

Bow Concord I-93 Improvements

Public Informational Meetings

February 14, 2018

February 15, 2018

Agenda

- Project History/Review
 - Project Development Process
 - Key Resources
- Public Informational Meetings Summary
- Alternatives Development
 - I-93 Corridor
 - I-89 Area
 - Exit 12
 - Exit 13
 - Exit 14/15
- Preferred Alternative
- Next Steps



Project History/ Project Development Process

Part A – Planning (2002 - 2008)

- Problem & Goal Statements
- Range of Reasonable Alternatives
- Determine Level of Environmental Document
- Prepare Summary/Classification Report

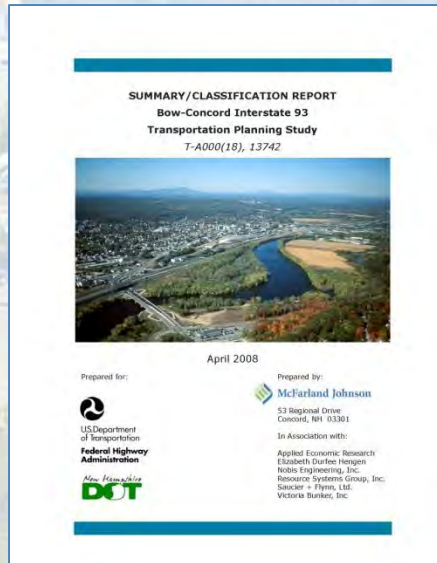
Red List Bridges (2008 - 2016)

- Exit 14 Rehabilitation
- I-93 over I-89 Replacement
- Exit 12 Replacement

Part B – Scoping (2013 - 2018)

- Select Preferred Alternative
- Environmental Documentation (EA)
- Public Hearing

Part C – Final Design



NEPA Process

- Agency & Public “Scoping” Throughout the NEPA Process
 - Agency Consultation (DES / Corps / DHR / EPA / DHR)
 - City / Town / Planning Commission (Concord / Bow / CNHRPC)
 - Public Input (Public Meetings / website contact)
- Inventory of Resources and Socio-Economic Conditions
- Determination of Impacts (Beneficial and Adverse)
- Environmental Assessment (EA) is Published (est. May 2018)
- Public Review & Comment Period of the EA
- FHWA Decision (FONSI or prepare an EIS)

Key Resources

- Wetlands
- Floodplains
- Recreational Areas & Trails
- Conservation Land
- Farmland
- Wildlife & Fisheries
- Historic Properties
- Archaeology



Wetlands



Floodplains



Recreational Areas & Trails

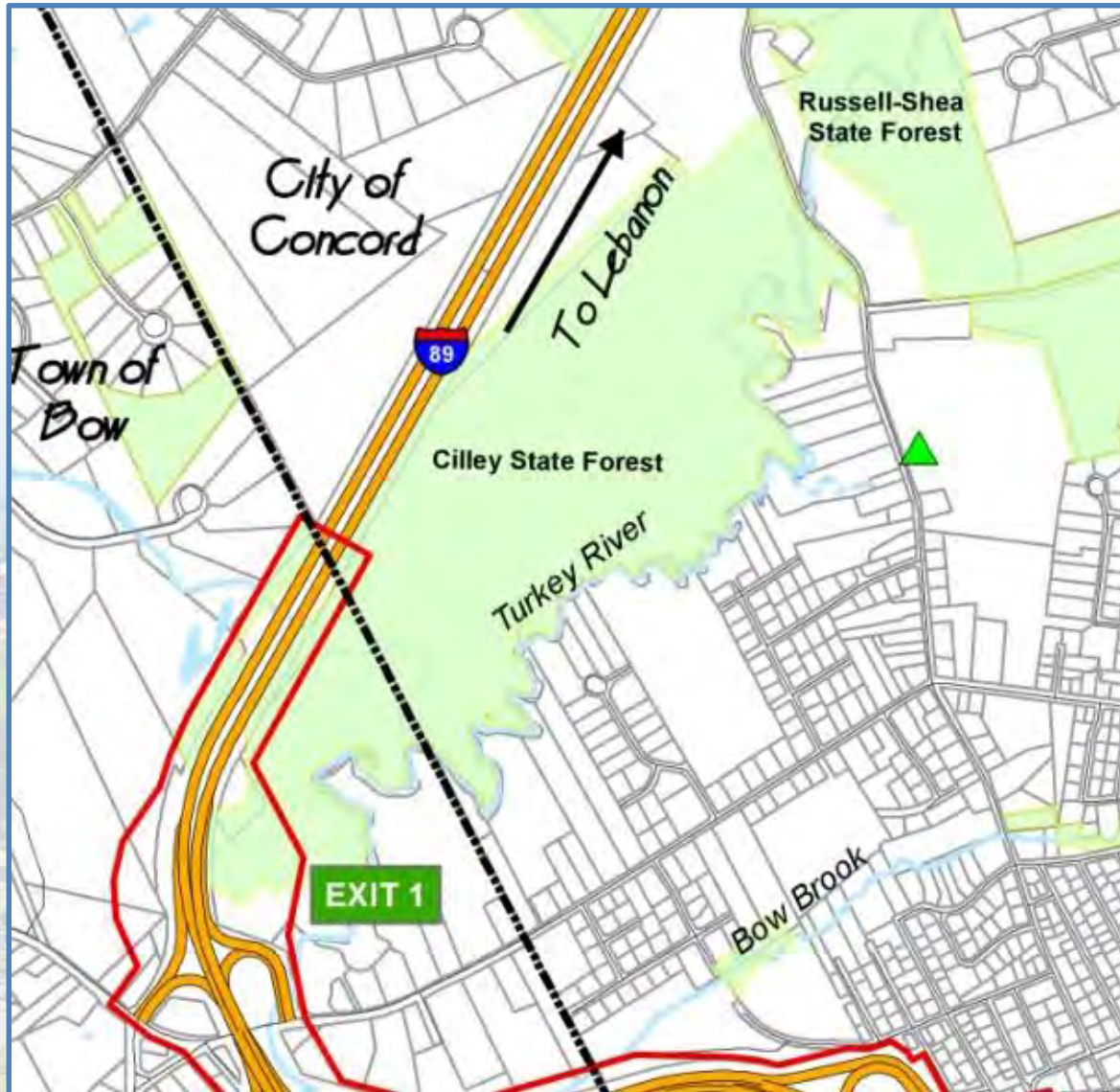
Kiwanis Waterfront Park



Terrill Park



Conservation Lands



Active Farmland



Wildlife & Fisheries



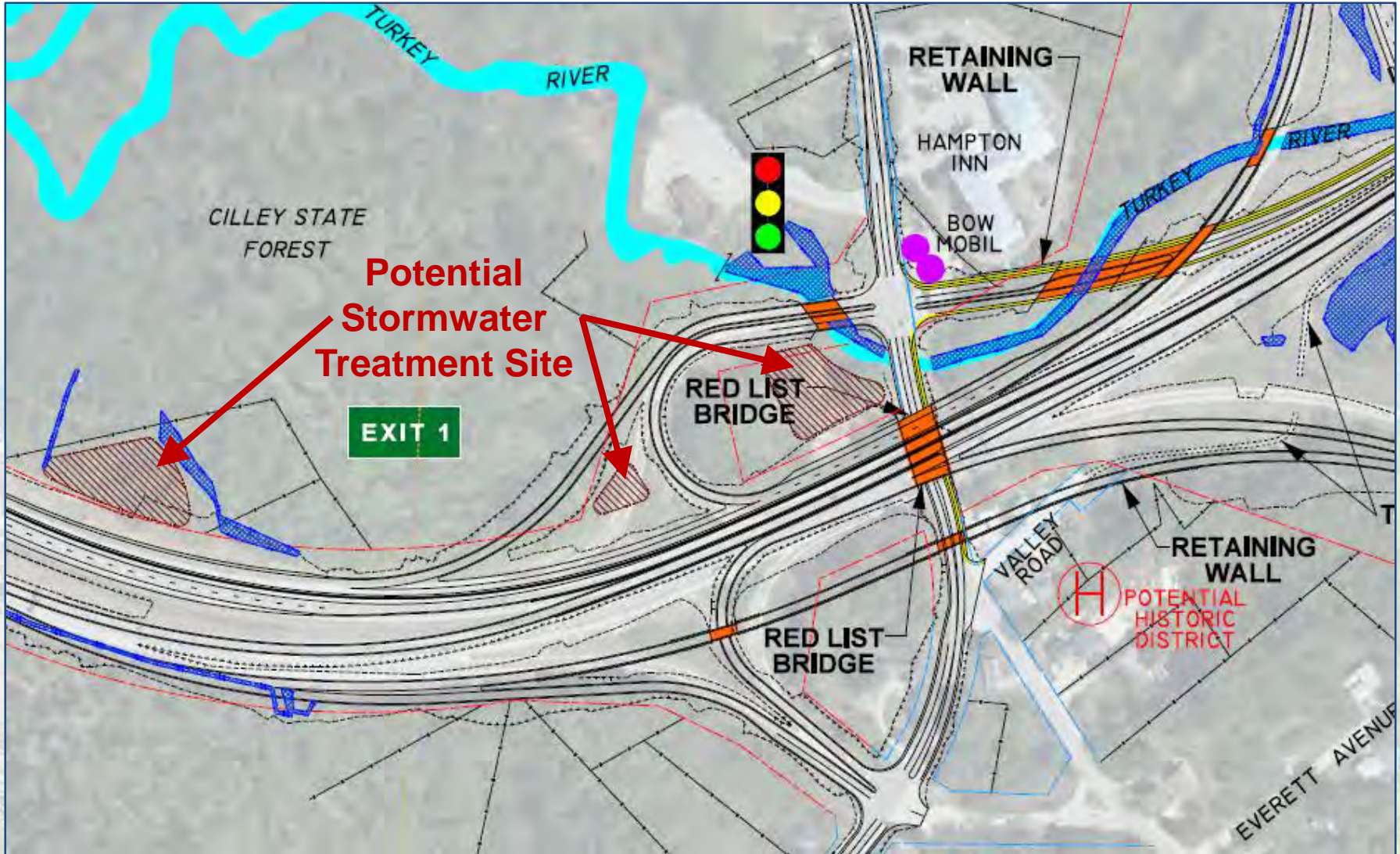
Historic Properties



Other Resources Under Study

- Noise Study
- Air Quality Study
- Contaminated Sites including Groundwater
- Archaeology
- Groundwater Protection / Public Wells
- Socio-Economic Study
- Environmental Justice
- Visual Resources

Stormwater Treatment



Public Informational Meetings

- May 31, 2017 Bow, NH - 70 Attendees
- June 1, 2017 Concord, NH - 40 Attendees
- Exit 14-15 Visualizations
- Verbal Comments, Written Comments, E-mail Comments, Website Comments

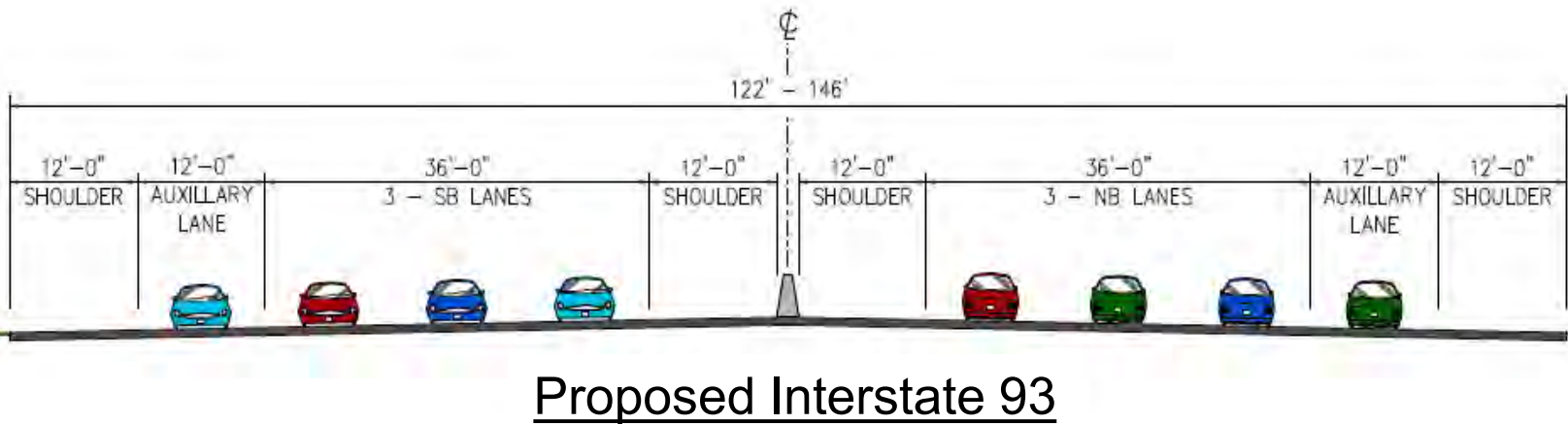
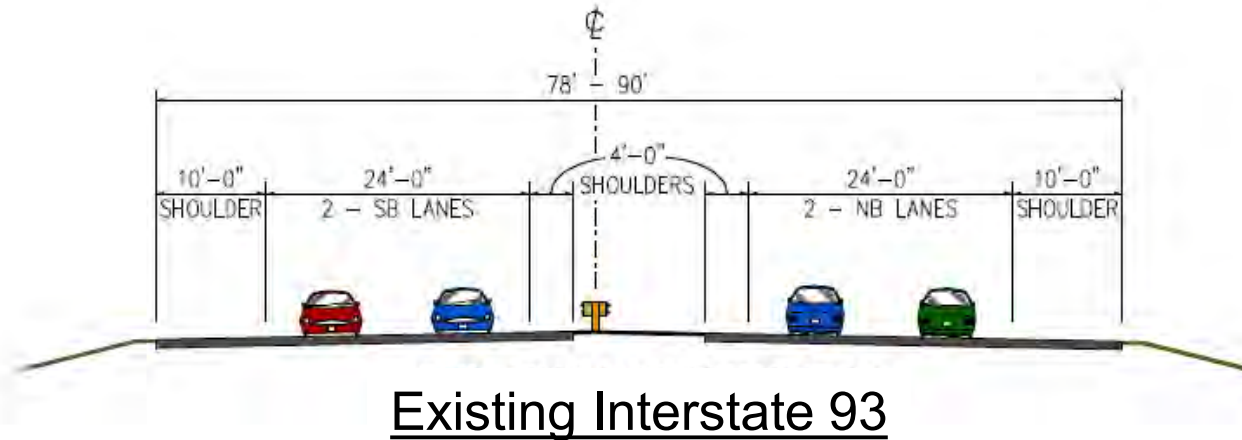


Alternatives Development



Bow Concord I-93 Improvements Project

I-93 Typical Sections



Alternatives Development



Bow Concord I-93 Improvements Project

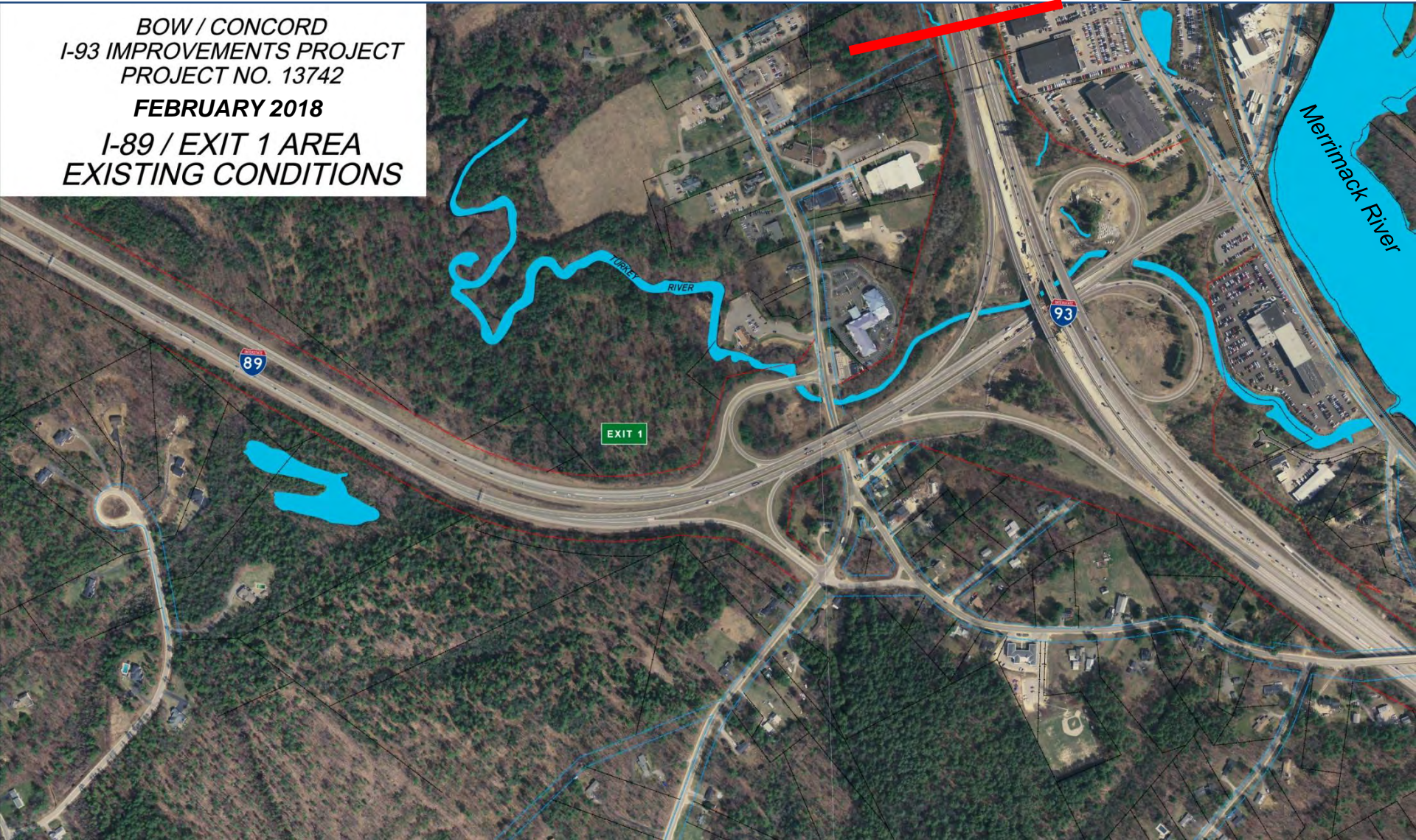
Alternatives Development



Bow Concord I-93 Improvements Project

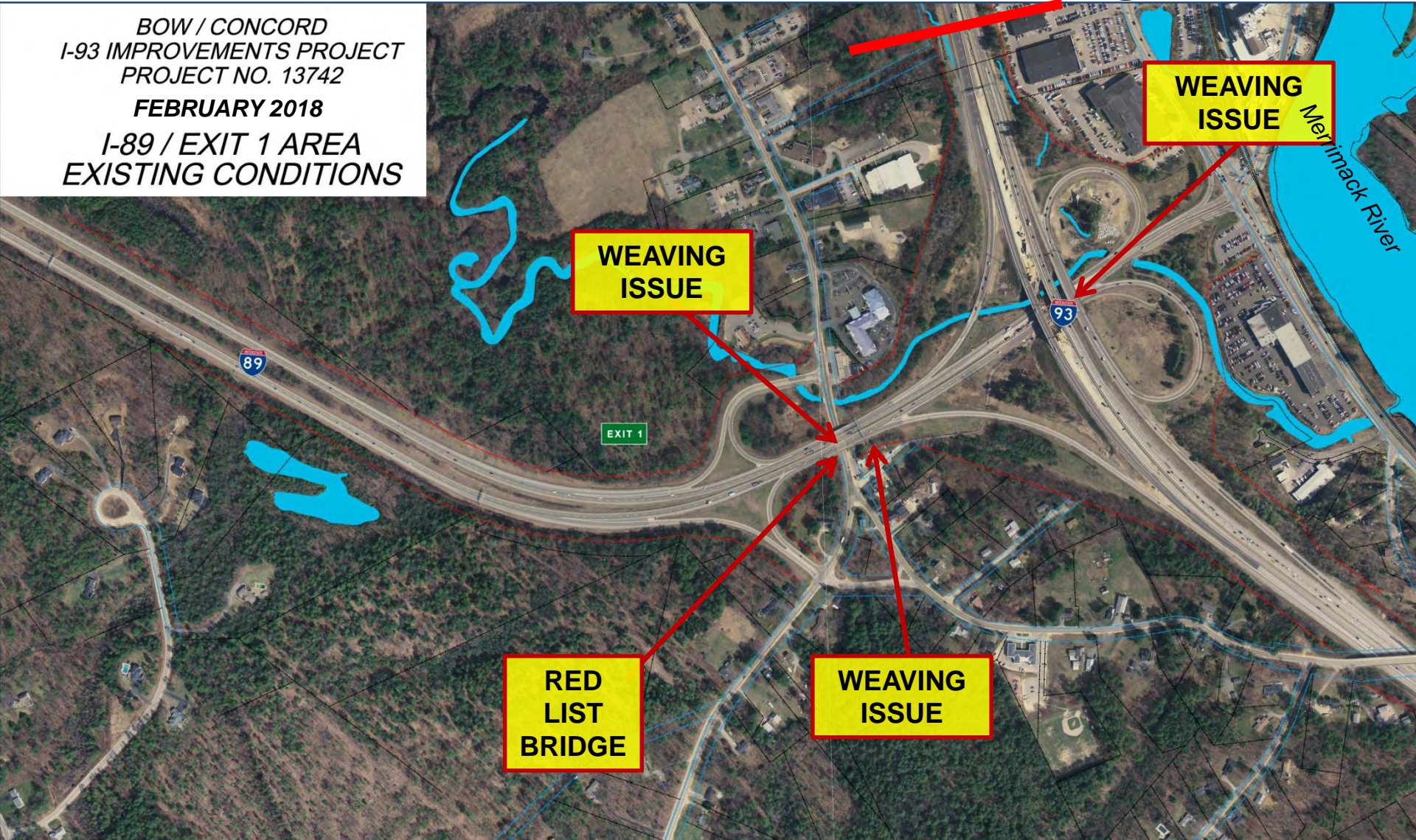
I-89 / Exit 1 Area - Existing

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I-93 IMPROVEMENTS PROJECT
PROJECT NO. 13742
FEBRUARY 2018
I-89 / EXIT 1 AREA
EXISTING CONDITIONS



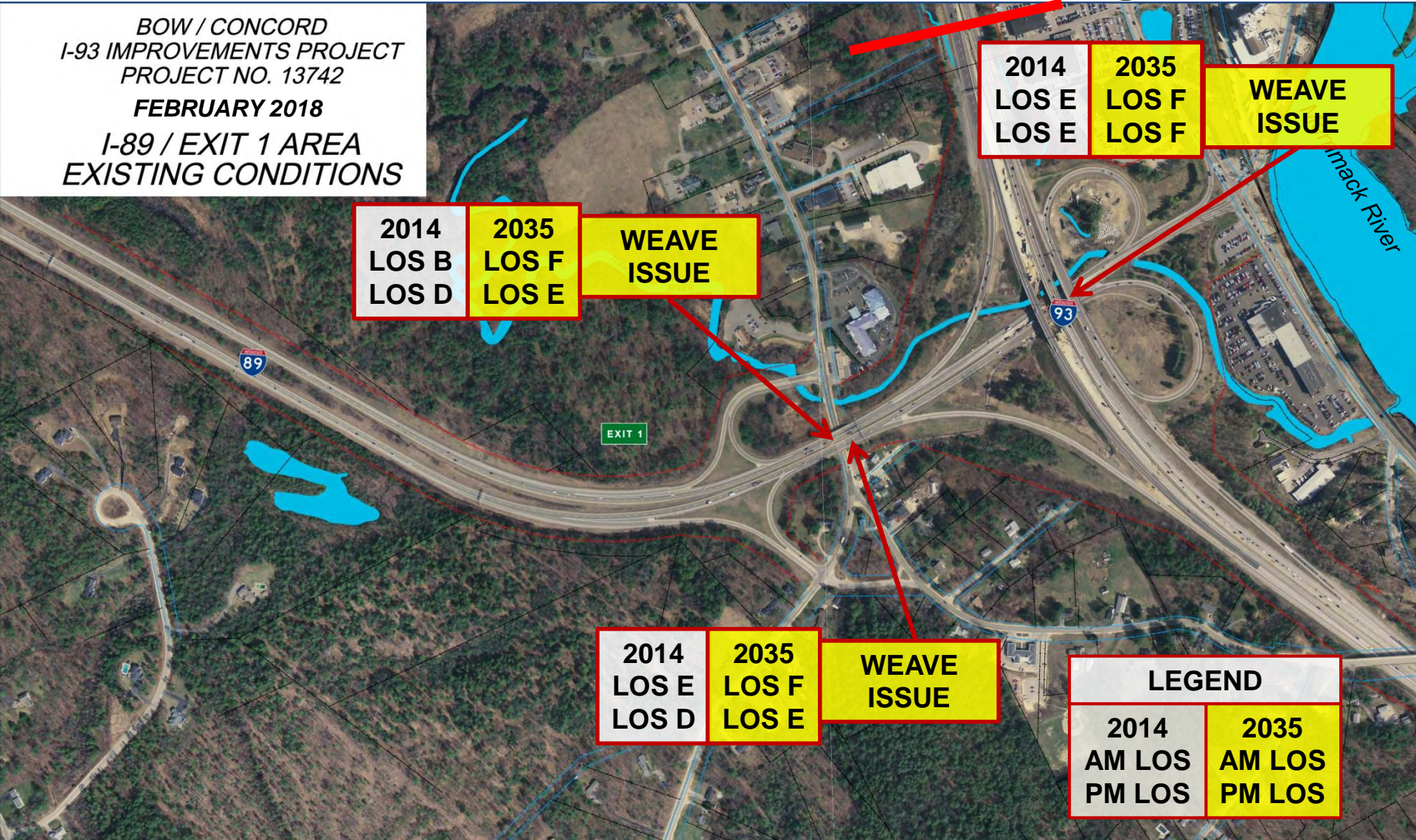
I-89 / Exit 1 Area - Existing

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FEBRUARY 2018
I-89 / EXIT 1 AREA
EXISTING CONDITIONS



I-89 / Exit 1 Area - Existing

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PROJECT NO. 13742
FEBRUARY 2018
I-89 / EXIT 1 AREA
EXISTING CONDITIONS



2014 LOS B LOS D	2035 LOS F LOS E
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**WEAVE
ISSUE**

2014 LOS E LOS E

2035 LOS F LOS F

**WEAVE
ISSUE**

2014 LOS E LOS D

2035 LOS F LOS E

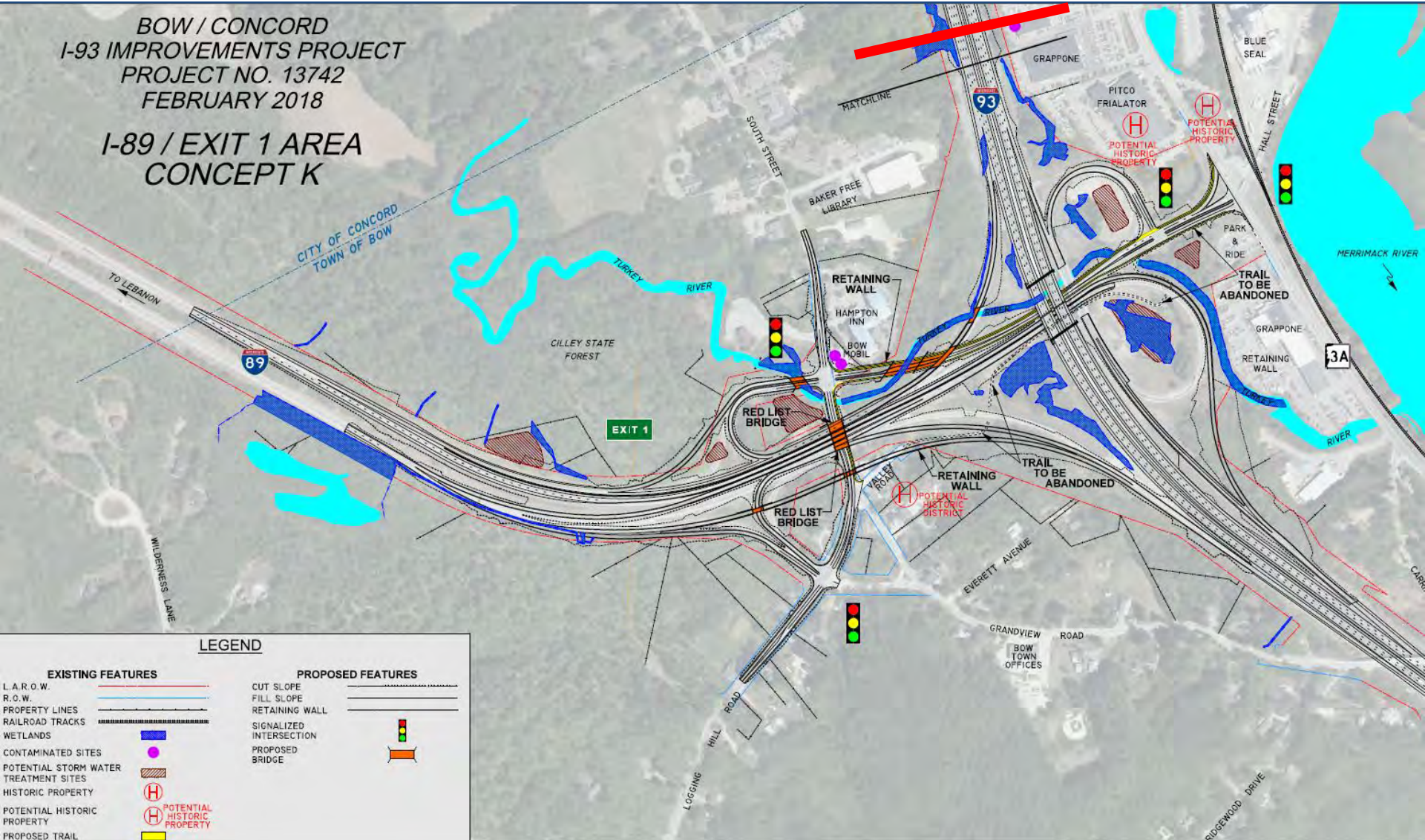
**WEAVE
ISSUE**

LEGEND	
2014 AM LOS PM LOS	2035 AM LOS PM LOS

I-89 / Exit 1 Area - Preferred

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I-89 / EXIT 1 AREA
CONCEPT K



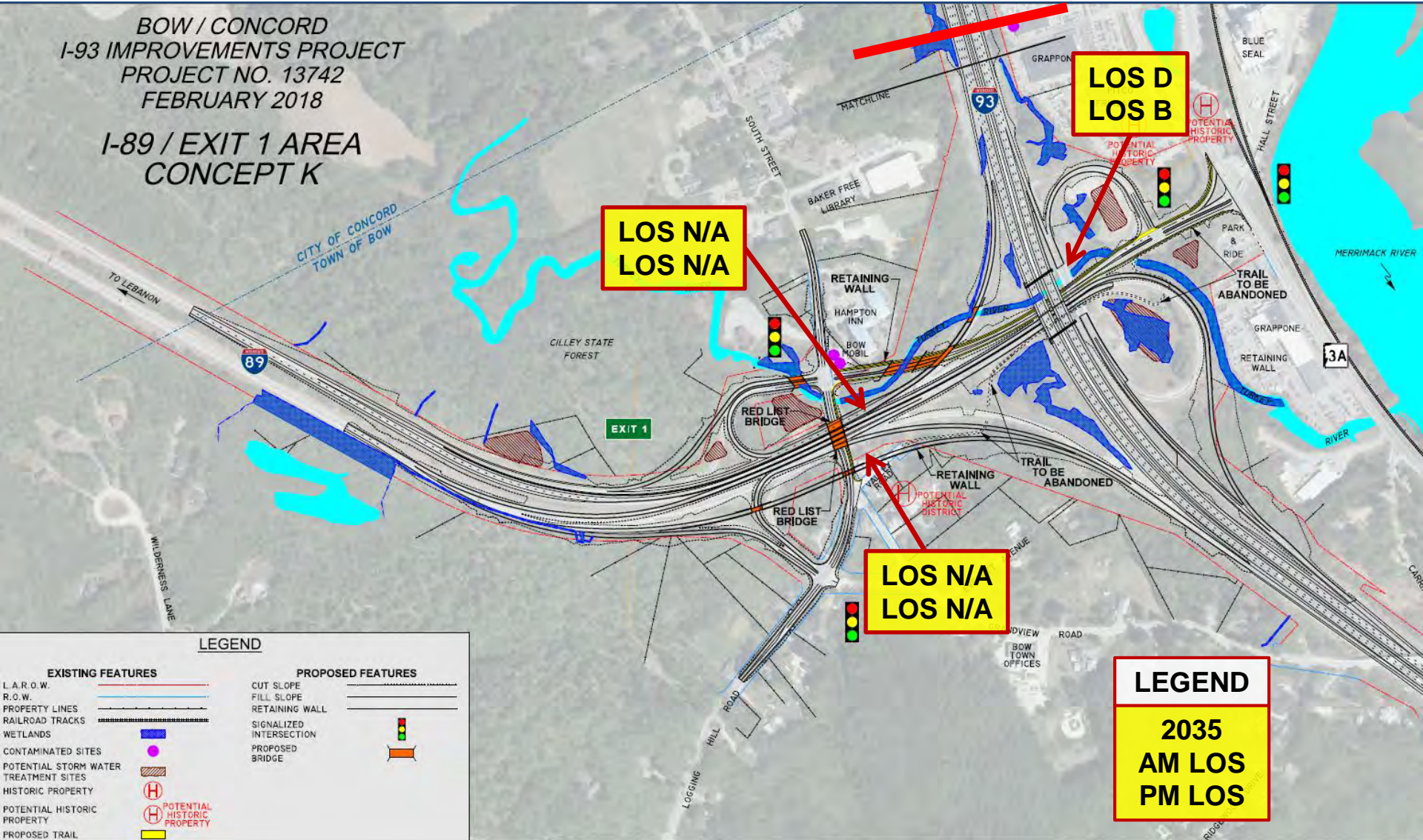
LEGEND

EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
R.O.W.	FILL SLOPE
PROPERTY LINES	RETAINING WALL
RAILROAD TRACKS	SIGNALIZED INTERSECTION
WETLANDS	PROPOSED BRIDGE
CONTAMINATED SITES	
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	

I-89 / Exit 1 Area - Preferred

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I-89 / EXIT 1 AREA
CONCEPT K



**LOS N/A
LOS N/A**

**LOS D
LOS B**

**LOS N/A
LOS N/A**

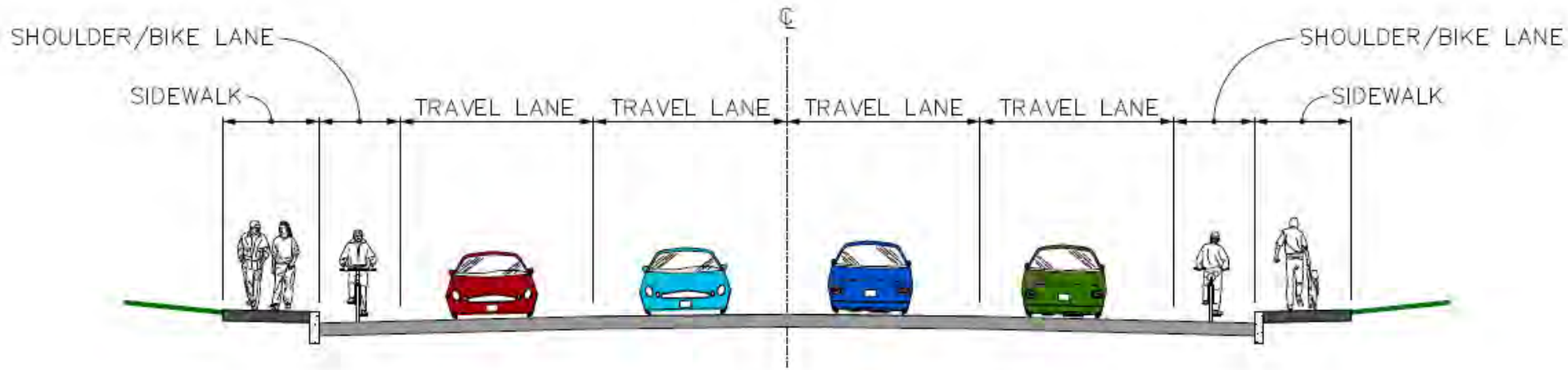
LEGEND

EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
R.O.W.	FILL SLOPE
PROPERTY LINES	RETAINING WALL
RAILROAD TRACKS	SIGNALIZED INTERSECTION
WETLANDS	PROPOSED BRIDGE
CONTAMINATED SITES	
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	

LEGEND

**2035
AM LOS
PM LOS**

Bicycle / Pedestrian Accommodation



Bicycle / Pedestrian Accommodation



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I-89 / EXIT 1 AREA
CONCEPT C*

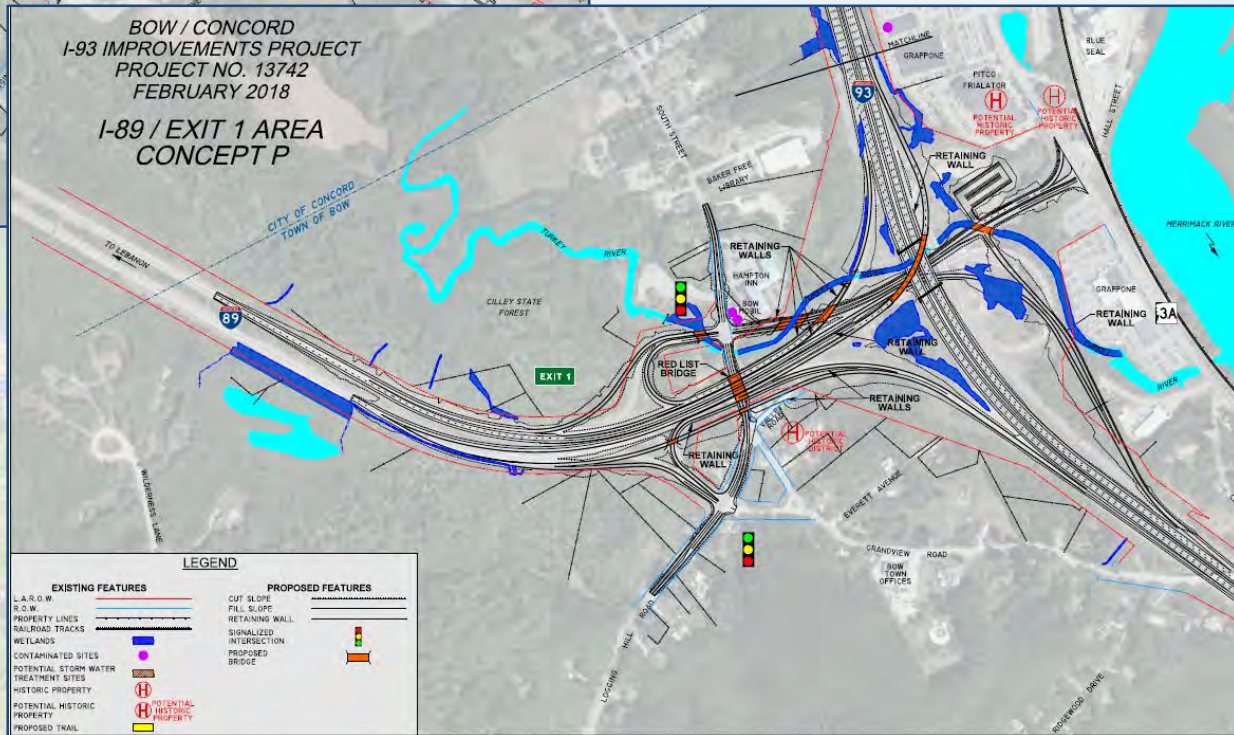
I-89 / Exit 1 Area



LEGEND

EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
R.O.W.	FILL SLOPE
PROPERTY LINES	RETAINING WALL
RAILROAD TRACKS	SIGNALIZED INTERSECTION
WETLANDS	PROPOSED BRIDGE
CONTAMINATED SITES	
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	

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I-89 / EXIT 1 AREA
CONCEPT P*



LEGEND

EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
R.O.W.	FILL SLOPE
PROPERTY LINES	RETAINING WALL
RAILROAD TRACKS	SIGNALIZED INTERSECTION
WETLANDS	PROPOSED BRIDGE
CONTAMINATED SITES	
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	

Not Preferred Concepts

I-89 Area Comparison

CONSIDERATION	CONCEPT C	CONCEPT K	CONCEPT P
Exit 1 To I-93 Weaves	Improved	Eliminated	Eliminated
I-93 NB To I-89 NB Weave	No Change	Improved	Eliminated
I-89 To Route 3A Access	No Change	Via Exit 1 or Via I-93 Exit 12	Via Exit 1 or Via I-93 Exit 12
Property Impacts	Cilley State Forest & Private Parcels	Cilley State Forest, Bow Mobil & Private Parcels	Cilley State Forest, Bow Mobil & Private Parcels
# Red List Bridges	1	1	1
# New Bridges	0	4	5
Project Cost	\$34.1 M	\$65.6 M	\$92.8 M

I-89 Area Comparison

RESOURCES	CONCEPT C	CONCEPT K	CONCEPT P
Wetlands	0.6 Acres	0.7 Acres	1.8 Acres
Conservation Land	5.3 Acres of Cilley State Forest (+4.3 Ac)	0.7 Acres of Cilley State Forest	0.7 Acres of Cilley State Forest
Wildlife	<ul style="list-style-type: none"> • 2 State-listed Species • 2 Species of Concern • Fish Habitat 	<ul style="list-style-type: none"> • 2 State-listed Species • 2 Species of Concern • Fish Habitat 	<ul style="list-style-type: none"> • 2 State-listed Species • 2 Species of Concern • 2 Fish Habitat
Historic Properties	Bow Mills Historic Area	Bow Mills Historic Area	Bow Mills Historic Area

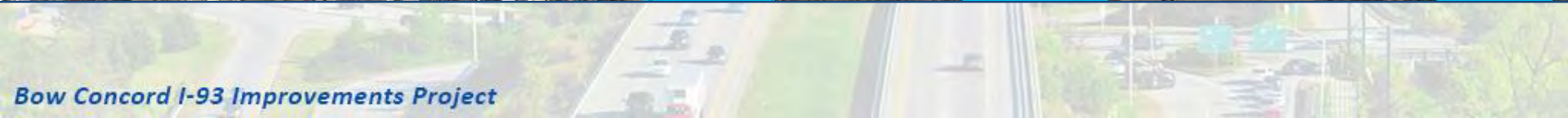
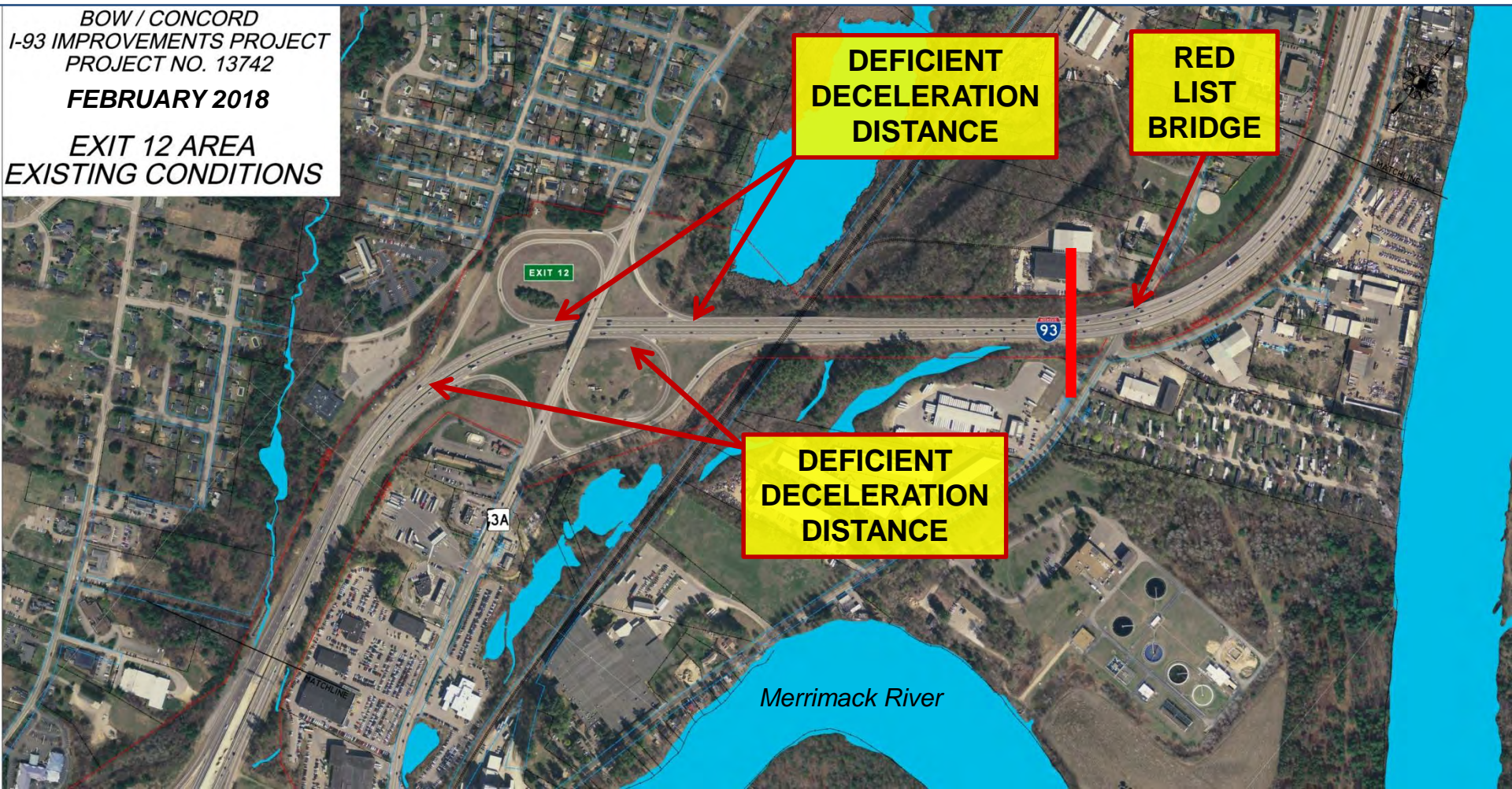
Exit 12 Area - Existing

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EXIT 12 AREA
EXISTING CONDITIONS



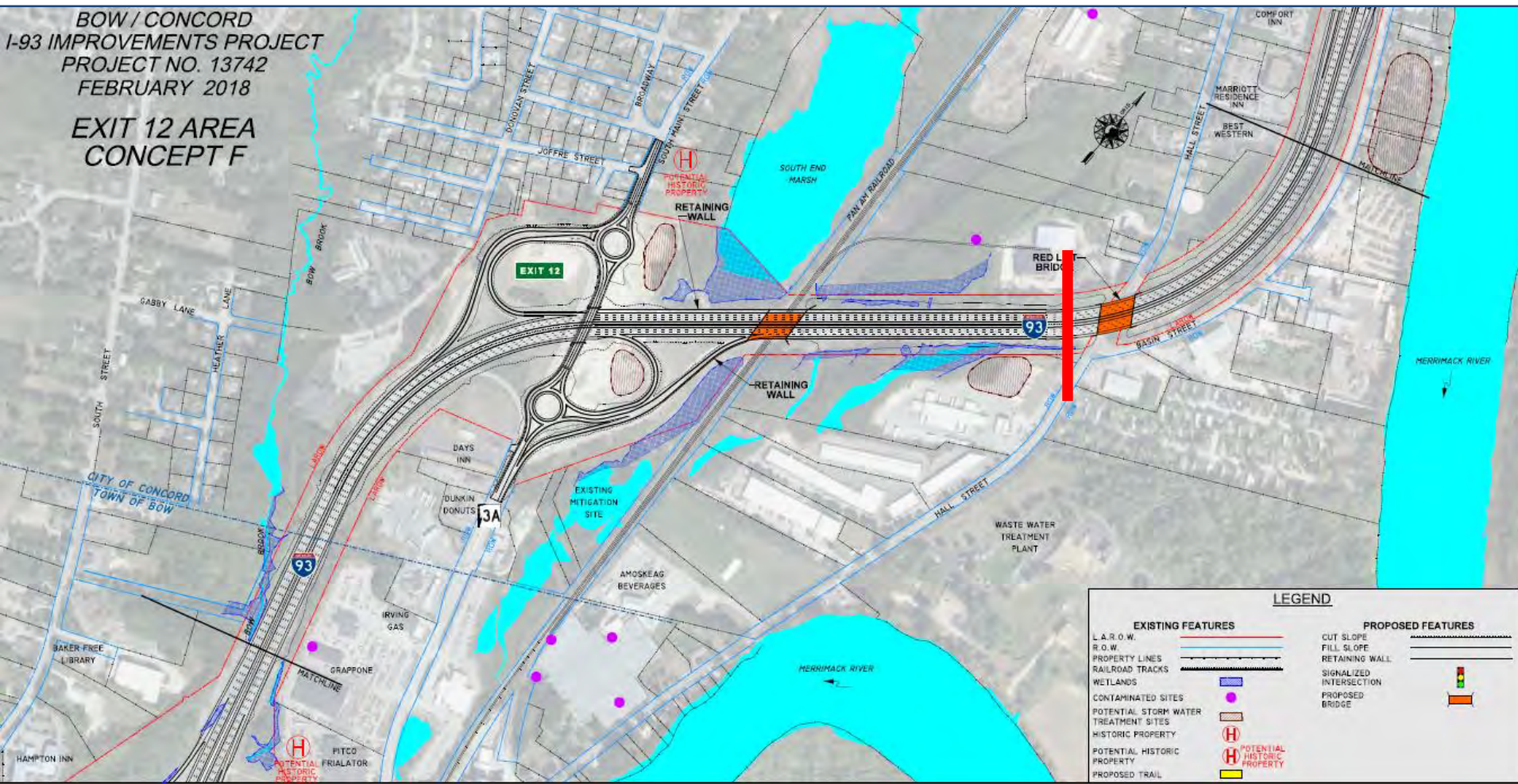
Exit 12 Area - Existing

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PROJECT NO. 13742
FEBRUARY 2018
EXIT 12 AREA
EXISTING CONDITIONS



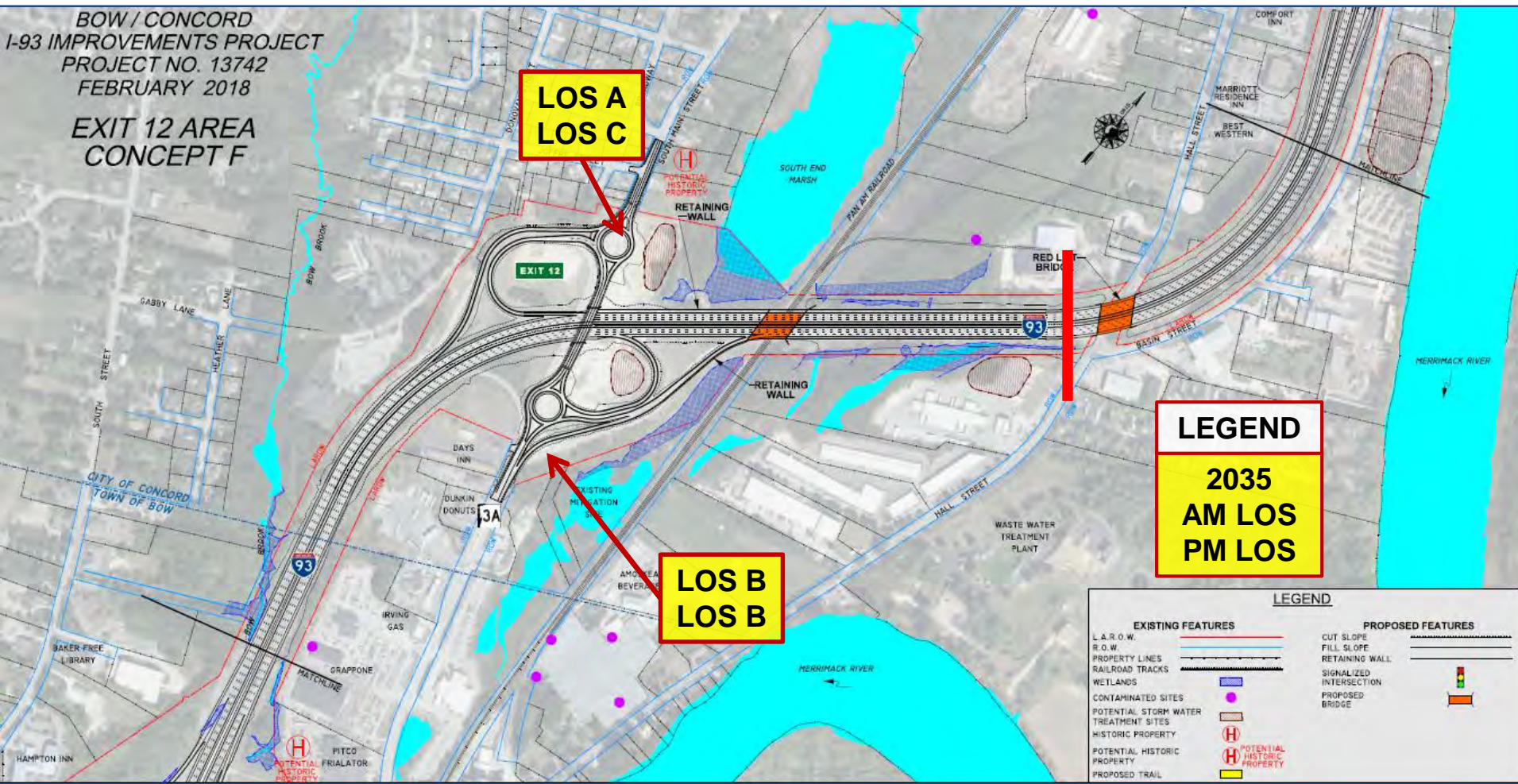
Exit 12 Area - Preferred

**BOW / CONCORD
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PROJECT NO. 13742
FEBRUARY 2018
EXIT 12 AREA
CONCEPT F**

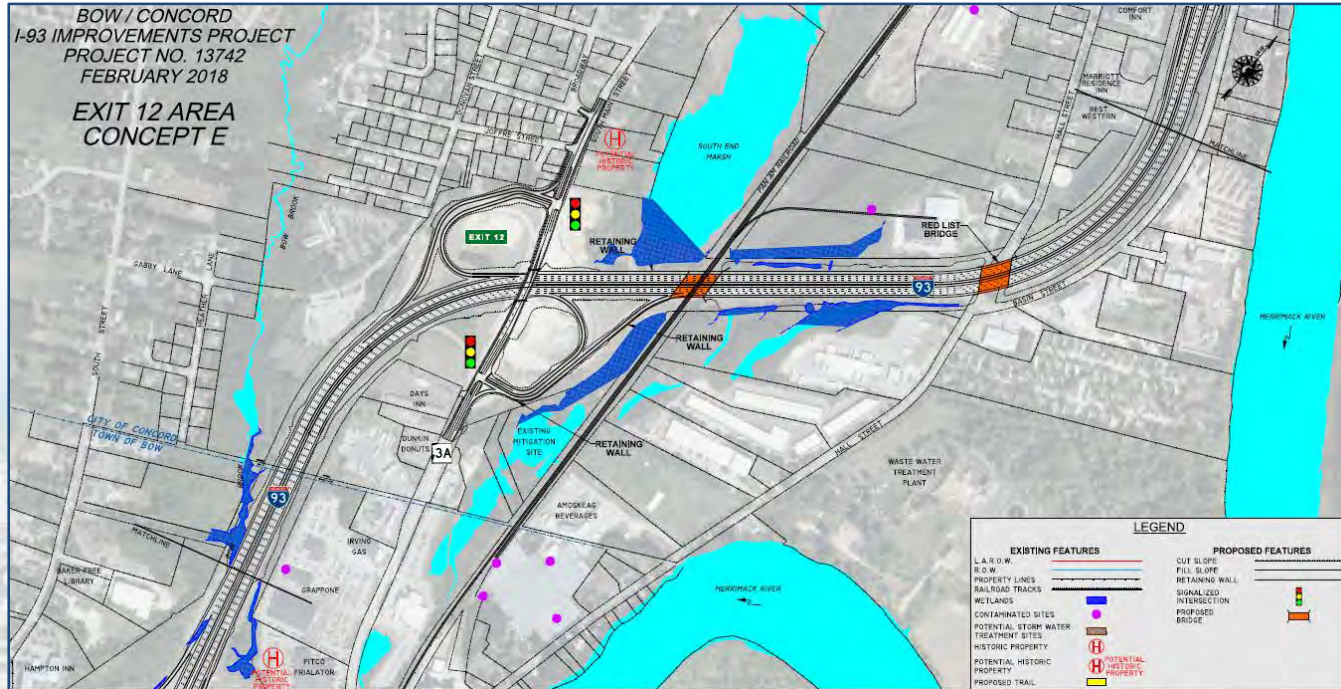


EXISTING FEATURES		PROPOSED FEATURES	
L.A.R.O.W.		CUT SLOPE	
R.O.W.		FILL SLOPE	
PROPERTY LINES		RETAINING WALL	
RAILROAD TRACKS		SIGNALIZED INTERSECTION	
WETLANDS		PROPOSED BRIDGE	
CONTAMINATED SITES			
POTENTIAL STORM WATER TREATMENT SITES			
HISTORIC PROPERTY			
POTENTIAL HISTORIC PROPERTY			
PROPOSED TRAIL			

Exit 12 Area - Preferred



Exit 12 Area



**Not Preferred
Concept**



Exit 12 Area Comparison

CONSIDERATION	CONCEPT E	CONCEPT F
Level of Service (AM/PM)	LOS C/C with Queuing	LOS A/C with little Queuing
Property Impacts	Partial Impacts along Route 3A	Partial Impacts along Route 3A
# Red List Bridges	0	0
# New Bridges	0	0
Project Cost	\$36.1 M	\$33.8 M

Exit 12 Area Comparison

RESOURCES	CONCEPT E	CONCEPT F
Wetlands	0.5 Acres	0.5 Acres
Conservation Land	0.0 Acres	0.0 Acres
Wildlife	2 State-listed Species	2 State-listed Species
Historic Properties	S. Concord / Weeks Garden District	S. Concord / Weeks Garden District

Exit 13 Area - Existing

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EXIT 13 AREA
EXISTING CONDITIONS

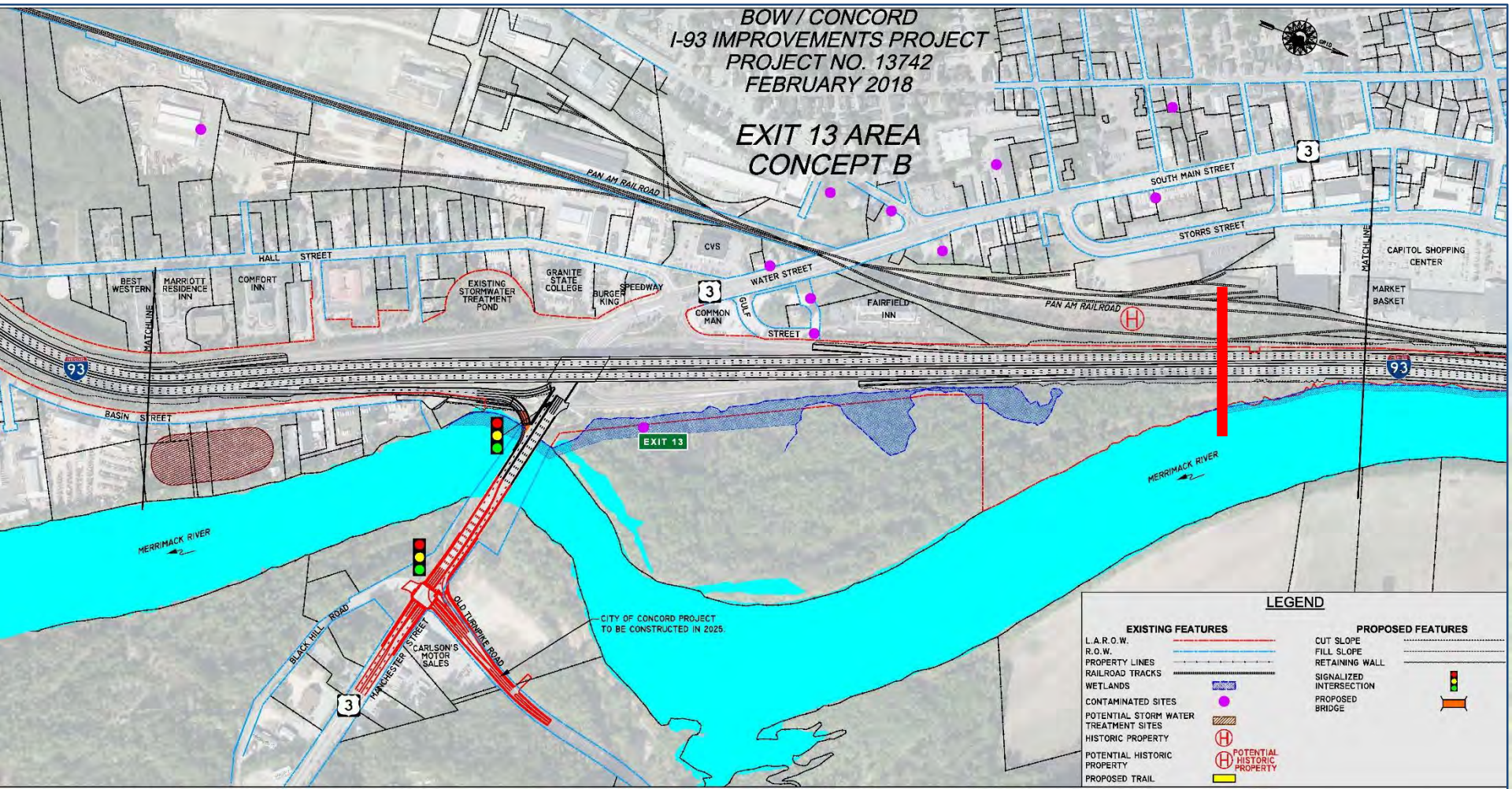


Exit 13 Area - Existing

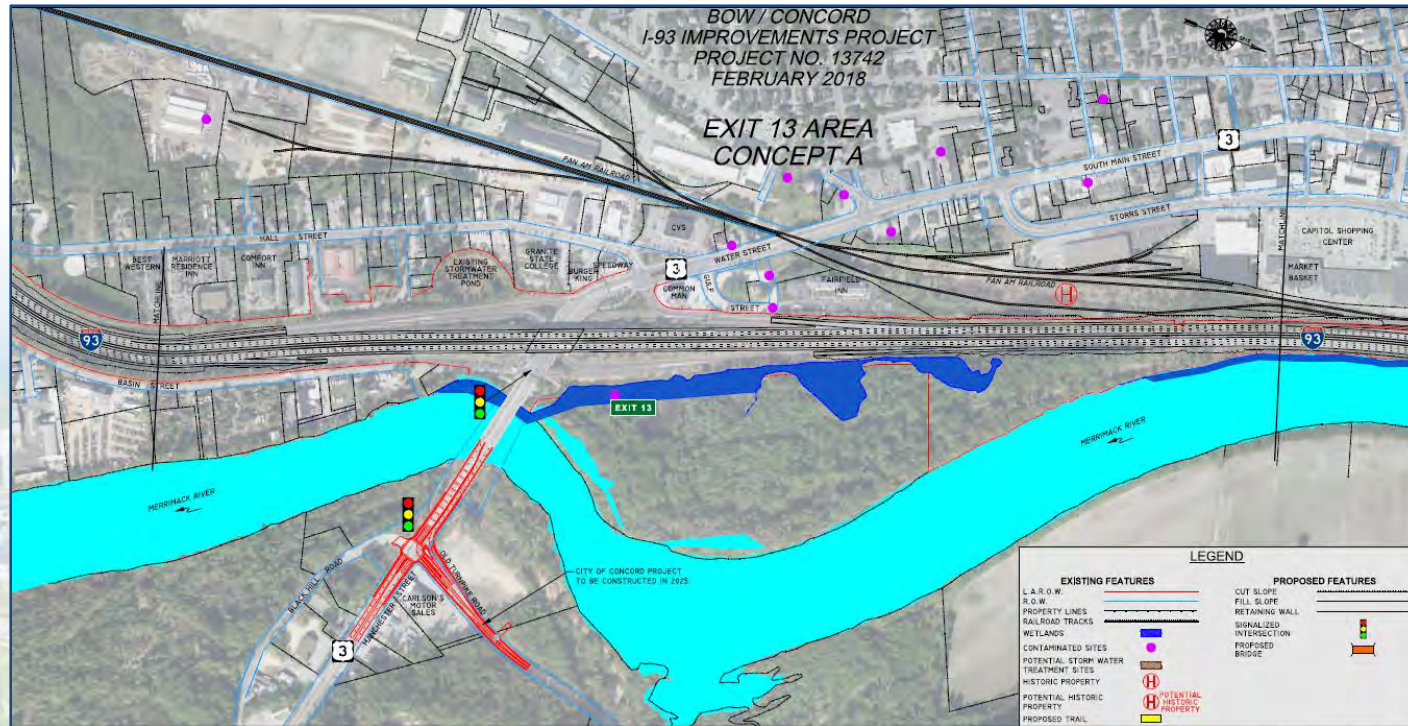
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FEBRUARY 2018
EXIT 13 AREA
EXISTING CONDITIONS



Exit 13 Area - Preferred



Exit 13 Area



**Not Preferred
Concept**

Exit 13 Comparison

CONSIDERATION	CONCEPT A	CONCEPT B
Queuing on NB Exit Ramp	Onto I-93 by 2035	Acceptable
Property Impacts	None	1 Private Parcel
# Red List Bridges	1	1
# New Bridges	0	1
Project Cost	\$33.2 M	\$38.4 M

Exit 13 Comparison

RESOURCES	CONCEPT A	CONCEPT B
Wetlands	0.0 Acres	0.1 Acres
Conservation Land	0.0 Acres	0.0 Acres
Wildlife	<ul style="list-style-type: none"> • 2 State-listed Species • Fish Habitat • 1 Exemplary Community 	<ul style="list-style-type: none"> • 2 State-listed Species • Fish Habitat • 1 Exemplary Community
Historic Properties	N/A	N/A

Exit 14 / 15 Area - Existing

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EXITS 14 / 15 AREAS
EXISTING CONDITIONS



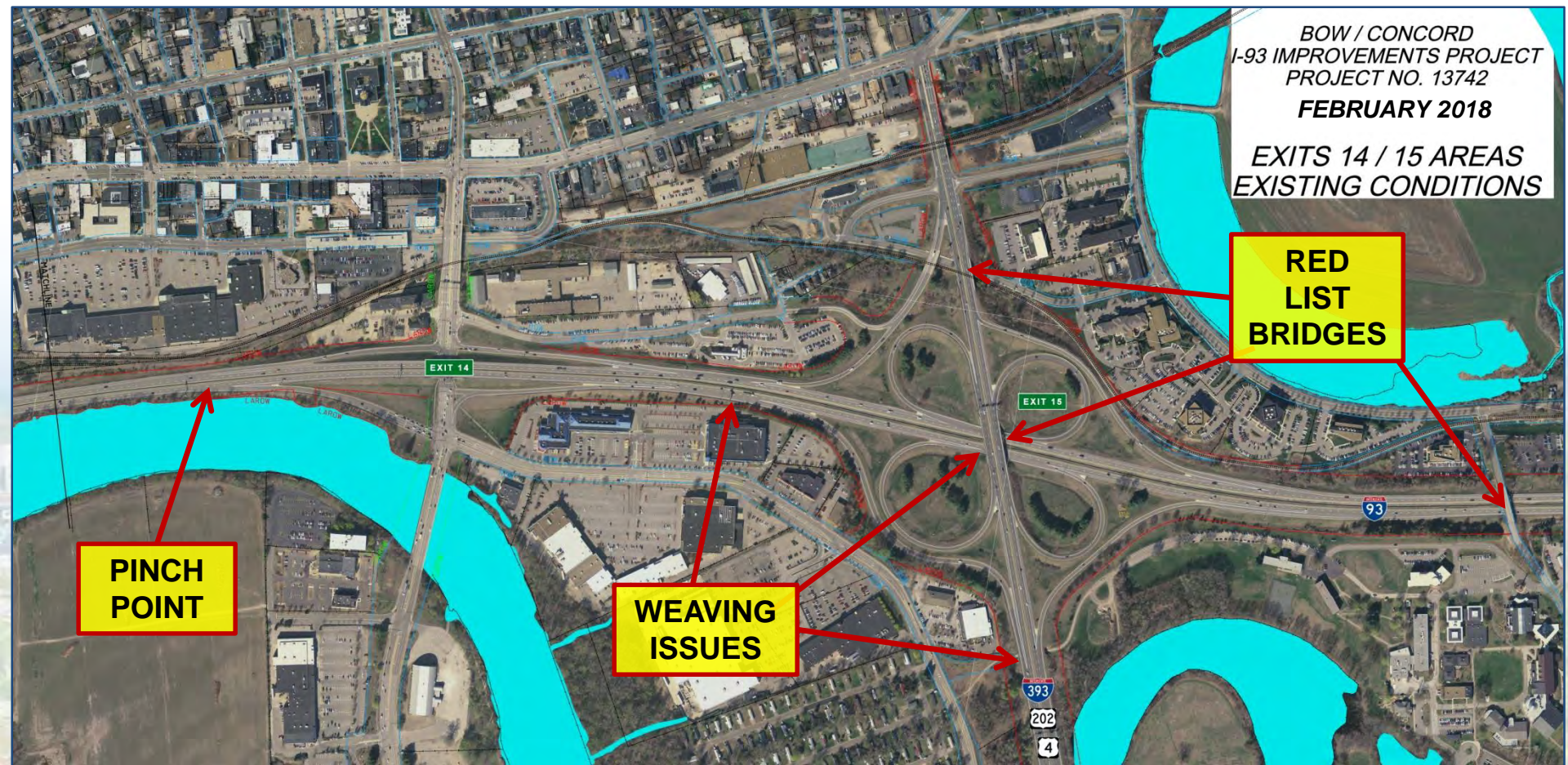
Exit 14 / 15 Area - Existing

BOW / CONCORD
I-93 IMPROVEMENTS PROJECT
PROJECT NO. 13742
FEBRUARY 2018
EXITS 14 / 15 AREAS
EXISTING CONDITIONS

**RED
LIST
BRIDGES**

**PINCH
POINT**

**WEAVING
ISSUES**



Exit 14 / 15 Area - Existing

BOW / CONCORD
I-93 IMPROVEMENTS PROJECT
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EXITS 14 / 15 AREAS
EXISTING CONDITIONS

2014 LOS F LOS D	2035 LOS F LOS E
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**WEAVE
ISSUE (SB)**

2014 LOS F LOS E	2035 LOS F LOS F
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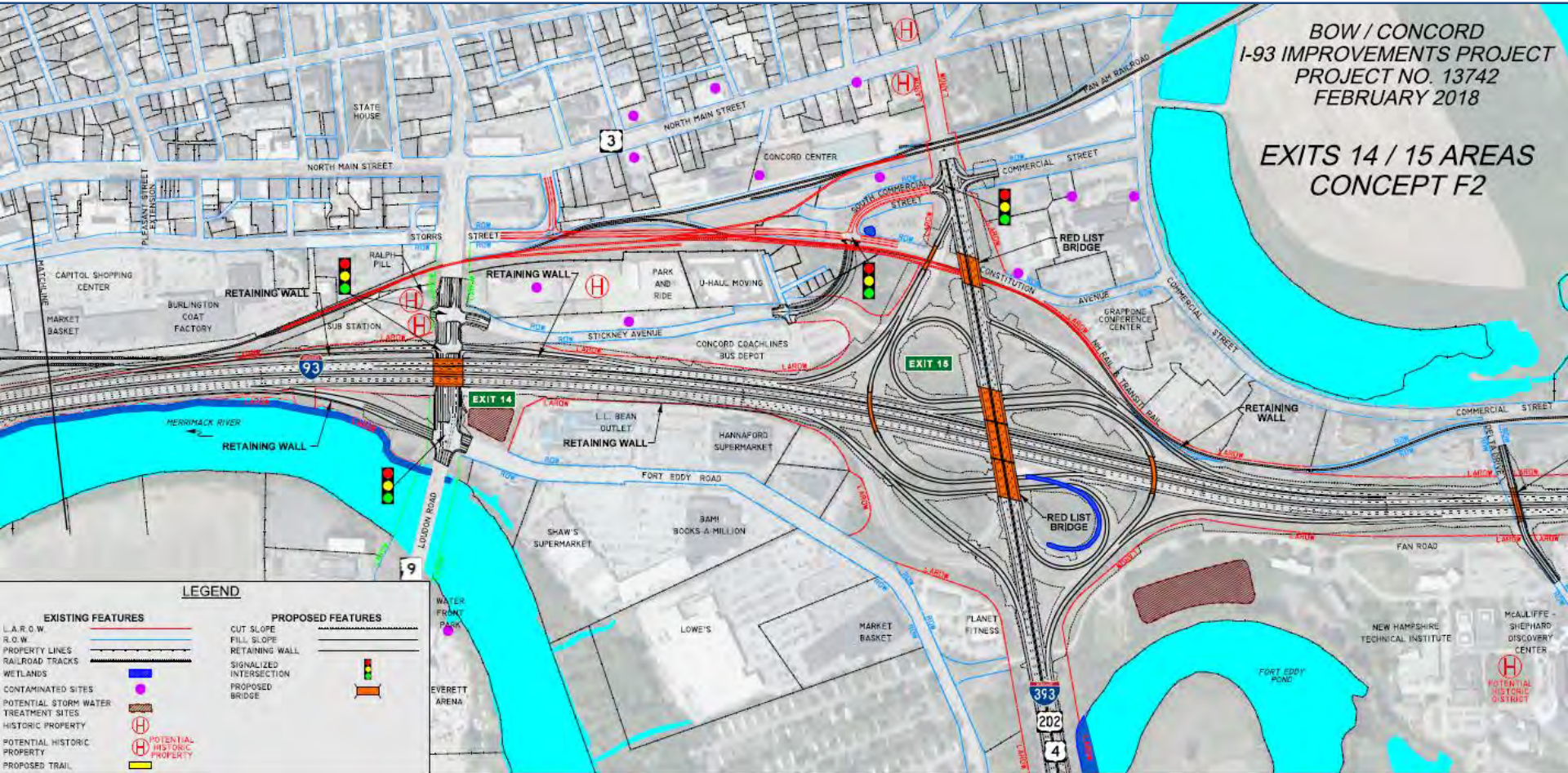
**WEAVE
ISSUE (SB)**

**WEAVE
ISSUE (NB)**

2014 LOS C LOS E	2035 LOS C LOS F
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LEGEND	
2014 AM LOS	2035 AM LOS
2014 PM LOS	2035 PM LOS

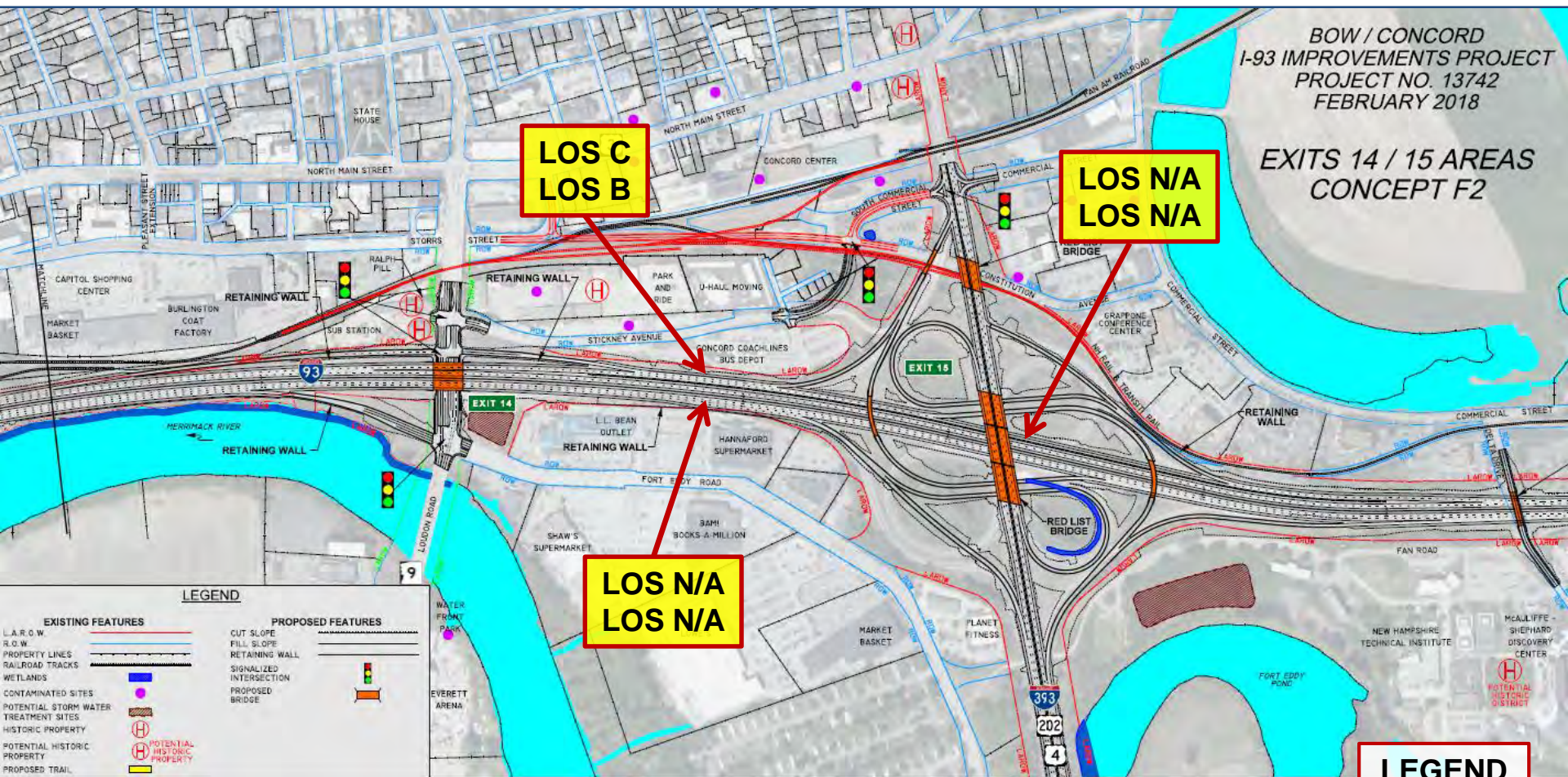
Exit 14 / 15 Area - Preferred



Exit 14 / 15 Area - Preferred

BOW / CONCORD
I-93 IMPROVEMENTS PROJECT
PROJECT NO. 13742
FEBRUARY 2018

EXITS 14 / 15 AREAS
CONCEPT F2



LEGEND

EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
R.O.W.	FILL SLOPE
PROPERTY LINES	RETAINING WALL
RAILROAD TRACKS	SIGNALIZED INTERSECTION
WETLANDS	PROPOSED BRIDGE
CONTAMINATED SITES	
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	

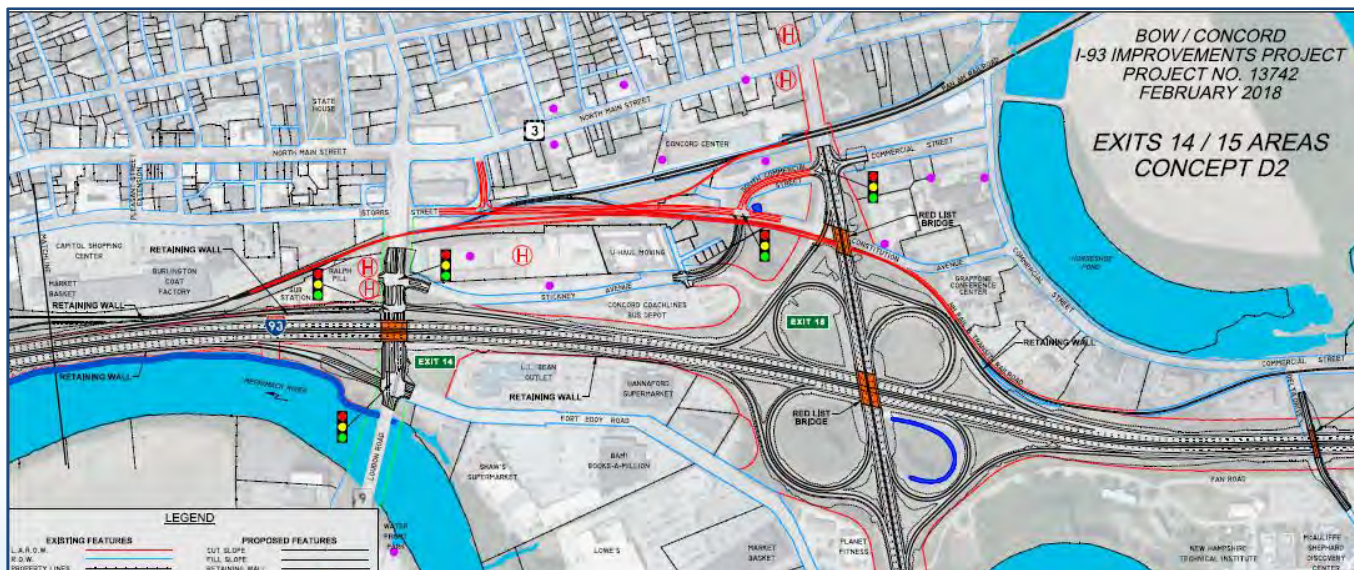
LEGEND

2035
AM LOS
PM LOS

BOW / CONCORD
I-93 IMPROVEMENTS PROJECT
PROJECT NO. 13742
FEBRUARY 2018

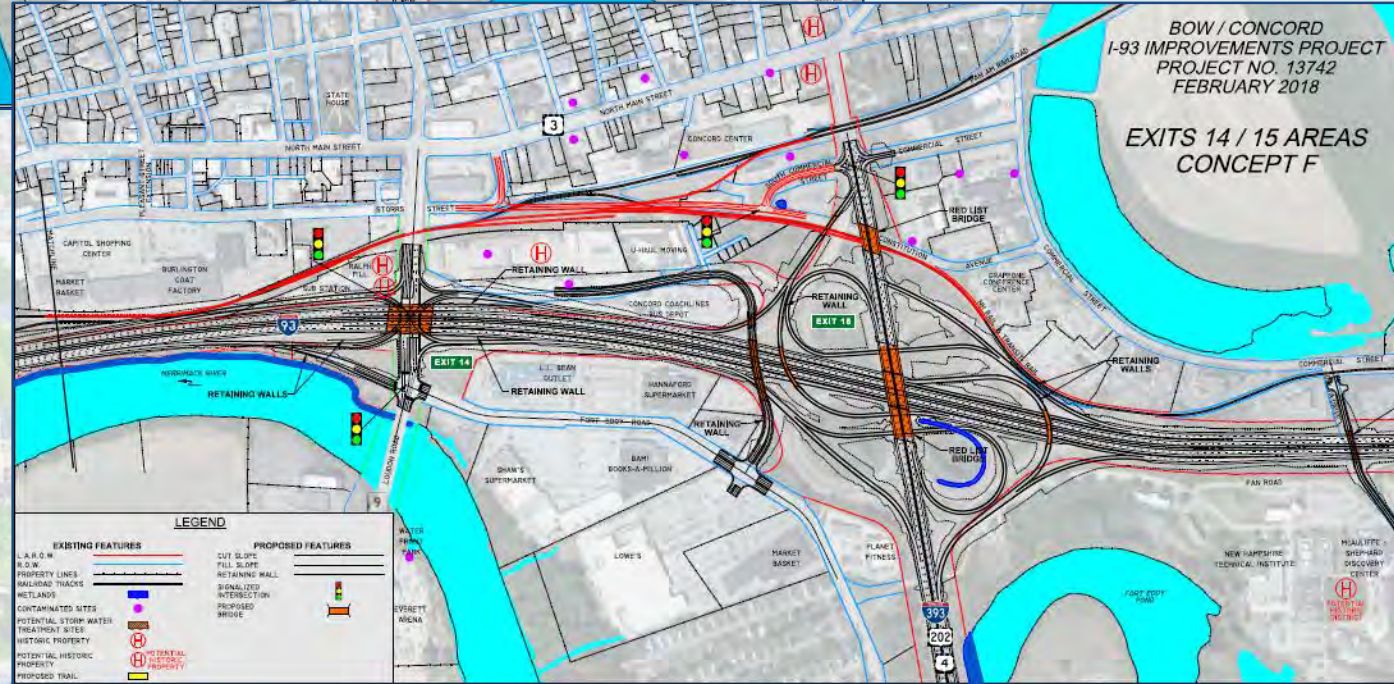
EXITS 14 / 15 AREAS
CONCEPT D2

Exit 14 / 15 Area



LEGEND

EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
PROPERTY LINES	FILL SLOPE
RAILROAD TRACKS	RETAINING WALL
WETLANDS	SIGNALIZED INTERSECTION
CONTAMINATED SITES	PROPOSED BRIDGE
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	



BOW / CONCORD
I-93 IMPROVEMENTS PROJECT
PROJECT NO. 13742
FEBRUARY 2018

EXITS 14 / 15 AREAS
CONCEPT F

LEGEND

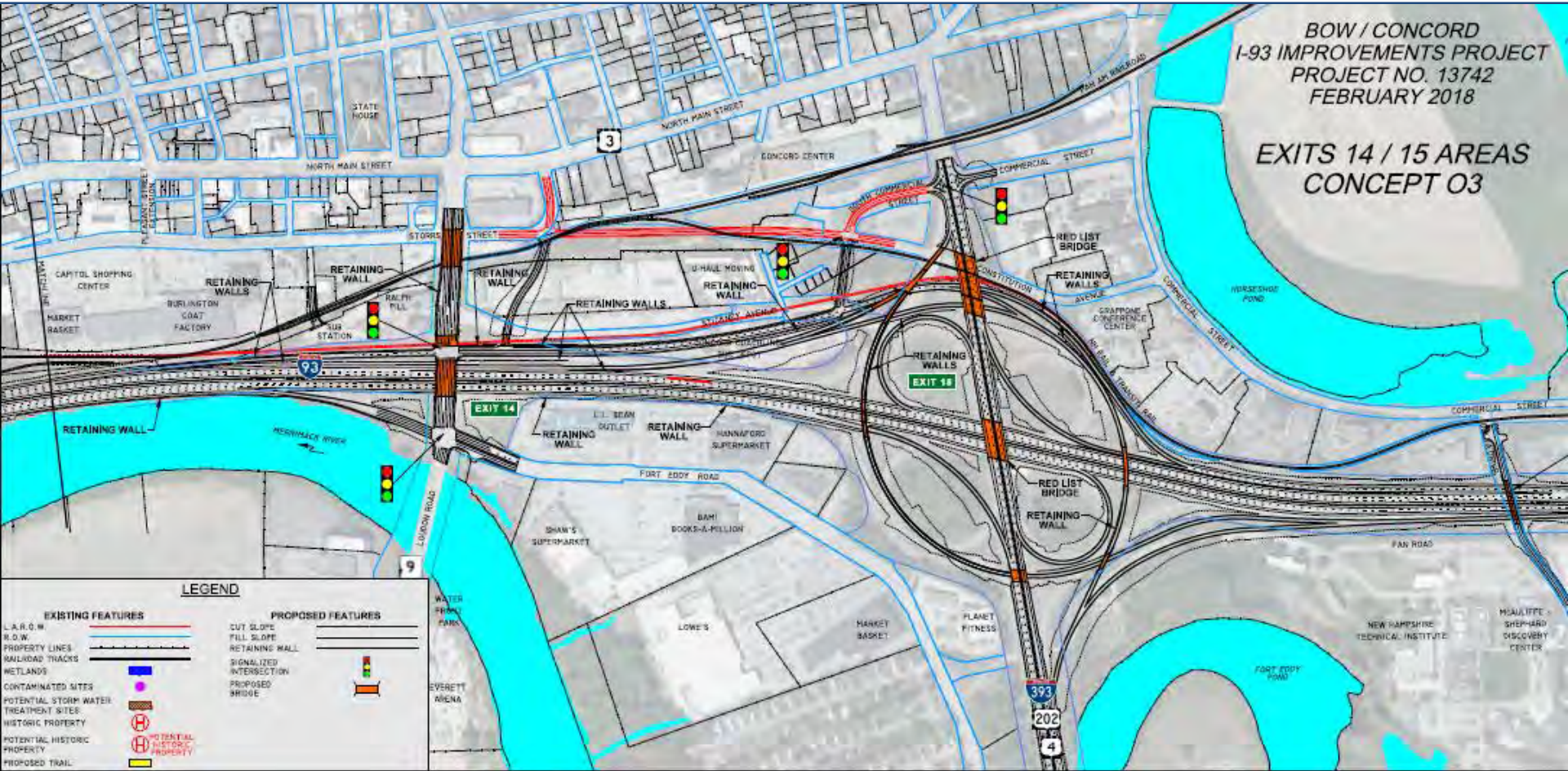
EXISTING FEATURES	PROPOSED FEATURES
L.A.R.O.W.	CUT SLOPE
PROPERTY LINES	FILL SLOPE
RAILROAD TRACKS	RETAINING WALL
WETLANDS	SIGNALIZED INTERSECTION
CONTAMINATED SITES	PROPOSED BRIDGE
POTENTIAL STORM WATER TREATMENT SITES	
HISTORIC PROPERTY	
POTENTIAL HISTORIC PROPERTY	
PROPOSED TRAIL	

Not Preferred Concepts

Bicycle / Pedestrian Accommodation



Exit 14 / 15 Area



**Not Preferred
Concept**

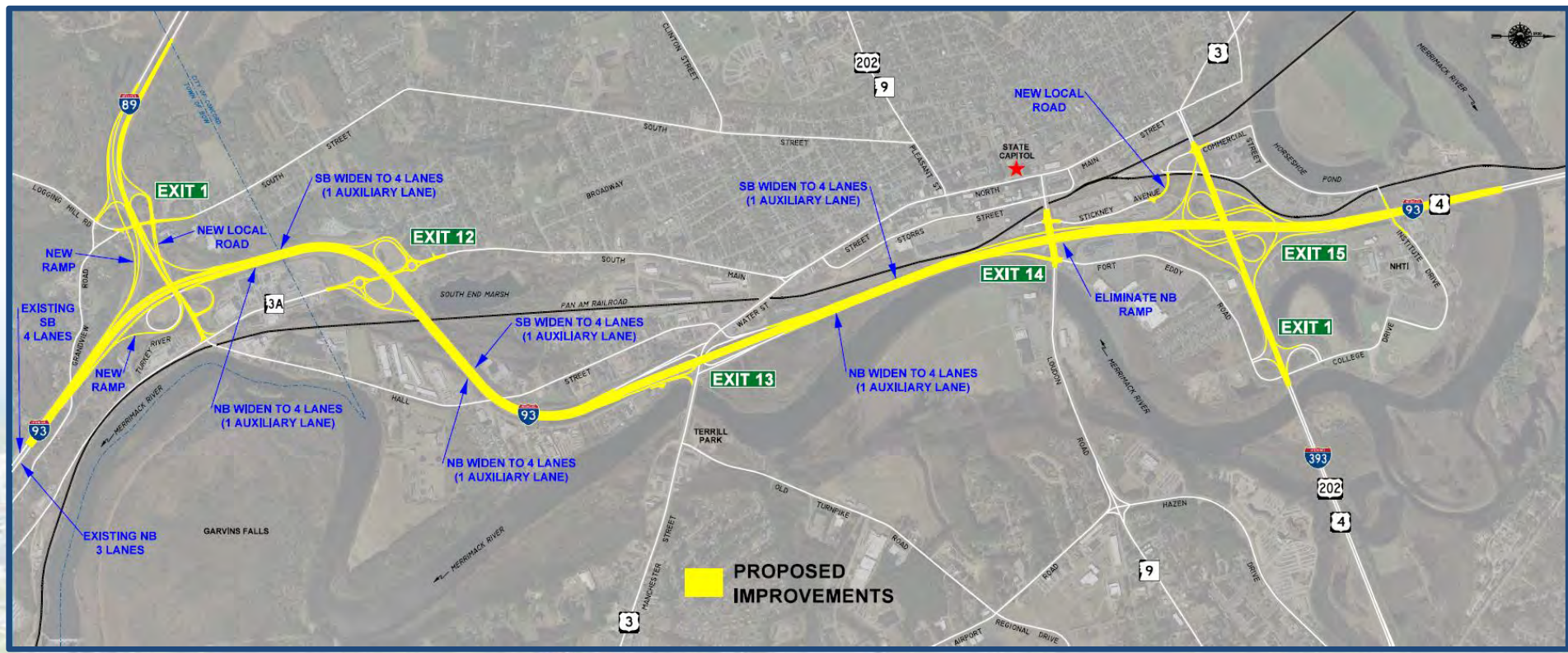
Exit 14 / 15 Comparison

CONSIDERATION	CONCEPT D2	CONCEPT F	CONCEPT F2	CONCEPT O3
Exit 14 to Exit 15 Weaves	Improved	C-D Roads	C-D Road (SB) Eliminated (NB)	Eliminated
Exit 15 Weaves	Improved	Eliminated	Eliminated	Eliminated
NB Entrance Ramp at Exit 14	Eliminated	No Change	Eliminated	Eliminated
Property Impacts	None	Ralph Pill Bldg., Util Sub Station, & Burlington	None	Bus Station
# Red List Bridges	4	4	4	4
# New Bridges	0	4	2	7
Project Cost	\$91.5 M	\$188.9 M	\$125.0M	\$170.8 M

Exit 14 / 15 Comparison

RESOURCES	CONCEPT D2	CONCEPT F	CONCEPT F2	CONCEPT O3
Wetlands	0.3 Acres	0.4 Acres	0.5 Acres	0.2 Acres
Conservation Land	0.0 Acres	0.0 Acres	0.0 Acres	0.0 Acres
Wildlife	<ul style="list-style-type: none"> • 2 State-listed Species • Fish Habitat • 1 Exemplary Community 	<ul style="list-style-type: none"> • 2 State-listed Species • Fish Habitat • 1 Exemplary Community 	<ul style="list-style-type: none"> • 2 State-listed Species • Fish Habitat • 1 Exemplary Community 	<ul style="list-style-type: none"> • 2 State-listed Species • Fish Habitat • 1 Exemplary Community
Historic Properties	Railroad, DOT Garage Ralph Pill, 24 Bridge St.	Railroad, DOT Garage, Ralph Pill, 24 Bridge St., NHTI District	Railroad, DOT Garage, Ralph Pill, 24 Bridge St., NHTI District	NHTI District

Recommended Preferred Alternative



**I-89 Area
Concept K**

**Exit 12 Area
Concept F**

**Exit 13 Area
Concept B**

**Exit 14/15 Area
Concept F2**

Project Costs

Bow Concord I-93 Improvements Project
Preferred Alternative Cost Matrix
 (Millions \$)

SEGMENT	Concept	Construction \$	Right-of-Way \$	Engineering and Permitting \$	Mitigation \$	Utility \$	Total Project \$
I-89 Area	K	\$58.0	\$1.15	\$5.80	\$0.58	\$0.00	\$65.6
Exit 12	F	\$29.5	\$0.01	\$2.95	\$0.30	\$1.00	\$33.8
Exit 13	B	\$34.5	\$0.01	\$3.45	\$0.35	\$0.00	\$38.4
Exit 14/15	F2	\$111.4	\$0.27	\$11.14	\$1.11	\$1.00	\$125.0
Total		\$233.4	\$1.4	\$23.3	\$2.3	\$2.0	\$262.8

(Assessed Value)

(10% of Constr.)

(1% of Constr +
any Major Items.)

Next Steps

- Complete Environmental Document
- Develop Corridor Plan
 - Blueprint for Corridor
 - Set Priorities
- Conduct Public Hearing
- Environmental Determination
- Construction
 - Begin 2024
 - Not Fully Funded



Questions & Answers

www.i93bowconcord.com

