

# Maine-NH Connections Study

Public Informational Meeting

February 25, 2010

Portsmouth High School



# Agenda

- Welcome
- TIGER Grant Application Results
- Round 3 Fatal Flaw Analysis Results
- Alternatives to be carried forward
- What's Next: Detailed Evaluation
- Business Impact Assessment
- Next Steps/Upcoming Meetings

# Results of TIGER Grant Application

- Joint Maine-NH application not selected
- Very competitive grant process
- Moving Forward: Study scope and schedule remains the same
- Both Maine and NH **are committed** to implementing Study recommendations
- Schedule to fund/implement recommendations will depend on alternative selected

# Sources of Potential Transportation Funding

- Regular biennial Federal transportation appropriation
- Bond issues (subject to voter approval)
- Special appropriations from Congress
- Other federal funding yet to be determined

*MaineDOT and NHDOT will be developing a suitable funding approach to support Study recommendations.*

# **Fatal Flaw Analysis**

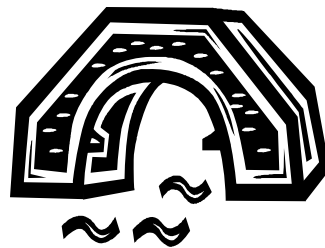
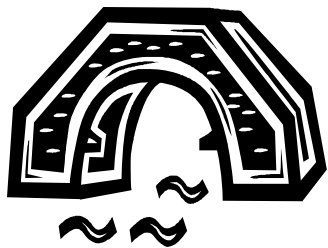
# Fatal Flaw Analysis

- Fatal Flaw Process
  - Broad level of analysis conducted in 3 Rounds
  - Based on Study Purpose and Need
  - **16** Evaluation Criteria identified
  - Generated 63 different alternatives
- An OPTION is one piece of the ALTERNATIVE.
- An ALTERNATIVE is an entire solution.

# Options and Alternatives

Memorial  
Bridge  
Option

Sarah Long  
Bridge  
Option



Alternative

OR

Something new  
to replace both  
the Memorial  
and Sarah Long  
Bridges



Alternative

# Fatal Flaw Results – Rounds 1 and 2

- Round 1: 34 alternatives dismissed (29 remain)
- Met with Steering and Stakeholder committees in November to Review Round 1 Fatal Flaw Results
- Round 2: 14 alternatives dismissed (15 remain)
- General Public, Steering and Stakeholder Committee concurred on Round 1 and 2 findings at Dec. 16<sup>th</sup> Public Meeting



# Fatal Flaw – Round 3 Process

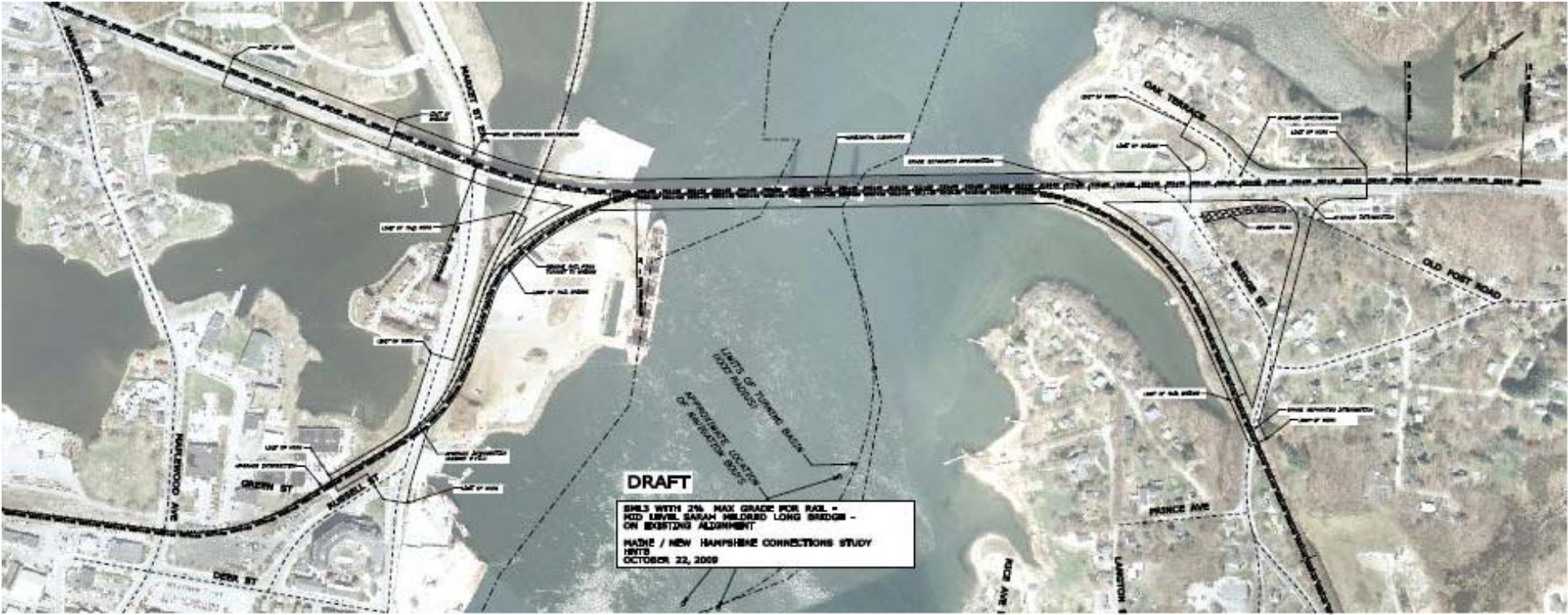
- Steering and Stakeholder Committee concurred on Round 3 Findings at January 19<sup>th</sup> meetings
- Final Fatal Flaw Report has been delivered to Maine/NH DOTs and FHWA for review and comment.
- Report will be made available to Committees and public following their review

# Fatal Flaw Analysis Round 3

- Compared options and alternatives against **these criteria:**
  - Impacts at/near Port of New Hampshire
  - Order of Magnitude Life Cycle costs
  - Mobility within Study Area without Sarah Long Bridge during construction
- Result – 15 alternatives reduce to 9\*
  - \* - *includes No-build alternative*

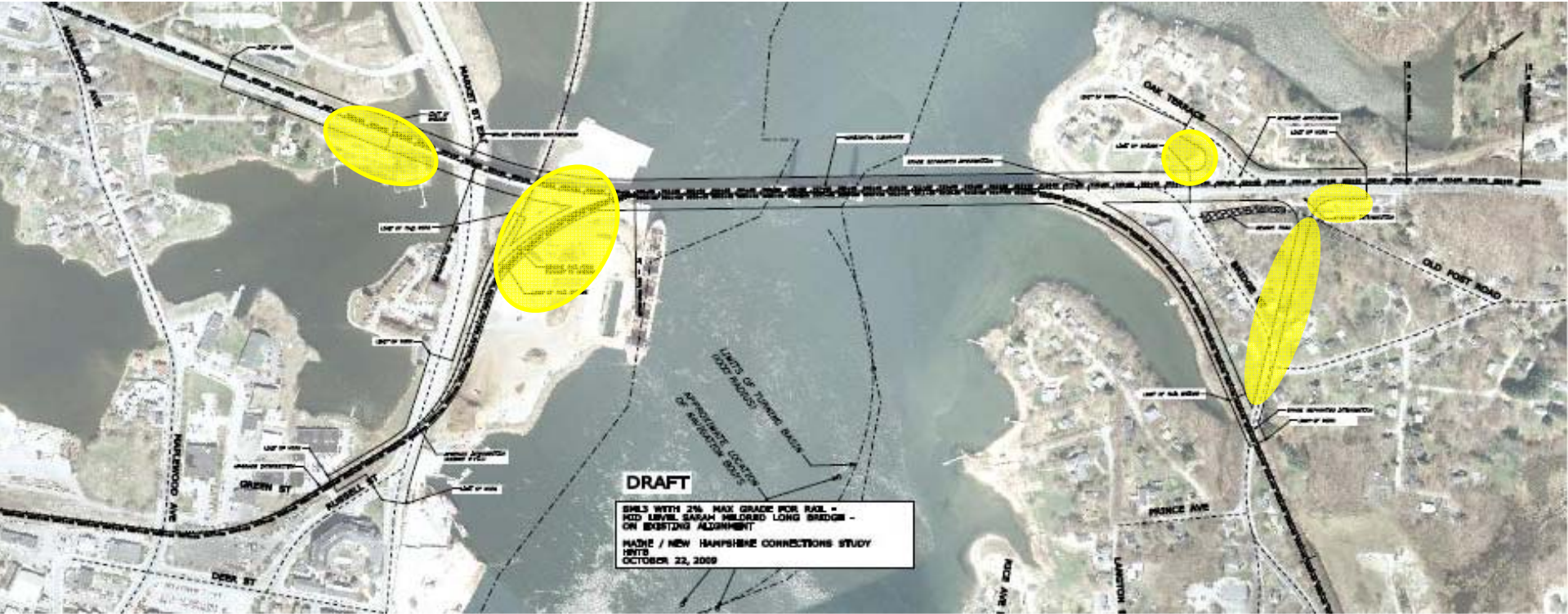
# **Round 3 Options Considered but Dismissed**

# SL3-Mid Level Bridge on Alignment



Sarah Long Bridge Option

# SL3-Mid Level Bridge on Alignment



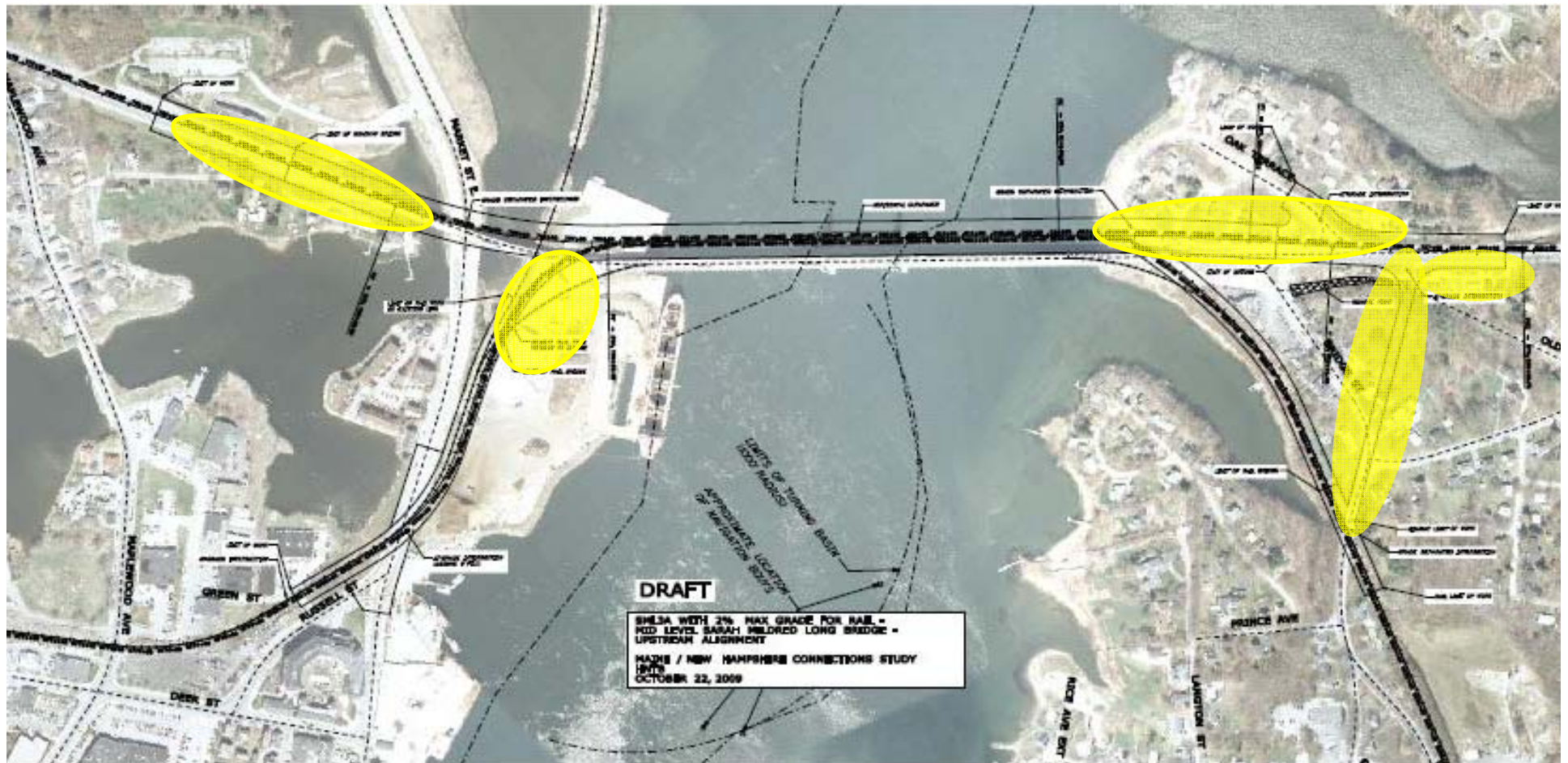
Sarah Long Bridge Option

# SL3A-Mid Level Bridge Upstream



Sarah Long Bridge Option

# SL3A-Mid Level Bridge Upstream

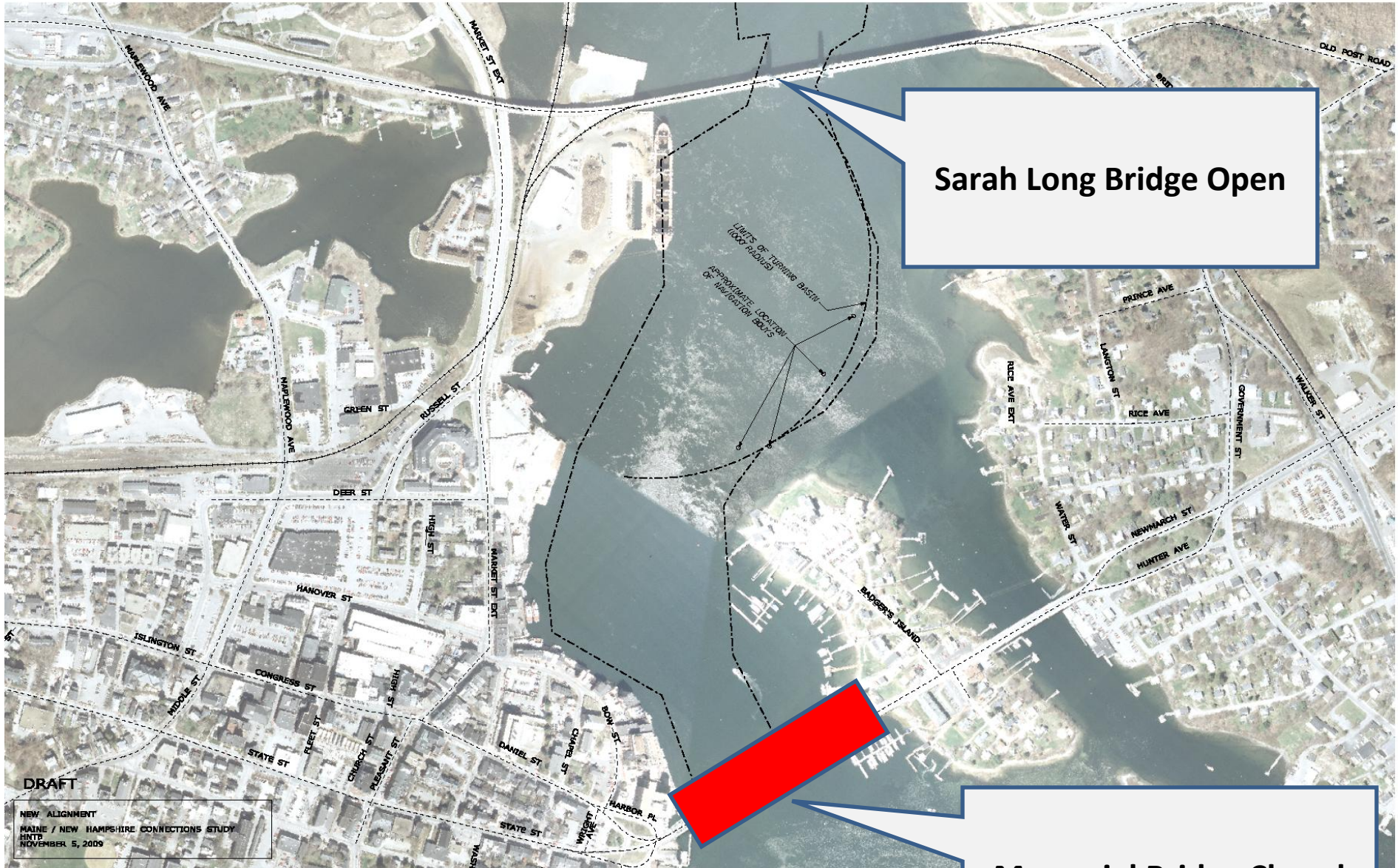


Sarah Long Bridge Option

**Options/Alternatives Recommended  
to be  
Carried Forward for  
Further Study**



# No Build Alternative



# MB1 – Rehab on Existing Alignment



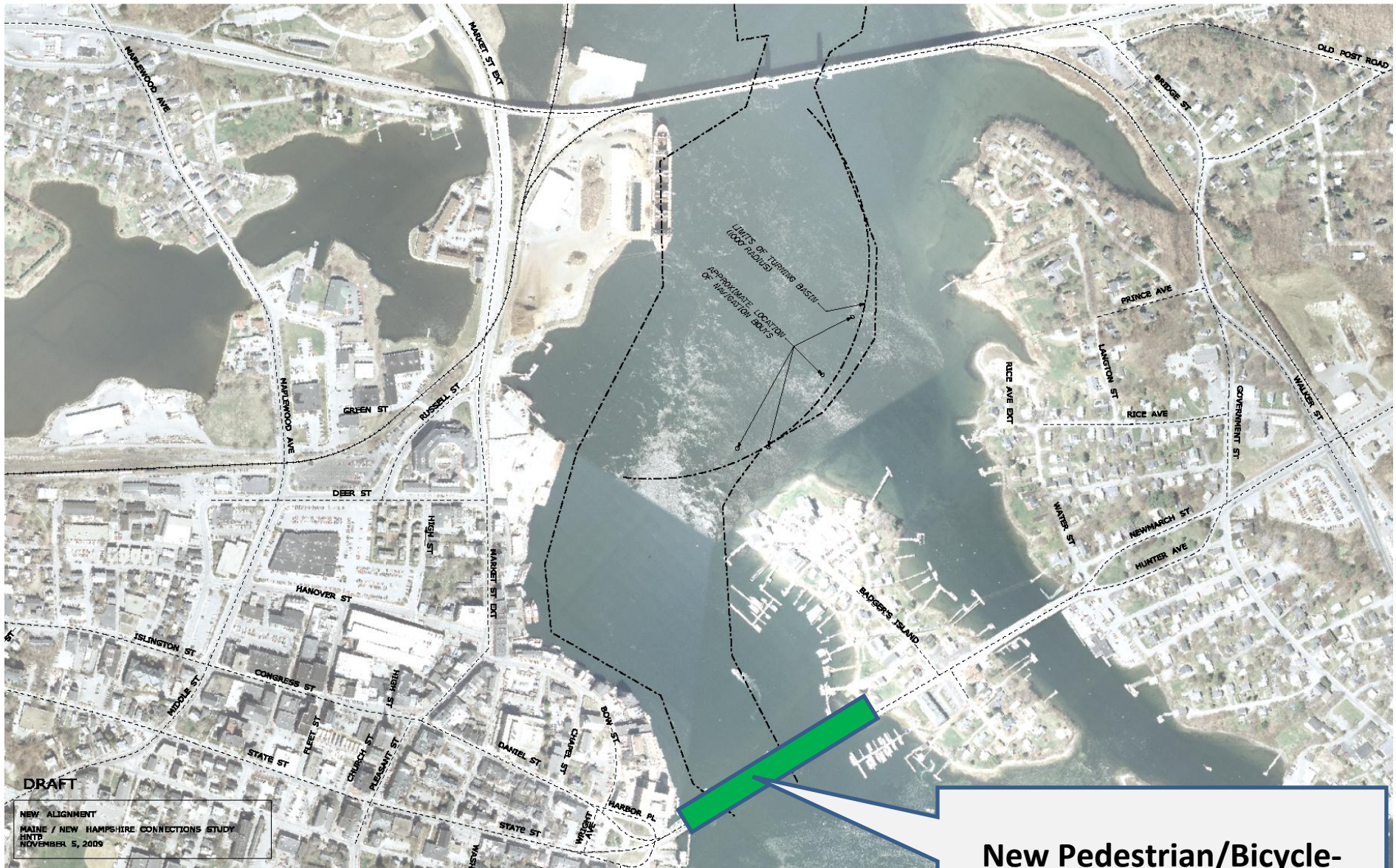
Memorial Bridge Option

# MB2 – Replace on Existing Alignment (2-lane)



Memorial Bridge Option

# MB6 - Pedestrian/Bicycle Only Bridge



Memorial Bridge Option

# SL1 – Rehab on Existing Alignment



Sarah Long Bridge Option

# SL2 – Replace on Existing Alignment (2 or 4 lane)



Sarah Long Bridge Option

# SL2A-Low Level Bridge Upstream (2 or 4 lane)



Sarah Long Bridge Option

# SL2A-Low Level Bridge Upstream



Sarah Long Bridge Option

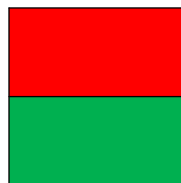


# Fatal Flaw - Final Results

- 63 alternatives reduced to 8 alternatives plus No-Build (9 total)
  - 3 Memorial Bridge options
    - Rehab (2-lane)
    - Low-level replacement on existing alignment (2-lane)
    - Pedestrian/Bicycle Only Bridge
  - 3 Sarah Long Bridge Options
    - Rehab (2-lane)
    - Low-level replacement on existing alignment (2 or 4 lane)
    - Low-level replacement on upstream alignment (2 or 4 lane)

## Alternatives formed by combining Bridge Options

Memorial Bridge Options	Sarah Mildred Long Options						
	Rehab	Replacement	Replacement Upstream	Mid-Level	Mid-Level Upstream	High Level	Close but Rail Remains
Rehab							
Replacement (2-lane)							
Replacement Up/Downstream							
Mid-Level Replacement							
Mid-Level Replacement Up/Downstream							
High Level Replacement							
Close Entirely		1					
New Pedestrian/Bicycle Only		2	2	2	2		



Alternative Recommended to be Eliminated

Alternative Recommended to be Carried Forward

1 - Evaluated as both a 2 lane and 4 lane option. Both alternatives were eliminated.

2 - Evaluated as both a 2 lane and 4 lane option. 2 lane option was eliminated, the 4 lane option carried forward.

# **Next Step: Detailed Evaluation of Remaining Alternatives**

# Detailed Evaluation

- Next: *detailed* evaluation, analysis and assessment of feasible alternatives
- Compare alternatives against Study Purpose, Need and Goals
- Measure against **44** criteria developed from Purpose and Need Statement
- Work with DOTs, FHWA, Steering and Stakeholder Committees and public to review and adjust evaluation criteria

# Original 16 Criteria

<b>Meet Purpose and Need</b>	<b>Study Area Mobility and Accessibility</b>	<b>Satisfy Structural Needs</b>	<b>Lift Span Reliability</b>
<b>Improved Bridge Features for Traffic</b>	<b>Improved Bridge Features for Vessels</b>	<b>Improved Bridge Features for Other modes</b>	<b>Rail access to PNS</b>
<b>Vehicle and Emergency Access</b>	<b>Neighborhood Impacts</b>	<b>Natural Resource Impacts</b>	<b>Historic Impacts</b>
<b>Physical Resource Impacts</b>	<b>Permittable</b>	<b>Life Cycle Costs</b>	<b>VMT/VHT</b>

# Evaluation Criteria: 16 to 44

- For detailed analysis, expanded list of measurable criteria
- Purpose & Need Statement/ensure all categories covered:
  - Three Transportation categories
  - One Cost category
  - Three “Quality of Life” categories
  - Two Regulatory categories
- 18 needs and goals to be addressed

# Evaluation Categories

*Categories cover 44 different criteria*

Structural Improvement	Mobility	Accessibility
Historic Environment	Natural Environment	Physical Environment
Cost	Regulatory	Use of Section 4(f) Resources

# Category: Structural Improvement

*Criteria: Addresses Needs 1, 2*

- Satisfy Structural Needs
- Lift Span Reliability



# Category: Mobility

*Criteria: Addresses Needs/Goals 1, 5, 17*

- Vehicle Miles Traveled
- Vehicle Hours Traveled
- Roadway Level of Service
- Bridge Level of Service
- Mobility During Construction
- Emergency Access
- Evacuation Access
- Regional and Local Business Impacts

# Category: Accessibility

*Criteria: Addresses Needs/Goals 3, 4, 5, 6, 7, 9, 18*

- Accessibility to Downtowns
- Accessibility to Portsmouth Naval Shipyard
- Bridge Design Features: Vehicle
- Bridge Design Features: Marine
- Bridge Design Features: Bicycle
- Bridge Design Features: Pedestrian
- Bridge Design: Rail

# Category: Cost

*Criteria: Addresses Goals 8, 10*

- Capital Cost
- Operation and Maintenance Cost
- 100-year Life Cycle Cost
- Travel Time Cost
- Benefit/Cost Ratio

# Category: Historic

*Criteria: Addresses Goal 11*

- Impact to National Register-Eligible Bridges
- Other Historic Resource Impacts
- Archeological Resource Impacts

# Category: Natural Environment

*Criteria: Addresses Goals 12, 13, 15*

- Long-term River Quality Impacts
- Short-term River Quality Impacts
- Air Quality
- Aquatic Resources
- Access to River
- Threatened and Endangered Species
- Wetlands
- Floodplain/Floodway

# Category: Physical Environment

*Criteria: Addresses Goals 5, 14*

- Neighborhood Impacts
- Impact on Community Resources
- Commercial Property Impacts
- Residential Property Impacts
- Noise

# Category: Regulatory

*Criteria: Addresses Goal 16*

- US Coast Guard Permitability
- Other State and Federal Regulatory Permitability
- Level of anticipated NEPA documentation

# **Category:**

## **Use of Section 4(f) Resources**

*Criteria: Addresses Goals 5, 11, 16*

- Historic Section 4(f) Properties
- Public Park and Recreation Properties
- Other Section 4(f) Resources



# Detailed Evaluation

- Study Team actively working to evaluate remaining alternatives
- Evaluation, analysis and assessment results summarized will provide information for evaluation criteria

# Schedule

Task	February		March		April		May		June		
Engineering	■		■								
Travel Demand Modeling & Traffic Analysis	■		■								
Resource Impact Analysis			■		■						
Other Cost, Impact and Resource assessment				■		■					
Screen and Evaluate Alternatives					■		■				
Draft Report						■		■			
Final Report								■		■	
NEPA, Section 4(f) and 106		■									
Public Meetings		●				●		●		42 ●	

# **Local Business Impact Assessment**

# Local Business Impact Assessment

- A certain level of business impact with any transportation change is inevitable: positive *and* negative
- This *qualitative* analysis seeks to estimate level of impact in Portsmouth/Kittery adjacent to Memorial and Sarah Long Bridges
- Will help us assess and better understand any potential short and/or long-term change

# Local Business Impact Assessment

- Available non-anecdotal data: O&D 2005 and 2009
- Will look at 2006 Construction Timing Survey and Kittery November Sales Tax Data/2005-2009 to supplement and clarify
- Ports/Kittery business survey identifies trade areas; perceived impact
- Select businesses to host customer survey relating to travel patterns/bridge use

# **Next Steps/Upcoming Meetings**

# Process/Next Steps

- Public: Received feedback today on Fatal Flaw results and Evaluation Process
- DOTs/FHWA review/concurrence on Fatal Flaw by end of February/early March
- Will be analyzing remaining alternatives against all evaluation criteria: February-April

# Upcoming Meetings

- Steering and Stakeholder Committee meetings  
March 26 to review progress
- Next Public Meeting in mid-April: Review analysis  
and discuss findings





Table 1: DRAFT Fatal Flaw Analysis Evaluation Matrix September 18, 2009

Alternative #	Description	Study Area Mobility and Accessibility	Satisfy Structural Needs	Lift Span Reliability	Bridge Design Features as they relate to Vehicular Traffic Flow and Safety	Bridge Design Features as they relate to Marine Traffic Flow and Safety	Bridge Design Features as they relate to Other modes (bike, ped, rail)	Vehicular and Emergency Access to Portsmouth, Kittery downtowns and the PNS	Rail Access to Portsmouth, Kittery, and the PNS	Life Cycle Costs (2009\$)	Property and Neighborhood Impacts	Natural Resource Impacts	Physical Resource Impacts	Historic Resource Impacts	Permittable	Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), and Emissions	Total Number of Green/Yellow/Red by Alternative
1	No Build																
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

Comparative Evaluation:

- Green Box = Within the Range of BEST Alternatives for this parameter
- Yellow Box = Within the Range of MEDIUM Alternatives for this parameter
- Red Box = Within the Range of WORST Alternatives for this parameter

How Each will be Rated/Measured

- Study Area Mobility and Accessibility: Does the alternative provide adequate\* Study Area mobility and accessibility (Green – yes, Yellow – potentially, Red – No)
- Satisfy Structural Needs: Does the alternative provide adequate\* structural and functional life of Memorial and Long Bridges to 2060 or beyond? (Green – Yes, Yellow – potentially, Red – No)
- Lift Span Reliability: Does the alternative provide adequate\* lift span reliability to 2060 or beyond? (Green – Yes, Yellow – potentially, Red – No)
- Bridge Design Features/Traffic: Does the alternative provide adequate\* bridge design features for vehicular (car and truck) traffic (lane width, shoulder width, etc)? (Green – Yes, Yellow – potentially, Red – No)
- Bridge Design Features/Marine Traffic: Does the alternative provide adequate\* bridge design features for marine traffic (clearance, bridge skew, etc.)? (Green – Yes, Yellow – potentially, Red – No)
- Bridge Design Features/Other Modes: Does the alternative provide adequate\* bridge design features for other modes (bike lanes, crosswalks, sidewalks, etc.)? (Green – Yes, Yellow – potentially, Red – No)
- Accessibility to Portsmouth, Kittery and PNS: Does the alternative maintain or improve access to Portsmouth and Kittery downtowns and the PNS? (Green – yes, Yellow – no change, Red – reduces access)
- Rail Access to Portsmouth, Kittery and PNS: Does the alternative maintain the rail line across the Piscataqua River to PNS? (Green – yes, Yellow – rail line not applicable, Red – no)
- Life Cycle Costs: Estimated 100-year life cycle cost (in Present Value \$\$) for each alternative. Green/Yellow/Red will be comparative based on range of costs for each alternative.
- Property/Neighborhood Impacts: Estimated level of properties/neighborhoods impacted for each alternative. Green/Yellow/Red will be comparative based on range of impacts for each alternative.
- Natural Resource Impacts: Estimated natural resource impacts for each alternative (acres). Green/Yellow/Red will be comparative based on range of impacts for each alternative.
- Physical Resource Impacts: Estimated physical resource impacts for each alternative (acres). Green/Yellow/Red will be comparative based on range of impacts for each alternative.
- Historic Resource Impacts: Estimated level of historic properties/areas impacted each alternative. Green/Yellow/Red will be comparative based on range of impacts for each alternative.
- Permittable: Is the alternative considered permittable? (Green – Yes, Yellow – uncertain, Red – No)
- VMT/VHT/Emissions: Measure of VMT and VHT for each alternative as it relates to vehicle emissions. Green/Yellow/Red will be comparative based on VMT/VHT for each alternative and will be in combination with other alternatives.

\* Adequacy relates to the alternatives' compliance with federal and state design criteria