



Planning Group



Alternative Screening
Presentations
October/November 2006

Part A Schedule



Planning Group 1
February 1, 2006

Introduction
CSS Overview
Brainstorm Problem Statement



Planning Group 2
March 7, 2006

Confirm Problem Statement
Brainstorm Goal Statement



Planning Group 3
March 29, 2006

Confirmed Problem Statement
Confirmed Goal Statement
Brainstormed Screening Criteria



Planning Group 4
April 18, 2006

Confirm Screening Criteria
Brainstorm Alternatives



Public Meetings
May 18 & 20, 2006

Receive Public Comment on Problem Statement, Goal Statement, Screening Criteria & Alternative Components



Planning Group 5
June 13, 2006

Develop Range of Alternatives to be Considered

Part A Schedule

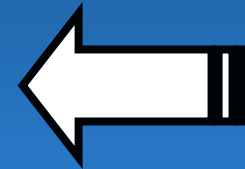


July - August

Project Team Evaluates Alternatives
Perform Model Runs
Determine Costs
Determine Impacts
Conduct Preliminary Screening

**Planning Group 6, 7 & 8
October/November 2006**

**Review and Confirm
Alternative Screening**



Planning Group 9

Secure Consensus on Reasonable Range of Alternatives
Secure Consensus on Purpose and Need
Present Study Findings

Public Meeting
Late 2006/Early 2007?

Receive Public Comment on Reasonable Range
of Alternatives

December 2006

Complete Summary Report
Complete Phase A

Project Problem Statement

"Marked by aging infrastructure and limited transportation options, the Bow-Concord I-93 Corridor neither meets the varied transportation and safety demands of interstate highway users, nor appropriately balances those demands against the interests of the Capitol Region communities in their unique identities and visions, their economic vitality, preservation of and access to their natural and historic resources, and their quality of life. Future population and economic growth, in the region and beyond, will increase transportation demand and further exacerbate this problem."



CONSENSUS

Project Goal Statement

“The Bow-Concord I-93 Corridor should balance the needs of all users and the surrounding communities by providing a safe, affordable, reliable, environmentally acceptable and community compatible transportation system. The system will offer mobility choices and complement the unique character of the Capitol Region communities. It will support their economic initiatives, preserve and/or enhance their natural and historic resources, facilitate non-vehicular access, and sustain the communities’ quality of life, now and into the future.”








CONSENSUS

Bow-Concord I-93 Transportation Planning Study

SCREENING CRITERIA





















The purpose of screening is to evaluate whether a concept is effective in addressing the problems and goals defined for this project. The criterion on the following pages determines if a concept is reasonable and should be included in the range of reasonable alternatives. The criteria are arranged into fifteen categories that are summarized on the previous page. The Scoring System outlined below is a qualitative measure of a concepts ability to meet the criteria. The Category Score is an overall score for the particular category that is not just the sum of the detailed scoring.

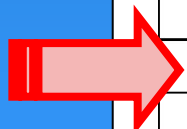
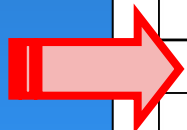
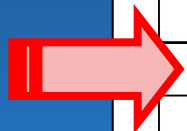
Scoring System				
				
Fatal Flaw Impact Serious Degradation Unreasonable Strong Opposition	Negative Impact Degradation Opposition	Neutral Not Applicable No Impact	Benefit Improvement Enhancement Support	Substantial Benefit Substantial Improvement Reasonable Strong Support

SCREENING SUMMARY – ALTERNATIVE...

Alternative 1 proposes the following improvements or provisions; ...






Sample

Category	Score					
						
Access					X	
Aesthetics					X	
Community Resources				X		
Community Vision						
Economic Vitality					X	
Historic and Archeological Resources		X				
Implementation		X				
Mobility				X		
Natural Environment		X				
Public Health				X		
Quality of Life				X		
Residential Neighborhoods			X			
Safety				X		
Support				X		
Transportation Choice					X	








<i>Alternative 1 is deemed ...</i>	Reasonable or Unreasonable
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ALTERNATIVE SCREENING CRITERIA DETAILED SCREENING

Community Vision	Score				
					
Evaluate the compatibility with the visions, land use plan, and major elements of the Bow Master Plan and/or other current planning documents.					
Evaluate the compatibility with the visions, land use plan, and major elements of the Concord Master Plan, the Opportunity Corridor Master Plan, and/or other current planning documents.					
Evaluate the compatibility with the visions, land use plan, and major elements of the Pembroke Master Plan and/or other current planning documents.					
Evaluate the compatibility with the visions, land use plan, and major elements of the master plans and/or other planning documents from the other communities in the region.					
Evaluate the compatibility with the visions, land use plan, and major elements of the CNHRPC Regional Master Plan.					
Evaluate the potential impacts on population and employment growth in the region.					
Comments: Category Score					

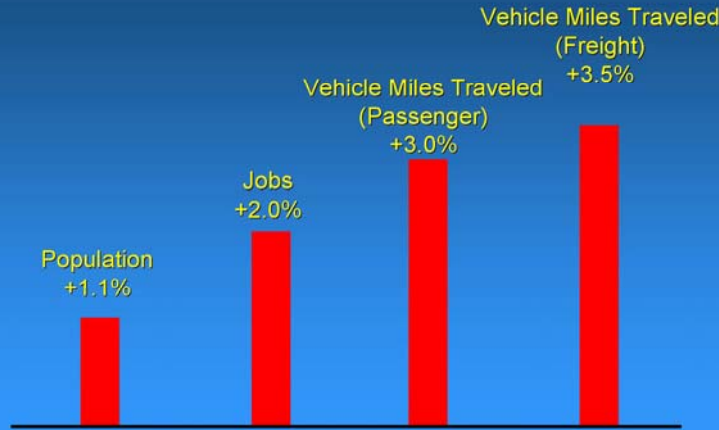
ALTERNATIVE SCREENING CRITERIA DETAILED SCREENING

Quality of Life	Score				
					
Evaluate the effect on the Quality of Life for those living in the region.					
Evaluate the effect on the Quality of Life for those working in the region.					
Evaluate the effect on the Quality of Life for those traveling through the region.					
Evaluate the effect on noise levels.					
Comments: Category Score					

ALTERNATIVE SCREENING CRITERIA DETAILED SCREENING

Support	Score				
					
Evaluate the support from the public in Bow.					
Evaluate the support from the public in Pembroke.					
Evaluate the support from the public in Concord.					
Evaluate the support from the public in the other communities in the Central NH Region.					
Evaluate the support from those communities whose livelihood is dependent upon travel through the region.					
Evaluate the support from resource agencies.					
Evaluate the support from resource groups.					
Comments:	Category Score				

Demographic and Travel Trends



Growth and Land Use

	<u>2000</u>	<u>2030 Forecast</u>	
Allenstown	1,040	1,872	Central NH Employment
Boscawen	1,760	3,092	
Bow	4,741	10,072	
Canterbury	336	606	
Chichester	729	1,172	
Concord	46,423	87,518	
Dunbarton	244	688	
Epsom	1,387	2,273	
Hopkinton	2,206	3,528	
Loudon	1,826	2,716	
Pembroke	2,600	3,932	
Webster	134	138	
Total	63,426	117,616	(85% Increase)

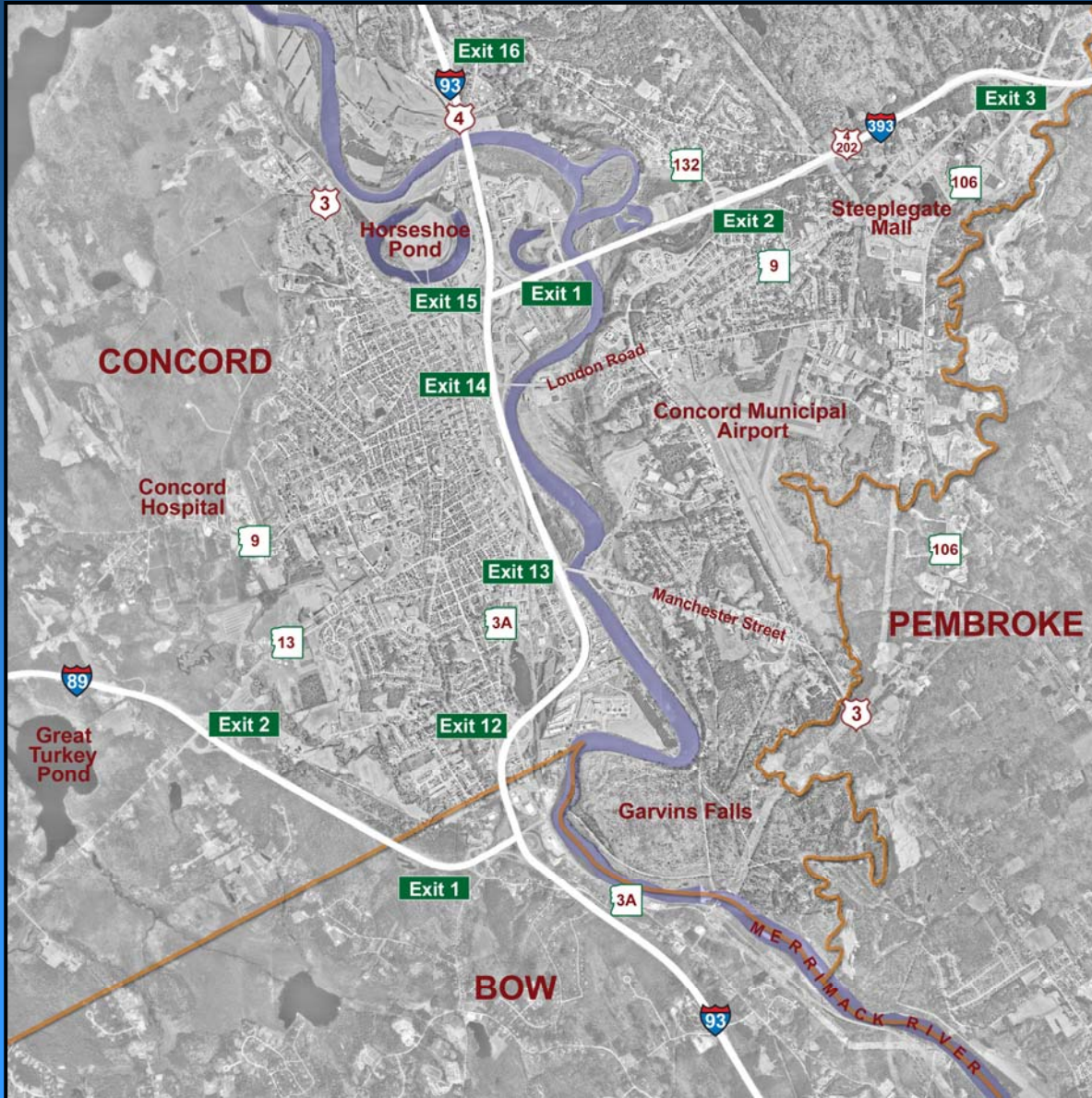
**2030
Concord – 74%
All Others – 26%**

	<u>2000</u>	<u>2030 Forecast</u>	
Allenstown	4,854	6,100	Central NH Population
Boscawen	3,684	5,100	
Bow	7,168	11,300	
Canterbury	1,991	3,400	
Chichester	2,259	3,600	
Concord	40,785	53,500	
Dunbarton	2,252	3,700	
Epsom	4,051	6,700	
Hopkinton	5,412	7,000	
Loudon	4,510	7,400	
Pembroke	6,917	9,000	
Webster	1,591	3,100	
Total	85,474	120,000	(40% Increase)

**2030
Concord – 45%
All Others – 55%**

Potential Alternatives






















- No Build - Required
- Travel Demand Management (TDM)/Transit - Required
- Opportunity Corridor Concept Option 1 - Reasonable
- Opportunity Corridor Concept Option 2 (Reversible Lane) - Unreasonable
- Opportunity Corridor Concept Option 3 (Alternate Land Use)
- Opportunity Corridor Concept Option 4 (106 Connector & Exit 2 ½)
- Opportunity Corridor Concept Option 5 (“Lite”) - Unreasonable
- Route 106 Connector Option 1 (I-89 to Route 106) - Unreasonable
- Route 106 Connector Option 2 (I-93 to Route 106 & Exit 11½) - Unreasonable
- Local Road Improvements - Unreasonable
- Safety Improvements
- 1992 Feasibility Study
- Alternate Land Use
- Passenger Rail Service



No Build Alternative

SCREENING SUMMARY NO BUILD ALTERNATIVE

The No Build Alternative is the do nothing option that is used for comparison to the build alternatives. The screening assumes no new facilities are constructed as part of the I-93 Project.

Category	Score					
						
Access		X				
Aesthetics			X			
Community Resources			X			
Community Vision		X				
Economic Vitality		X				
Historic and Archeological Resources			X			
Implementation					X	
Mobility	X					
Natural Environment		X				
Public Health		X				
Quality of Life		X				
Residential Neighborhoods		X				
Safety	X					
Support		X				
Transportation Choice		X				

The No Build Alternative is required by NEPA for comparison purposes and therefore must be carried forward.

**Reasonable
(Required)**

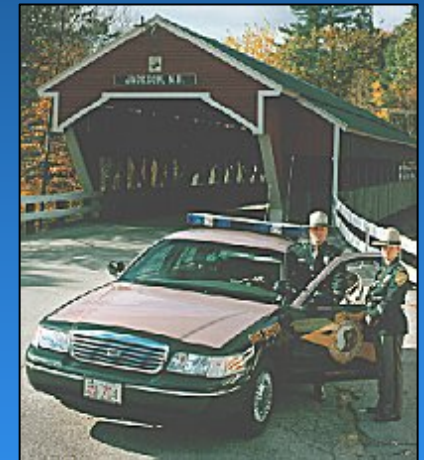
Travel Demand Management



Expanded Bus Service



Toll Pricing



Enforcement



Park and Ride Lots























Tele-commuting

SCREENING SUMMARY

TRAVEL DEMAND MANAGEMENT ALTERNATIVE

The Travel Demand Management (TDM) Alternative proposes a variety of initiatives to decrease the demand on the transportation system without expanding the roadway network, these include:

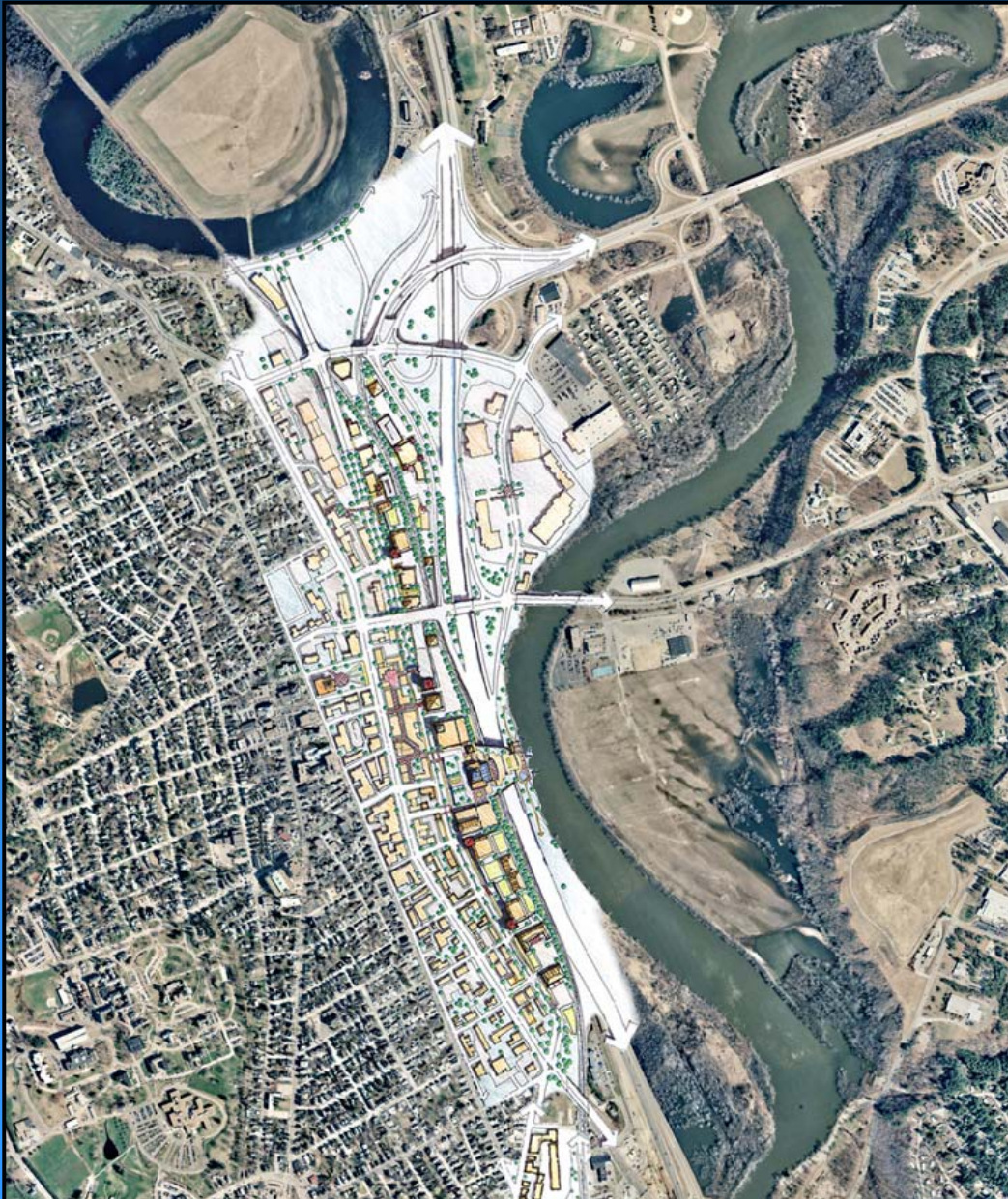
- Ride Sharing
- Alternative modes (bus rail, etc.)
- Vanpools
- Shifting work hours
- Congestion pricing of tolls
- Tele-commuting
- Increased enforcement

Category	Score					
						
Access		X				
Aesthetics			X			
Community Resources			X			
Community Vision		X				
Economic Vitality		X				
Historic and Archeological Resources			X			
Implementation		X				
Mobility		X				
Natural Environment		X				
Public Health				X		
Quality of Life		X				
Residential Neighborhoods		X				
Safety		X				
Support		X				
Transportation Choice				X		

The TDM Alternative is deemed reasonable because it is typically an alternative or a component of an alternative in an environmental document.

**Reasonable
(Required)**

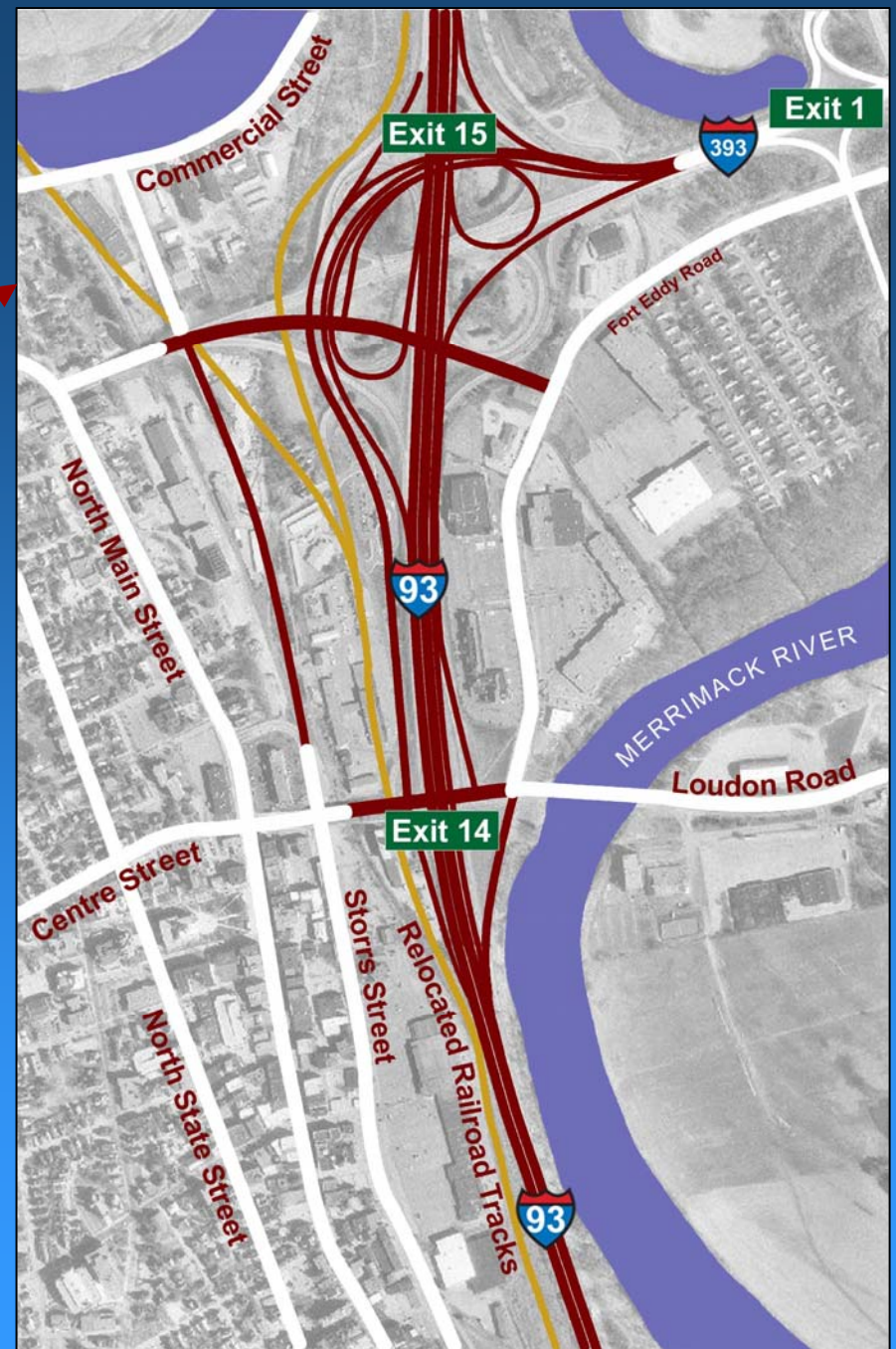
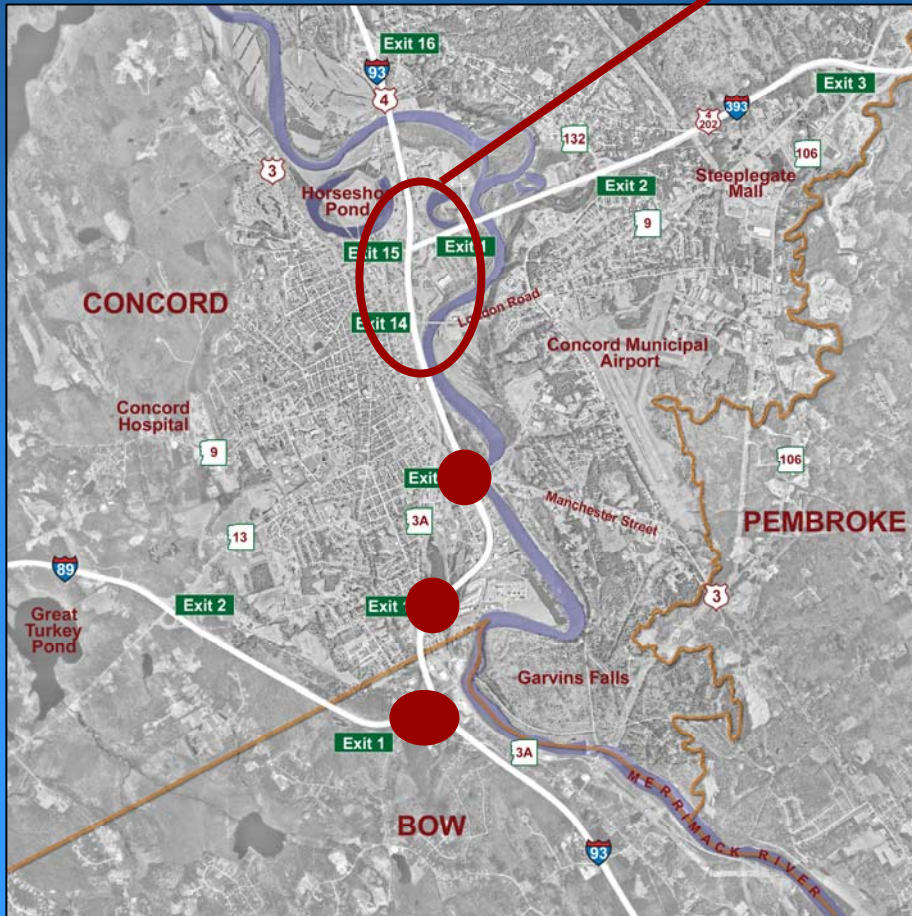
Opportunity Corridor Concept



Option 1

- Six Lanes on I-93
- Westerly Shift of I-93
- Lower I-93 b/w Exits 13 & 15
- Reconfigure Exits 14 & 15
- Upgrade Exit 12
- Upgrade I-93/I-89 Interchange and Exit 1 on I-89
- Maintain Rail Corridor
- Extend Storrs Street
- Local connection over I-93
- Multi-modal center
- Enhanced pedestrian & bicycle connections
- Enhanced river access

Opportunity Corridor Concept Option 1
























SCREENING SUMMARY

OPPORTUNITY CORRIDOR CONCEPT OPTION 1

The Opportunity Corridor Concept was developed by the City of Concord. Option 1 includes all elements of this concept, which proposes the following;

- Six Lanes on I-93
- Westerly shift of I-93
- Lower I-93 between Exits 13 & 15
- Reconfigure Exits 14 & 15
- Upgrade to Exit 12
- Upgrade to I-93/I-89 and Exit 1
- Extend Storrs Street north & south
- Local Connection to Fort Eddy Road
- Multi-modal center
- River Access

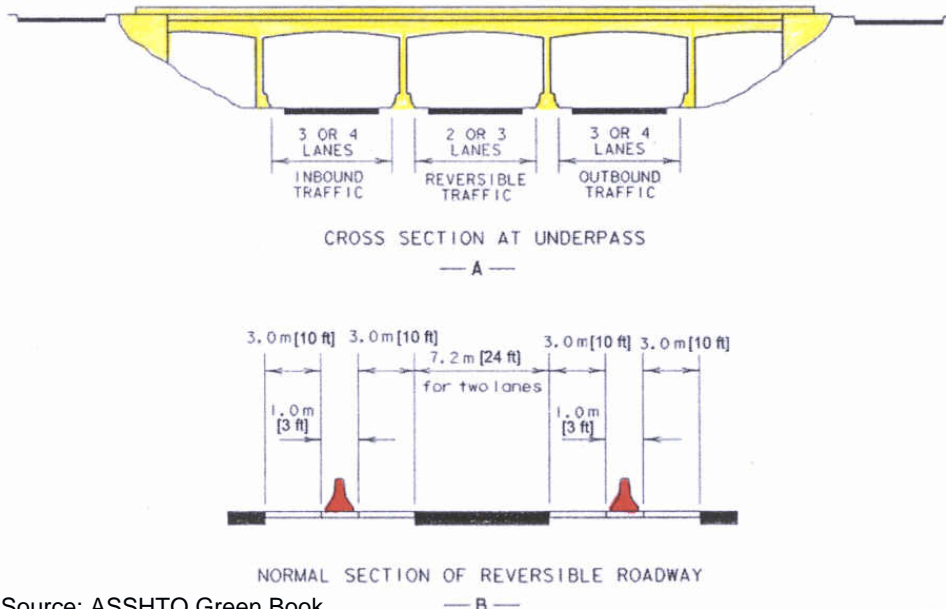
Category	Score					
						
Access				X		
Aesthetics				X		
Community Resources			X			
Community Vision				X		
Economic Vitality				X		
Historic and Archeological Resources			X			
Implementation		X				
Mobility					X	
Natural Environment			X			
Public Health				X		
Quality of Life					X	
Residential Neighborhoods				X		
Safety					X	
Support					X	
Transportation Choice				X		

Opportunity Corridor Option 1 is deemed Reasonable for further consideration.

Reasonable

Opportunity Corridor Concept Option 2

- **Five Lanes on I-93
(One Reversible)**
 - Westerly Shift of I-93
 - Lower I-93 b/w Exits 13 & 15
 - Reconfigure Exits 14 & 15
 - Upgrade Exit 12
 - Upgrade I-93/I-89 Interchange and Exit 1 on I-89
 - Maintain Rail Corridor
 - Extend Storrs Street
 - Local connection over I-93
 - Multi-modal center
 - Enhanced pedestrian & bicycle connections
 - Enhanced river access



Source: ASSHTO Green Book

SCREENING SUMMARY

OPPORTUNITY CORRIDOR CONCEPT OPTION 2

The Opportunity Corridor Concept was developed by the City of Concord. Option 2 proposes a reversible lane on I-93 and proposes the following;

- Five Lanes on I-93 (One Reversible)
- Westerly shift of I-93
- Lower I-93 between Exits 13 & 15
- Reconfigure Exits 14 & 15
- Upgrade to Exit 12
- Upgrade to I-93/I-89 and Exit 1
- Extend Storrs Street north & south
- Local Connection to Fort Eddy Road
- Multi-modal center
- River Access

Category	Score					
Access				X		
Aesthetics				X		
Community Resources			X			
Community Vision				X		
Economic Vitality				X		
Historic and Archeological Resources			X			
Implementation		X				
Mobility				X		
Natural Environment			X			
Public Health				X		
Quality of Life					X	
Residential Neighborhoods				X		
Safety				X		
Support					X	
Transportation Choice				X		

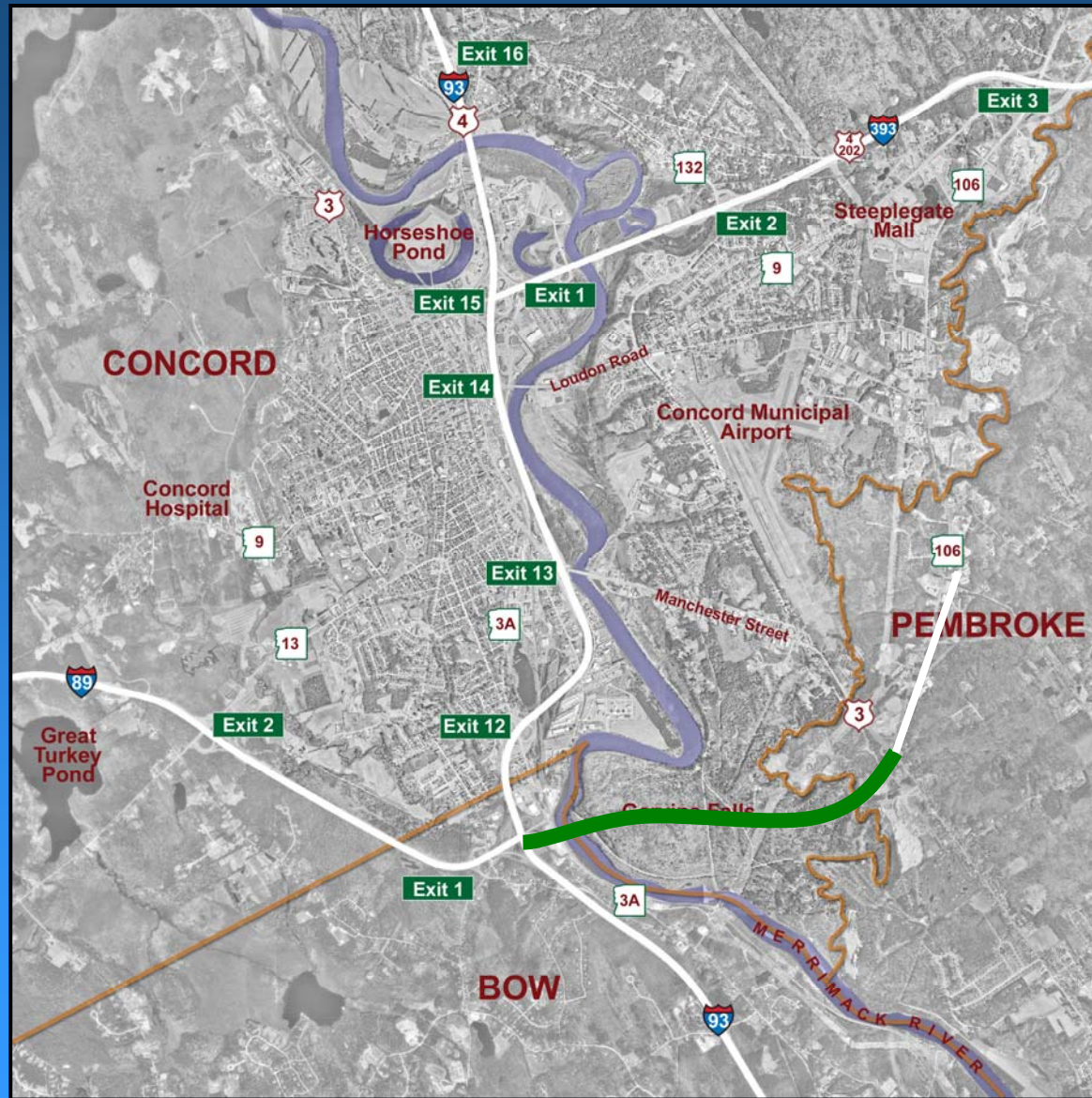
Opportunity Corridor Option 2 is deemed Unreasonable because the expense to construct and operate a reversible lane is not justified for I-93 where the traffic volumes for peak and non-peak directions are not significantly different.

Unreasonable

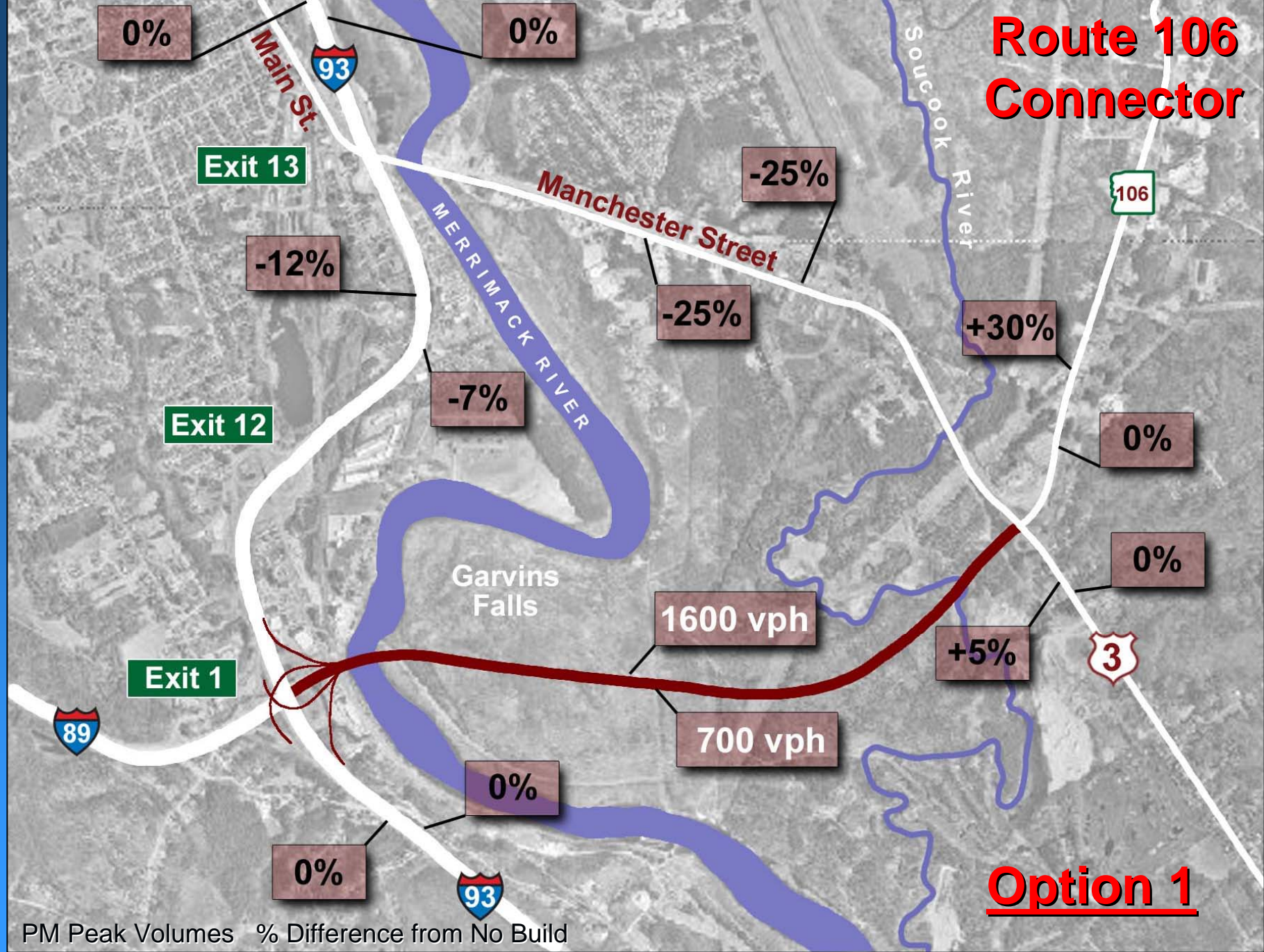
Route 106 Connector

Option 1

- Limited access roadway from I-89 to the Route 3/106 Intersection
- Four lanes on I-93
- Full interchange at I-89/I-93



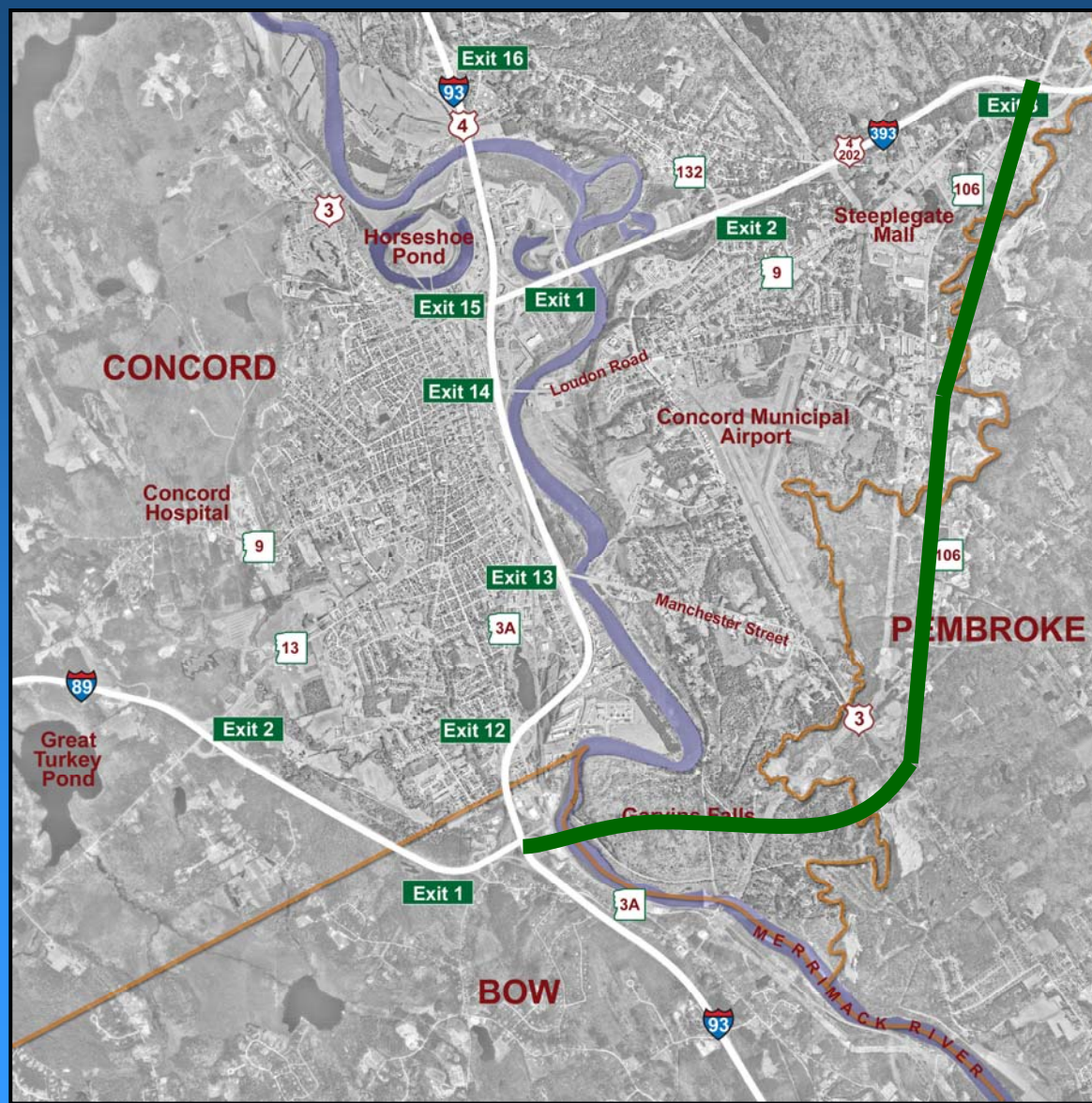
Route 106 Connector



Option 1

PM Peak Volumes % Difference from No Build

Route 106 Connector























Option 1a

- Limited access roadway from I-89 to the I-393
- Four lanes on I-93
- Full interchange at I-89/I-93

SCREENING SUMMARY

ROUTE 106 CONNECTOR OPTION 1

The Route 106 Connector Option 1 proposes a limited access connector roadway from I-89 to the Route 3/106 Intersection. I-93 would remain four lanes north of I-89 under this alternative.

Category	Score					
						
Access				X		
Aesthetics			X			
Community Resources			X			
Community Vision				X		
Economic Vitality			X			
Historic and Archeological Resources	X					
Implementation		X				
Mobility		X				
Natural Environment	X					
Public Health			X			
Quality of Life			X			
Residential Neighborhoods			X			
Safety		X				
Support		X				
Transportation Choice				X		

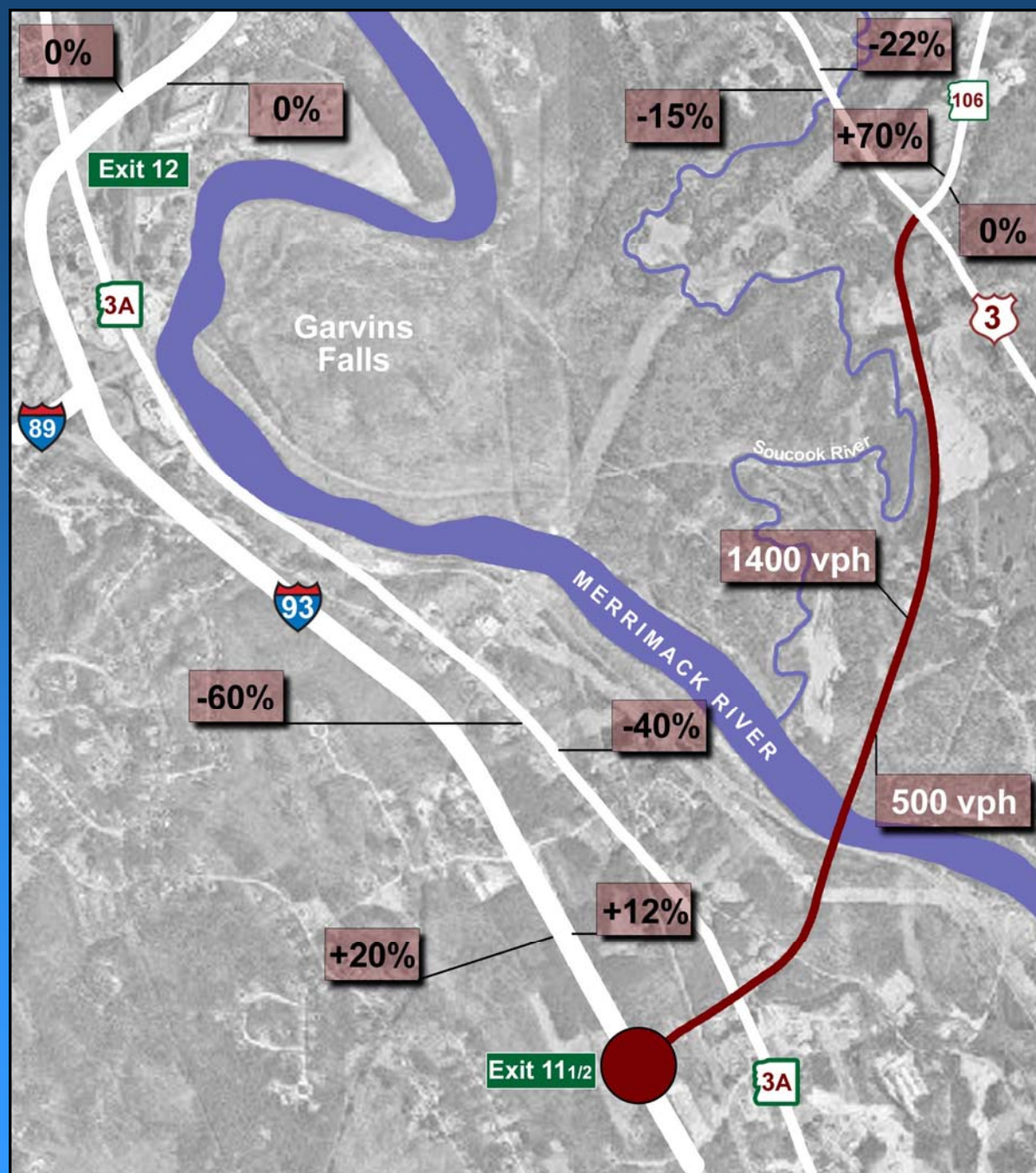
The Route 106 Connector Option 1 is deemed Unreasonable due to its inability to address the future mobility needs of I-93.

Unreasonable

Route 106 Connector

Option 2





















- Limited access roadway from I-93 to the Route 3/106 Intersection
- New Exit 11-1/2
- Four lanes on I-93
- Full interchange at I-89/I-93



SCREENING SUMMARY

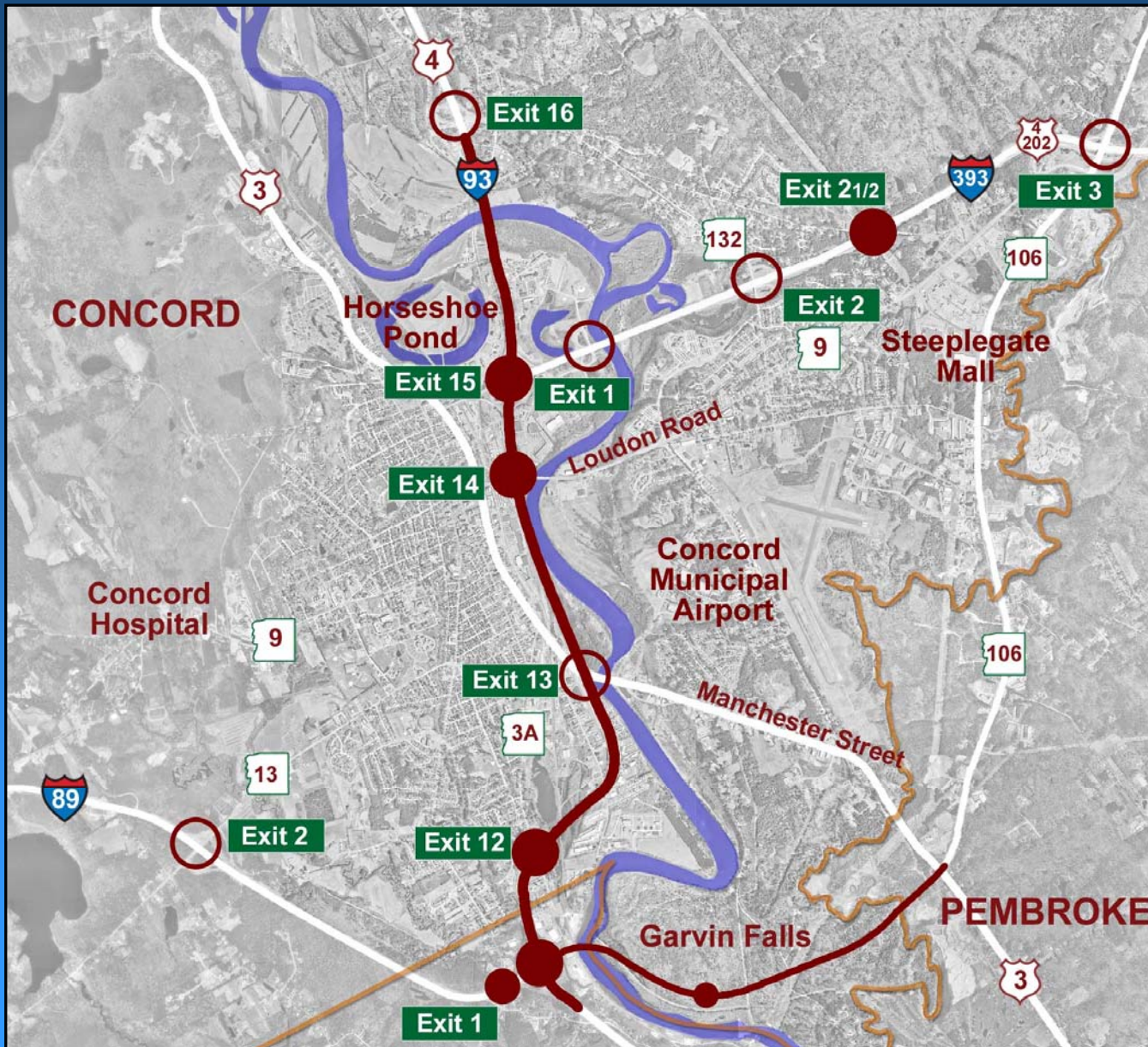
ROUTE 106 CONNECTOR OPTION 2

The Route 106 Connector Option 2 proposes a limited access connector roadway from a new Exit 11 ½ on I-93 to the Route 3/106 Intersection. I-93 would remain four lanes north of I-89 under this alternative.

Category	Score					
						
Access				X		
Aesthetics			X			
Community Resources			X			
Community Vision				X		
Economic Vitality			X			
Historic and Archeological Resources		X				
Implementation		X				
Mobility		X				
Natural Environment		X				
Public Health			X			
Quality of Life			X			
Residential Neighborhoods			X			
Safety		X				
Support		X				
Transportation Choice				X		

<p>The Route 106 Connector Option 2 is deemed Unreasonable due to its inability to address the future mobility needs of I-93.</p>	<p>Unreasonable</p>
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Opportunity Corridor Concept



Option 4

- All Option 1 Elements
- Assumes an Exit 2 ½ on I-393
- Assumes a Route 106 Connector
- Assumes Access to Garvin Falls for Development
- *Requires Revised Land Use*

Garvin Falls Land Use

Garvin Falls Land Use #1 (Additional Employment)

- Increase Jobs and Housing Forecasts at Garvin Falls for 2030
- 3,775 more jobs at Garvin Falls than original assumptions
- No other changes to number of jobs
- 1,600 additional housing units to balance model
- 215 more housing units at Garvin Falls than original assumptions

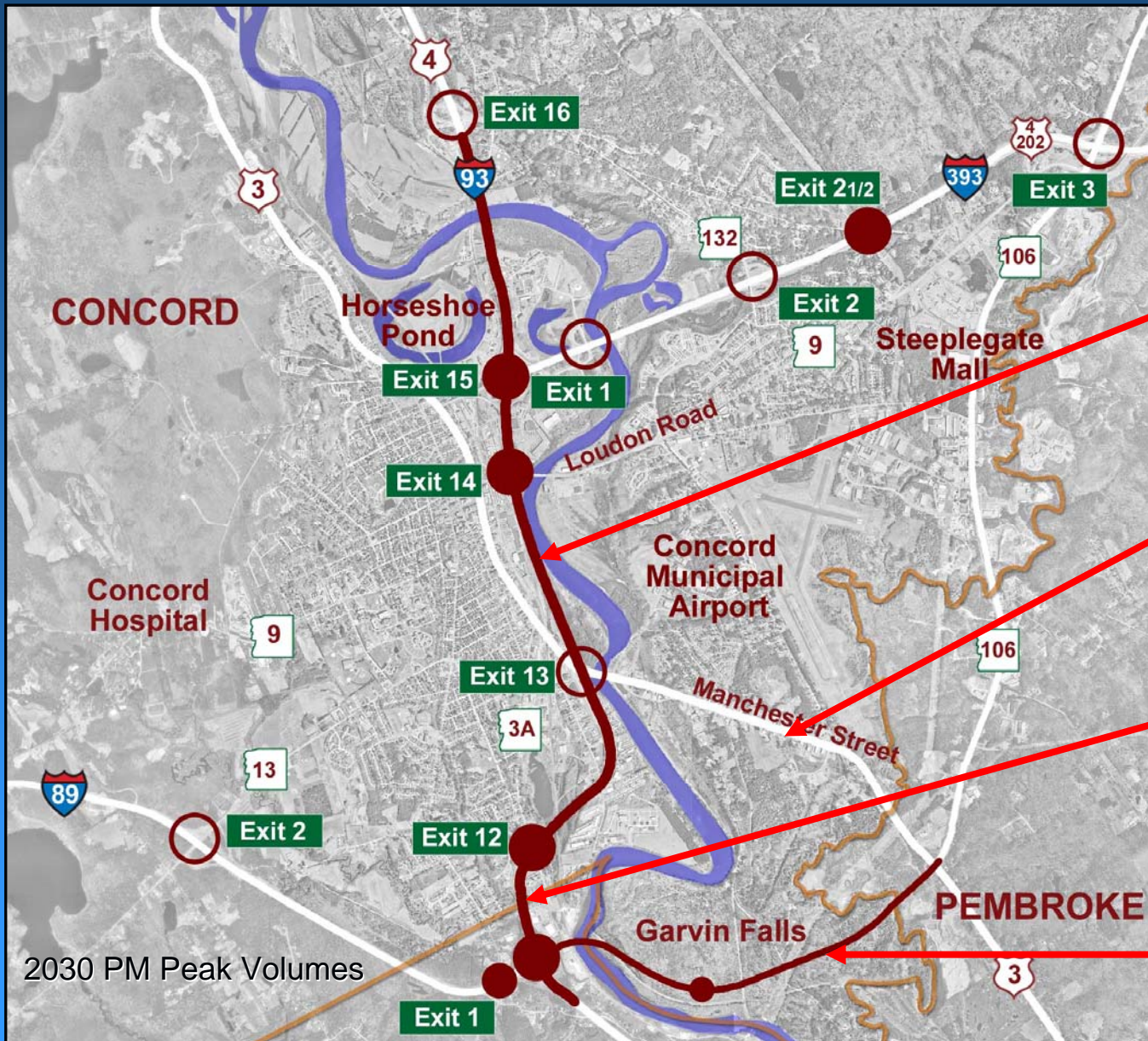
Garvin Falls Land Use #2 (Re-distributed Employment)

- Increase Jobs and Housing Forecasts at Garvin Falls for 2030
- 3,775 more jobs at Garvin Falls than original assumptions
- Re-allocate jobs to maintain the same total as original assumptions
- No additional housing units required
- 215 more housing units at Garvin Falls than original assumptions

Opportunity Corridor Concept – Option 4 vs Option 1

Garvin Falls Land Use #1 (Additional Jobs)

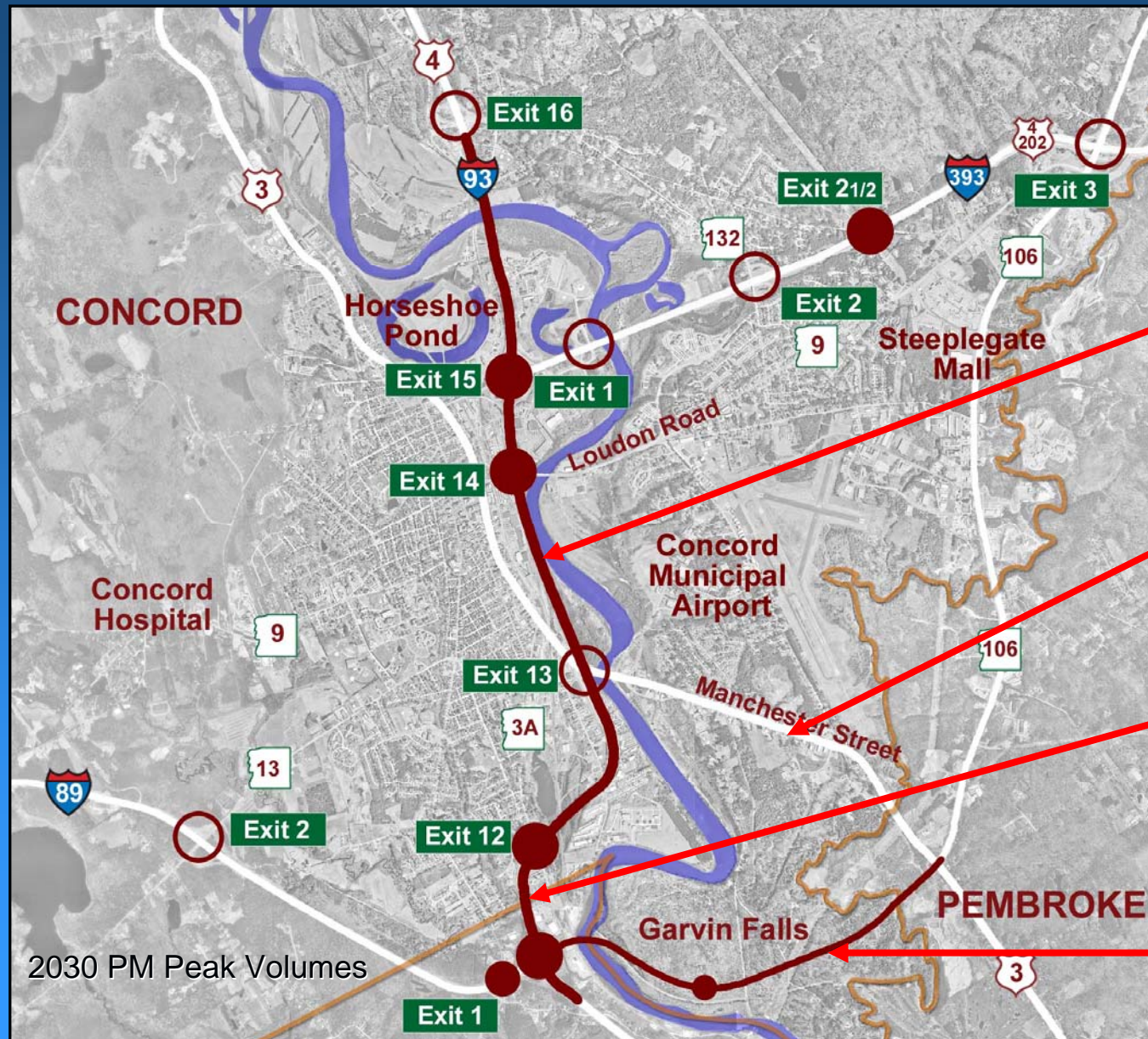
- 800 Additional Trips on I-93 between Exits 13 & 14
- 1,600 Fewer Trips on Manchester Street
- 400 Fewer Trips on I-93 between Exit 12 & I-89
- 2,800 Trips on 106 Connector



Opportunity Corridor Concept – Option 4 vs Option 1

Garvin Falls Land Use #2 (Re-distributed)

- 400 Additional Trips on I-93 between Exits 13 & 14
- 1,700 Fewer Trips on Manchester Street
- 600 Fewer Trips on I-93 between Exit 12 & I-89
- 2,800 Trips on 106 Connector
























SCREENING SUMMARY

OPPORTUNITY CORRIDOR CONCEPT OPTION 4

The Opportunity Corridor Concept was developed by the City of Concord. Option 4 includes all elements of this concept in addition to a Route 106 Connector with access to Garvin Falls and Exit 2 ½ on I-393. It proposes the following;

- Six or Eight Lanes on I-93
- Westerly shift of I-93
- Lower I-93 between Exits 13 & 15
- Reconfigure Exits 14 & 15
- Route 106 Connector
- Access to Garvin Falls
- Extend Storrs Street north & south
- Local Connection to Fort Eddy Road
- Multi-modal center & River Access
- Exit 2 ½ on I-393

Category	Score					
						
Access					X	
Aesthetics				X		
Community Resources			X			
Community Vision				X		
Economic Vitality				X		
Historic and Archeological Resources	X					
Implementation	X					
Mobility					X	
Natural Environment	X					
Public Health			X			
Quality of Life					X	
Residential Neighborhoods			X			
Safety					X	
Support			X			
Transportation Choice				X		

Opportunity Corridor Option 4 is deemed ...

Reasonable or Unreasonable

Opportunity Corridor Concept

Option 5

- “Lite” Version
- Six Lanes on I-93
- Reconfigure Exits 14 & 15
- Upgrade Exit 12
- Upgrade I-93/I-89 Interchange and Exit 1 on I-89
- Maintain Rail Corridor
- Extend Storrs Street
- Local connection over I-93
- *No Westerly Shift of I-93, No Lower I-93, No Multi-modal center, No enhanced river access*
























SCREENING SUMMARY

OPPORTUNITY CORRIDOR CONCEPT OPTION 5

-The Opportunity Corridor Concept was developed by the City of Concord. Option 5 includes most of the elements of this concept except the shifting and lowering of I-93, the multi-modal center, or river access. It proposes the following improvements or provisions;

- Six Lanes on I-93
- Reconfigure Exits 14 & 15
- Extend Storrs Street north & south
- Local Connection to Fort Eddy Road

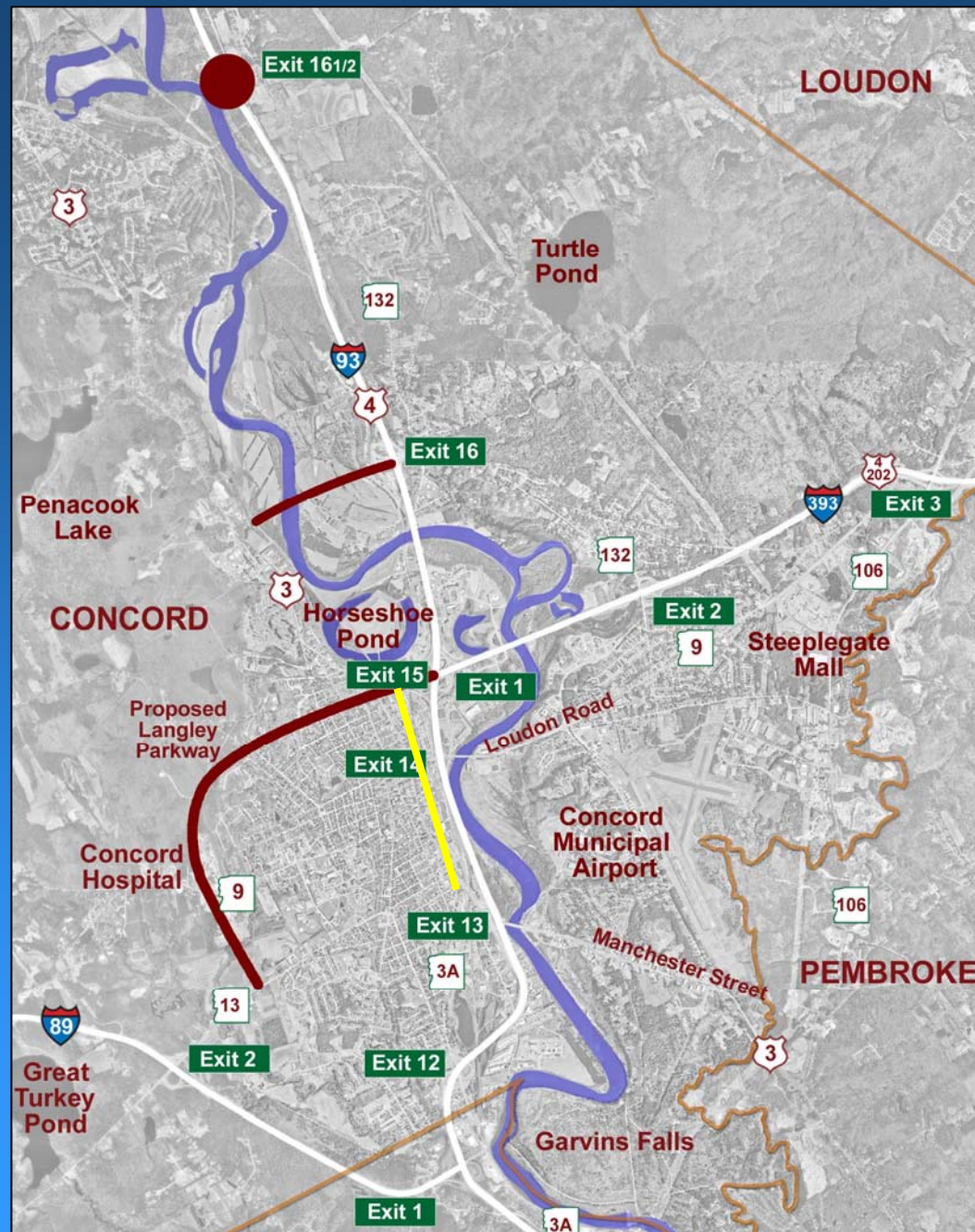
Category	Score					
						
Access				X		
Aesthetics		X				
Community Resources			X			
Community Vision	X	X				
Economic Vitality				X		
Historic and Archeological Resources		X				
Implementation			X			
Mobility					X	
Natural Environment			X			
Public Health			X			
Quality of Life				X		
Residential Neighborhoods				X		
Safety					X	
Support		X	X			
Transportation Choice		X				

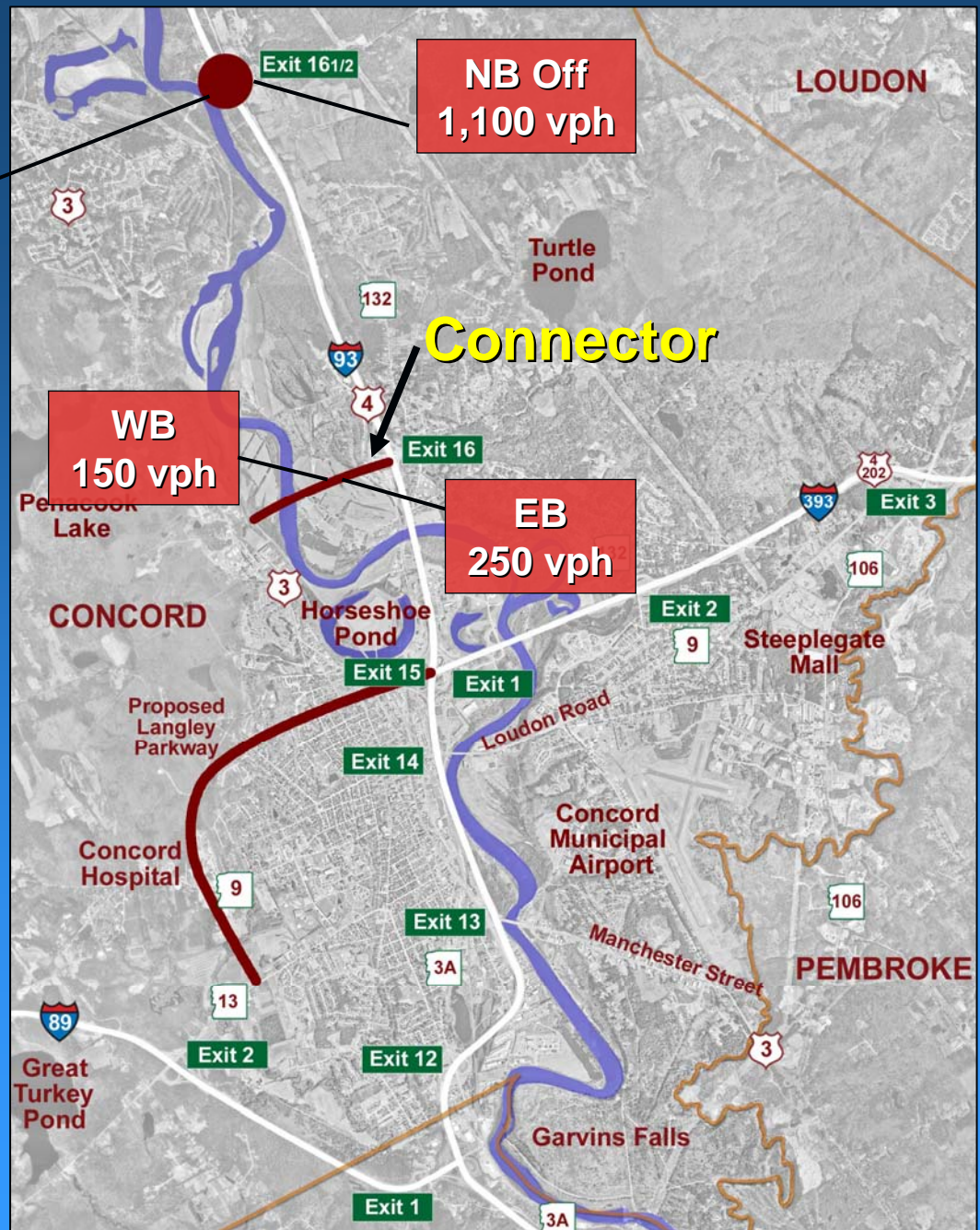
Opportunity Corridor Option 5 is deemed Unreasonable because it does not provide the community with the type of transportation system it desires.

Unreasonable

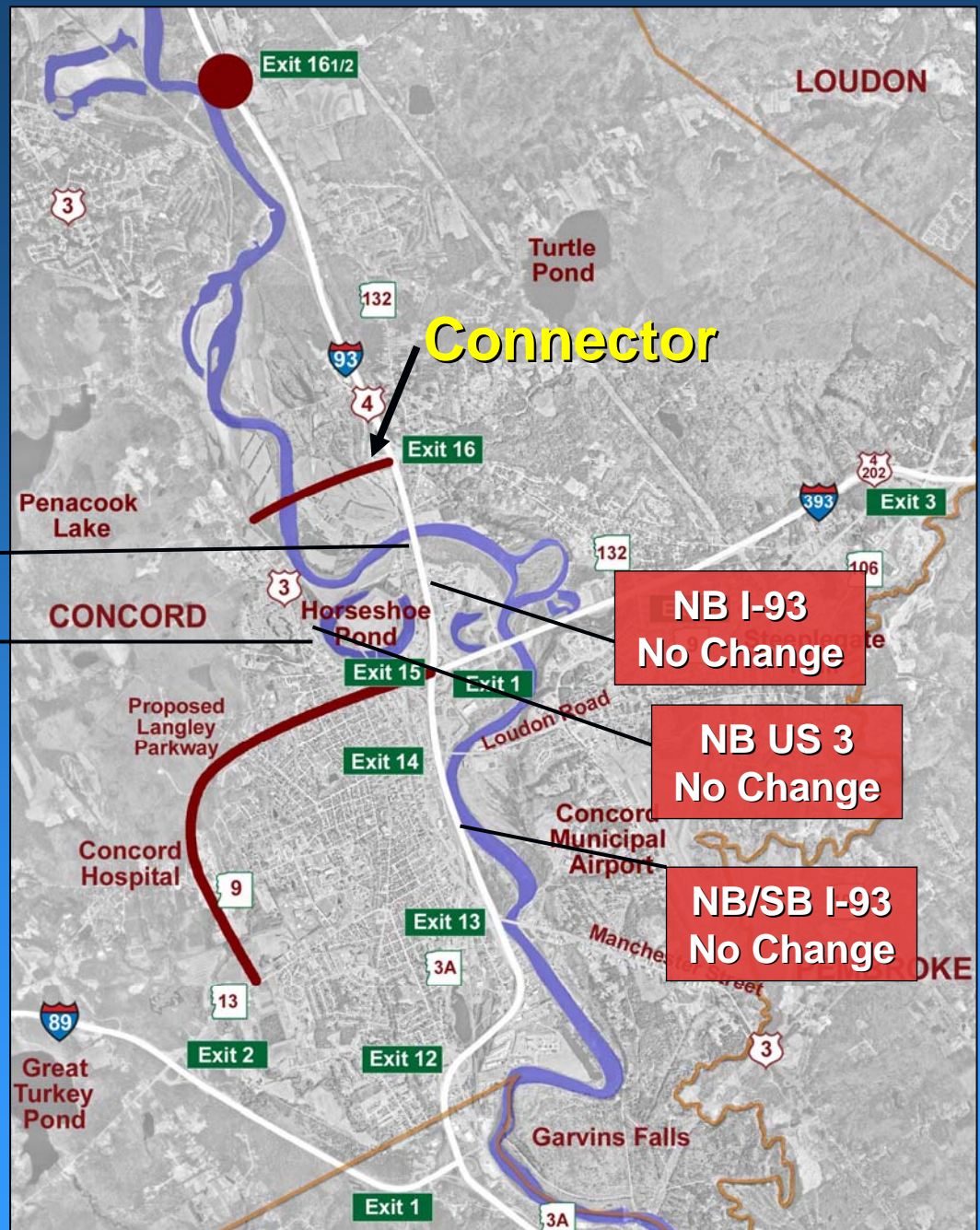
Local Road Improvements

- Four lanes on I-93
- Langley Parkway
- Exit 16 to US 3 Connector
- Exit 16 ½
- Storrs Street





2030 PM Peak Volumes



**SB I-93
+400 vph**

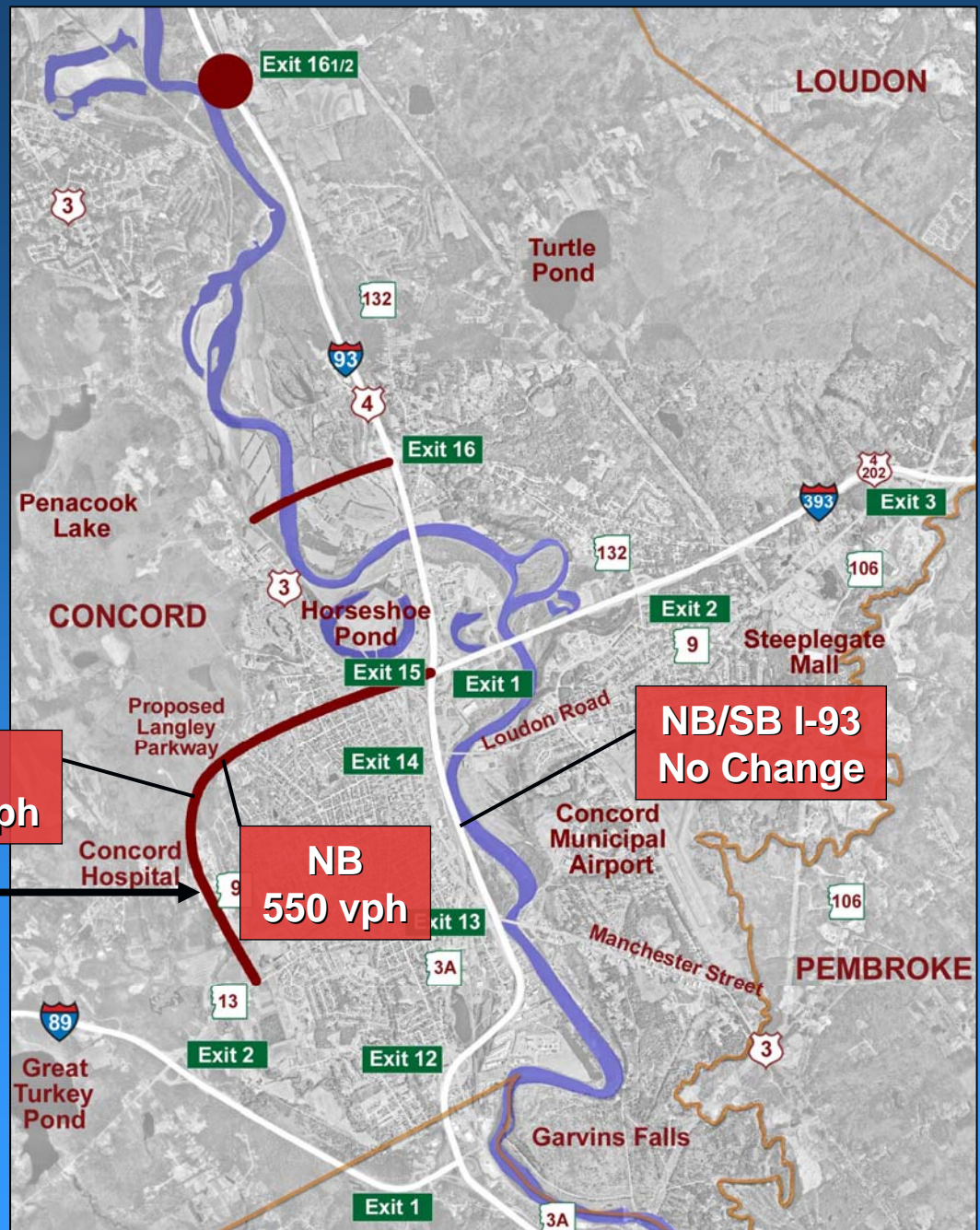
**SB US 3
-300 vph**

**NB I-93
No Change**

**NB US 3
No Change**

**NB/SB I-93
No Change**

2030 PM Peak Volumes



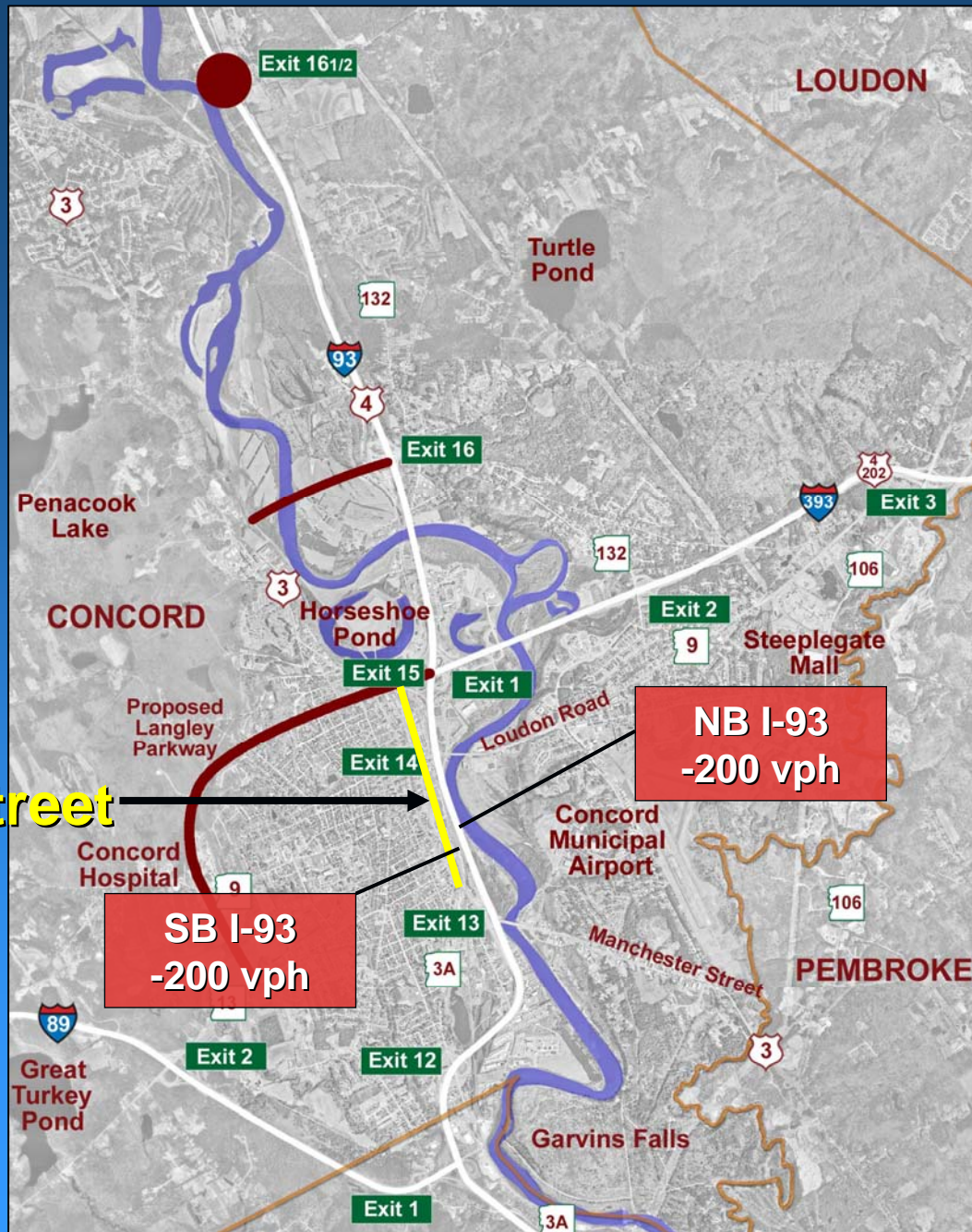
**SB
750 vph**

**NB
550 vph**

**NB/SB I-93
No Change**

**Langley
Parkway**

2030 PM Peak Volumes



Storrs Street






















2030 PM Peak Volumes

SCREENING SUMMARY

LOCAL ROAD IMPROVEMENTS ALTERNATIVE

The Local Road Improvements Alternative proposes improvements to or construction of new of local roads. I-93 would remain four lanes north of I-89 under this alternative and would include the following:

- Langley Parkway (NW Bypass)
- Exit 16 1/2
- Connector from Exit 16 to US 3
- Extend Storrs Street

Category	Score					
						
Access			X			
Aesthetics			X			
Community Resources		X				
Community Vision		X				
Economic Vitality			X			
Historic and Archeological Resources	X					
Implementation		X				
Mobility		X				
Natural Environment	X					
Public Health			X			
Quality of Life		X				
Residential Neighborhoods		X				
Safety		X				
Support		X				
Transportation Choice			X			

The Local Road Improvements Alternative is deemed Unreasonable due to its inability to address future mobility needs of I-93

Unreasonable