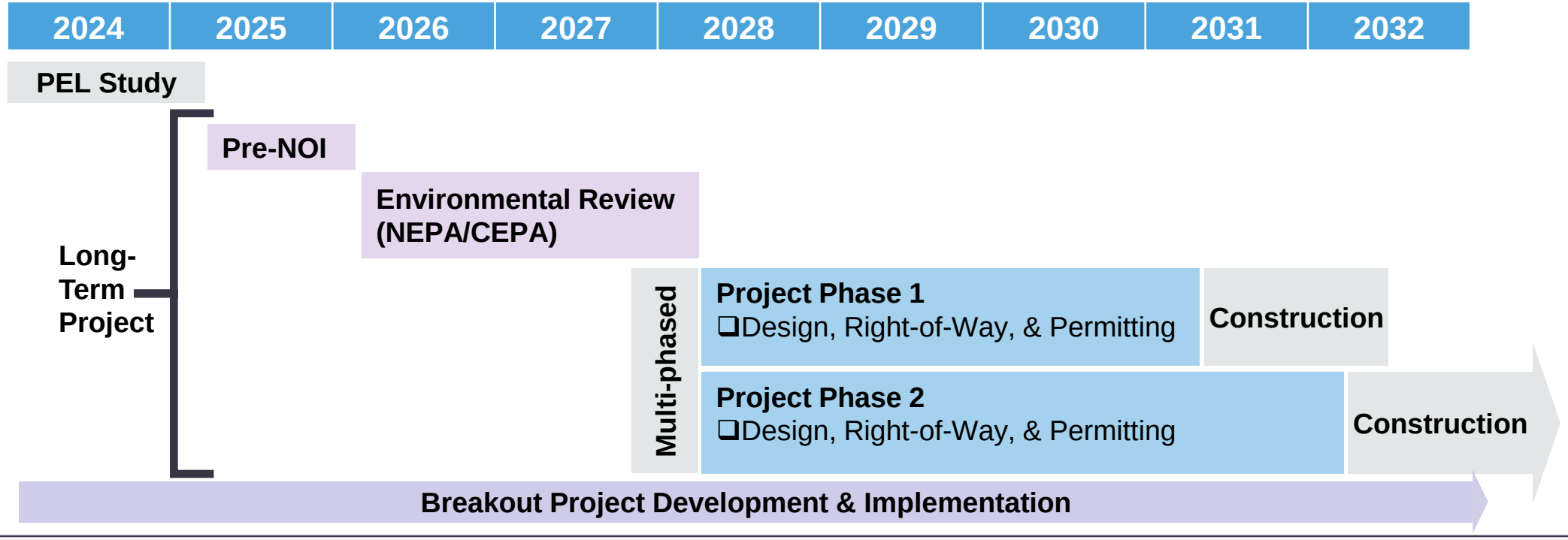
NEPA / CEPA Review

- The environmental review process for compliance with federal and state environmental laws.
- Requires federal and state agencies to evaluate potential impacts to the surrounding environment during the planning process of projects.

Project Development in NEPA / CEPA
Additional Engineering Development
Final Alignments Determined
Rights-of-Way Evaluated
Funding Sources Identified

Environmental Review (NEPA/CEPA) Resource Areas			
	Traffic Noise Analysis		Community Impacts
	Recreational Resources		Air Quality
	Hazardous / contaminated materials		Climate change and resiliency
	Wetlands and Waterbodies		Indirect and Cumulative impacts
	Storm Water Quality and management		Visual / aesthetic considerations

New Mix Program Process and Timeline



Timeline Definitions

Breakout Projects: "Stand-alone" projects identified during the PEL Study.

The Long-Term Project: Reconstruction of I-84, Route 8, and their system connections. The multi-phased approach is to allow for funding and maintenance of traffic.

Phase 1: Permanent improvements or temporary construction that will remain in place until completion of the Long-Term Project to facilitate traffic flow.

Phase 2: Project work for the Preferred Alternative that begins to improve mainline or system ramp traffic within the elevated core of the interchange.

Range of Reasonable Alternatives

Range of Reasonable Alternatives

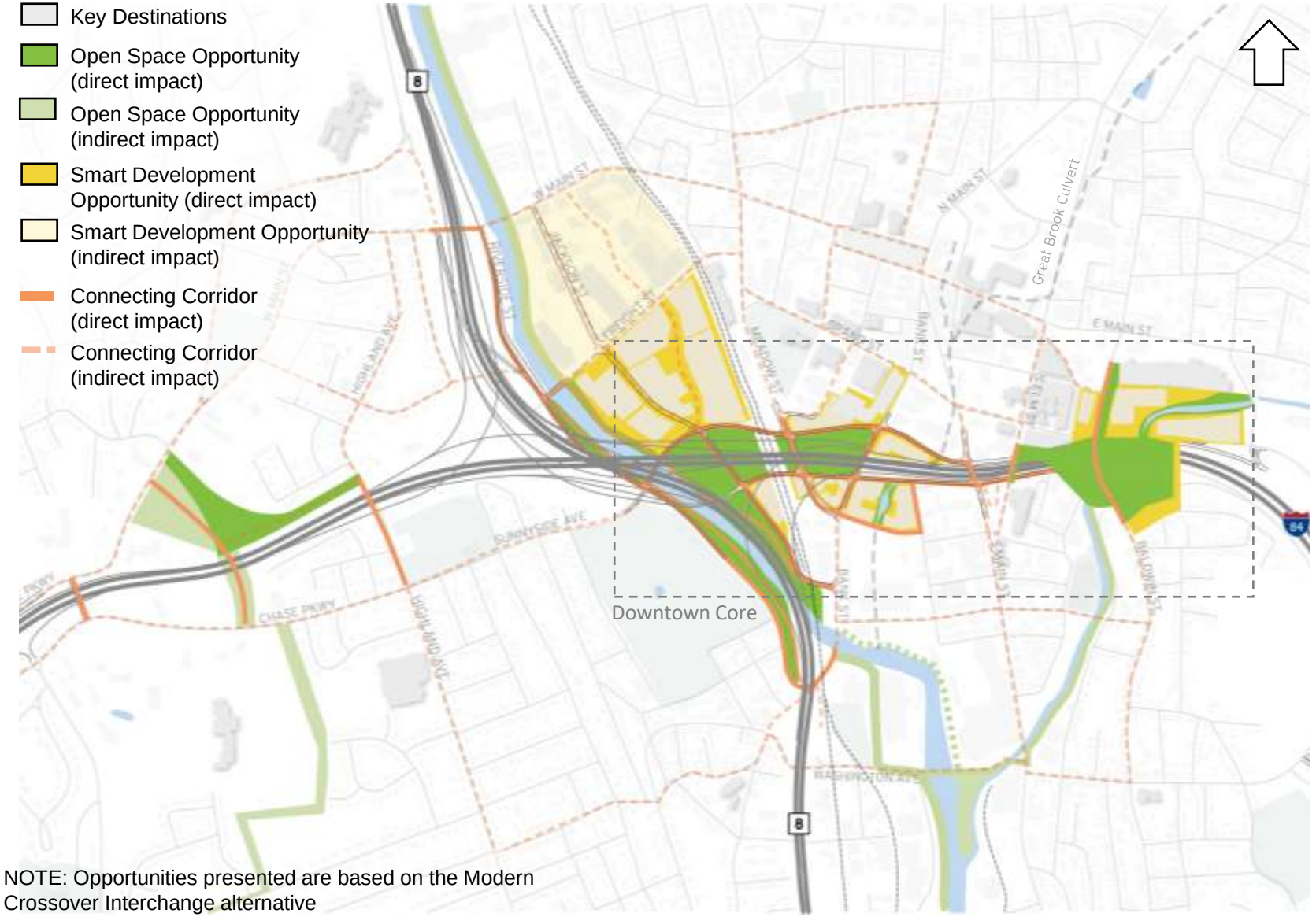
Modern Crossover Interchange

- The Route 8 structures would be reconstructed east of the Naugatuck River resulting in opportunities to provide access to the Naugatuck River on the west riverbank.

Naugatuck River Shift

- The Route 8 structures would remain on the west side of the river resulting in opportunities to provide access to the Naugatuck River on the east riverbank. Excavation activities would need to occur to provide floodplain capacity due to unstacking of Route 8.

Urban Design Approach



NOTE: Opportunities presented are based on the Modern Crossover Interchange alternative

- Implementing the tools to meet the urban design objectives, the project team has developed a plan of preliminary opportunities
- “Primary opportunities” exist in areas that would be directly impacted by the New Mix construction
- “Secondary opportunities” indicate indirect impacts but can contribute to a comprehensive network of places and spaces and connecting corridors

Downtown Open Space Opportunities

Open space downtown has the potential to connect communities around the interchange.

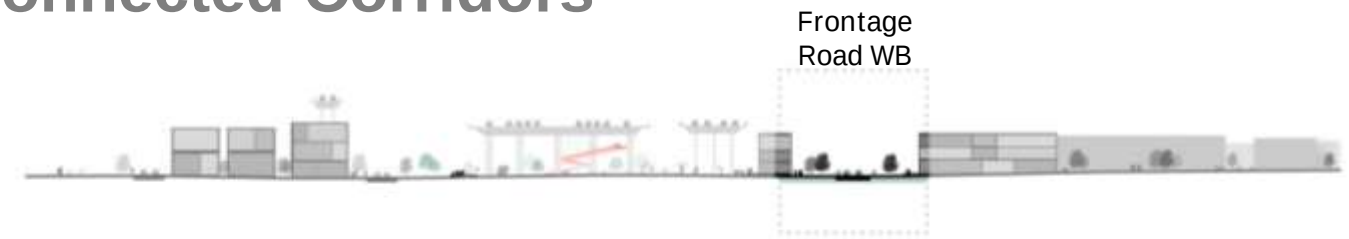
A connected park system could include:

- Performance/ gathering space
- Sports courts
- Skate park
- Elevated pedestrian walkway
- Bioretention areas
- Riparian buffers along the river
- Pedestrian plazas
- Local markets
- Picnic areas

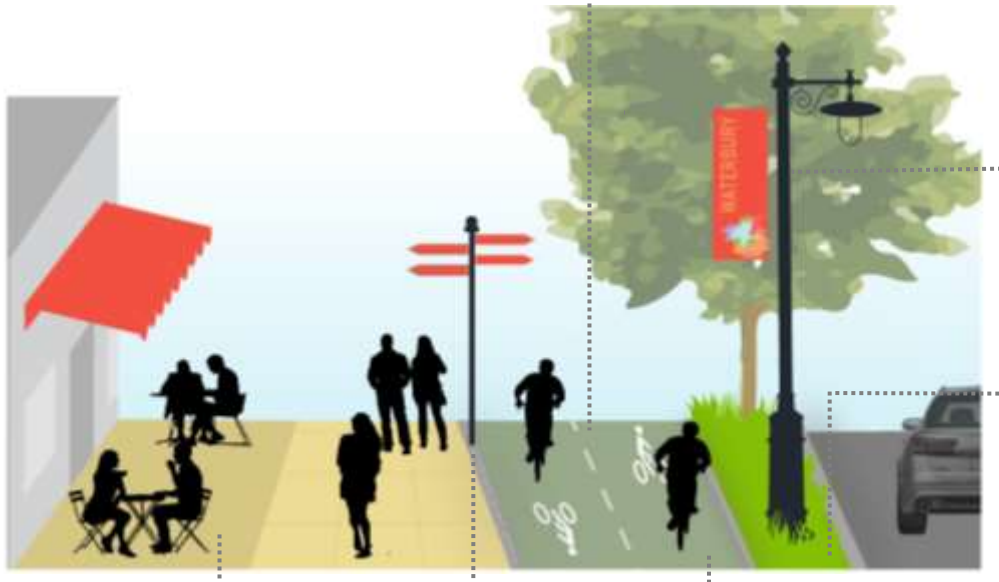
NOTE: Opportunities presented are based on the Modern Crossover Interchange alternative

Safe and Activated Corridors

Connected Corridors



- **Special Paving –** visual cue for pedestrians and drivers
- **Mid-Block Crossing** – formalizes pedestrian desire lines, calms traffic
- **Pedestrian Refuge Islands –** shorter crossings on busy streets

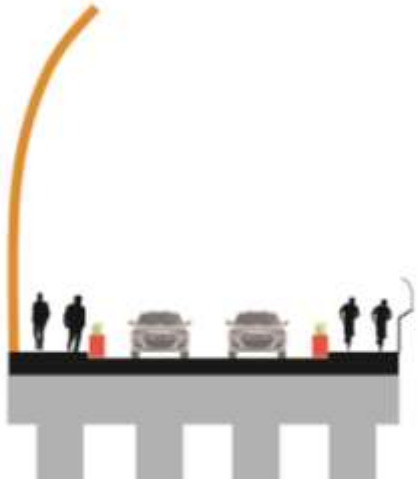


- **Raised Cycle Track** protect cyclists, pedestrians, and motorists
- **Enhanced Lighting** improved safety, unique lighting creates a sense of place
- **Green Infrastructure and Planting Strips** buffer between cars and pedestrians while providing stormwater benefits

Overpasses as Gateways

Connecting Corridors

Highland Ave Overpass Opportunity



S. Elm St Overpass Opportunity

- Unique installations create a sense of arrival specific to Waterbury
- Incorporate “Safe Route” tactics
- Opportunity to engage local artists

Gateway Experienced from the Highway

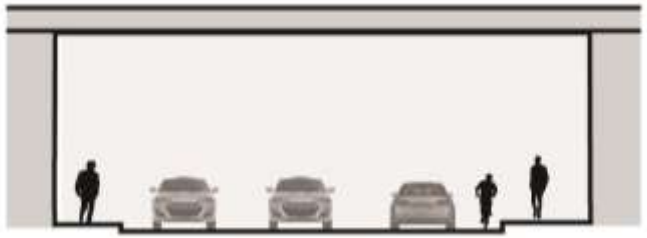
Gateway Experienced from the Overpass

New Britain, CT

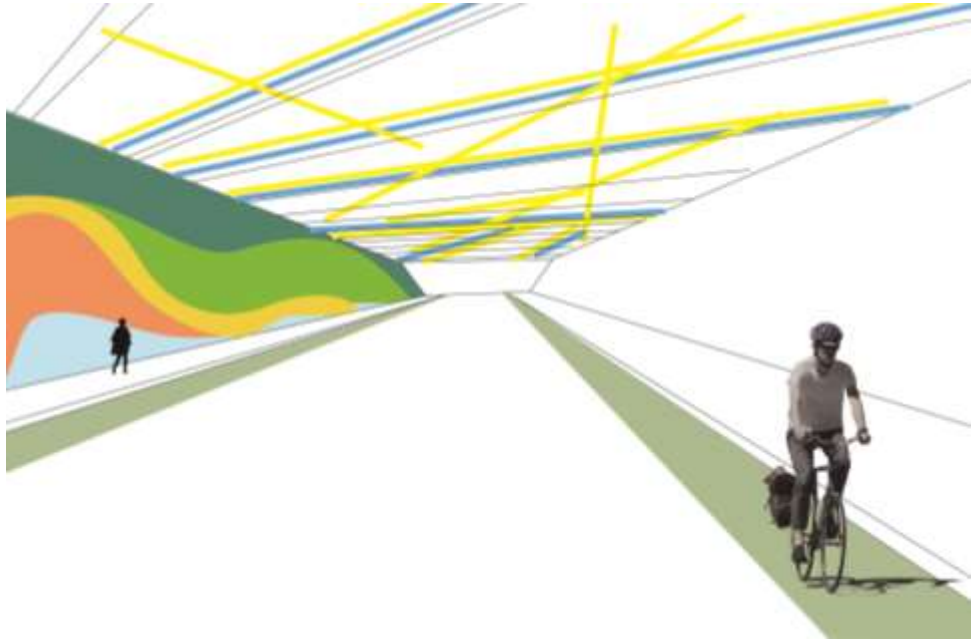
Enlivened Underpasses

Connected Corridors

Existing Underpass Experience



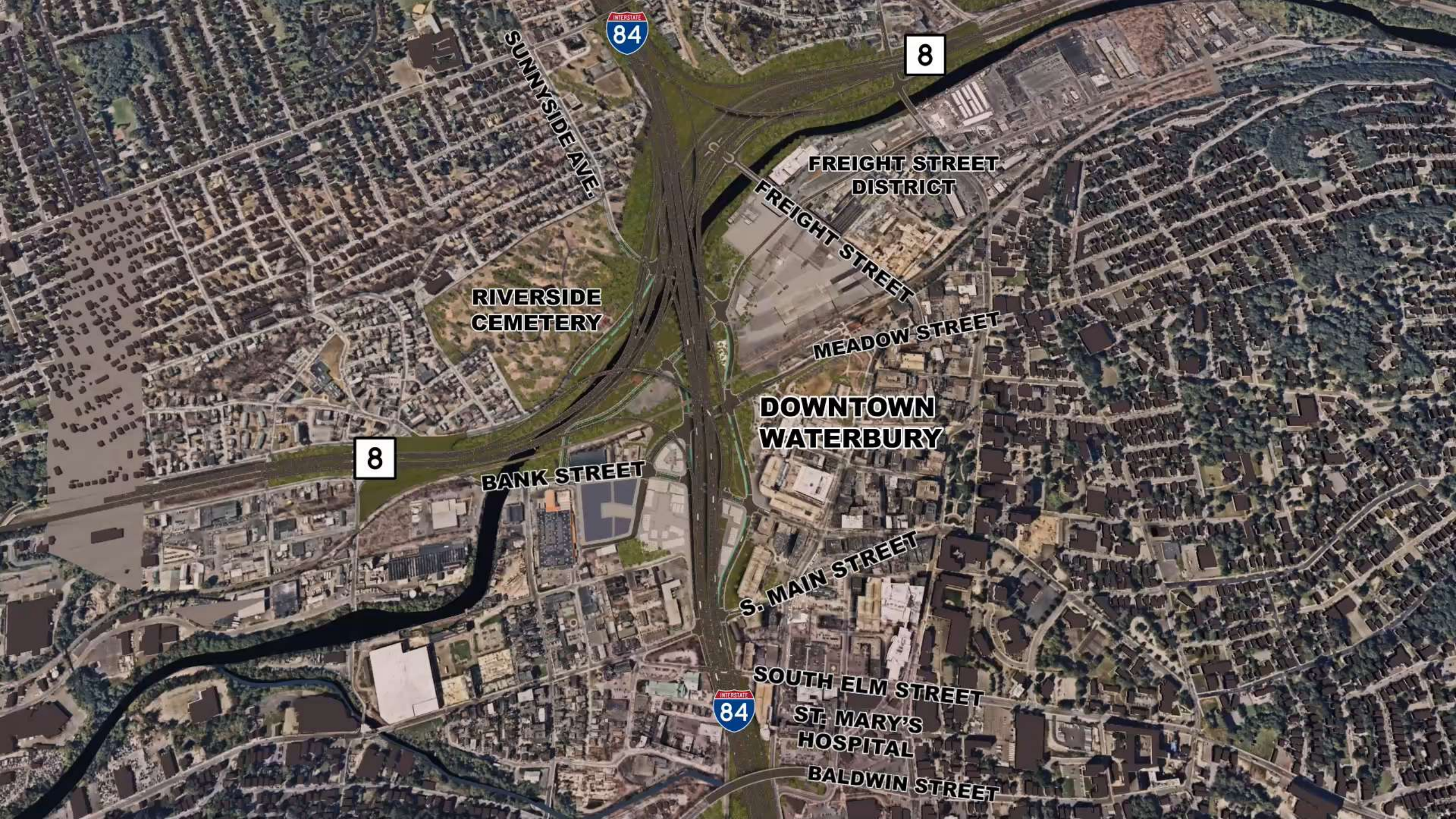
Enlivened Underpass Opportunities



- Murals and lighting welcome pedestrians, create visual presence
- Combine with Safe Routes tactics

San Jose, CA

Colorado Springs, CO


INTERSTATE
84
8
SUNNYSIDE AVE.
FREIGHT STREET
DISTRICT
FREIGHT STREET
RIVERSIDE
CEMETERY
MEADOW STREET
DOWNTOWN
WATERBURY
8
BANK STREET
S. MAIN STREET
SOUTH ELM STREET
INTERSTATE
84
ST. MARY'S
HOSPITAL
BALDWIN STREET

Interactive Activity

After multiple surveys, dozens of questions, and hundreds of responses, the New Mix Team has identified a Range of Reasonable Alternatives that best address the needs of the transportation system and balance the needs of the diverse communities that make up Waterbury.

1. Each PAC member will receive 4 sticky-notes.
2. Reflect on the two alternatives proposed to advance to NEPA (boards posted around room)
3. Provide responses to the prompt(s) that resonate most with you.

Interactive Activity

Feedback on the Range of Reasonable Alternatives	
A. What improvements do you see?	Top improvement that immediately jumps out to you from the advancing alternatives
B. What stands out as a possible concern?	Top concern or problem that each alternative could cause/exacerbate
C. What suggestions do you have for the team as this project moves forward?	Top thought on each alternative that could benefit them or their community that we can look at.

Next Steps

What's Next?

New Mix PEL Study Wrap Up

Public information meetings will be held to present the findings of the PEL Study.

Documentation following meetings will be developed.

Community meetings will be held to spread awareness of the PEL Results. Let us know if you'd like for the New Mix Team to present to your constituents!

Acknowledgement of the PEL Study by FHWA

The Federal Highway Administration (FHWA) will receive the results of the PEL Study which will initiate the start of the next phase.

NEPA/CEPA Review

Data Collection activities will occur for evaluation during the National Environmental Policy Act (NEPA) / Connecticut Environmental Policy Act (CEPA) Phase.

This will start with the initiation of Pre-Notice of Intent (NOI) activities (e.g., traffic data collection, and more).

Public Involvement will continue throughout all phases of project development.

Upcoming Public Meetings

Join us for an open house.

Visit **NewMixWaterbury.com** or call **203-759-8742** for more information.

March 27th
4:30pm to 6:30pm
John F. Kennedy High School
422 Highland Ave., Waterbury, CT

April 1st
12:00pm to 1:30pm

Held virtually on Zoom.
Register here.

April 2nd
5:30pm to 7:30pm
Maloney Interdistrict Magnet School
233 S. Elm St., Waterbury, CT

All attendees will have a chance to win a $25 Visa Gift Card! Children can have fun with kid-friendly activities at our kid's station!

PAC Comments Due

Comments / Input Due: March 31, 2025
Email: Nhodges@hntb.com

March

S	M	T	W	TH	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Feedback on the Range of Reasonable Alternatives are due March 31 for incorporation into the PEL Documents.

Before the Next Meeting Continue to…

Review PAC Meeting #7 Information Materials and provide input on the preliminary results of the PEL Study.

Explore the Program Website.

Check email for information about the upcoming Public Information Meetings.

Remain excited to participate in our Public Information Meetings.

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Questions & Comments




Thank you.





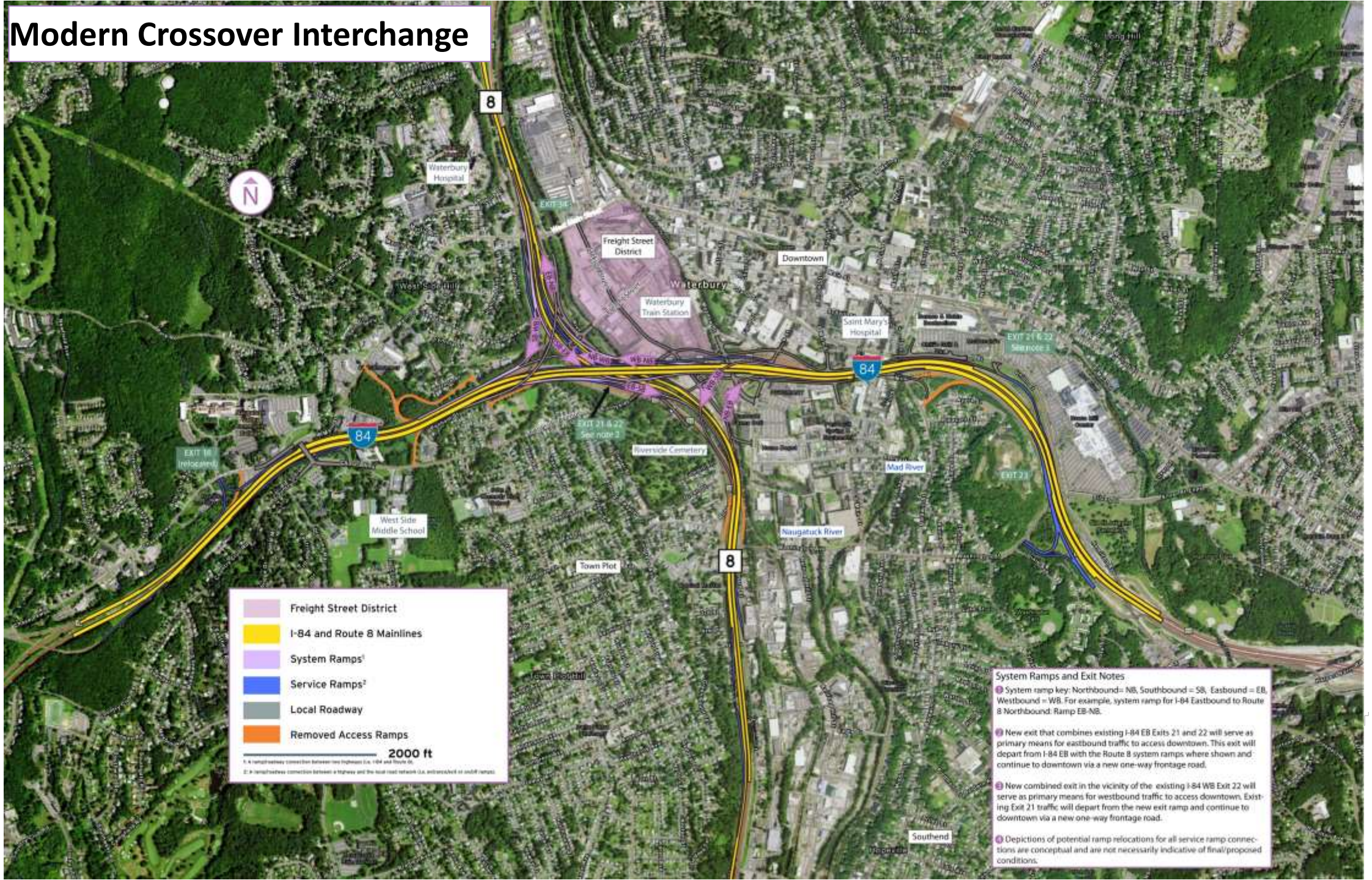
I-84 EB Exit 18 Reconfiguration

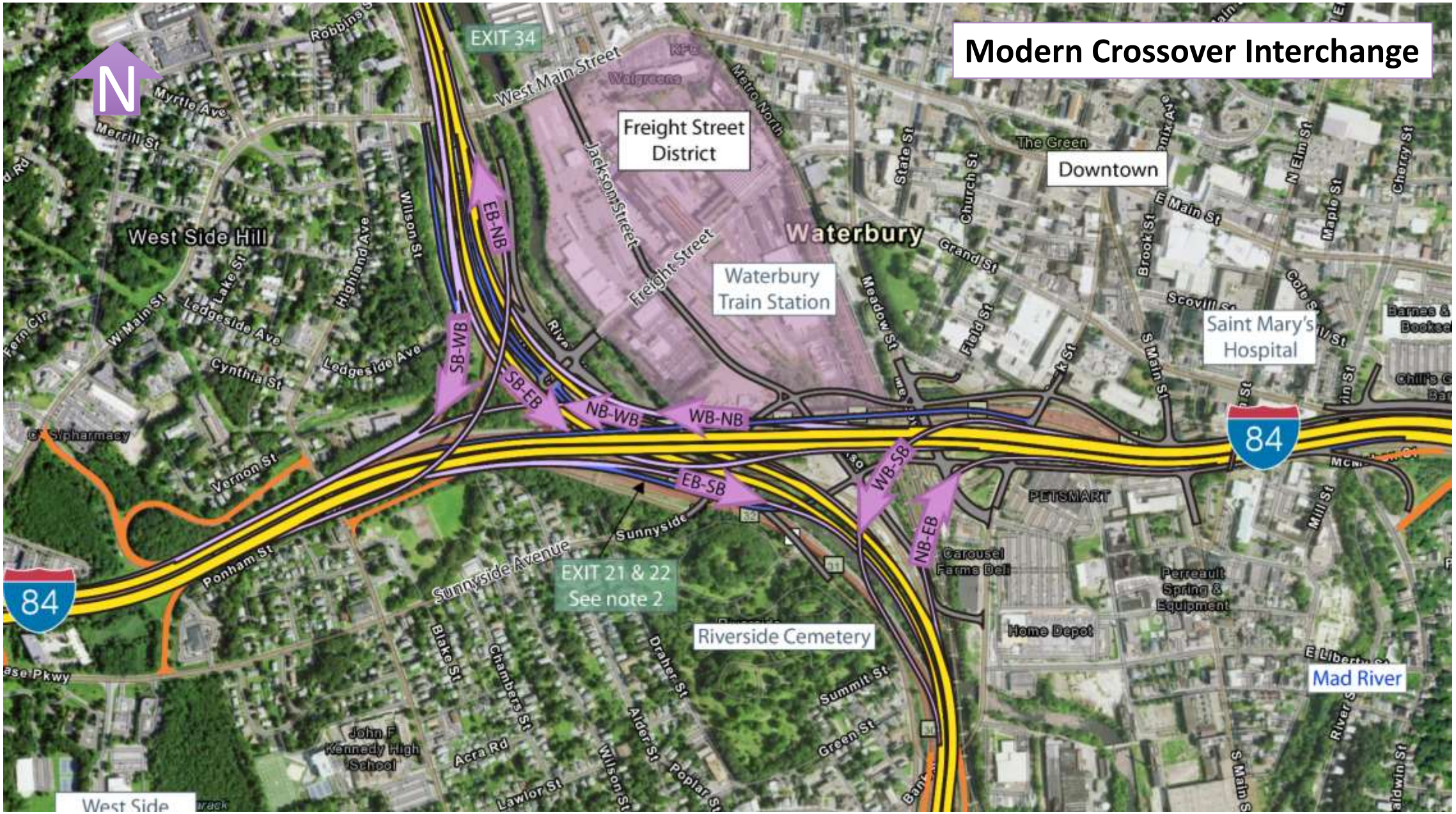
CONCEPT DESIGN CONSTRUCTION

This project is early in the concept phase. Solutions are being considered to reconfigure the ramps at exit 18 to create better spacing between entrances and exits along the mainline. Providing adequate distance between exits and entrances reduces crash rates by providing more room for acceleration, deceleration and merging..

Sample Concepts

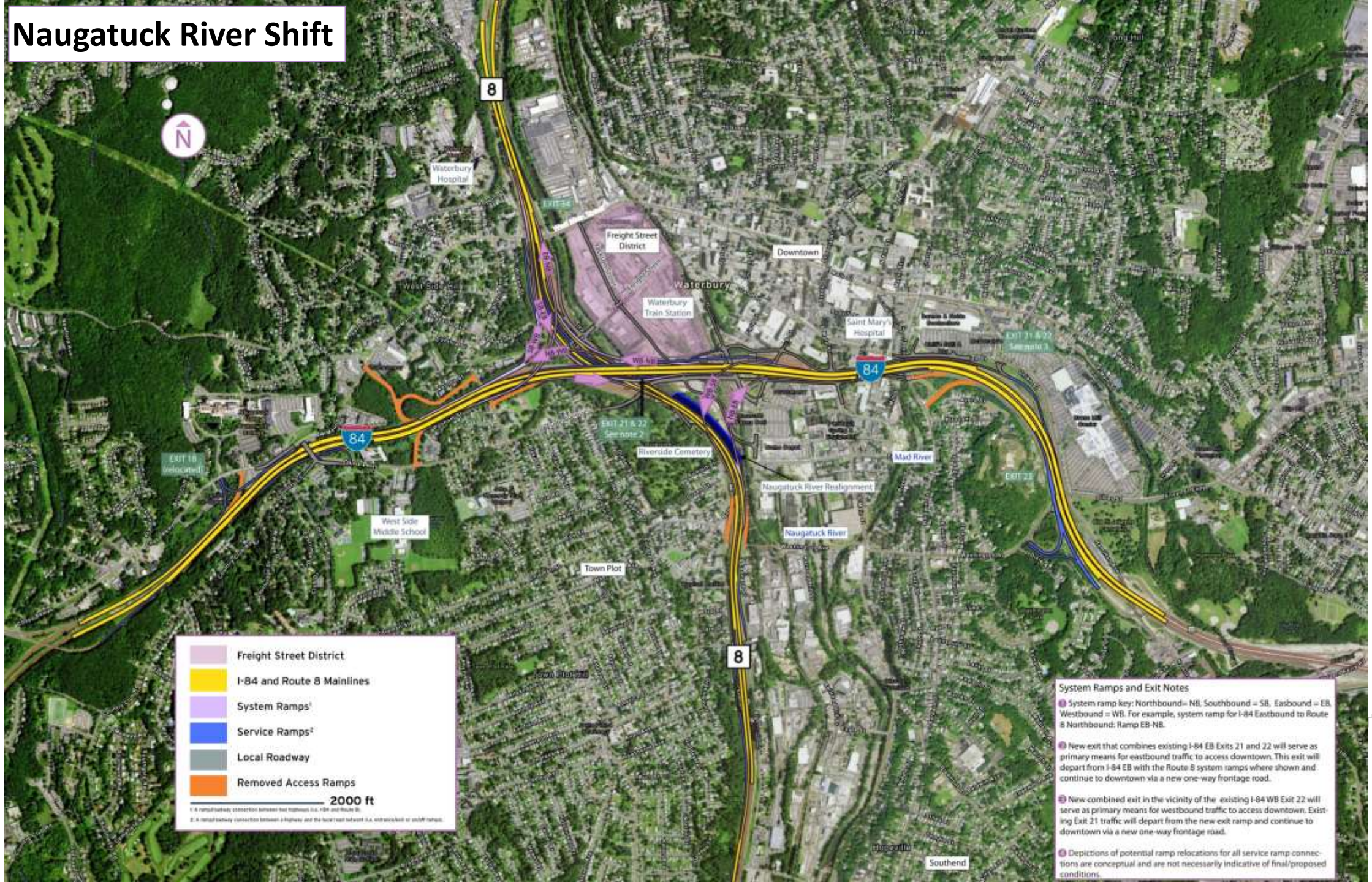
Modern Crossover Interchange

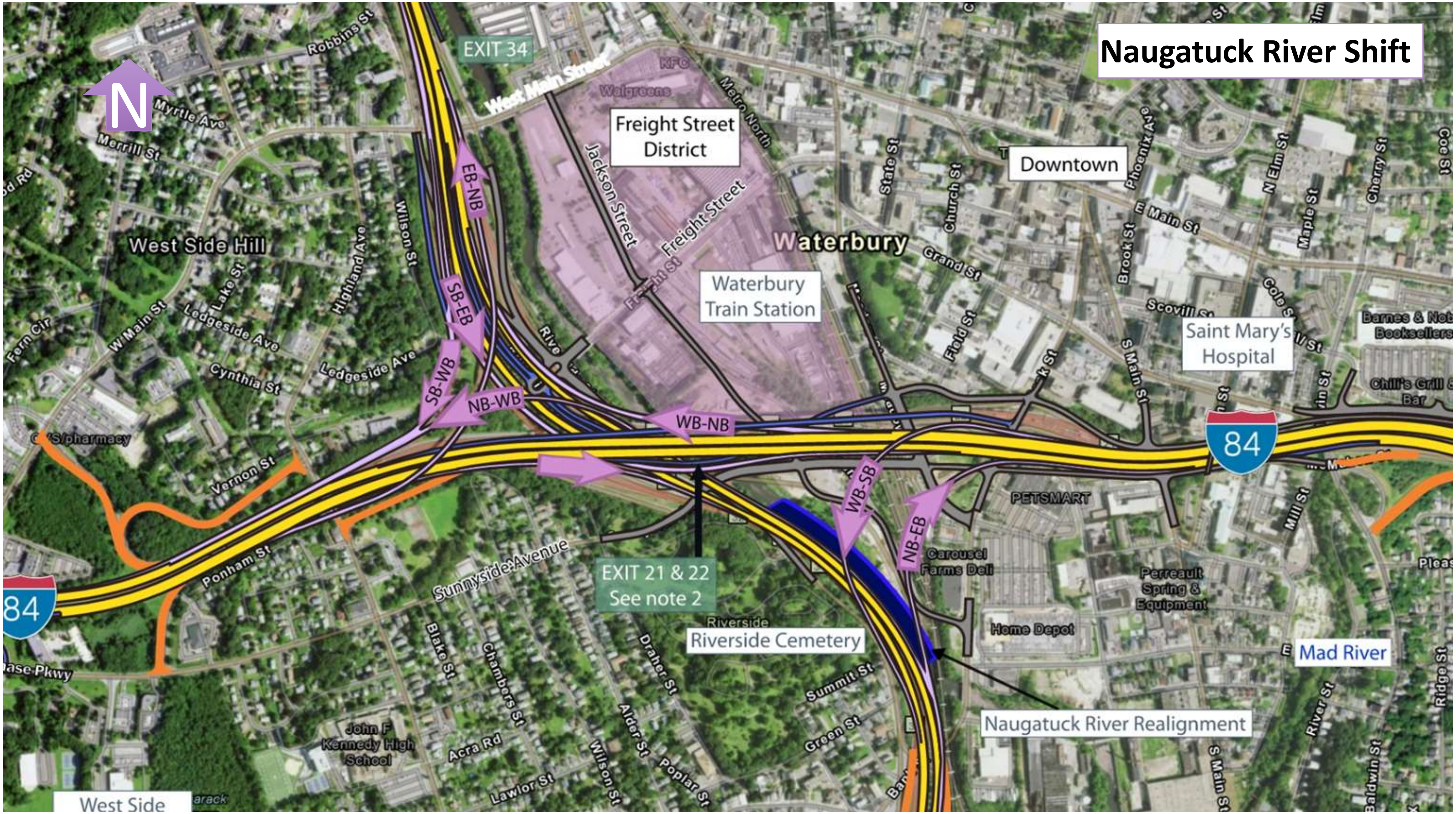



Modern Crossover Interchange
N
EXIT 34
West Main Street
Freight Street District
Jackson Street
Freight Street
Waterbury
Waterbury Train Station
Downtown
The Green
West Side Hill
EB-NB
SB-WB
SB-EB
NB-WB
WB-NB
WB-SB
EB-SB
NB-EB
Saint Mary's Hospital
84
EXIT 21 & 22
See note 2
Sunnyside
Sunnyside Avenue
Ponham St
Riverside Cemetery
PETSMART
Carousel Farms Deli
Perreault Spring & Equipment
Home Depot
Mad River
John F Kennedy High School
Acra Rd
Lawlor St
Summit St
Green St
Vernon St
Cynthia St
Ledgeside Ave
Meadow St
Field St
Grand St
Church St
State St
Brook St
E Main St
S Main St
Maple St
Cherry St
N Elm St
Mill St
Myrtle Ave
Merrill St
Highland Ave
Wilson St
Lake St
W Main St
Fern Cir
Blake St
Chambers St
Draher St
Alder St
Poplar St

New Mix Modern Crossover Interchange Alternative

Naugatuck River Shift





Naugatuck River Shift
N
EXIT 34
West Main Street
Freight Street District
Downtown
Waterbury
Waterbury Train Station
Saint Mary's Hospital
West Side Hill
EB-NB
SB-EB
SB-WB
NB-WB
WB-NB
WB-SB
NB-EB
84
EXIT 21 & 22
See note 2
Riverside Cemetery
Mad River
Naugatuck River Realignment
West Side

New Mix Naugatuck River Shift Alternative