

# The *New Mix*: Project Advisory Committee (PAC) Meeting #3C May 23, 2022



**HNTB**

**84**new  
mix

# Agenda

- **Welcome Back!**
- **The Universe of Alternatives Discussion**
- **Level 1 Screening Criteria**
- **Next Steps**

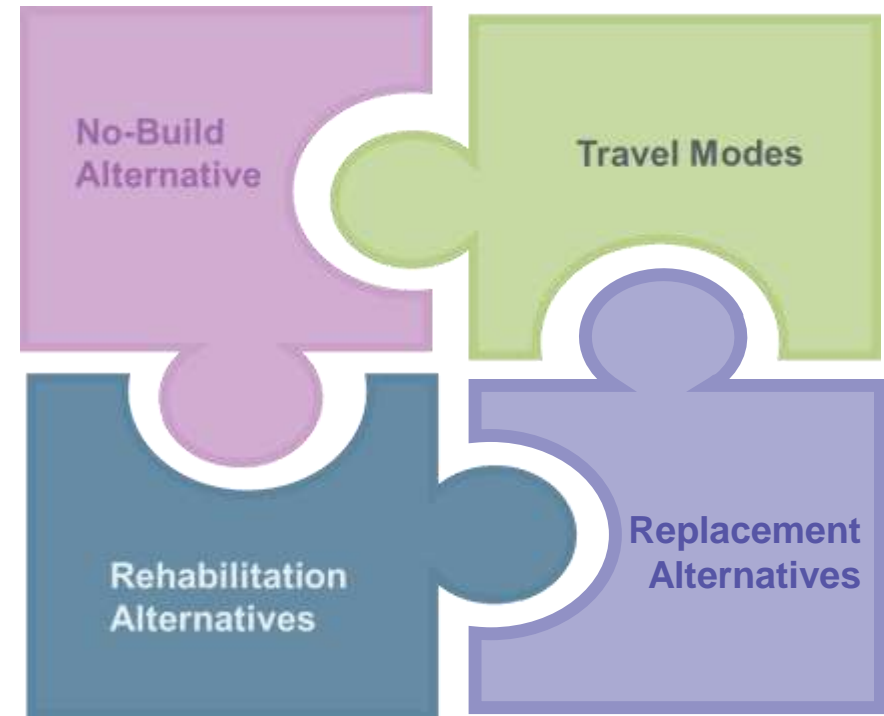


# Universe of Alternatives



The Study Team summarized and consolidated similar conceptual alternatives

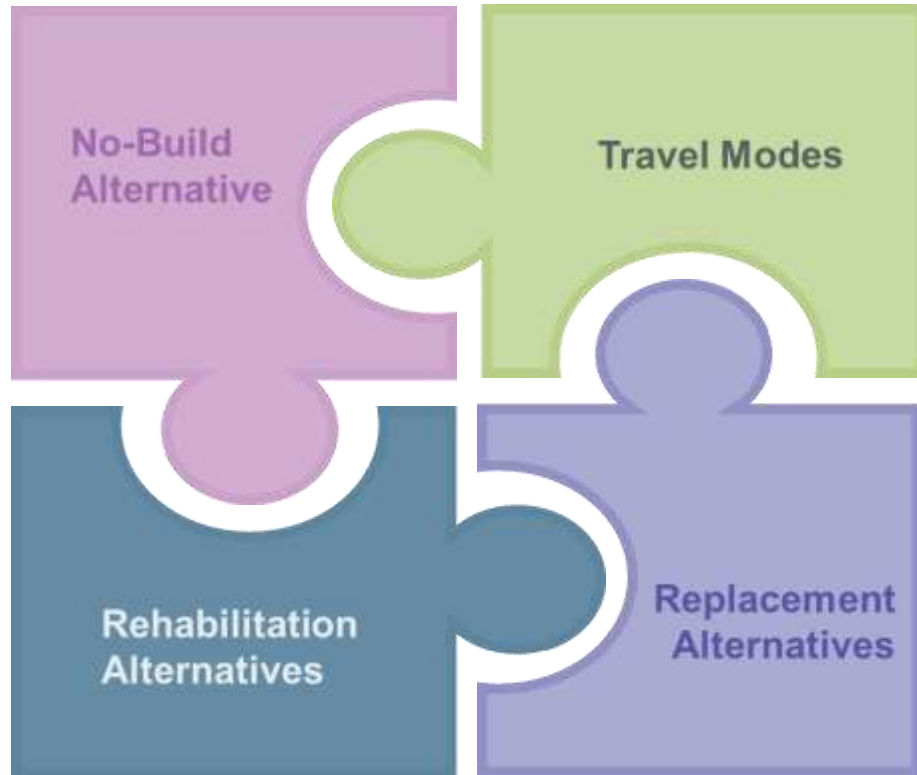
**The final Universe defined the following groups of alternatives:**





# Universe of Alternatives: Conceptual Alternatives

Any questions on the Universe?



1. **No-Build Alternative**

2. **Alternate Travel Modes**

## Rehabilitation Alternatives

3. I-84/Route 8 True Rehabilitation

4. I-84 WB Bridge Rehabilitation with Construction of New I-84 EB Mainline

5. I-84 Bridge Rehabilitation with Bypass Reused as Frontage Road

6. I-84 Bridge Rehabilitation with Widening to Facilitate Staging

## Replacement Alternatives

7. At Grade System Connections

8. Modern Crossover Interchange with Route 8 Split to the South

9. Interchange Shifted East

10. Combined System Connections

11. I-84 Reconstruction In-Place

12. Interchange Shifted East with Inner Loop Ramp

13. Partial System Crossover Interchange

14. Modified Diverging Diamond

15. Half Diverging Diamond

16. Partial System Interchange with Freight Street Interchange

17. Route 8 Boulevard

18. Modern Crossover Interchange

19. Washington Street Bypass

20. South City Bypass

21. Keeping Route 8 Stacked

22. Tunnel

23. Naugatuck River Shift





# Which alternative would you like to see visualized and with more explanation? (Vote through zoom application)

1. **No-Build Alternative**

2. **Alternate Travel Modes**

## Rehabilitation Alternatives

3. I-84/Route 8 True Rehabilitation

4. I-84 WB Bridge Rehabilitation with Construction of New I-84 EB Mainline

5. I-84 Bridge Rehabilitation with Bypass Reused as Frontage Road

6. I-84 Bridge Rehabilitation with Widening to Facilitate Staging

## Replacement Alternatives

7. At Grade System Connections

8. Modern Crossover Interchange with Route 8 Split to the South

9. Interchange Shifted East

10. Combined System Connections

11. I-84 Reconstruction In-Place

12. Interchange Shifted East with Inner Loop Ramp

13. Partial System Crossover Interchange

14. Modified Diverging Diamond

15. Half Diverging Diamond

16. Partial System Interchange with Freight Street Interchange

17. Route 8 Boulevard

18. Modern Crossover Interchange

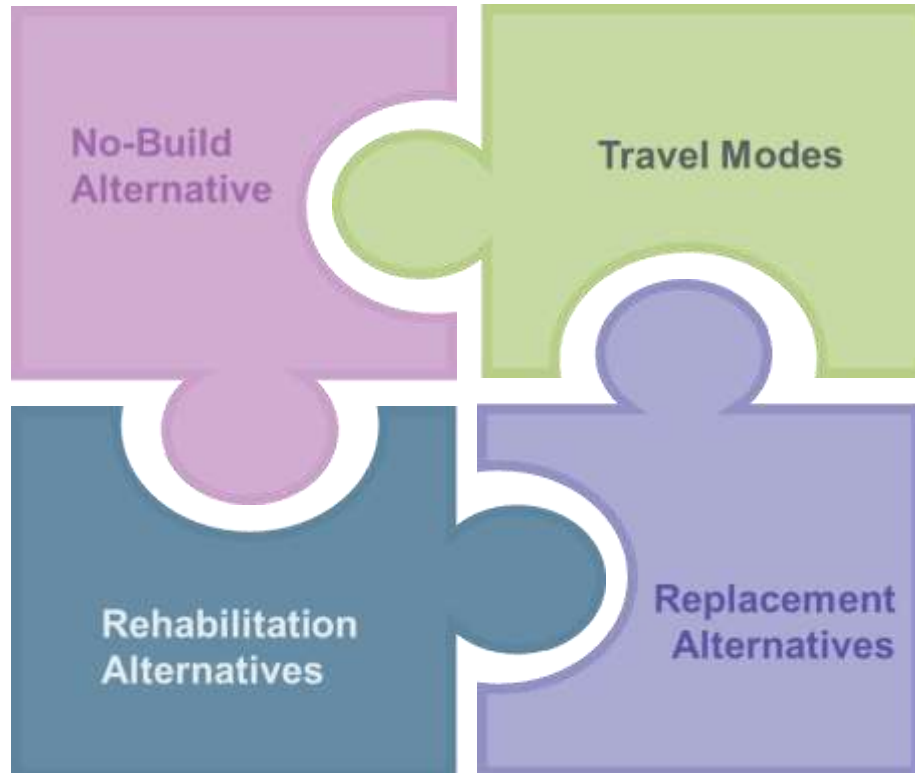
19. Washington Street Bypass

20. South City Bypass

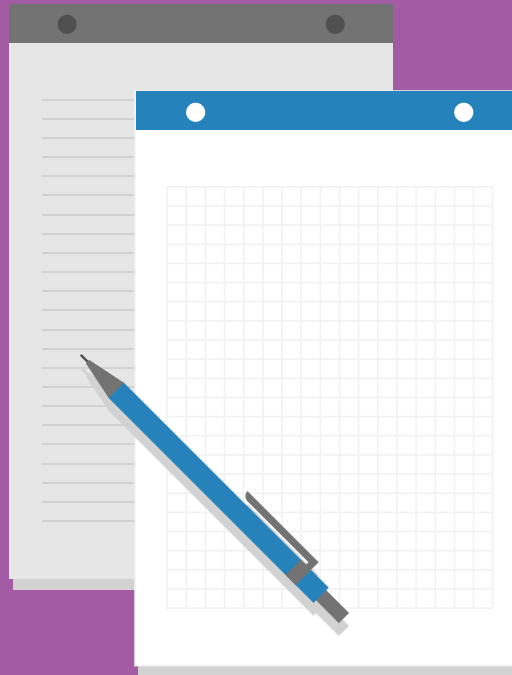
21. Keeping Route 8 Stacked

22. Tunnel

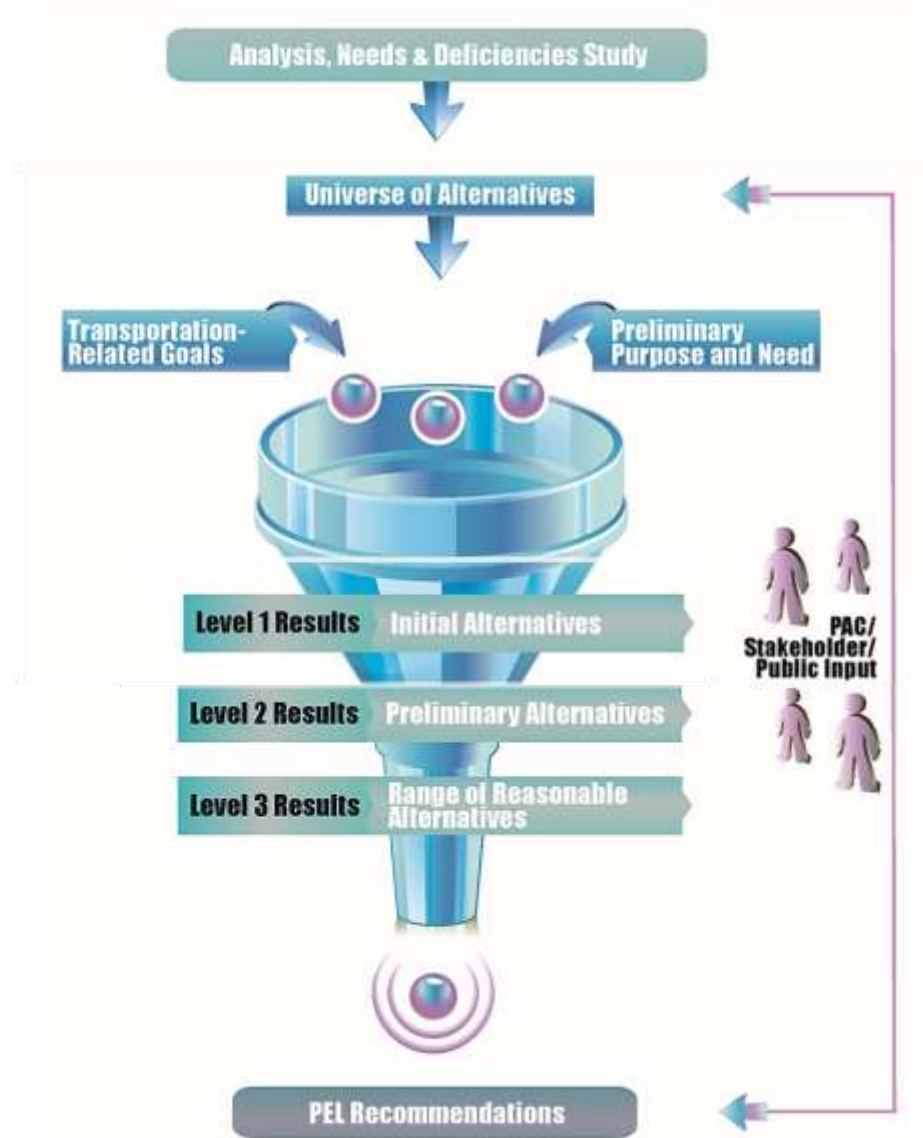
23. Naugatuck River Shift



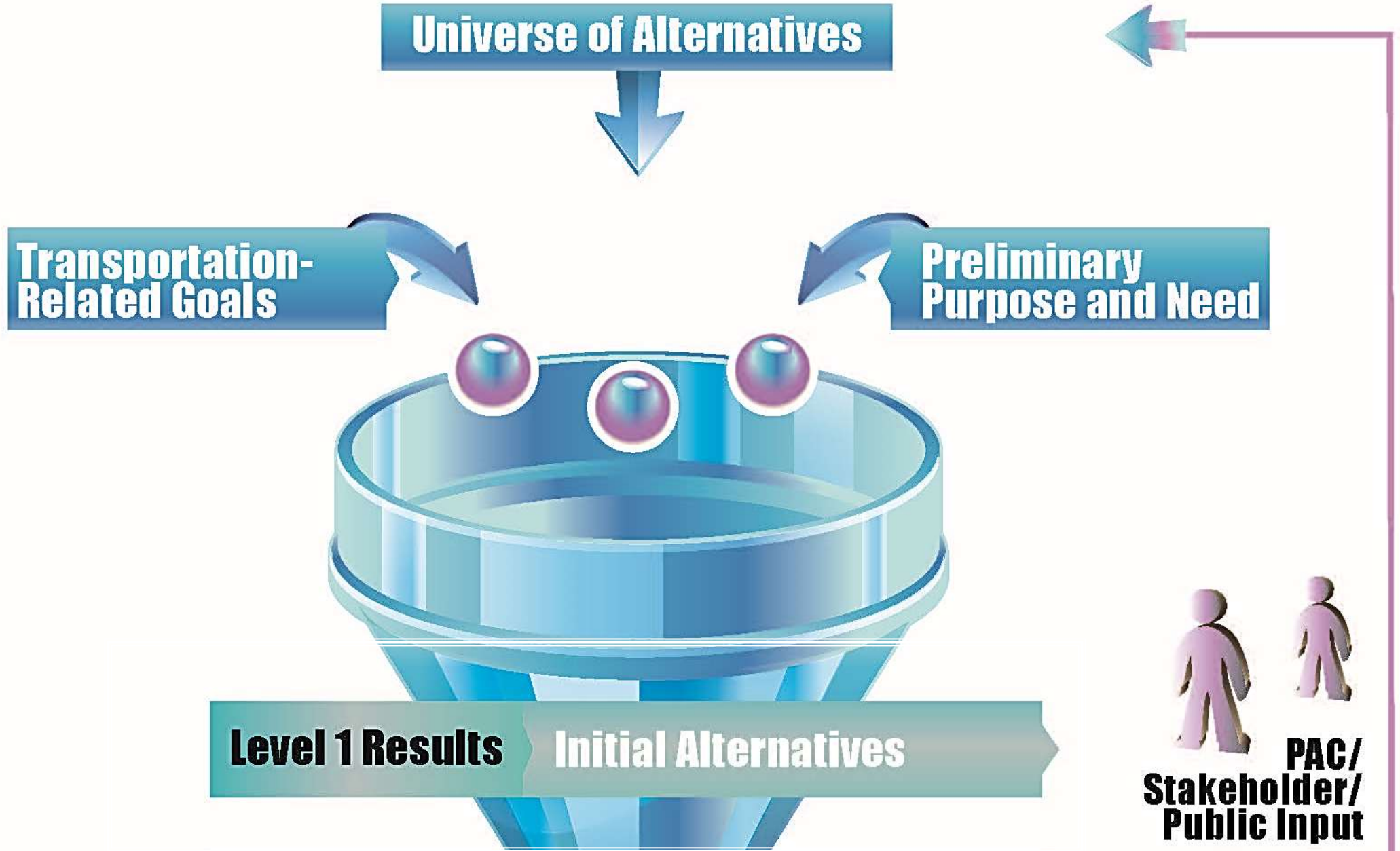
# *New Mix Program* PEL Study Level 1 Screening Criteria



# New Mix PEL Process Preview: Screening of Alternatives







**Universe of Alternatives**

**Transportation-Related Goals**

**Preliminary Purpose and Need**

**Level 1 Results**

**Initial Alternatives**

**PAC/  
Stakeholder/  
Public Input**

# Level 1 Analysis: Engineering Based – Can the Alternative Satisfy the Purpose of the Project? Does it have any fatal flaws?

NEEDS	PURPOSE
Structural Deficiencies	Improve bridge conditions.
Geometric Deficiencies	Improve roadway conditions.
Operational Deficiencies	Improve operational conditions.

## Fatal Flaws:

Cost  
Feasibility  
Additional TBD



Pass

Fail



# New Mix PEL Study Screening Process: Level 1

Can the Alternative Satisfy the Purpose of the Project? Does it have any fatal flaws?



Structural  
Geometric  
Operational  
Cost  
Feasibility



Pass

Fail



PEL Study Alternative Screening Methodology  
Level 1 Evaluation Criteria





# *New Mix* PEL Study Level 1 Screening Criteria

Structural

Geometric

Operational

Cost

Feasibility

## Improve Structural Deficiencies

Address the need to improve or replace deteriorating bridge structures that have outlived their original intended 50-year service lives.

# Engineering Based – Can the Alternative Satisfy the Purpose of the Project? Does it have any fatal flaws?



Structural



Geometric



Operational



Cost



Feasibility



**✗ Fail**

Pass ✓

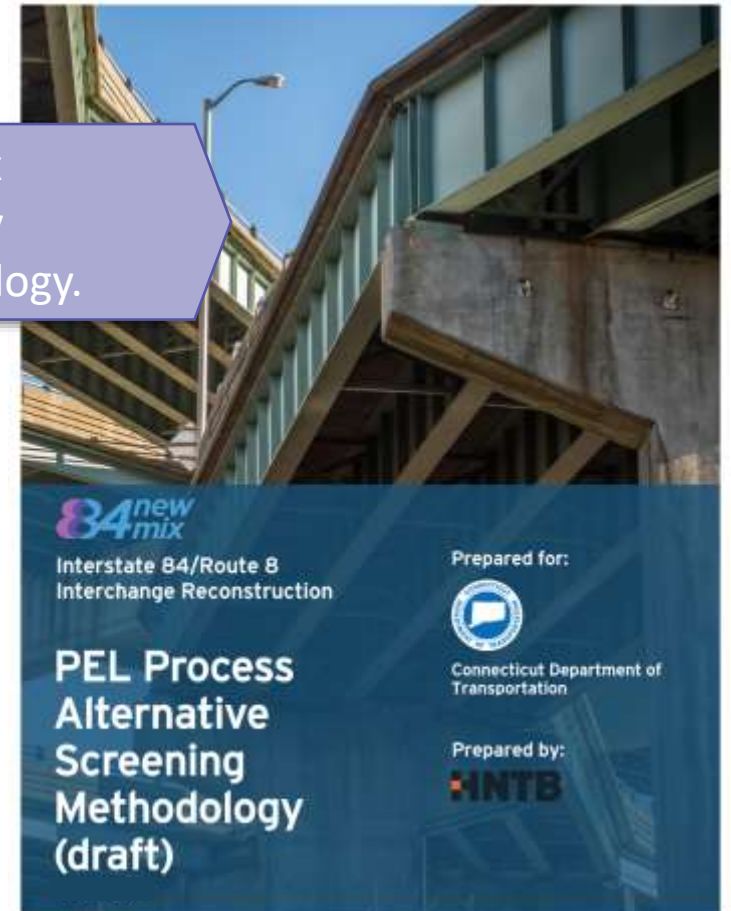


**=FAILURE TO SATISFY THE PRELIMINARY PURPOSE & NEED STATEMENT HAS FATAL FLAW**

# Draft PEL Documents

Details the New Mix Program's PEL Study Screening Methodology.

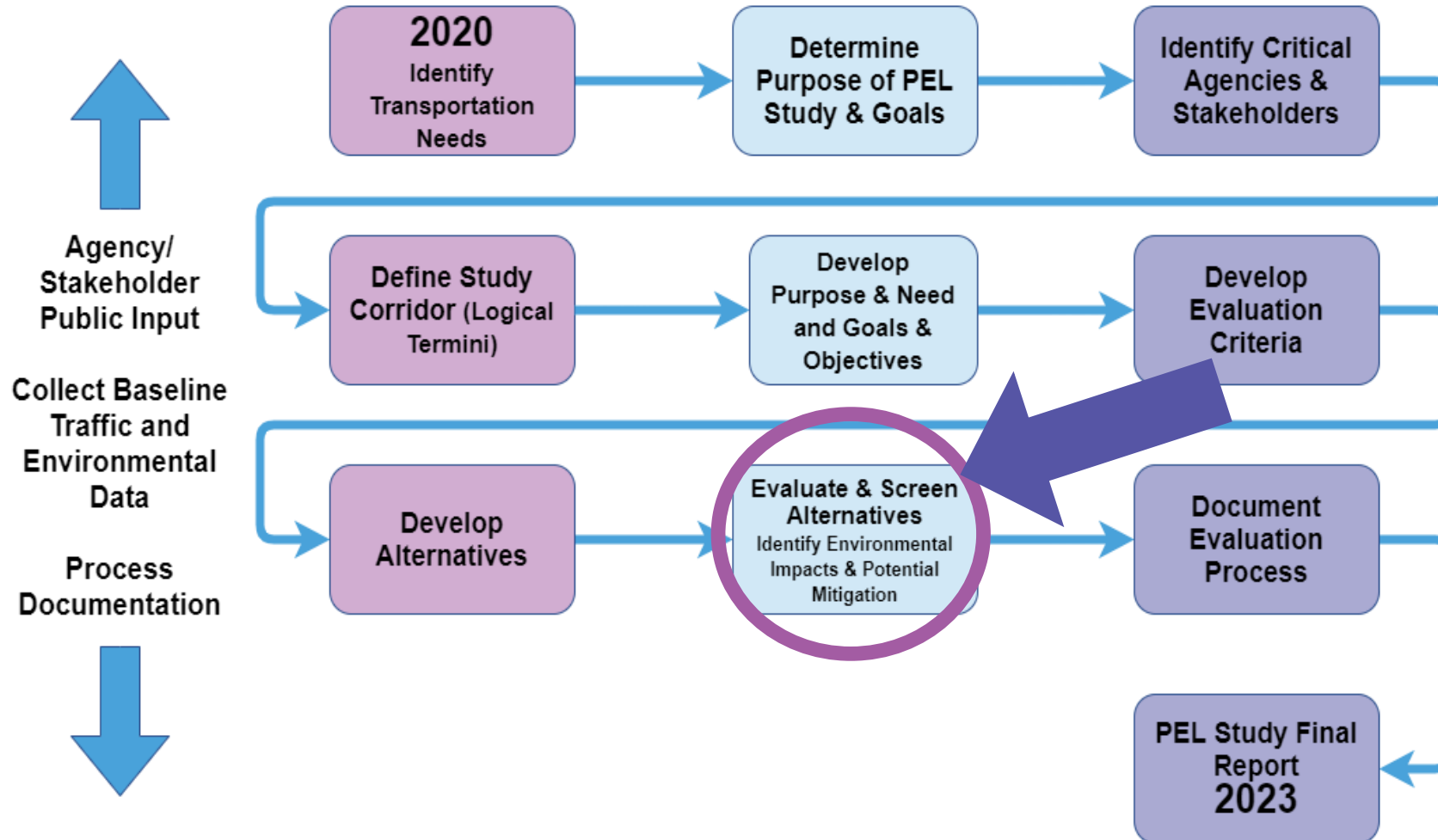
- Will be made available on the program website for public review and comment.
- PAC members are encouraged to provide their input on the draft documents via email or through the website for documentation and inclusion in the PEL Study.



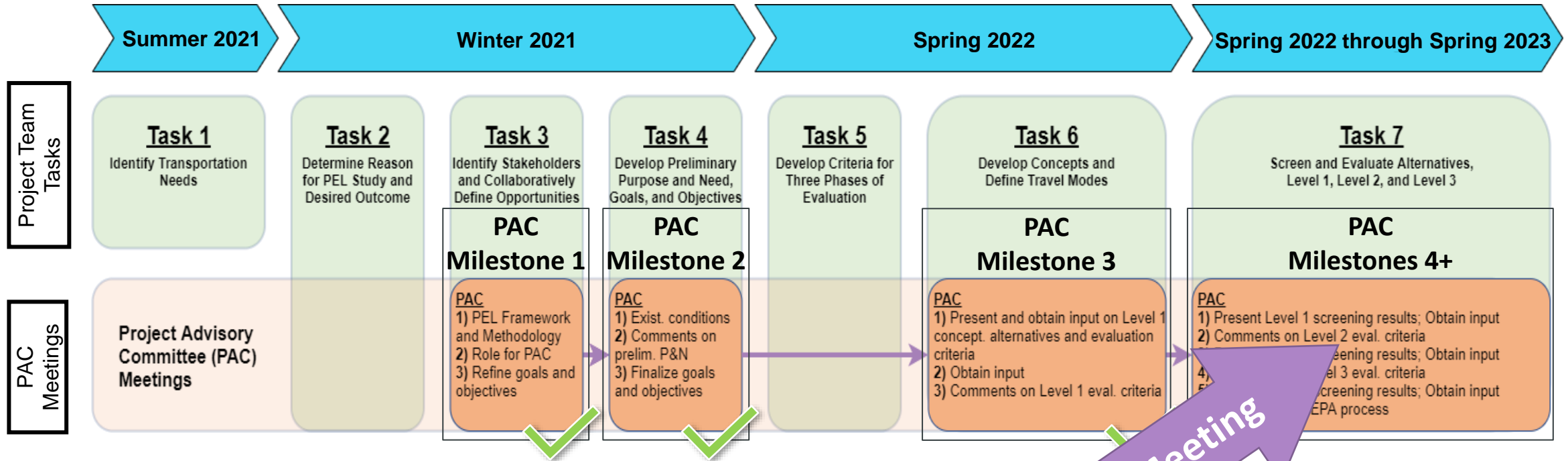


# Next Steps

# New Mix PEL Study Steps



# PEL: Project Advisory Committee Detail & Timeline



**Next Meeting**







# PAC Comments Due

Comments / Input Due: June 13, 2022

Email: [Nhodes@hntb.com](mailto:Nhodes@hntb.com)

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



Universe of Alternative and Level 1 Screening Criteria comments are due June 13th for incorporation into the PEL Documents.

# Upcoming Meetings and Future PAC Agenda Items

## Public Meeting #1 June 2022

**Where:**  
Virtual via Zoom

**Topics:**

- New Mix Program and PEL Study Introduction
- Obtain Input from the Public

## PAC Mtg #4 Anticipating July 2022

**Where:**  
Virtual via Zoom

**Topics:**

- Present preliminary Level 1 Screening Results and
- Obtain Input from PAC

## Public Meeting #2 Anticipating Early Fall 2022

**Where:**  
Virtual via Zoom

**Topics:**

- Present Universe of Alternative and Level 1 Screening Criteria
- Obtain Input from the Public



# Before the Next Meeting Continue to...



**Review** PAC Meeting #3 Materials and provide input on Universe of Alternatives and Level 1 Screening Criteria.



**Explore** the Program Website.



**Check email** for information about the next PAC meeting and scheduling.



**Remain excited** to participate in our next meeting.



# Questions & Comments



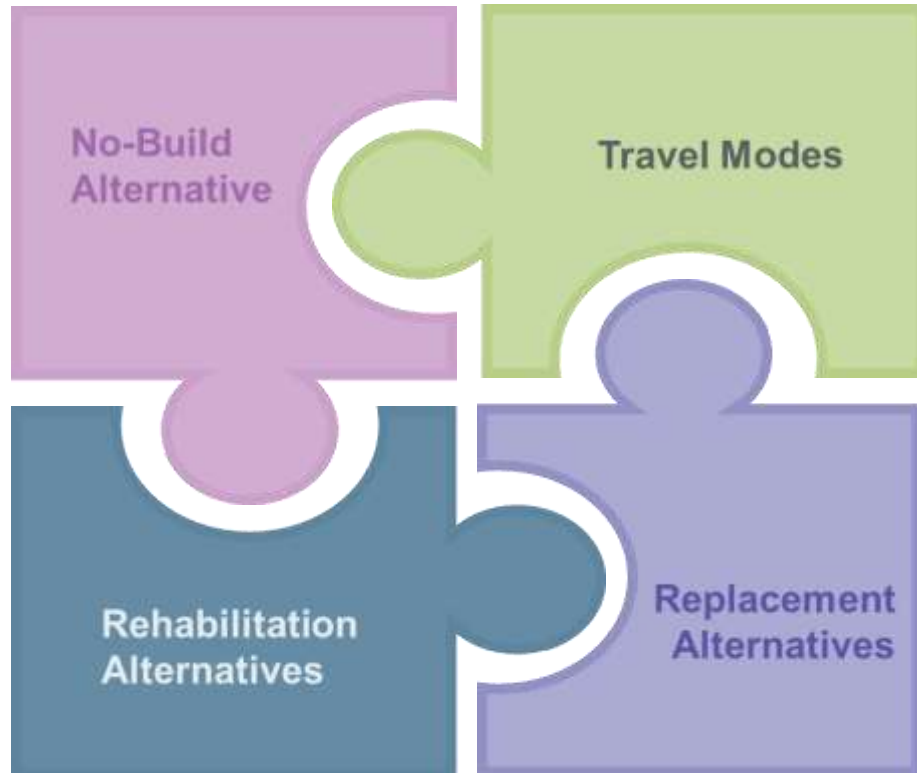
# Thank you.





# Universe of Alternatives: Conceptual Alternatives

Any questions on the Universe?



1. **No-Build Alternative**

2. **Alternate Travel Modes**

## Rehabilitation Alternatives

3. I-84/Route 8 True Rehabilitation

4. I-84 WB Bridge Rehabilitation with Construction of New I-84 EB Mainline

5. I-84 Bridge Rehabilitation with Bypass Reused as Frontage Road

6. I-84 Bridge Rehabilitation with Widening to Facilitate Staging

## Replacement Alternatives

7. At Grade System Connections

8. Modern Crossover Interchange with Route 8 Split to the South

9. Interchange Shifted East

10. Combined System Connections

11. I-84 Reconstruction In-Place

12. Interchange Shifted East with Inner Loop Ramp

13. Partial System Crossover Interchange

14. Modified Diverging Diamond

15. Half Diverging Diamond

16. Partial System Interchange with Freight Street Interchange

17. Route 8 Boulevard

18. Modern Crossover Interchange

19. Washington Street Bypass

20. South City Bypass

21. Keeping Route 8 Stacked

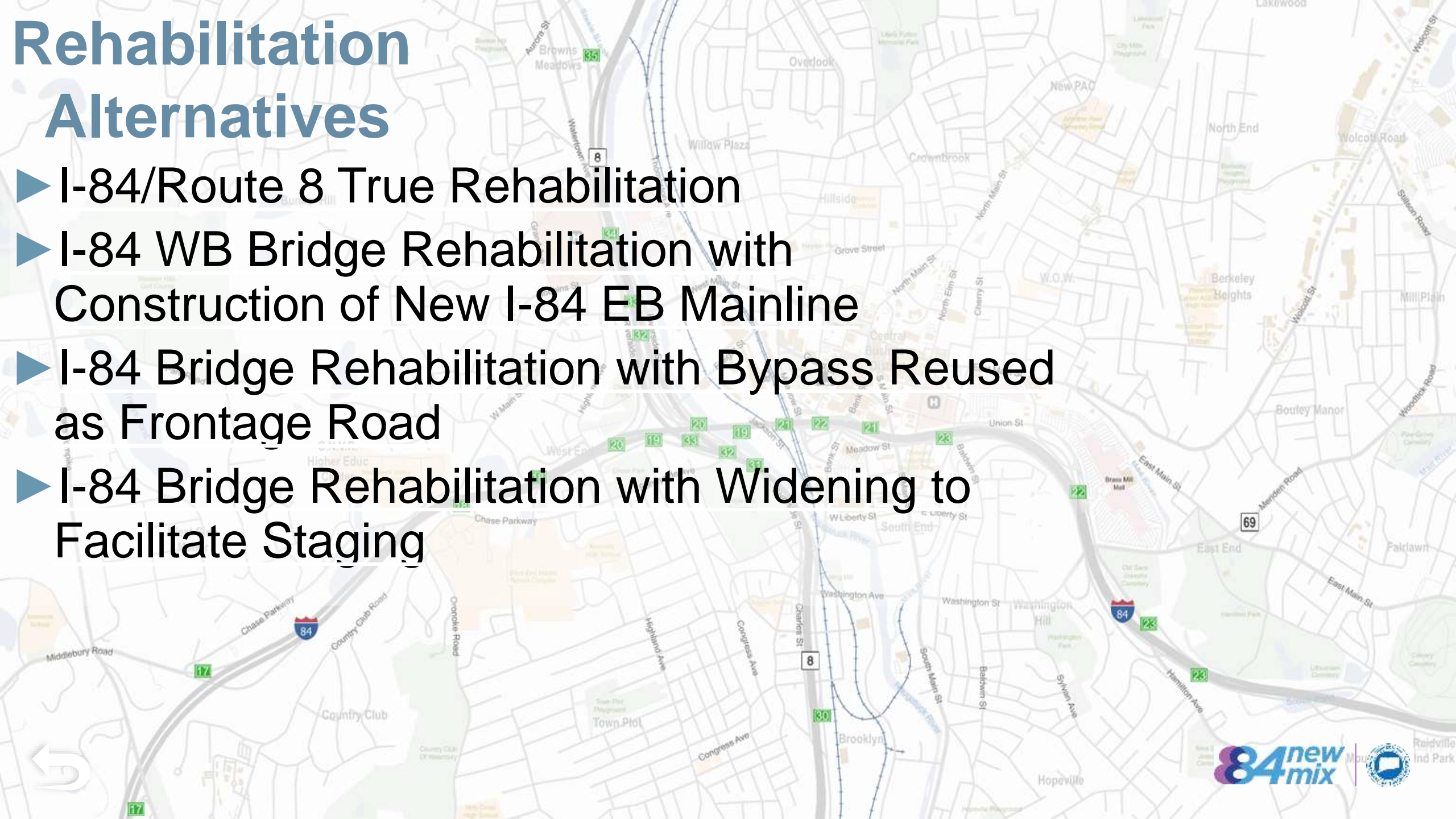
22. Tunnel

23. Naugatuck River Shift



# Rehabilitation Alternatives

- ▶ I-84/Route 8 True Rehabilitation
- ▶ I-84 WB Bridge Rehabilitation with Construction of New I-84 EB Mainline
- ▶ I-84 Bridge Rehabilitation with Bypass Reused as Frontage Road
- ▶ I-84 Bridge Rehabilitation with Widening to Facilitate Staging



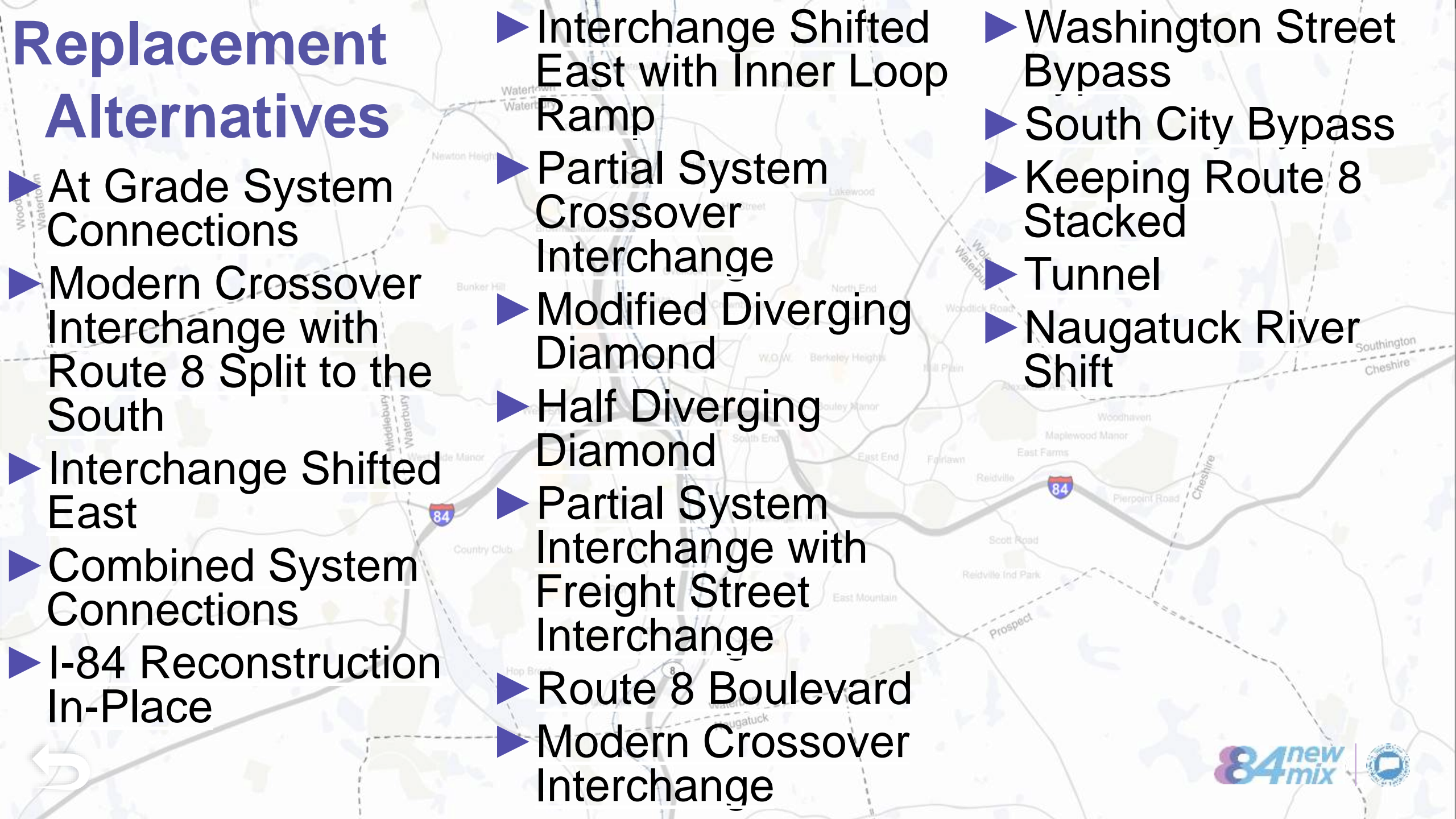


# Replacement Alternatives

- ▶ At Grade System Connections
- ▶ Modern Crossover Interchange with Route 8 Split to the South
- ▶ Interchange Shifted East
- ▶ Combined System Connections
- ▶ I-84 Reconstruction In-Place

- ▶ Interchange Shifted East with Inner Loop Ramp
- ▶ Partial System Crossover Interchange
- ▶ Modified Diverging Diamond
- ▶ Half Diverging Diamond
- ▶ Partial System Interchange with Freight Street Interchange
- ▶ Route 8 Boulevard
- ▶ Modern Crossover Interchange

- ▶ Washington Street Bypass
- ▶ South City Bypass
- ▶ Keeping Route 8 Stacked
- ▶ Tunnel
- ▶ Naugatuck River Shift



# No-Build Alternative

**I-84 and Route 8 Alignments**

I-84 remains on existing alignment

Route 8 remains on existing alignment

**System Connections  
(full or partial; direct or indirect)**

Full system connections remain as existing

**Local Connectivity  
(service interchanges and frontage roads)**

Left-hand entrance and exit ramps remain as existing

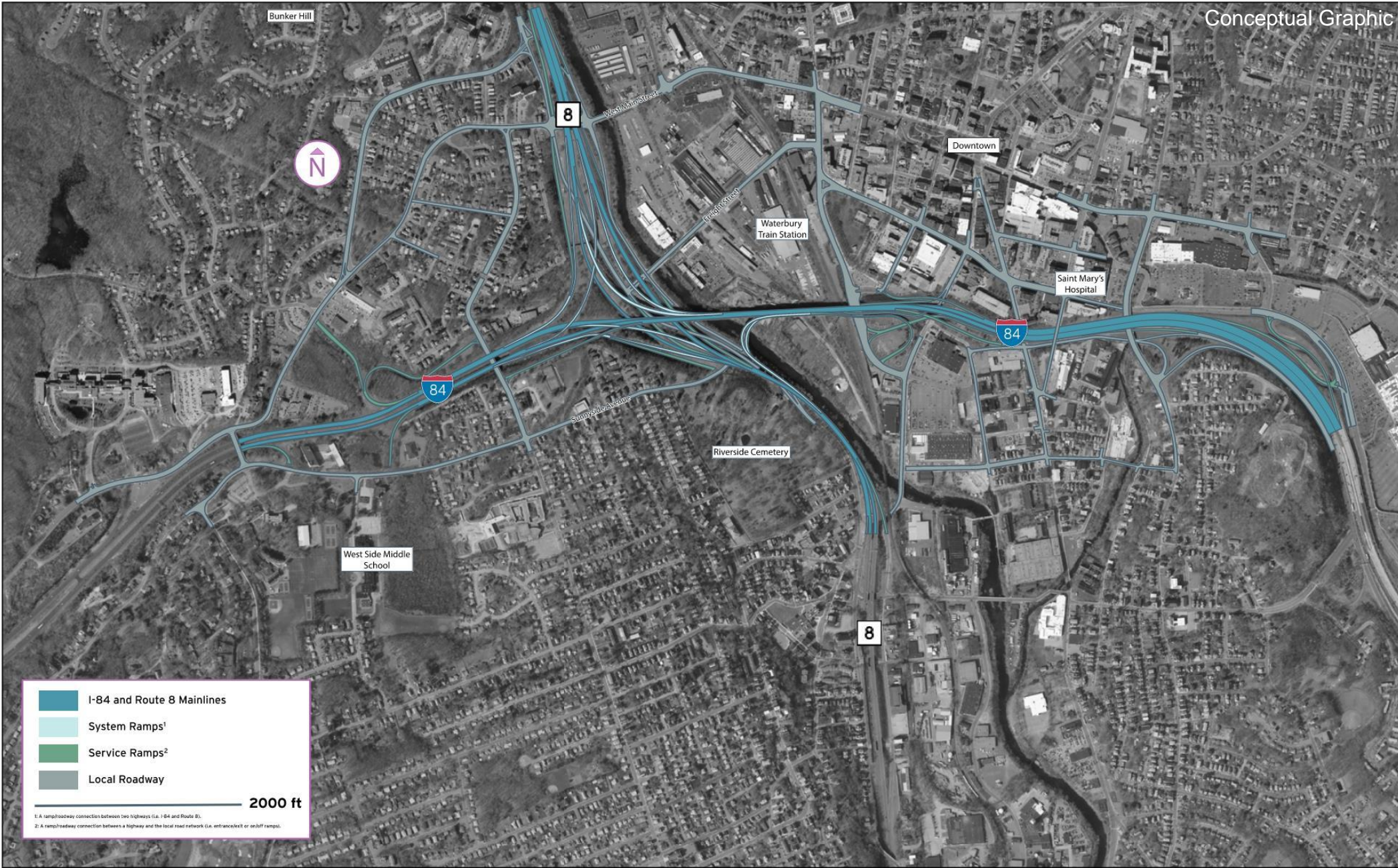
No local roadway improvements associated with the Mixmaster









FIGURE 9-1 EXISTING CONDITIONS

Conceptual Graphic



	I-84 and Route 8 Mainlines
	System Ramps <sup>1</sup>
	Service Ramps <sup>2</sup>
	Local Roadway

2000 ft

1: A ramp/roadway connection between two highways (i.e., I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e., entrances/exits or on/off ramps).





# Replacement Alternative At Grade System Connections

## I-84 and Route 8 Alignments

I-84 located south of existing alignment over Naugatuck River

Route 8 and located east of Naugatuck River (south of the interchange core)

## System Connections (full or partial; direct or indirect)

Partial system with two (2) indirect connections:  
I-84 Eastbound (EB) to Route 8 Northbound (NB) and Southbound (SB)

## Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

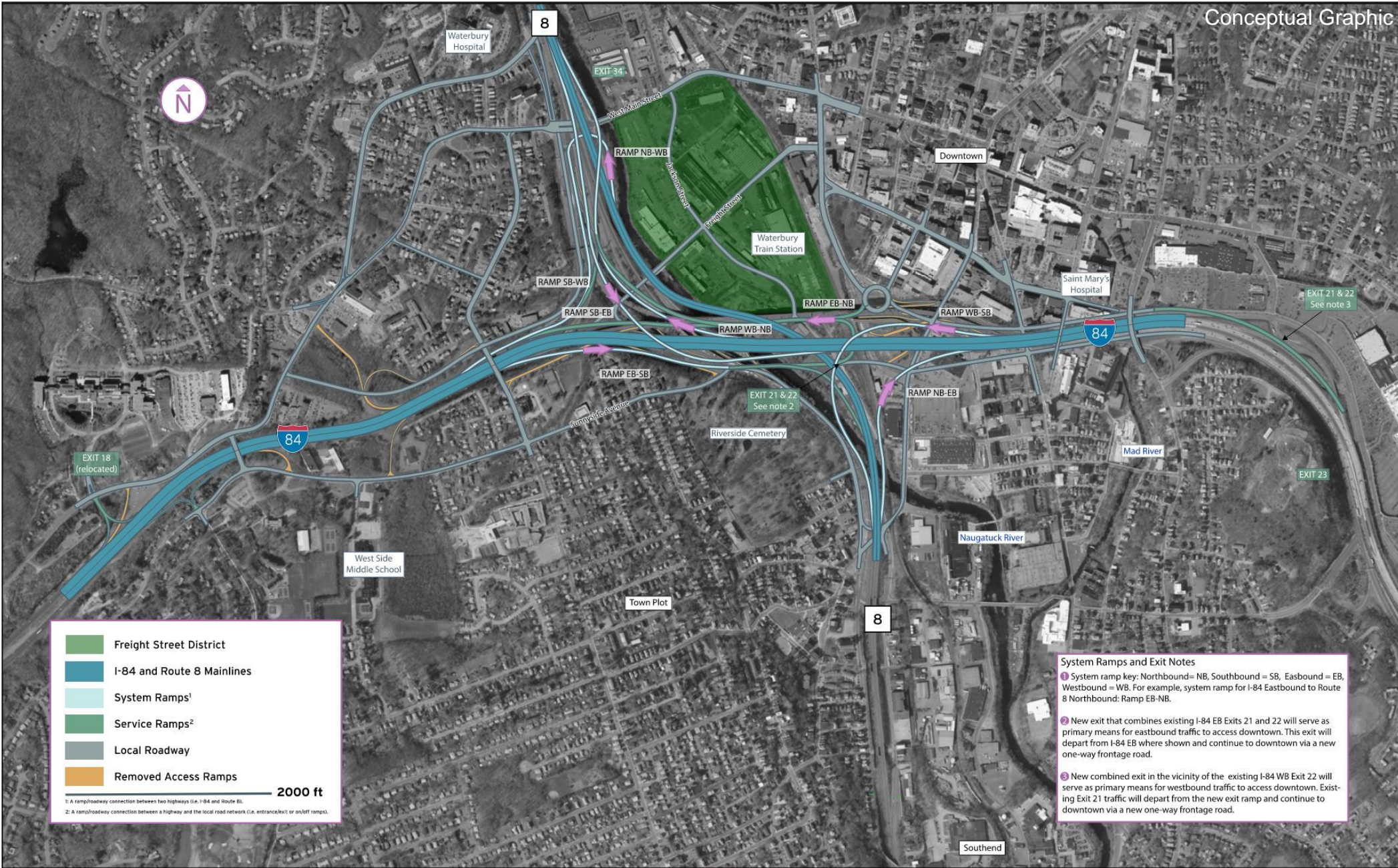
Improves interchange spacing by eliminating service ramps directly into downtown

New east / west frontage roads



FIGURE 9-2 AT GRADE SYSTEM CONNECTIONS

Conceptual Graphic



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- ① System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- ② New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.
- ③ New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative

## Modern Crossover Interchange with Route 8 Split to the South

### I-84 and Route 8 Alignments

I-84 located just south of existing alignment over Naugatuck River

Route 8 split with NB moving east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Full system with all direct connections

### Local Connectivity (service interchanges and frontage roads)

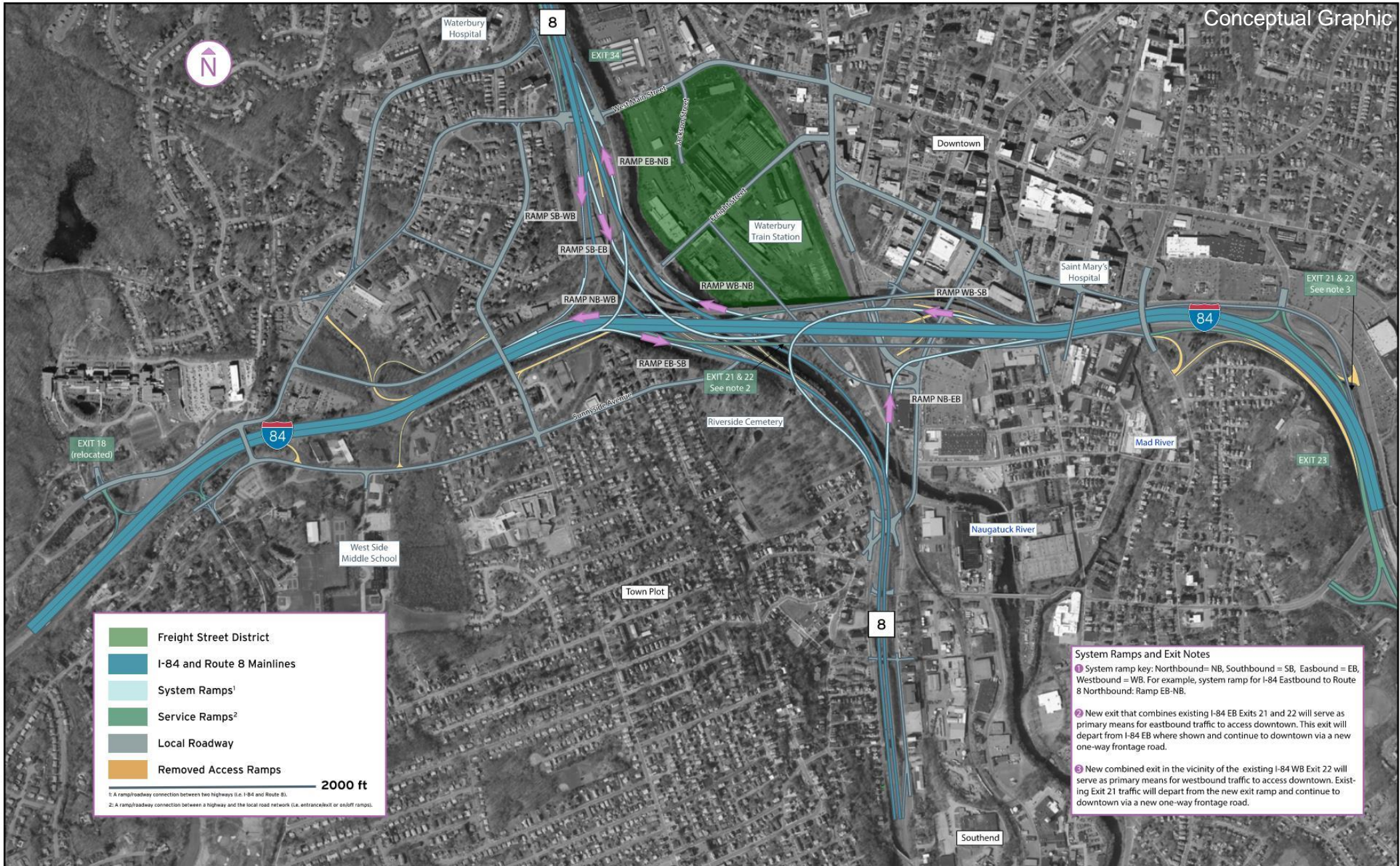
Eliminates all left-hand exit ramps and fewer left-hand exits remain

Improves interchange spacing by eliminating service ramps directly into downtown

New north / south and east / west frontage roads



FIGURE 9-4 MODERN CROSSOVER INTERCHANGE WITH ROUTE 8 SPLIT TO THE SOUTH



**System Ramps and Exit Notes**

1 System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.

2 New exit that combines existing I-84 Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.

3 New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.

**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).



# Replacement Alternative

## Interchange Shifted East

### I-84 and Route 8 Alignments

Interchange core constructed approx. 0.5-mile east of the existing alignment

I-84 located south of existing alignment over Naugatuck River

Route 8 located east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Full system with all direct connections and combined movements

### Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

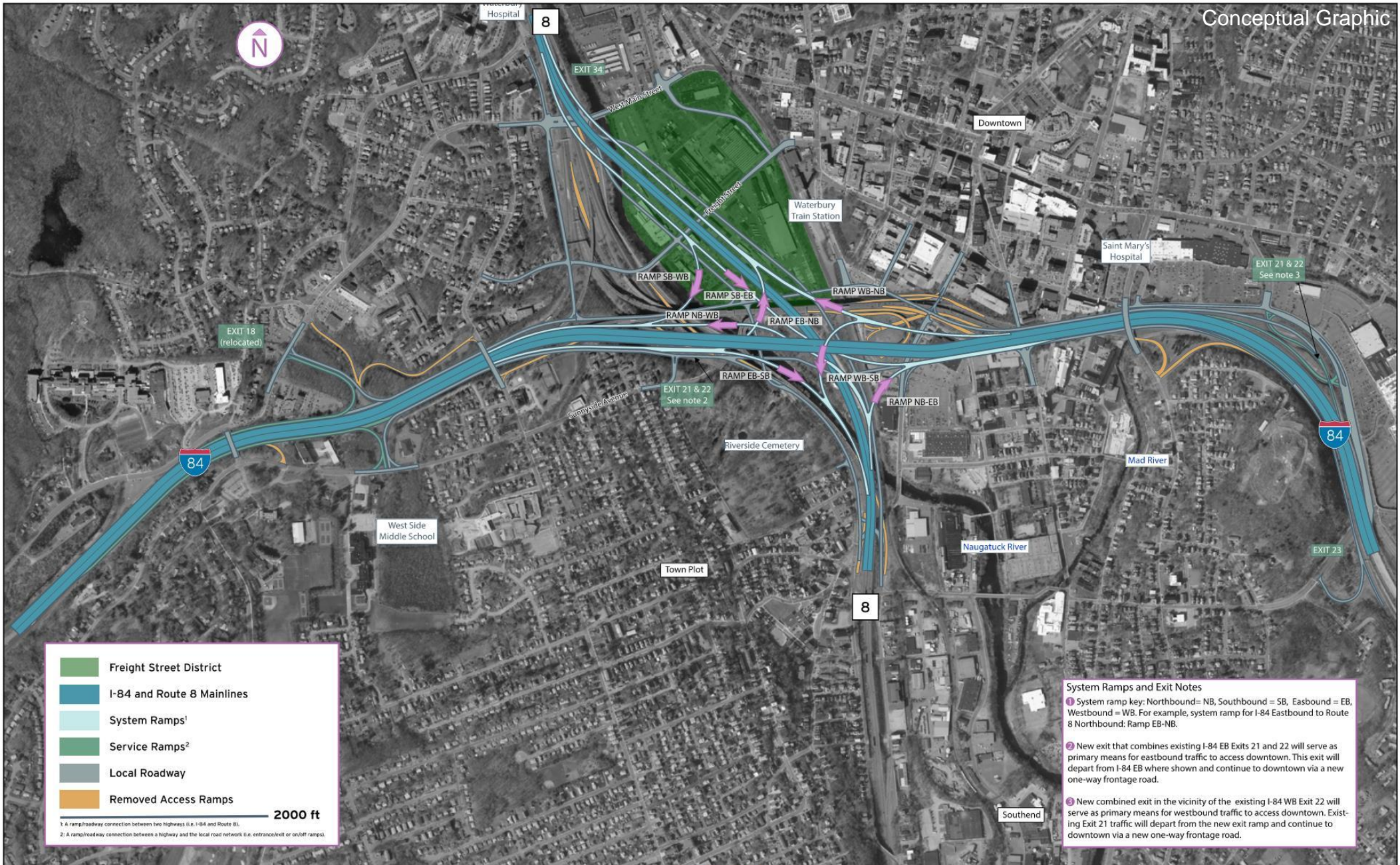
Improves interchange spacing by eliminating service ramps directly into downtown

New north / south and east / west frontage roads



FIGURE 9-6 INTERCHANGE SHIFTED EAST

Conceptual Graphic





# Replacement Alternative

## Combined System Connections

### I-84 and Route 8 Alignments

I-84 located south of existing alignment over Naugatuck River

Route 8 located east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Full system with all direct connections and combined movements

### Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

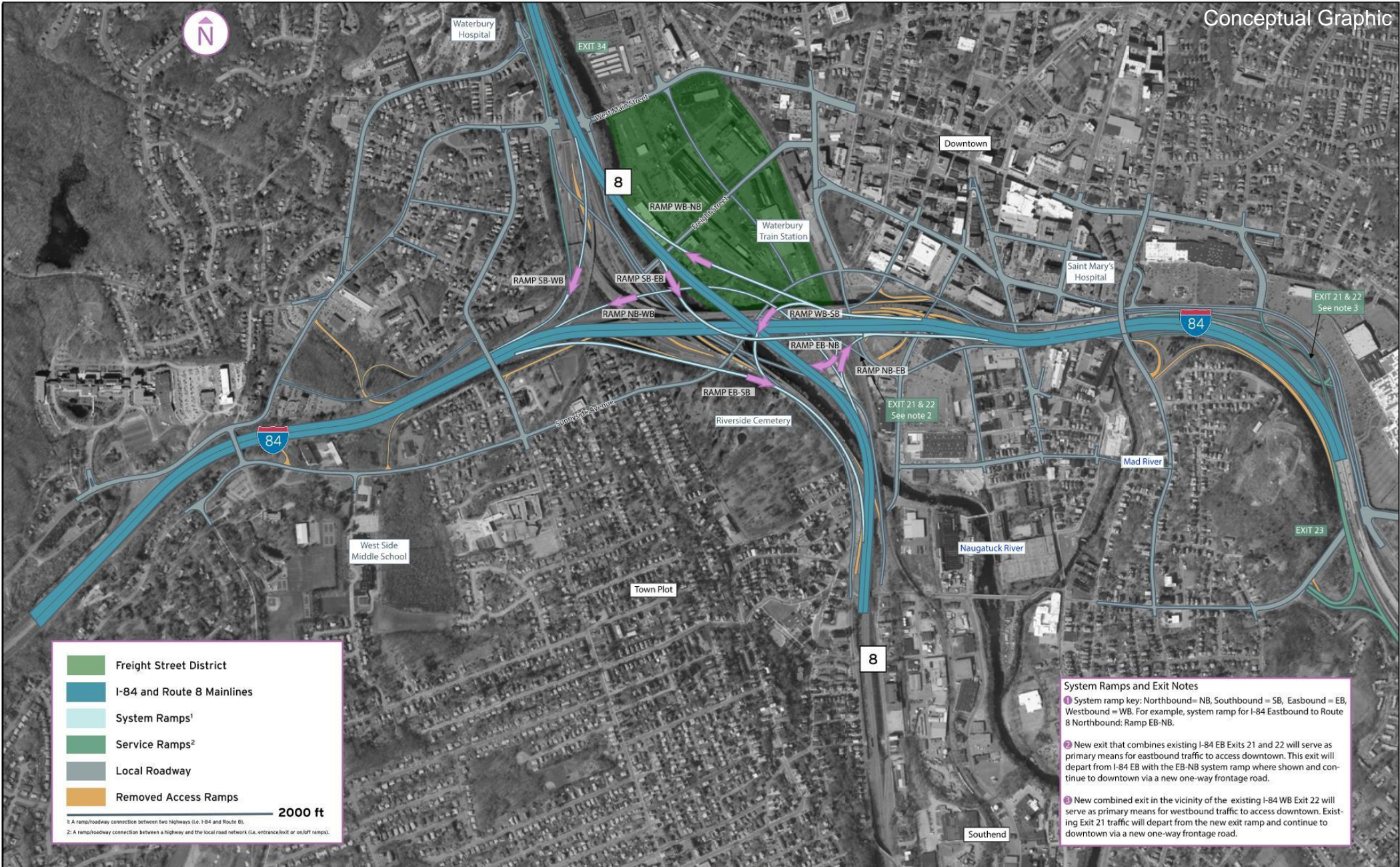
Improves interchange spacing by eliminating service ramps directly into downtown

New north / south and east / west frontage roads



FIGURE 9-8 COMBINED SYSTEM CONNECTIONS

Conceptual Graphic



<sup>1</sup>: A ramp/roadway connection between two highways (i.e., I-84 and Route 8).  
<sup>2</sup>: A ramp/roadway connection between a highway and the local road network (i.e., entrance/exit or on/off ramps).

2000 ft





# Replacement Alternative

## I-84 Reconstruction In-Place

### I-84 and Route 8 Alignments

I-84 located generally on existing alignment over Naugatuck River

Route 8 split and located east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Full system with all direct connections, most as combined movements

### Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

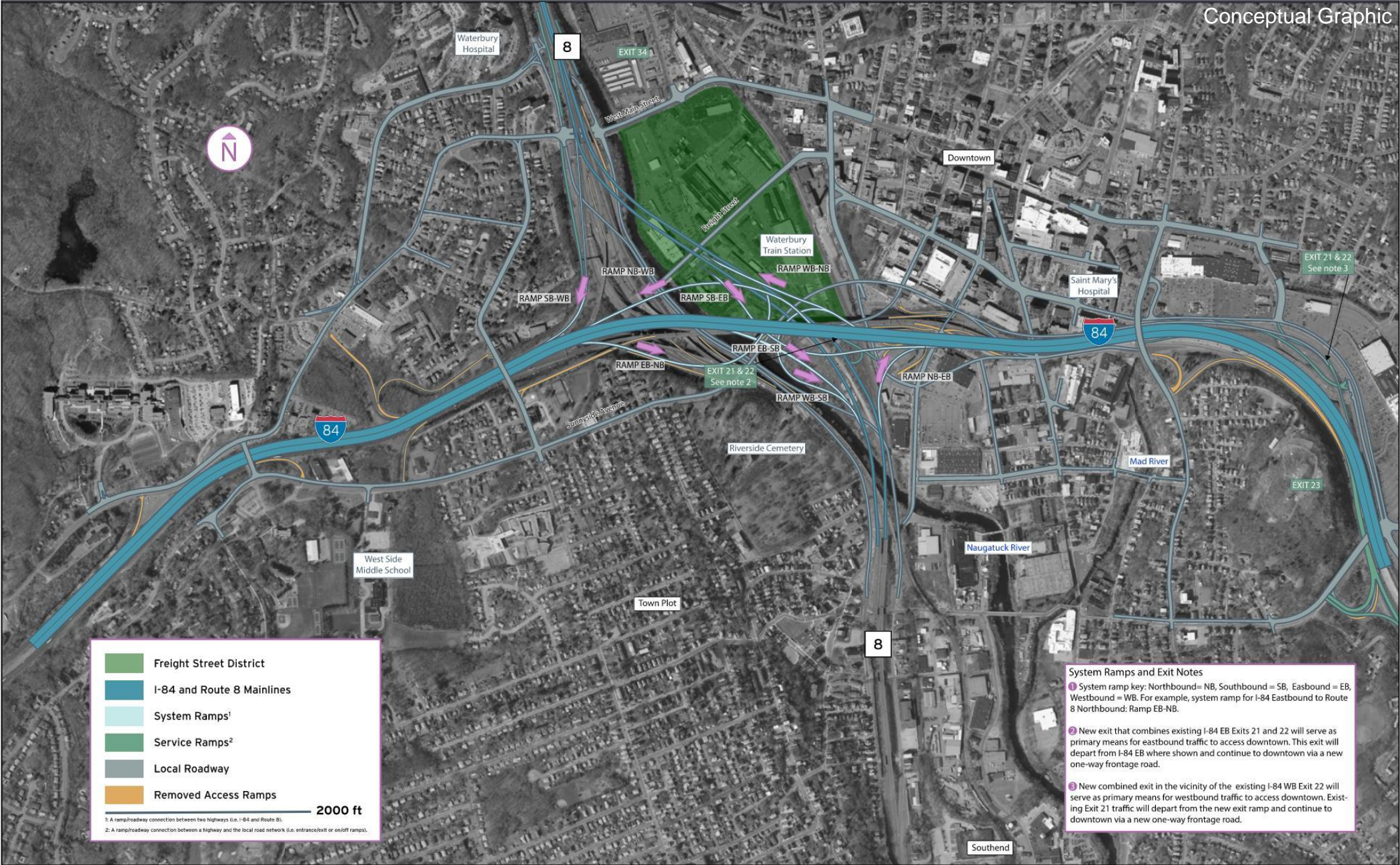
Improves interchange spacing by eliminating service ramps directly into downtown

New north / south and east / west frontage roads



FIGURE 9-10 I-84 RECONSTRUCTION IN PLACE

Conceptual Graphic



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- 1 System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- 2 New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.
- 3 New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative

## Interchange Shifted East with Inner Loop Ramp

### I-84 and Route 8 Alignments

I-84 located south of existing alignment over Naugatuck River

Route 8 split with NB and SB located east of Naugatuck River

### System Connections (full or partial; direct or indirect)

Full system connections all direct connections

### Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

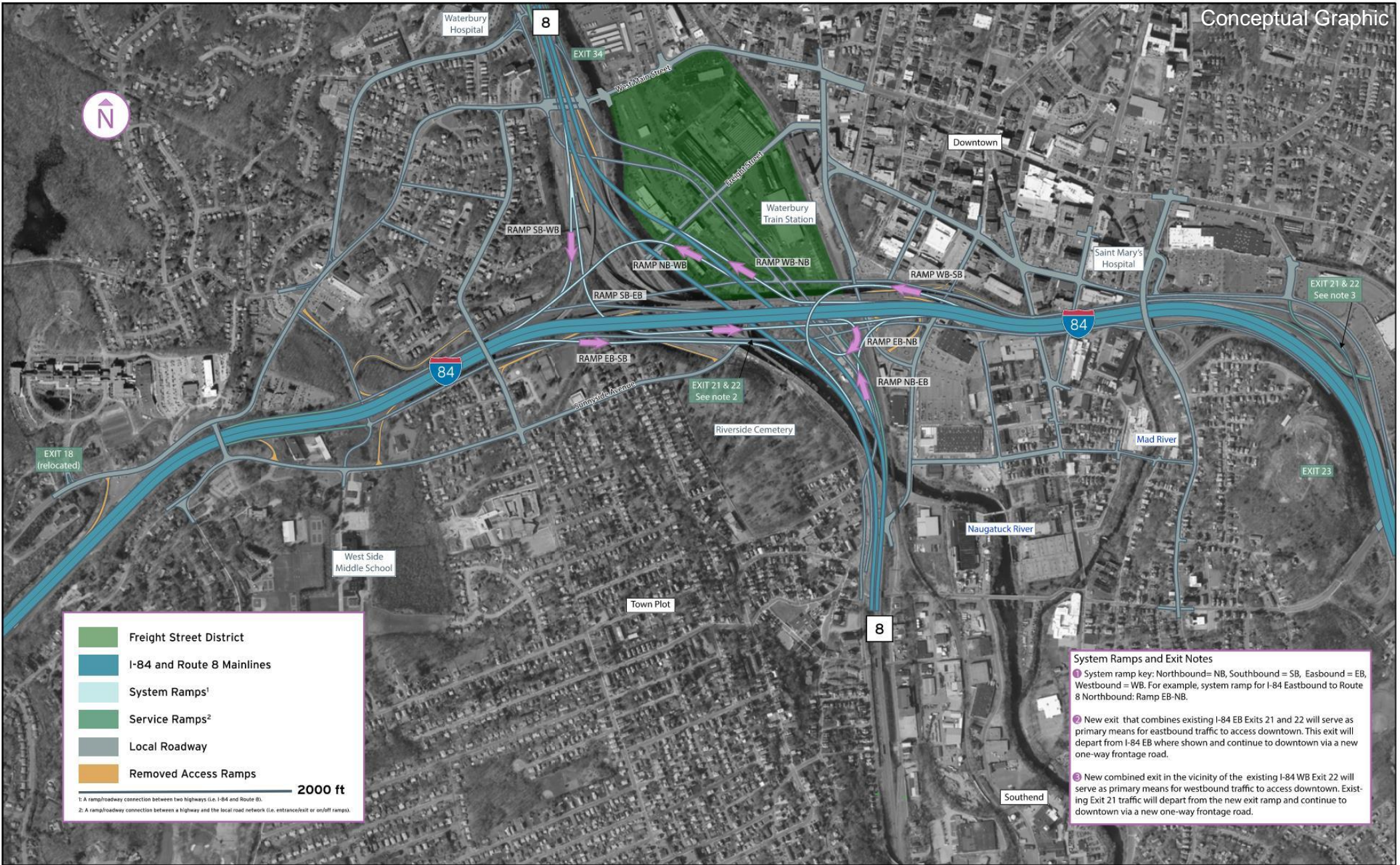
Improves interchange spacing by eliminating service ramps directly into downtown

New north / south and east / west frontage roads



FIGURE 9-12 INTERCHANGE SHIFTED EAST WITH INNER LOOP

Conceptual Graphic



	Freight Street District
	I-84 and Route 8 Mainlines
	System Ramps <sup>1</sup>
	Service Ramps <sup>2</sup>
	Local Roadway
	Removed Access Ramps

2000 ft

<sup>1</sup> A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
<sup>2</sup> A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

① System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.

② New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.

③ New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative

## Partial System Crossover

### Interchange

#### I-84 and Route 8 Alignments

I-84 located north of existing alignment over Naugatuck River

Route 8 split with NB located east of Naugatuck River (south of the interchange core)

#### System Connections (full or partial; direct or indirect)

Partial system with two (2) indirect connections:  
I-84 EB to Route 8 NB and Route 8 NB to I-84 WB movements as indirect connections

#### Local Connectivity (service interchanges and frontage roads)

Infeasible to eliminate all left-hand entrance and exit ramps

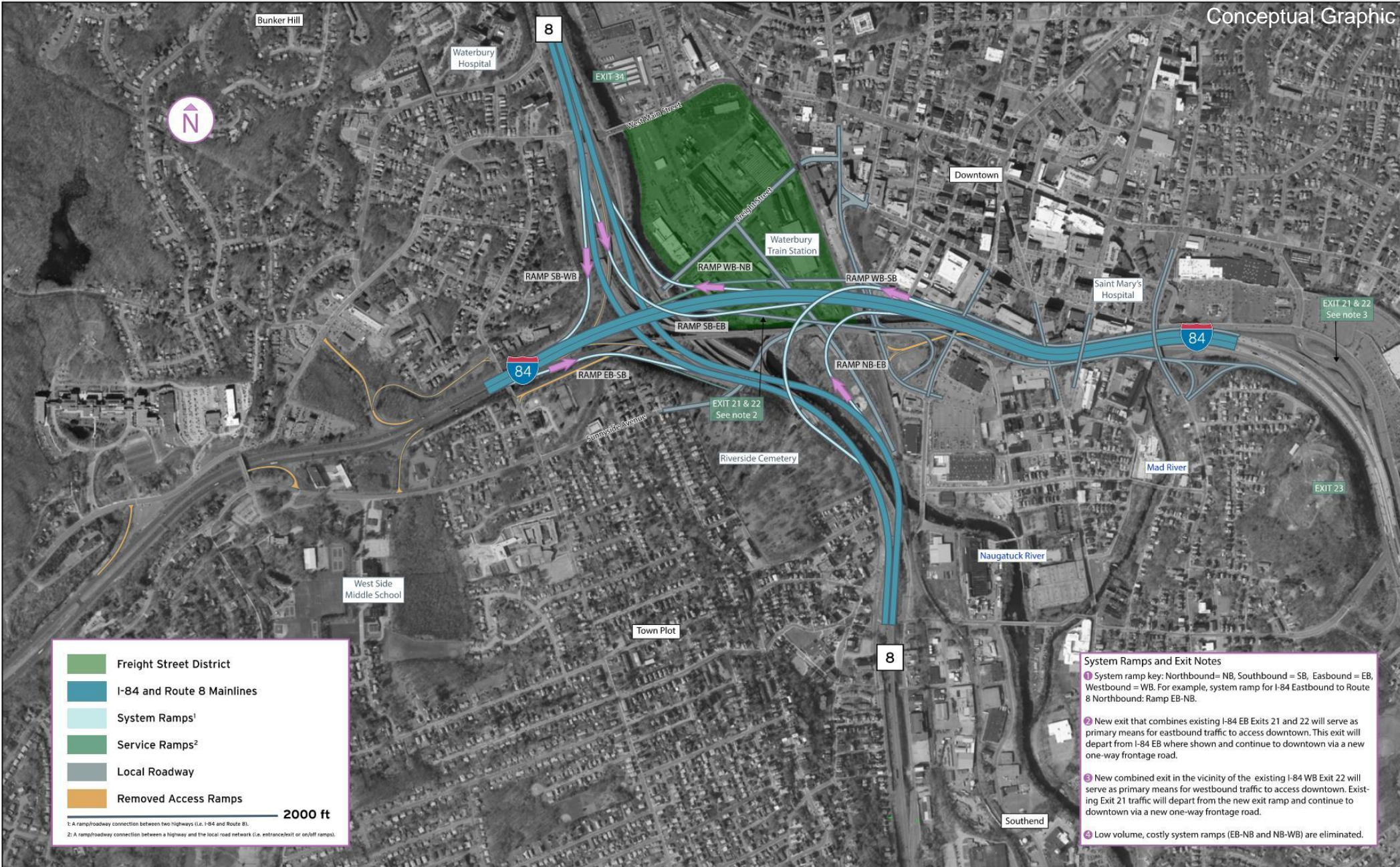
Improves interchange spacing by eliminating service ramps directly into downtown

New east / west frontage roads



FIGURE 9-14 PARTIAL SYSTEM CROSSOVER INTERCHANGE

Conceptual Graphic



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- ① System ramp key: Northbound= NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- ② New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.
- ③ New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.
- ④ Low volume, costly system ramps (EB-NB and NB-WB) are eliminated.





# Replacement Alternative

## Modified Diverging Diamond

### I-84 and Route 8 Alignments

I-84 located just south of existing alignment over Naugatuck River

Route 8 located generally on existing alignment

### System Connections (full or partial; direct or indirect)

Partial system with several indirect connections:  
I-84 WB to Route 8 SB, I-84 EB to Route 8 NB,  
Route 8 NB to I-84 WB, and Route 8 SB to I-84 EB

### Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

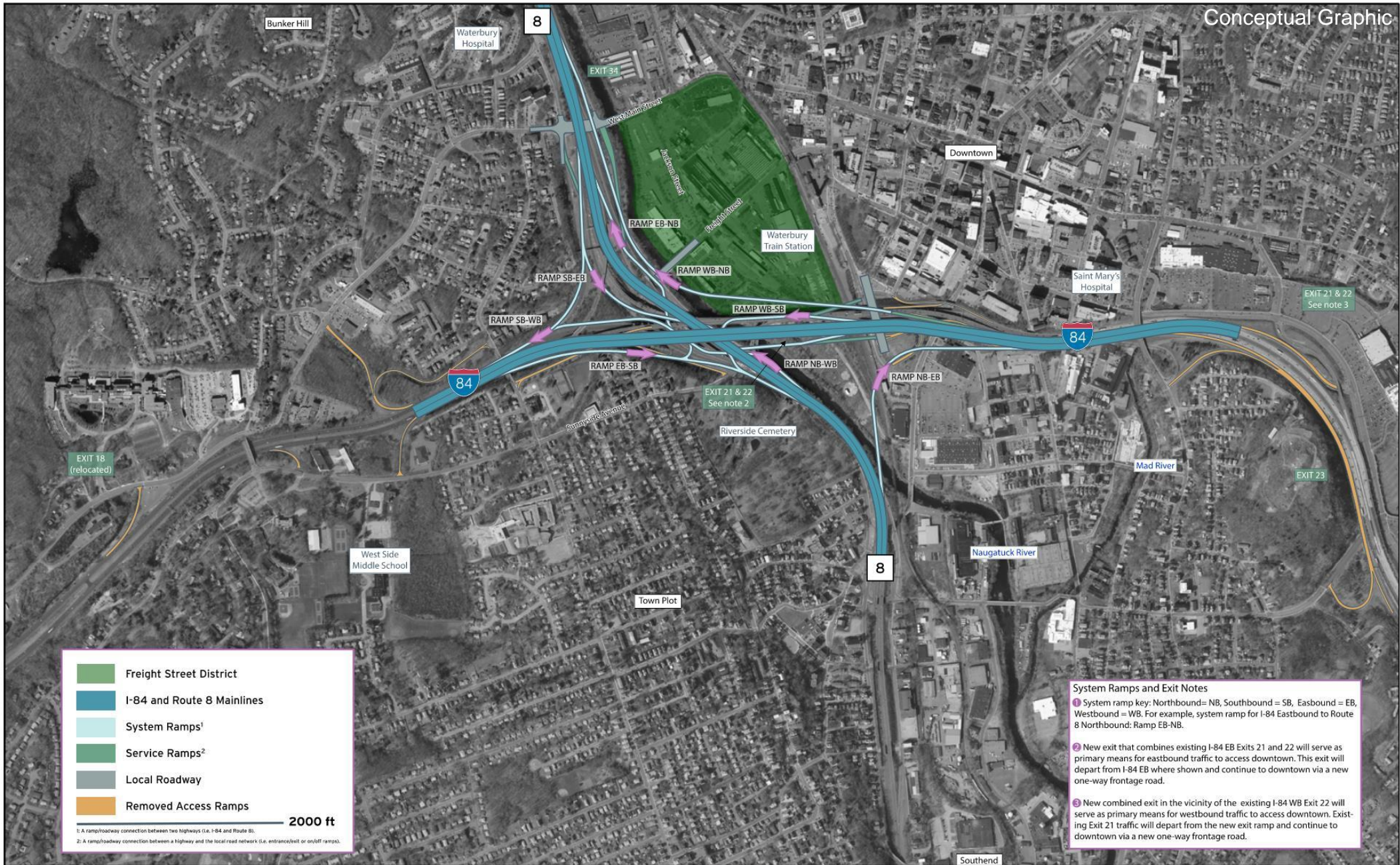
Improves interchange spacing by eliminating service ramps directly into downtown

New north / south and east / west frontage roads



FIGURE 9-16 MODIFIED DIVERGING DIAMOND

Conceptual Graphic



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- 1 System ramp key: Northbound= NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- 2 New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.
- 3 New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative Half Diverging Diamond

## I-84 and Route 8 Alignments

I-84 located just south of existing alignment over Naugatuck River

Route 8 located generally on existing alignment

## System Connections (full or partial; direct or indirect)

Partial system with two (2) direct connections:

Route 8 SB to I-84 EB and I-84 WB to Route 8 SB would be direct connections while the remaining would be indirect connections

## Local Connectivity (service interchanges and frontage roads)

Infeasible to eliminate all left-hand entrance and exit ramps

Service ramps consolidated with the system ramps at the core of the interchange

New service ramp from Freight Street to I-84 WB

New north / south and east / west frontage roads



FIGURE 9-18 HALF DIVERGING DIAMOND

Conceptual Graphic



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- 1 System ramp key: Northbound= NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- 2 New exit that combines existing I-84 Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB where shown and continue to downtown via a new one-way frontage road.
- 3 New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative

## Partial System Interchange with Freight Street Interchange

### I-84 and Route 8 Alignments

I-84 located south of existing alignment over Naugatuck River

Route 8 split and located east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Partial system with two (2) direct connections:  
Route 8 SB to I-84 EB and I-84 WB to Route 8 SB would be direct connections while the remaining would be indirect connections and combined with service ramps

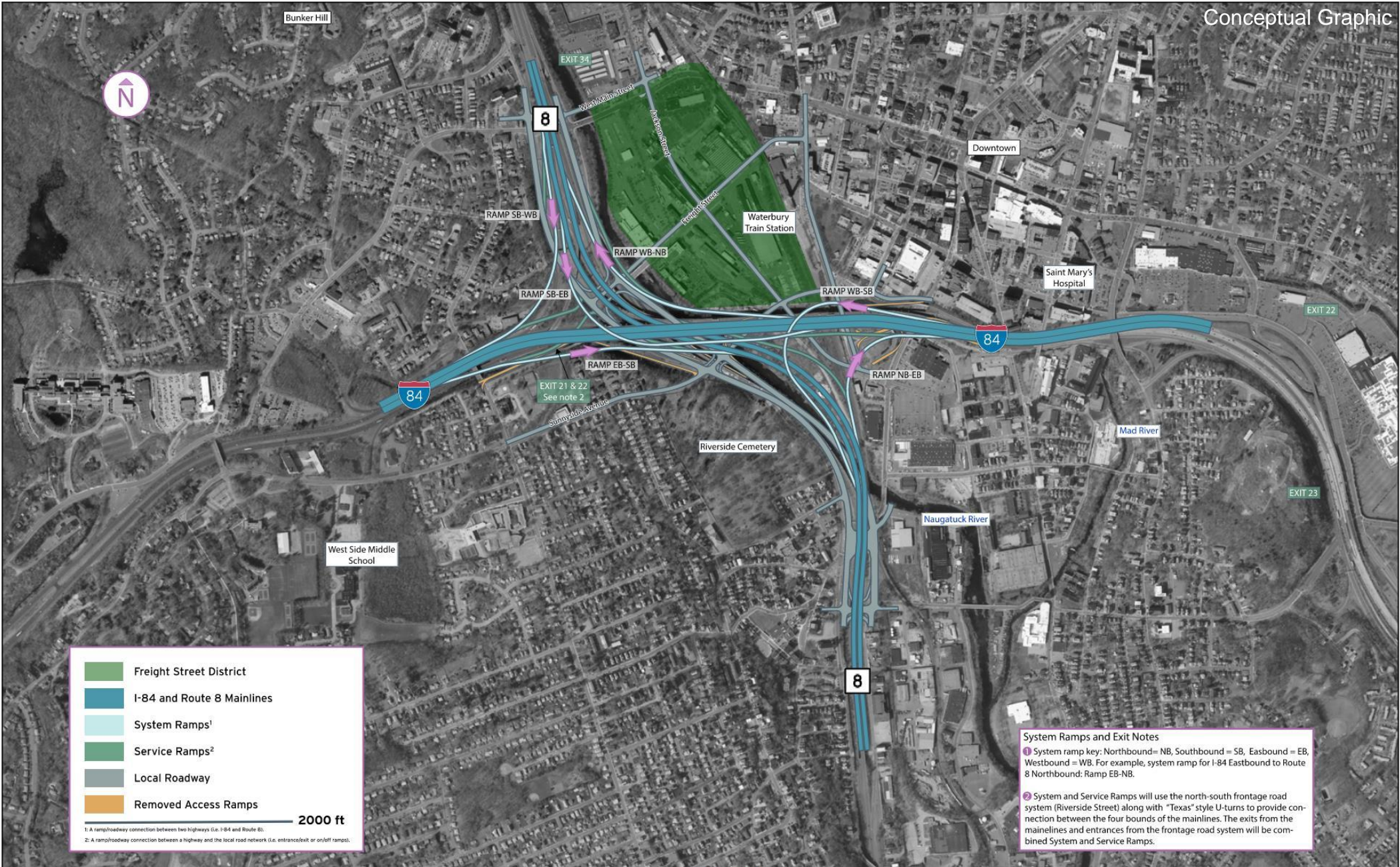
### Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps  
Texas U-Turns for local road network due to combined system and service ramps  
New north / south and east / west frontage roads



FIGURE 9-20 PARTIAL SYSTEM INTERCHANGE WITH FREIGHT STREET INTERCHANGE

Conceptual Graphic



- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

**2000 ft**

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

**1** System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.

**2** System and Service Ramps will use the north-south frontage road system (Riverside Street) along with "Texas" style U-turns to provide connection between the four bounds of the mainlines. The exits from the mainlines and entrances from the frontage road system will be combined System and Service Ramps.





# Replacement Alternative

## Route 8 Boulevard

### I-84 and Route 8 Alignments

I-84 located south of existing alignment over Naugatuck River

Route 8 located east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Partial system with two (2) indirect connections:  
I-84 EB to Route 8 NB and SB

### Local Connectivity (service interchanges and frontage roads)

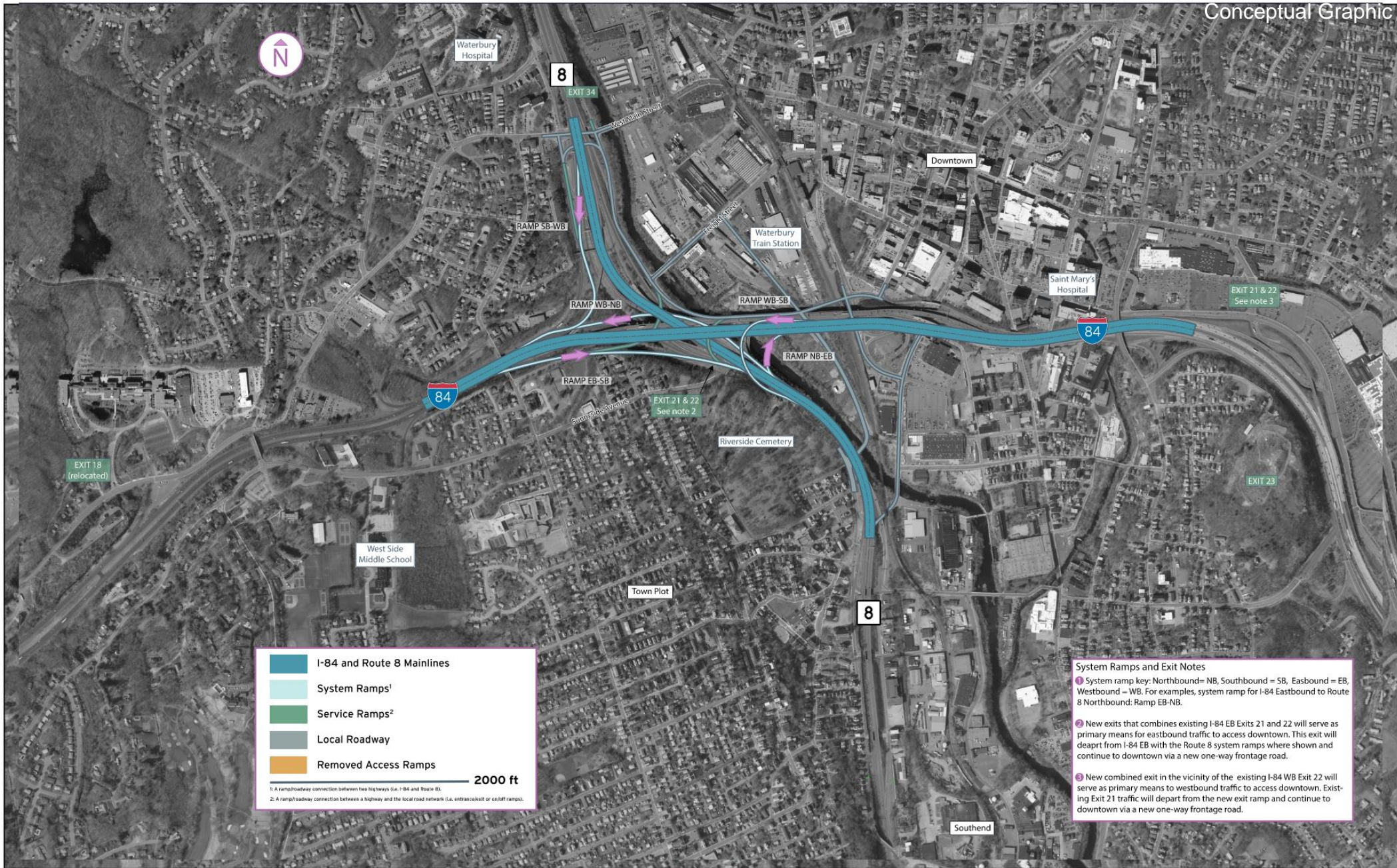
Avoids left-hand entrance and exit ramps

Eliminates service ramps directly into downtown to improve the interchange spacing

New east / west frontage roads



FIGURE 9-22 ROUTE 8 BOULEVARD



**Legend**

- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e., I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e., entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- 1 System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For examples, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- 2 New exits that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB with the Route 8 system ramps where shown and continue to downtown via a new one-way frontage road.
- 3 New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means to westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative

## Modern Crossover Interchange

### I-84 and Route 8 Alignments

I-84 located south of existing alignment over Naugatuck River

Route 8 split and located east of Naugatuck River (south of the interchange core)

### System Connections (full or partial; direct or indirect)

Full system with all direct connections

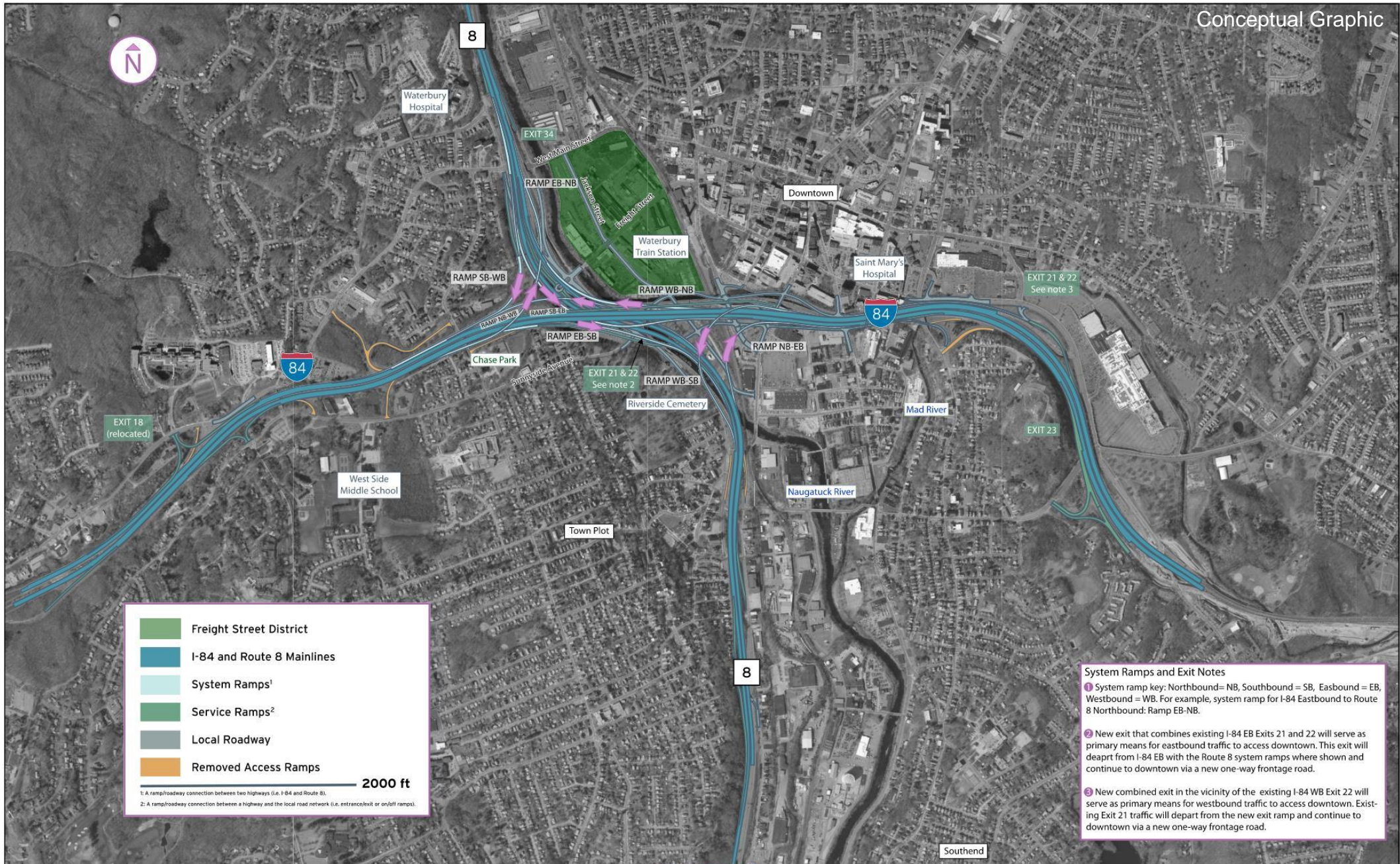
### Local Connectivity (service interchanges and frontage roads)

Left-hand ramp entrances and exits eliminated

New north / south and east / west frontage roads



FIGURE 9-24 MODERN CROSSOVER INTERCHANGE



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

<sup>1</sup>: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
<sup>2</sup>: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- ① System ramp key: Northbound= NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- ② New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB with the Route 8 system ramps where shown and continue to downtown via a new one-way frontage road.
- ③ New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative Washington Street Bypass

## I-84 and Route 8 Alignments

I-84 located south on the existing Washington Street alignment

Route 8 located east of Naugatuck River (south of the interchange core)

## System Connections (full or partial; direct or indirect)

Full system with all direct connections

## Local Connectivity (service interchanges and frontage roads)

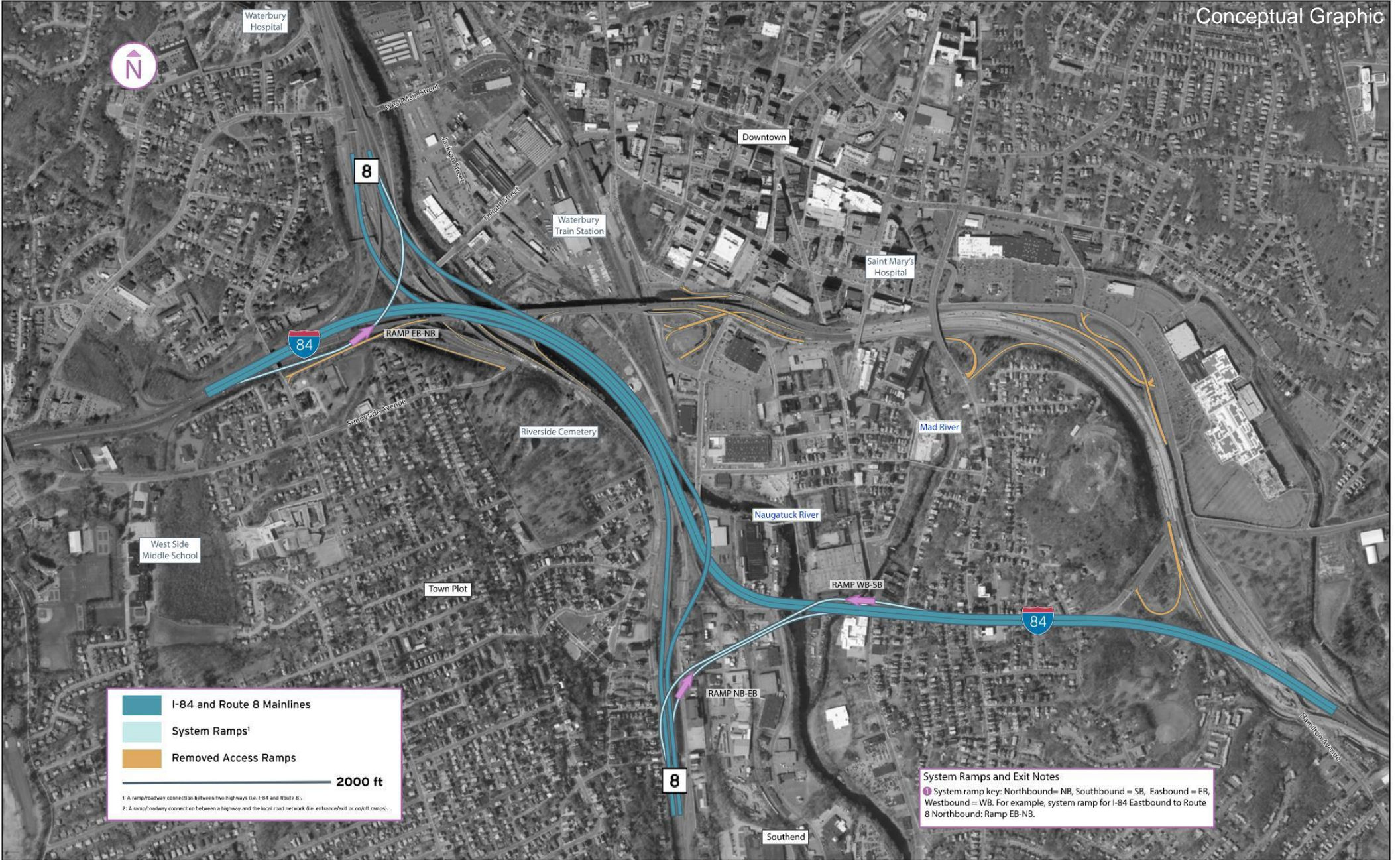
Left-hand entrance and exit ramps eliminated

Existing I-84 alignment would become a business loop maintaining downtown access



FIGURE 9-26 WASHINGTON STREET BYPASS

Conceptual Graphic



I-84 and Route 8 Mainlines  
 System Ramps<sup>1</sup>  
 Removed Access Ramps

2000 ft

<sup>1</sup> A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
<sup>2</sup> A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

❶ System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.





# Replacement Alternative

## South City Bypass

### I-84 and Route 8 Alignments

I-84 located approx. two and a half (2.5) miles south of existing alignment over the Naugatuck River near the Townline of Naugatuck requiring approximately five (5) miles of new infrastructure

Route 8 located generally on existing alignment

### System Connections (full or partial; direct or indirect)

Full system with all direct connections

### Local Connectivity (service interchanges and frontage roads)

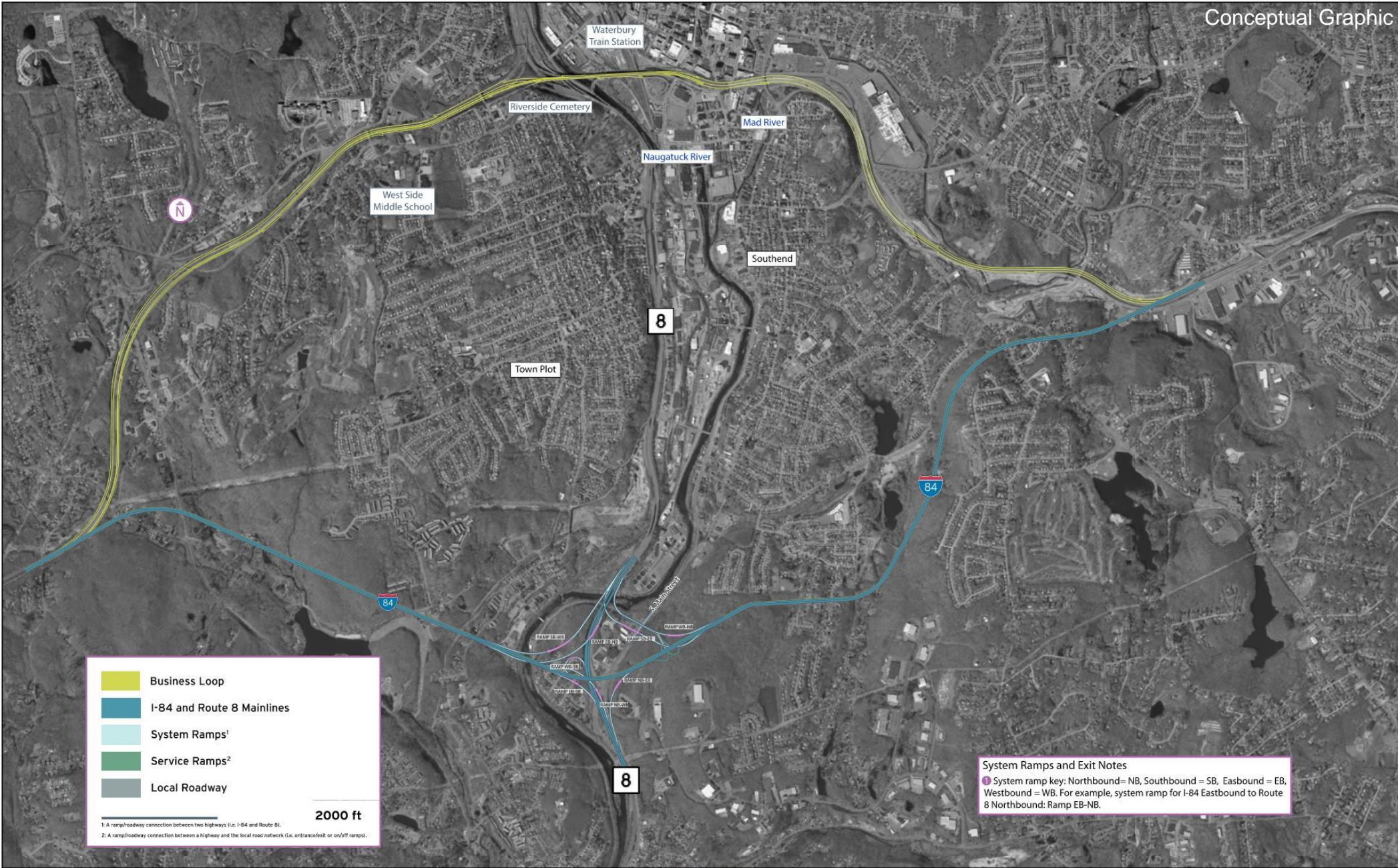
Left-hand entrance and exit ramps eliminated

Existing I-84 alignment would become a business loop maintaining downtown access



FIGURE 9-28 SOUTH CITY BYPASS

Conceptual Graphic



Business Loop  
 I-84 and Route 8 Mainlines  
 System Ramps<sup>1</sup>  
 Service Ramps<sup>2</sup>  
 Local Roadway

2000 ft

<sup>1</sup>: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
<sup>2</sup>: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

Ⓜ System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.





# Replacement Alternative

## Keeping Route 8 Stacked

### I-84 and Route 8 Alignments

I-84 located just south of existing alignment over Naugatuck River

### System Connections (full or partial; direct or indirect)

Route 8 remains stacked on existing alignment

### Local Connectivity (service interchanges and frontage roads)

Full system with all direct connections

Avoids left-hand entrance and exit ramps

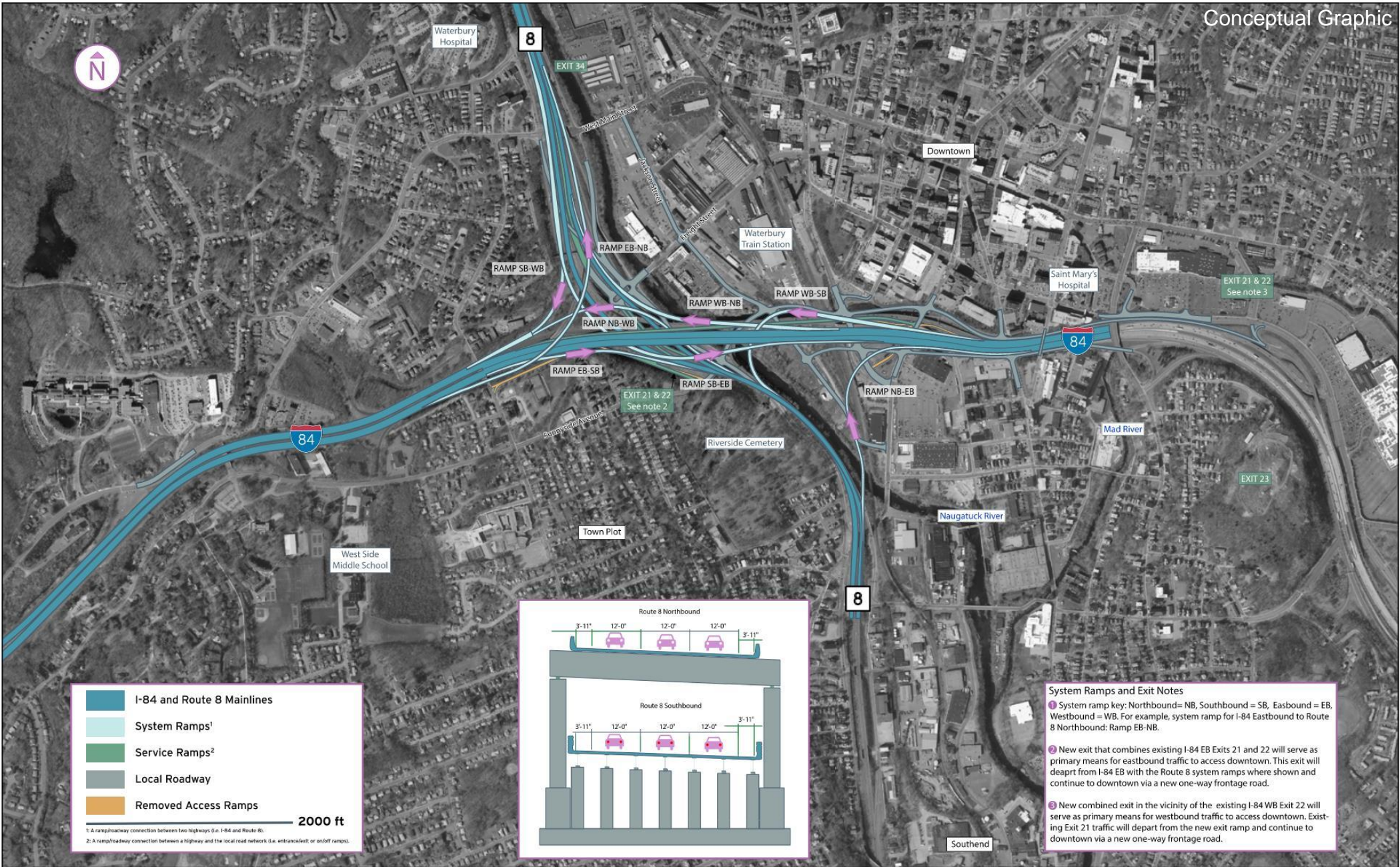
Improves interchange spacing by eliminating service ramps directly into downtown

New east / west frontage roads



FIGURE 9-30 KEEPING ROUTE 8 STACKED

Conceptual Graphic

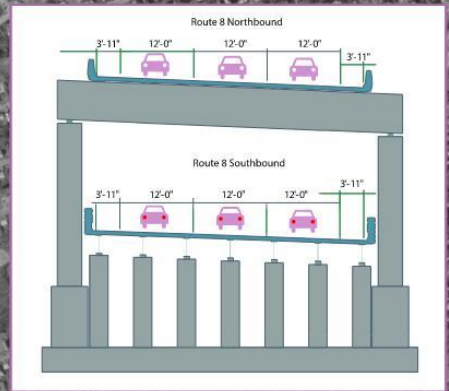


**Legend**

- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).



**System Ramps and Exit Notes**

- 1 System ramp key: Northbound= NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- 2 New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB with the Route 8 system ramps where shown and continue to downtown via a new one-way frontage road.
- 3 New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Replacement Alternative Tunnel

**I-84 and Route 8 Alignments**

I-84 located on existing alignment

Route 8 located on existing alignment

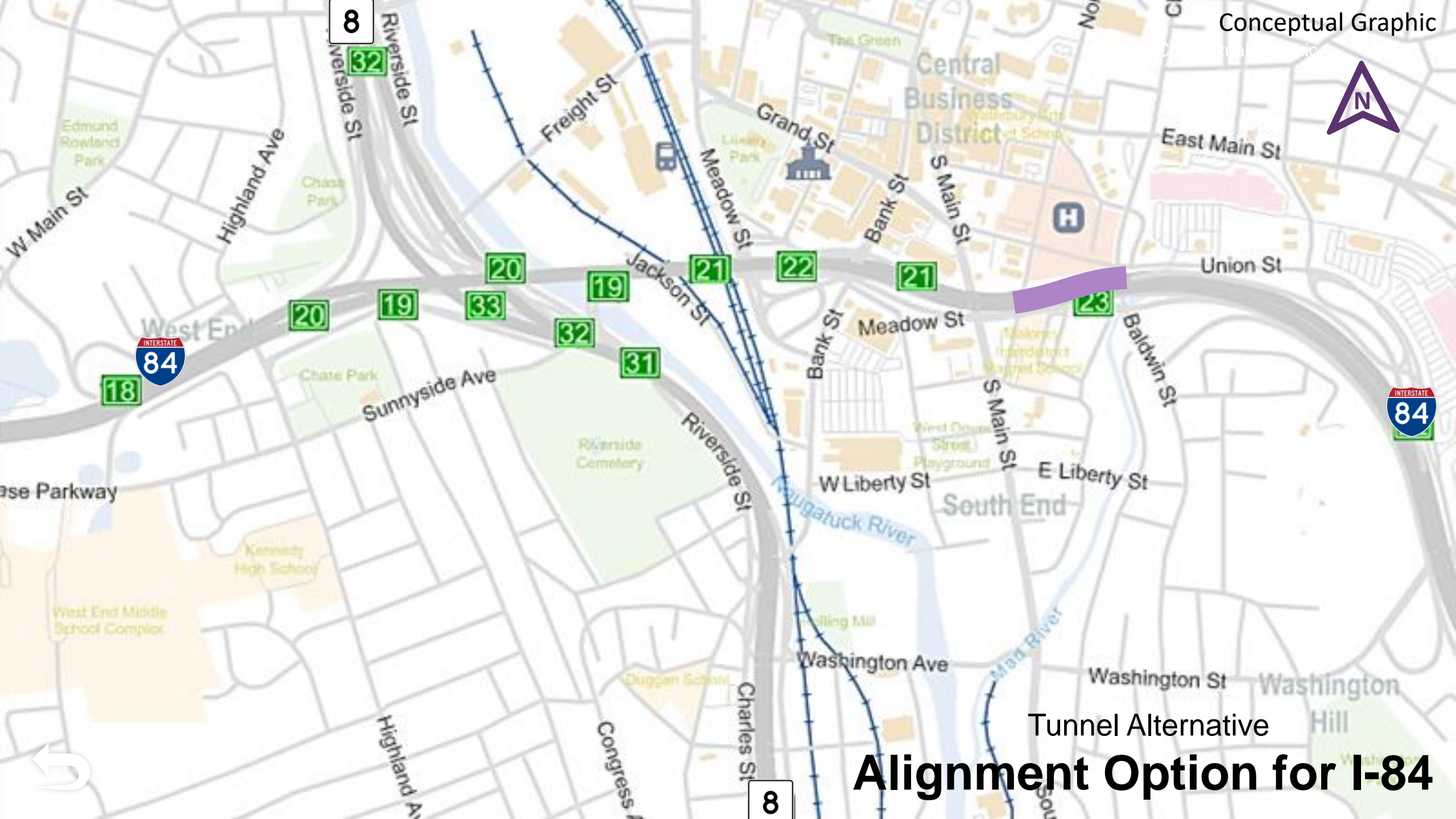
**System Connections  
(full or partial; direct or indirect)**

Full system with all direct connections, likely occurring above grade

**Local Connectivity  
(service interchanges and frontage roads)**

New north / south and east / west frontage roads





Tunnel Alternative

# Alignment Option for I-84

8

8



# Replacement Alternative Naugatuck River Shift

## I-84 and Route 8 Alignments

I-84 located just south of existing alignment over Naugatuck River

Route 8 remains stacked on existing alignment

## System Connections (full or partial; direct or indirect)

Full system with all direct connections

## Local Connectivity (service interchanges and frontage roads)

Avoids left-hand entrance and exit ramps

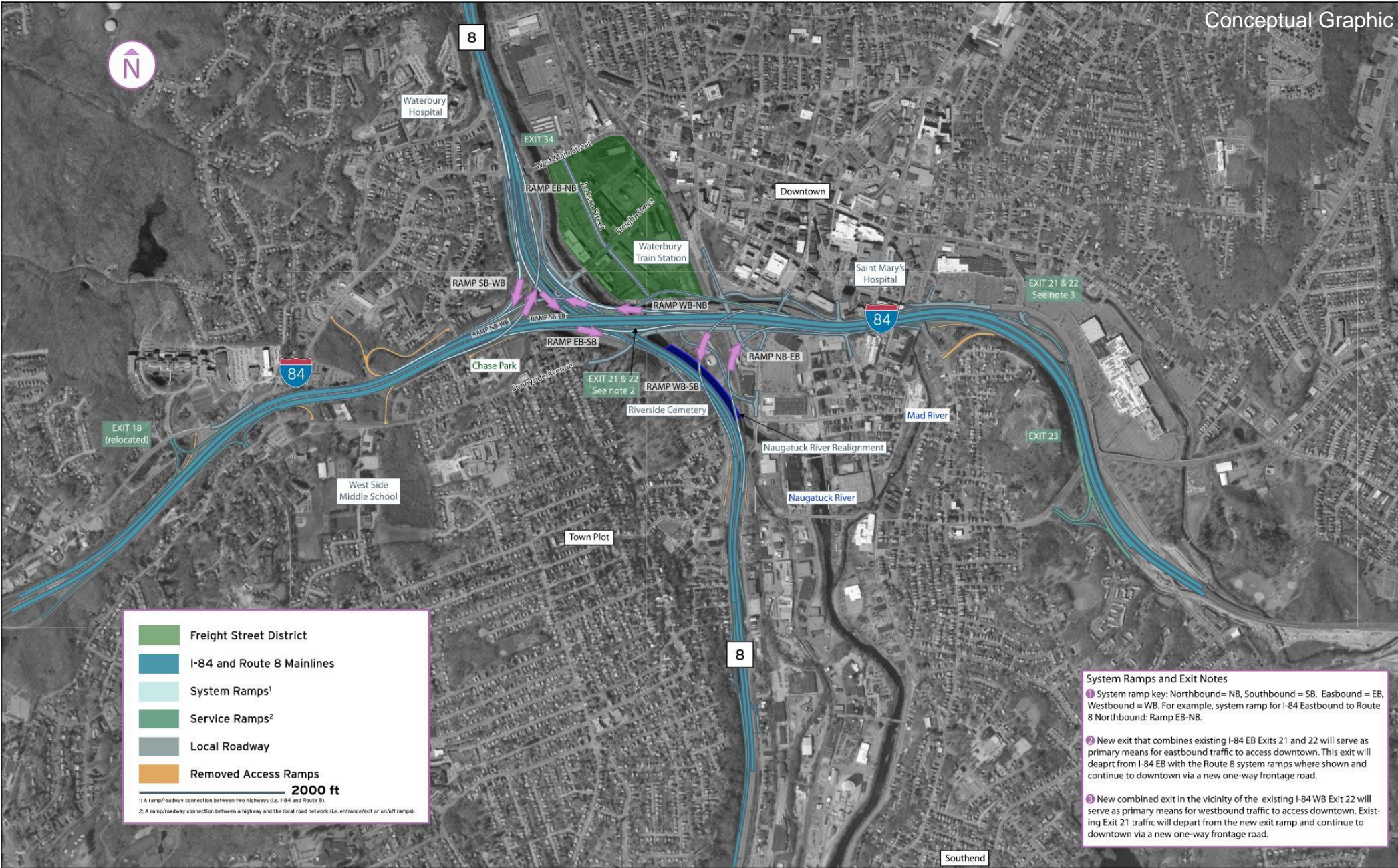
Improves interchange spacing by eliminating service ramps directly into downtown

New east / west frontage roads



FIGURE 9-32 NAUGATUCK RIVER SHIFT

Conceptual Graphic



**Legend**

- Freight Street District
- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway
- Removed Access Ramps

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

- 1** System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.
- 2** New exit that combines existing I-84 EB Exits 21 and 22 will serve as primary means for eastbound traffic to access downtown. This exit will depart from I-84 EB with the Route 8 system ramps where shown and continue to downtown via a new one-way frontage road.
- 3** New combined exit in the vicinity of the existing I-84 WB Exit 22 will serve as primary means for westbound traffic to access downtown. Existing Exit 21 traffic will depart from the new exit ramp and continue to downtown via a new one-way frontage road.





# Rehabilitation Alternative

## I-84 WB Bridge Rehabilitation with Construction of New I-84 EB Mainline

**I-84 and Route 8 Alignments**

I-84 unstacked new EB constructed to the south

Route 8 remains on existing alignment

**System Connections  
(full or partial; direct or indirect)**

Unchanged from existing configurations

**Local Connectivity  
(service interchanges and frontage roads)**

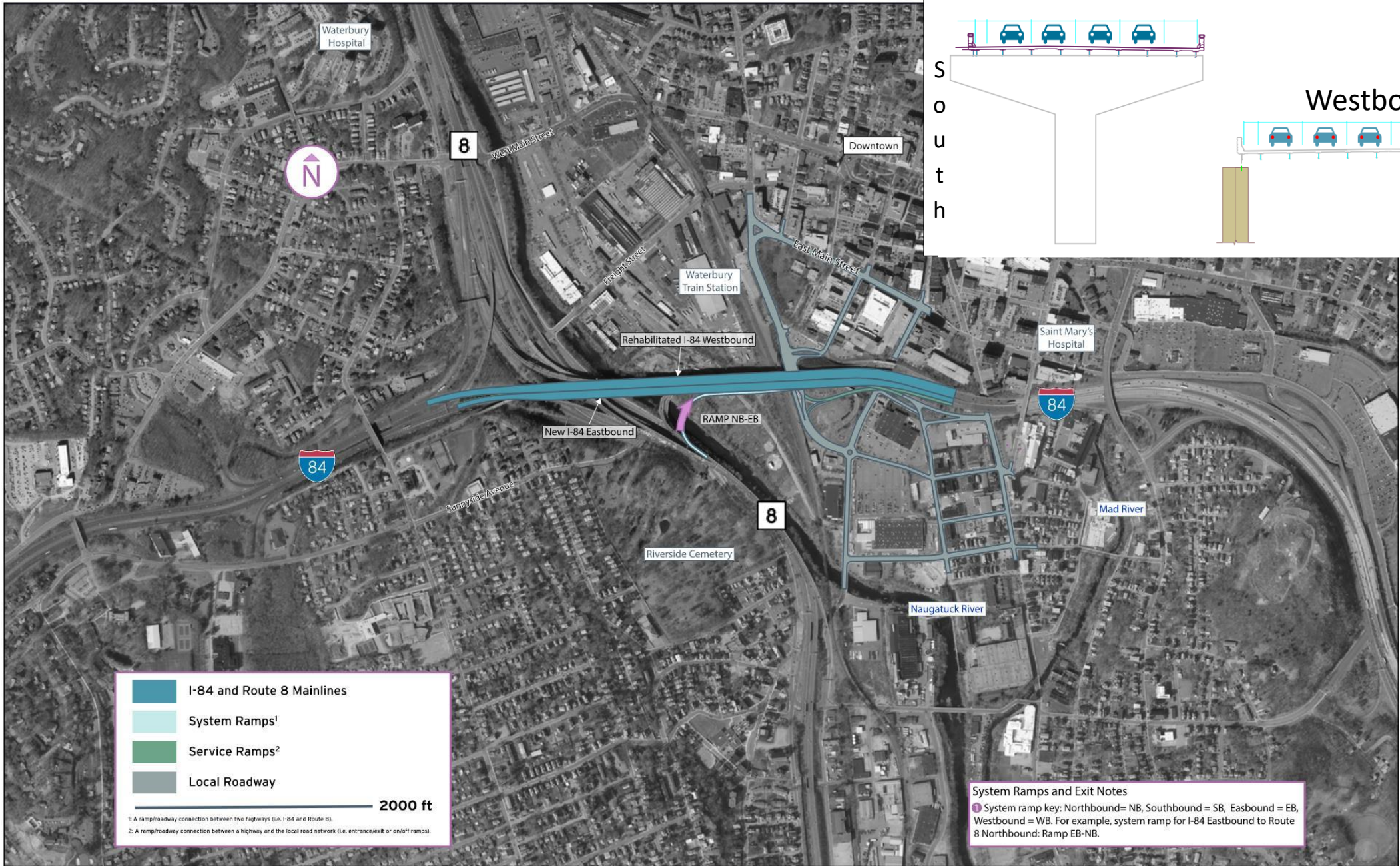
Maintains left-hand entrance and exit ramps

Limited local roadway improvements





FIGURE 9-34 I-84 WB BRIDGE REHABILITATION WITH CONSTRUCTION OF NEW I-84 EB MAINLINE



**Legend**

- I-84 and Route 8 Mainlines
- System Ramps<sup>1</sup>
- Service Ramps<sup>2</sup>
- Local Roadway

2000 ft

1: A ramp/roadway connection between two highways (i.e. I-84 and Route 8).  
2: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**

① System ramp key: Northbound = NB, Southbound = SB, Eastbound = EB, Westbound = WB. For example, system ramp for I-84 Eastbound to Route 8 Northbound: Ramp EB-NB.



# Rehabilitation Alternative

## I-84 Bridge Rehabilitation with Bypass Reused as Frontage Road

**I-84 and Route 8 Alignments**

I-84 remains on existing alignment

Route 8 remains on existing alignment

**System Connections  
(full or partial; direct or indirect)**

Unchanged from existing configurations

**Local Connectivity  
(service interchanges and frontage roads)**

Maintains left-hand entrance and exit ramps

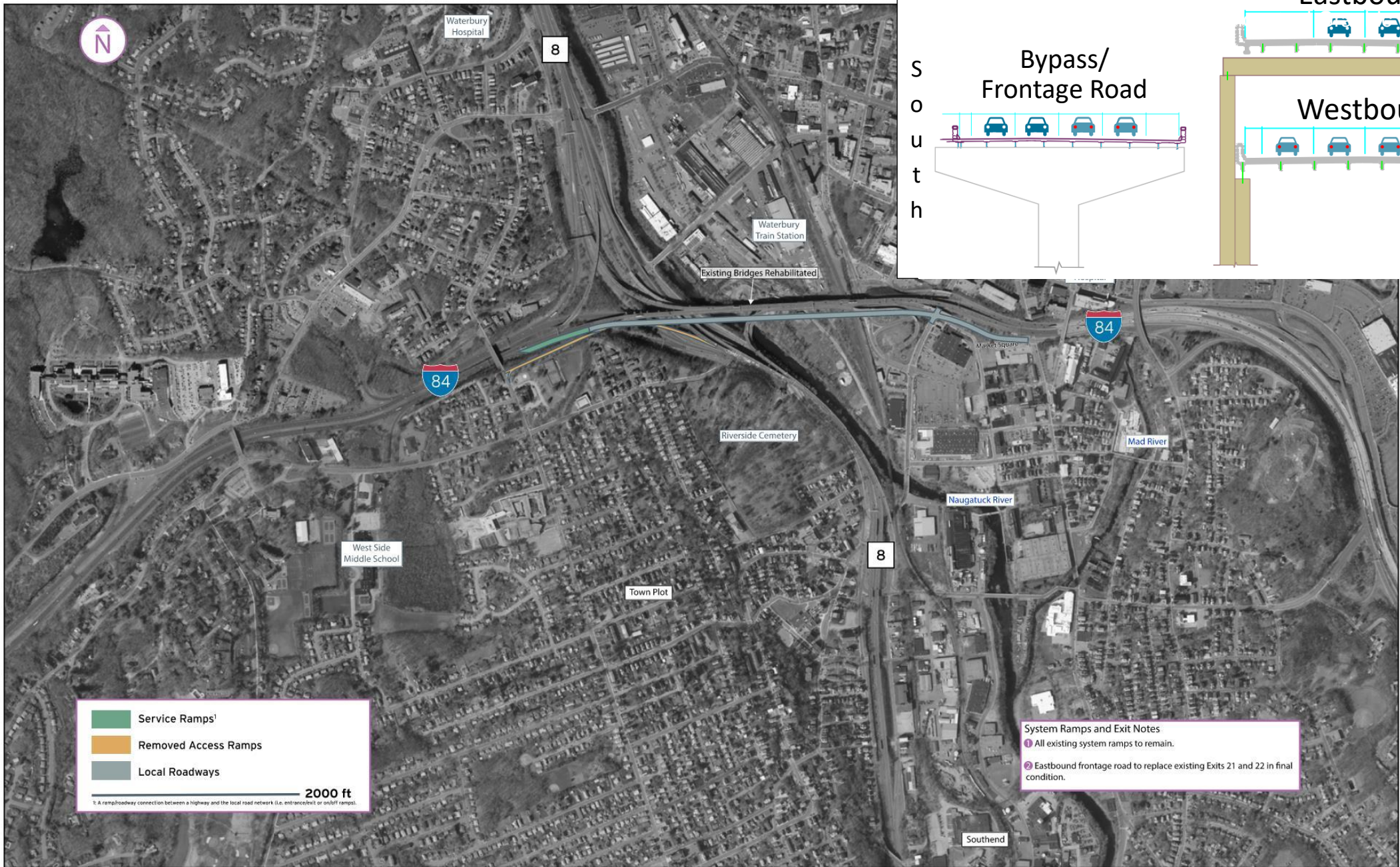
I-84 EB traffic would utilize bypass as frontage road to access downtown

Limited local roadway improvements





FIGURE 9-35 I-84 BRIDGE REHABILITATION WITH BYPASS REUSED AS FRONTAGE ROAD



■ Service Ramps<sup>1</sup>  
■ Removed Access Ramps  
■ Local Roadways

2000 ft  
1: A ramp/roadway connection between a highway and the local road network (i.e. entrance/exit or on/off ramps).

**System Ramps and Exit Notes**  
 1 All existing system ramps to remain.  
 2 Eastbound frontage road to replace existing Exits 21 and 22 in final condition.





# Rehabilitation Alternative

## I-84 Bridge Rehabilitation with Widening to Facilitate Staging

### I-84 and Route 8 Alignments

I-84 remains on existing alignment and widened to the north

Route 8 remains on existing alignment

### System Connections (full or partial; direct or indirect)

Unchanged from existing configurations

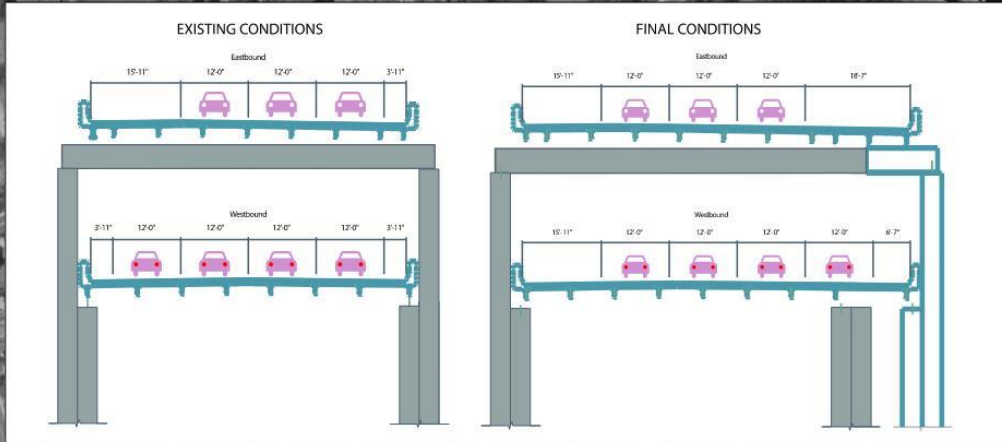
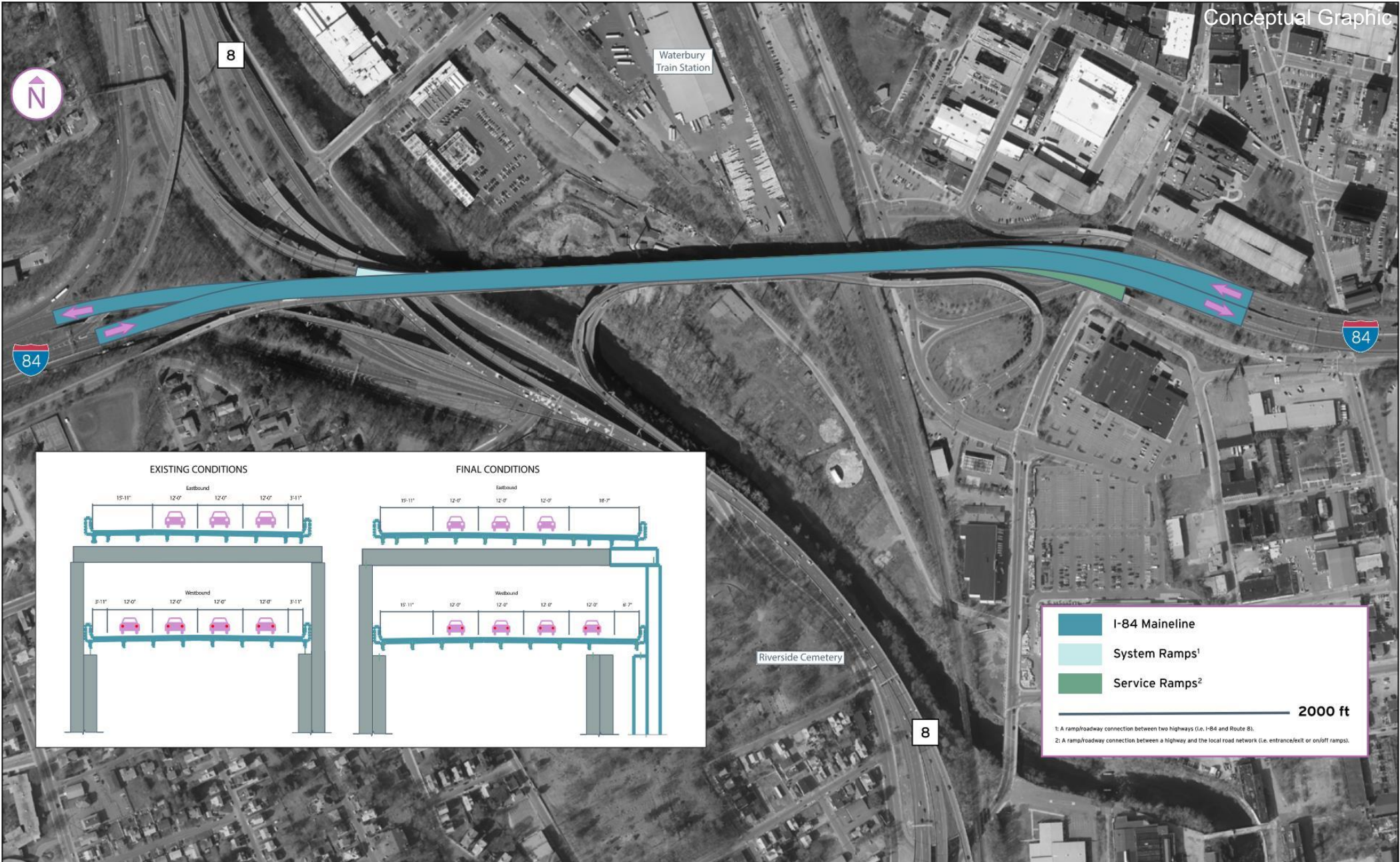
### Local Connectivity (service interchanges and frontage roads)

Maintains left-hand entrance and exit ramps

Limited local roadway improvements



FIGURE 9-36 I-84 BRIDGE REHABILITATION WITH WIDENING





# Rehabilitation Alternative

## I-84/Route 8 True Rehabilitation

**I-84 and Route 8 Alignments**

I-84 remains on existing alignment

Route 8 remains on existing alignment

**System Connections  
(full or partial; direct or indirect)**

Unchanged from existing configurations

**Local Connectivity  
(service interchanges and frontage roads)**

Maintains left-hand entrance and exit ramps

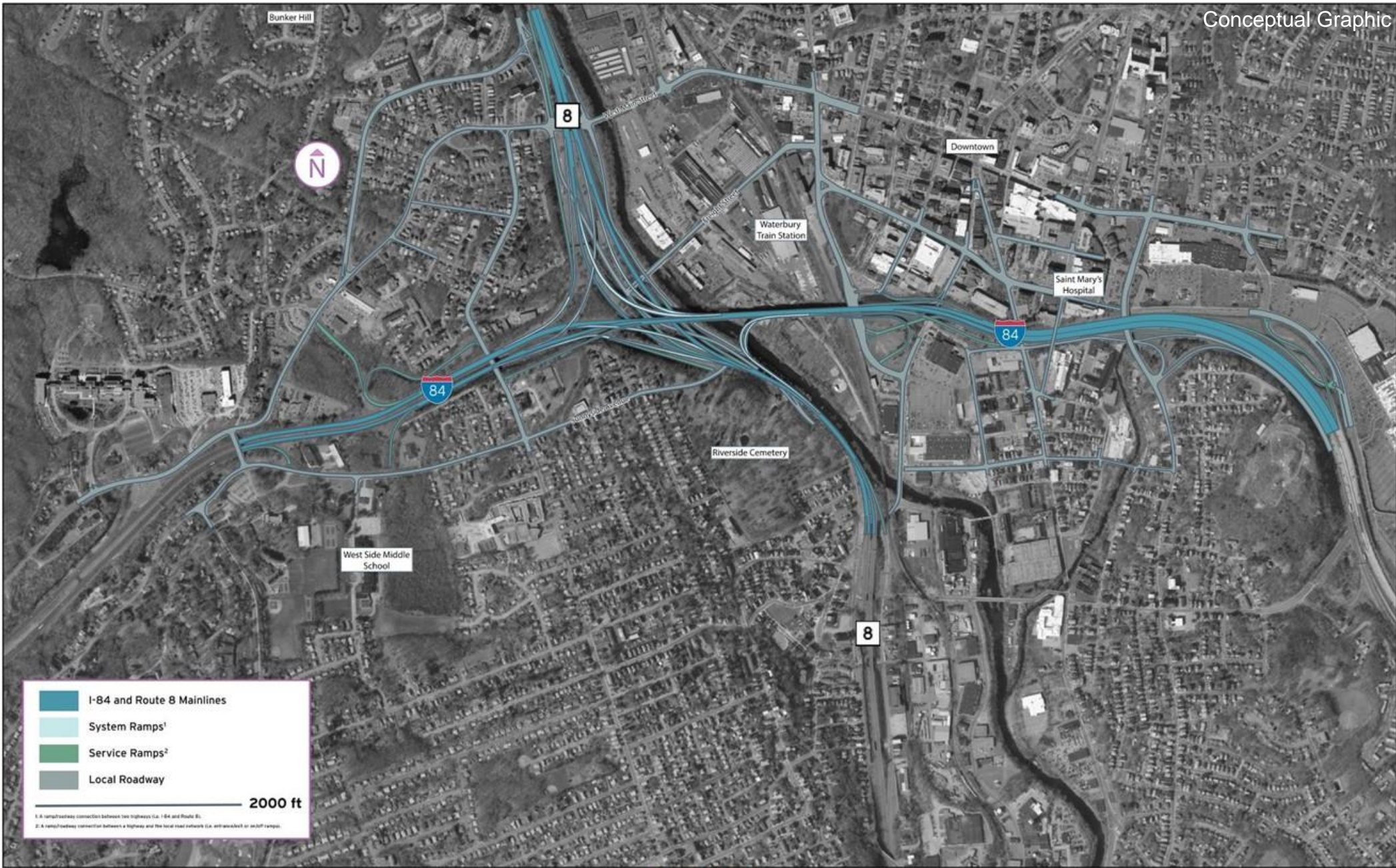
Limited local roadway improvements





FIGURE 9-1 EXISTING CONDITIONS

Conceptual Graphic



1. A ramp/roadway connection between two highways (i.e., I-84 and Route 8).  
 2. A ramp/roadway connection between a highway and the local road network (i.e., on/off ramps).

