

# Wiscasset Route 1 Corridor Study Phase II Alternatives Analysis Supplement



Response to request for further information  
from the U.S. Army Corps of Engineers

September 2009

Maine Department of Transportation  
16 State House Station  
Augusta, Maine  
04333-0016



# Table of Contents

	Page
1. Purpose.....	1
2. Overview.....	3
3. Summaries of Post- <i>DEIS</i> Midcoast Bypass Task Force Meetings.....	9
3.1 October 29, 2007 - <i>DEIS</i> Public Comment Period and Task Force Role	
3.2 December 13, 2007 - Information Requests, Informal Public Comments Report	
3.3 January 24, 2008 - Public Comments Work Plan	
3.4 February 07, 2008 and February 21, 2008 - Traffic Diversion Analysis	
3.5 March 6, March 20 and April 03, 2008 - Interchanges	
3.6 April 24, 2008 - Traffic Congestion Improvements in Downtown Wiscasset	
3.7 May 1, 2008 - Edgecomb Land Use Analysis	
3.8 June 10, 2008 - Army Corps of Engineers Process	
3.9 June 26, 2008 – Discussion of Materials Provided to Date	
3.10 July 24, 2008 - Alignment Revisions in Edgecomb	
3.11 September 18, 2008 - Interchanges	
3.12 October 29, 2008 - Interim Approaches to Relieve Congestion	
3.13 December 09, 2008 - Route 218 Access Options	
4. Comparison of Alternatives.....	17
4.1 Purpose and Need	
4.2 Impacts to the Natural Environment	
4.3 Impacts to the Human Environment	
4.4 Summary Comparison of alternatives - Part 3	
5. Responses to March 9, 2009 US Army Corps of Engineers Letter of Comments.....	29
6. Conclusions and Recommendations.....	33

## Appendices

A. References.....	A.1
B. Comments to Draft <i>Environmental Impact Statement</i> and MaineDOT Responses.....	B.1
C. Midcoast Bypass Task Force Meeting Agendas and Summaries.....	C.1
D. Traffic Diversion Analysis.....	D.1
E. Original Comparison and Scoring of Bypass Alternatives.....	E.1
F. Interim Downtown Measures to Reduce Congestion.....	F.1
G. MaineDOT Analysis of VanOrsdell Proposal for Alternative Alignments.....	G.1
H. MaineDOT Report on Economic and Land Use Impacts of Bypasses.....	H.1
I. Proposed Intersection Improvements at Route 1 and Route 27 in Wiscasset.....	I.1
J. March 09, 2009 U. S. Army Corps of Engineers Letter of Comments.....	J.1
K. N2 Alternative Alignment.....	K.1
L. Impacts to Hydrology.....	L.1
M. Revised Alignment Maps.....	M.1
N. Environmental Impact Maps.....	N.1

*The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.*

## 1. Purpose

The purpose of this submittal is to respond to questions received in a March 9, 2009 U.S. Army Corps of Engineers (ACOE) letter in response to a section 404 application that was submitted on December 8, 2008 with additional materials submitted on December 31, 2008. In essence, the ACOE letter requested MaineDOT to further substantiate its recommendation to identify alternative N2/N2a/N2h as the Least Environmentally Damaging Practicable Alternative (LEDPA).

MaineDOT and FHWA continue to recommend N2a as the LEDPA because it provides the best overall solution to the decades-long traffic congestion problem along Route 1 in the Wiscasset-Edgecomb area. This recommendation is based on:

1. The natural and human impacts of the remaining build and no-build alternatives, along with cost and engineering considerations. The no-build solution does not satisfy the FHWA-stated Purpose and Needs or the ACOE Purpose Statement, so it is not recommended. The impacts of the three remaining build alternatives are so close that MaineDOT developed a scoring methodology to assist the Midcoast Bypass Task Force in identifying its favored bypass alignment. The scoring shows that *N2a is the most practicable alternative*.
2. Impacts to the waters of the United States, as defined by section 404(b) are essentially the same for the three remaining build alternatives.
3. The Midcoast Bypass Task Force, which represents nine area communities and four additional interest areas, has recommended that N2a is their preference. This broad range of representation clearly indicates that *N2a is in the public interest*, and should therefore be recommended by ACOE as well. The need for ACOE to address public interest is clearly indicated in its December 21, 2007 letter of comments to the Draft Environmental Impact Statement, which states in part that:

“The Corps encourages DOT to continue to work with the affected communities and local interest groups to address local concerns and seek consensus. The Corps must not only identify the least environmentally damaging practicable alternative, we must demonstrate that it is not contrary to the public interest. A project that is deemed contrary to the public interest cannot receive a permit.”

This Supplement also includes the comments that were received on the October 2007 *Wiscasset Route 1 Corridor Study Draft Environmental Impact Statement and Draft Section 4(f) Evaluation (DEIS)* and MaineDOT responses to the substantive comments (see Appendix B, under separate cover).

## 2. Overview

The need to address traffic congestion in Wiscasset Village has been discussed with varying intensity over the last forty or more years. This issue took on greater visibility in the mid-1990s as MaineDOT responded to local requests to work to reduce congestion by conducting a preliminary analysis of transportation alternatives. This was followed in 1999 by the onset of the *Wiscasset Route 1 Corridor Study* to take the planning analyses through the National Environmental Policy Act (NEPA) process. The *Environmental Assessment* was elevated in 2002 to an *Environmental Impact Statement (EIS)*.

In 2004, MaineDOT began to develop the *Wiscasset Route 1 Corridor Study Draft Environmental Impact Statement and Draft Section 4(f) Evaluation (DEIS)*, which was published in October, 2007. As the *DEIS* was being completed, MaineDOT created the Midcoast Bypass Task Force, a diverse regional group of stakeholders in order to help MaineDOT and the Federal Highway Administration interpret the public comments received on the *DEIS*, identify issue areas, offer advice and reach local consensus. Public participation was especially important in this process, as the federal and state government's ability to successfully fund a bypass solution would depend on the communities' ability to agree on a solution that most people would be willing to accept, and given the long history of the affected communities' inability to reach consensus.

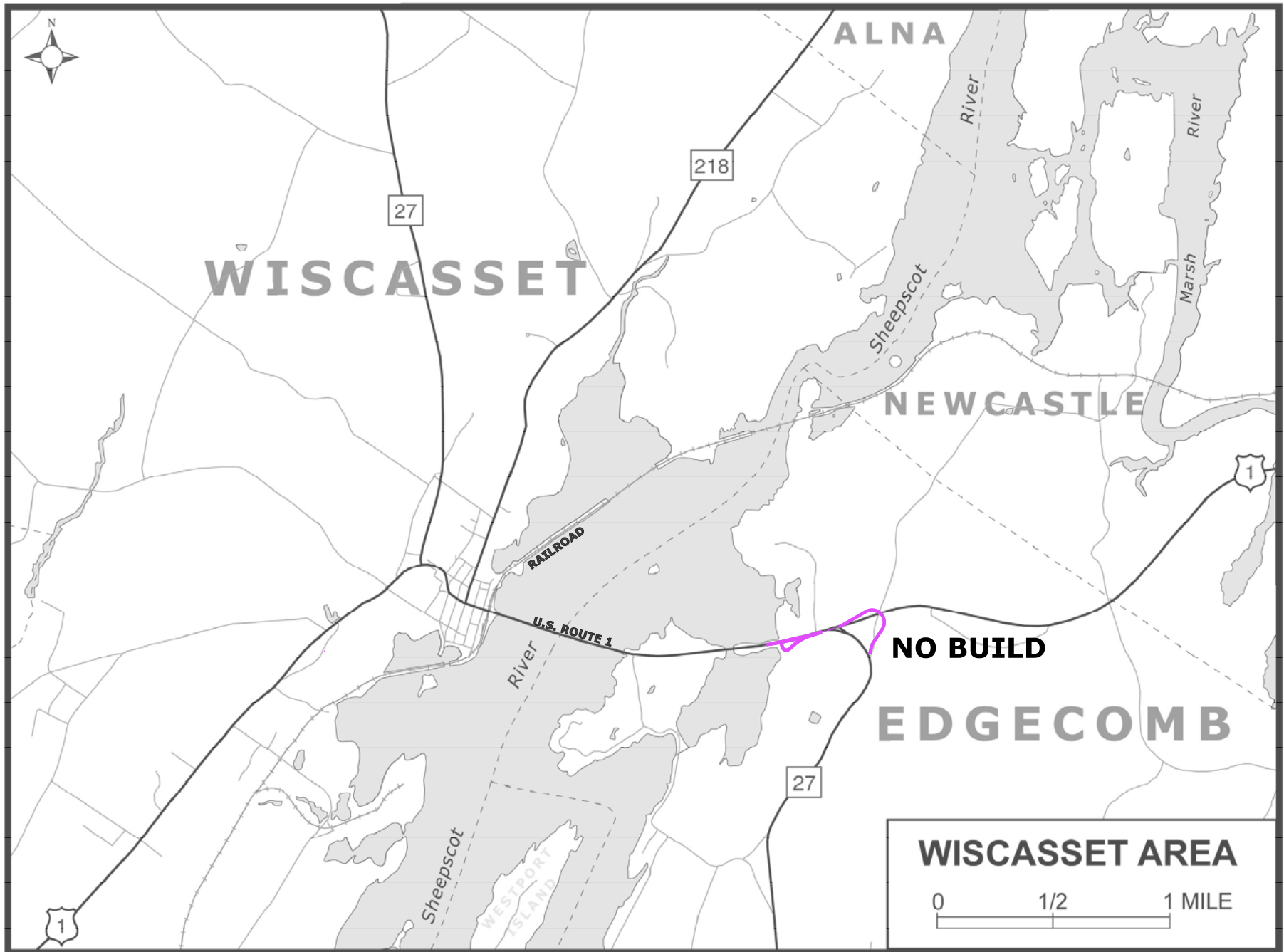
The Midcoast Bypass Task Force consists of representatives from the towns of Wiscasset, Edgecomb, Alna, Westport Island, Woolwich, Newcastle, Boothbay and Boothbay Harbor, Lincoln County, and interest groups consisting of the Sheepscot Valley Conservation Association, Chewonki Foundation and Friends of Coastal Preservation. Current members of the Midcoast Bypass Task Force are:

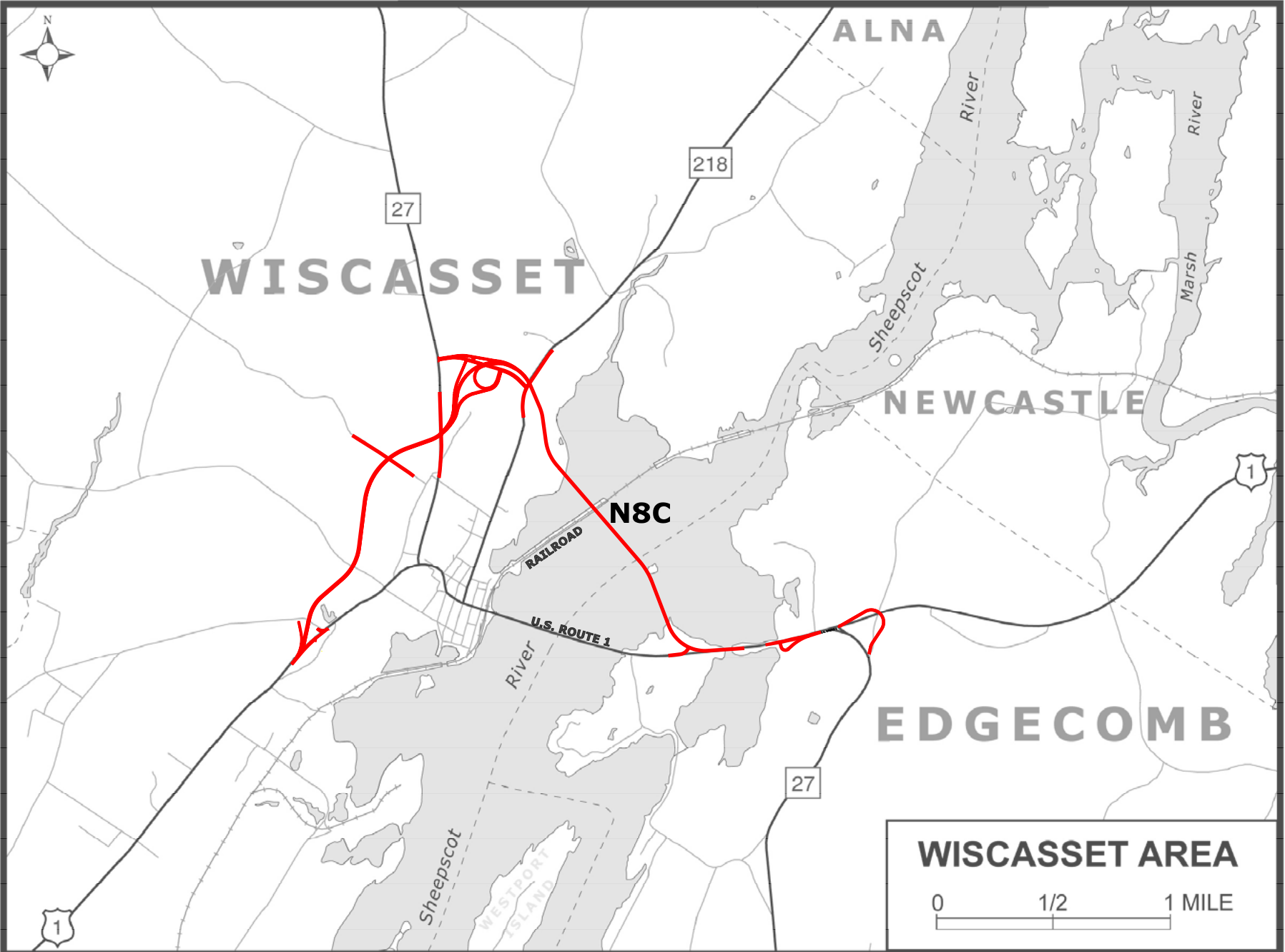
- David Nichols, Selectman, Wiscasset
- Arthur Faucher, Town Manager, Wiscasset
- Don Jones, Chair, Wiscasset Transportation Committee
- Joanne Cameron, Chair, Board of Selectmen, Edgecomb
- Amanda Russell, Planning Board, Edgecomb
- Barry Johnston, Fire/Safety Chief, Edgecomb
- Robert Faunce, Planning Director, Lincoln County
- Douglas Baston, Chair, Planning Board, Alna
- Lee Straw, Chair, Board of Selectmen, Newcastle
- David King, Sr., Chair, Board of Selectman, Woolwich
- David Bertran, Chair, Board of Selectman, Westport Island
- Ross Edwards, Selectman, Boothbay
- Tom Woodin, Town Manager, Boothbay Harbor
- Jaimie Logan, Boothbay Harbor Chamber of Commerce
- Leah Sprague, Sheepscot Valley Conservation Association
- Don Hudson, The Chewonki Foundation
- Dr. Norma Dreyfus, Friends of Coastal Preservation
- Kat Fuller, Chief of the Bureau of Transportation Systems Planning, MaineDOT
- Peter Kleskovic, Assistant Division Administrator, Maine Division, FHWA

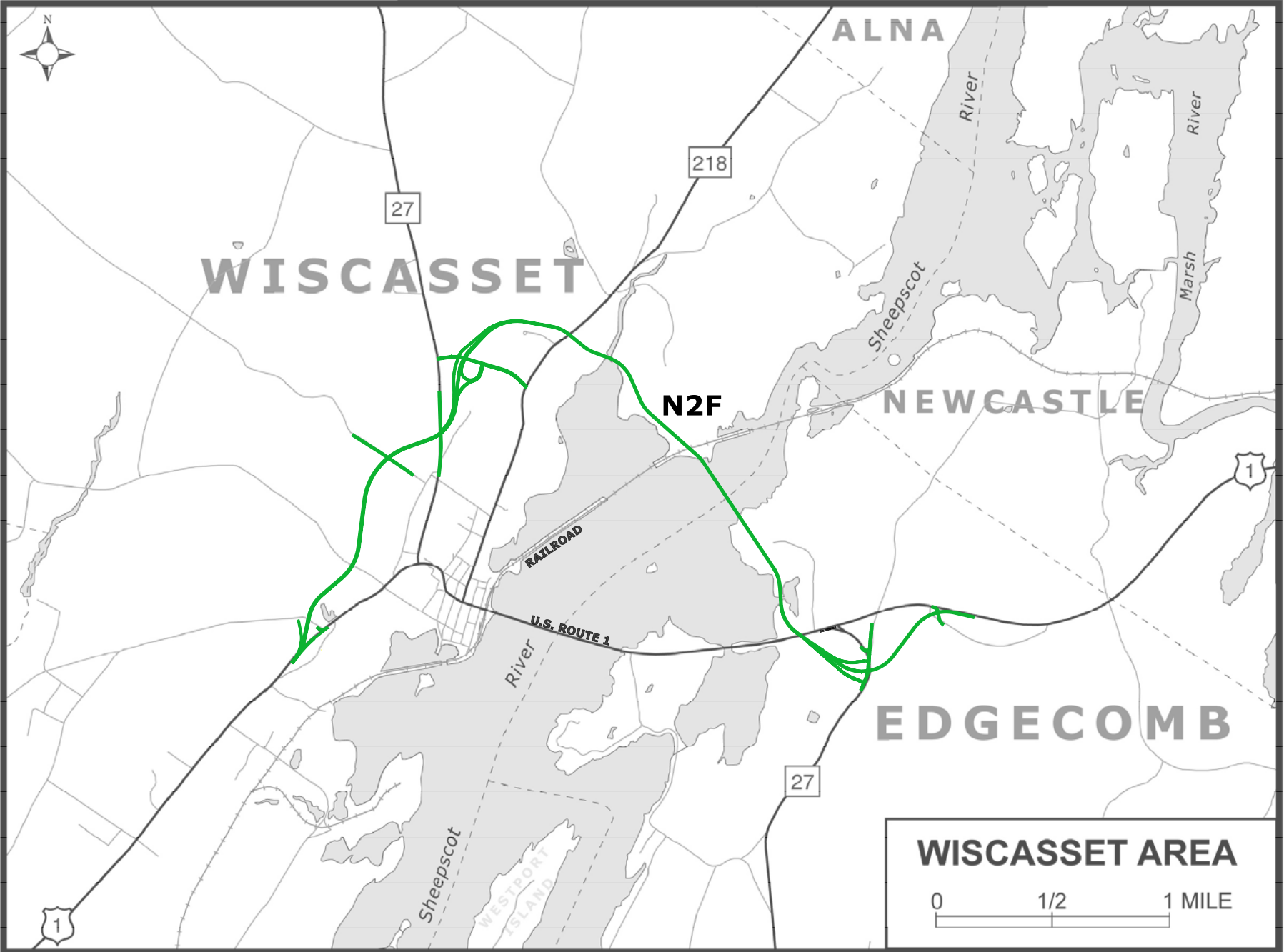
As a result of the work performed with the Midcoast Bypass Task Force, there now remain one no-build and three build alternatives, as described below and depicted graphically on the following pages. Refer

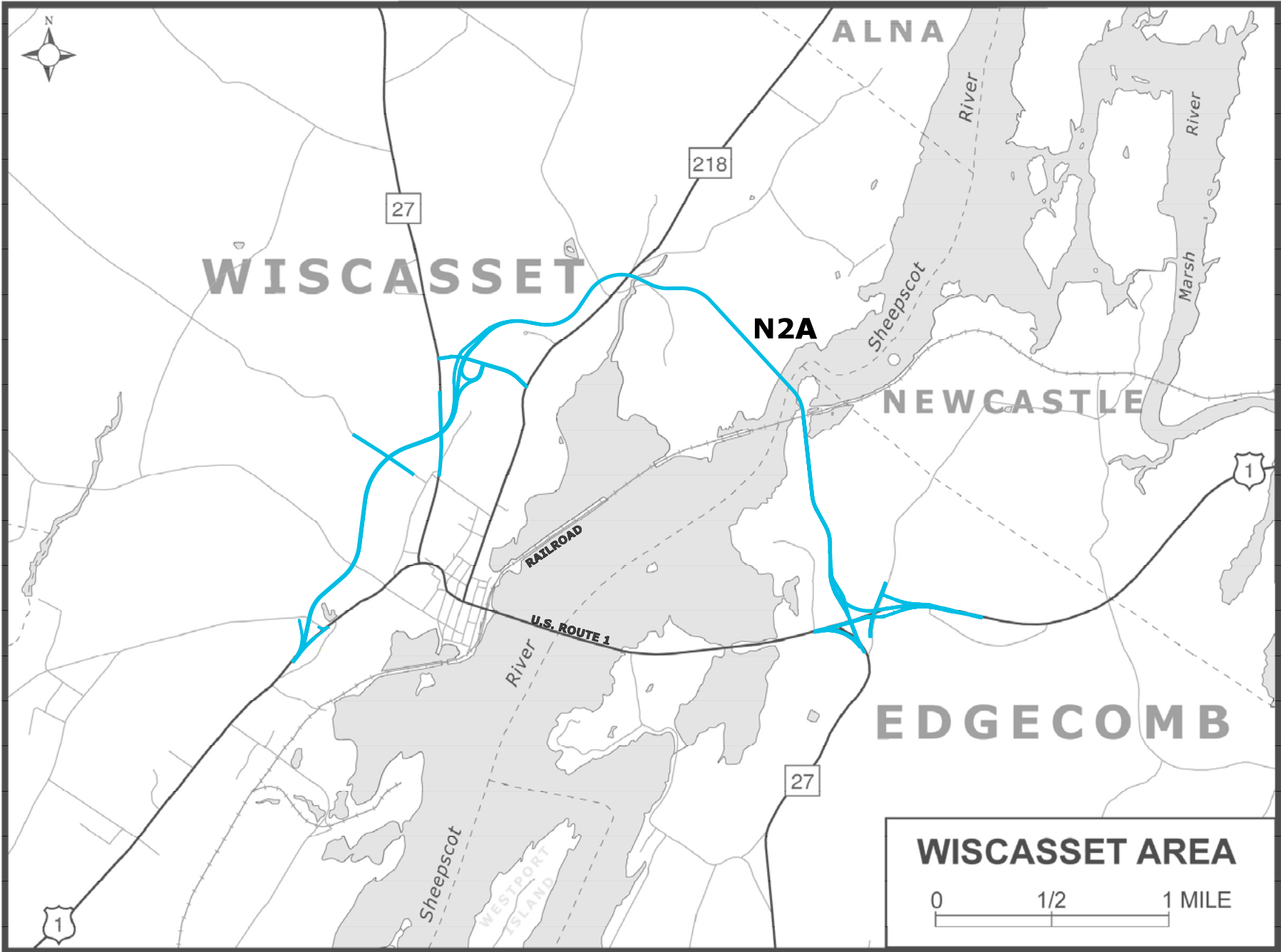
to Appendix M for larger-scale aerial maps overlain by the remaining alternatives and Appendix N for maps depicting natural and human environmental assets.

- No-Build – under this proposal, a single-lane flyover would be installed at the intersection of Route 1 in Edgecomb with Cross Road. The flyover would help address a safety hazard caused by Cross Road traffic attempting to turn left onto Route 1 southbound. The safety hazard is caused by a large hill and curve to the north (east) of the intersection, resulting in short sight distances. Additionally, a jug handle would be installed on the south side of Route 1 between the Cod Cove bridge and Englebrekt Road. The jug handle would address a safety hazard caused by Englebrekt Road traffic attempting to turn left onto Route 1 northbound. Englebrekt Road traffic would turn right onto Route 1 southbound, enter a left-turn pocket to get onto the jug handle and then merge onto Route 1 northbound. The No-Build alternative does not meet the stated purpose and need of relieving congestion in Wiscasset, however.
- Build Alternative N2/N8c, commonly referred to as N8c in this document, is the most southerly build alternative remaining and includes the longest bridge of any of the remaining build alternatives.
- Build Alternative N2/N2h/N2f-1, referred to as N2f in this document, lies between the most southerly and the most northerly build alternatives.
- Build Alternative N2N2a/N2h, referred to as N2a in this document, is the most northerly build alternative.









### 3. Summary of Comments Received to the October, 2007 Draft Environmental Impact Statement

An eight-week public comment period for the Draft Environmental Impact Statement (*DEIS*) extended from October 26 to December 21, 2007. During that time, seven public meetings were held; three of the meetings were public hearings. The public meeting and public hearing dates and topics of discussion follow:

<b>Date</b>	<b>Topic(s) Covered</b>
11/15/2007	<i>DEIS</i> Informational Meeting
11/28/2007	<i>DEIS</i> Informational Meeting
11/29/2007	<i>DEIS</i> Public Hearing #1
12/01/2007	<i>DEIS</i> Public Hearing #2
12/04/2007	<i>DEIS</i> Public Hearing #3
12/06/2007	<i>DEIS</i> Informational Meeting
12/17/2007	<i>DEIS</i> Informational Meeting

Many substantive comments were received during the Draft Environmental Impact Statement (*DEIS*) comment period. Refer to Appendix B for a summary listing of the comments received and MaineDOT responses to them. The comments received on the *DEIS* were assigned to several categories for review and discussion with the Midcoast Bypass Task Force:

- Category A Comments – For Midcoast Bypass Task Force Review
  - Traffic Diversion Analysis
  - Interchanges
  - Englebrekt Road
  - Interim & Long-Term Solutions for Wiscasset Village
  - Substantiated Opinions on Alternatives
  - Official Town & Task Force Member Comments
- Category B Comments – Require MaineDOT Action, but not necessarily Task Force Review
  - Agency Comments
  - Individual Comments
  - New Alignment Proposals
  - Public Hearing Comments
- Category C Comments – Not a Substantive Comment – No Response Required

The Midcoast Bypass Task Force met 15 times to discuss the *DEIS* comments. These Midcoast Bypass Task Force meetings were held on the dates listed below to discuss the topics and to come to consensus on major items of ongoing debate. Copies of the meeting agendas and meeting minutes are attached as Appendix C.

<b>Date</b>	<b>Topic(s) Covered</b>
10/29/2007	<i>DEIS</i> Public Comment Period and Task Force Role
12/13/2007	Information Requests, Informal Public Comments Report
01/24/2008	<i>DEIS</i> Public Comments Work Plan
02/07/2008	Traffic Diversion Analysis
02/21/2008	Traffic Diversion Analysis
03/06/2008	Interchanges
03/20/2008	Interchanges

<b>Date</b>	<b>Topic(s) covered</b>
04/03/2008	Interchanges
04/24/2008	Interim Traffic Congestion Improvements
05/01/2008	Edgecomb Land Use Analysis
06/10/2008	Army Corps Process
06/26/2008	Task Force Discussion on Materials Provided to Date
07/24/2008	Alignment Revisions in Edgecomb
09/18/2008	Bypass Interchanges
10/29/2008	Interim Approaches to Relieve Congestion
12/09/2008	Route 218 Access Options

The following paragraphs summarize the outcomes of the topics covered at these meetings.

- 3.1. October 29, 2007 Meeting on *DEIS* Public Comment Period and Task Force Role  
The purpose of this meeting was to provide a forum to ask questions about the *DEIS* and to obtain input on the Task Force process. Questions centered on traffic diversion, long term maintenance and operating costs, the future of Davey Bridge (plan is for MaineDOT to retain it at least through 2030), request to evaluate full interchanges at Route 27 and 218 in Wiscasset, recent land use developments on Davis Island, the need to provide emergency vehicles access at the intersection of Route 1 and Old Bath Road, noise, no-build alternatives, impacts of displacements to property taxes and the upcoming public meetings and hearings.
- 3.2. December 13, 2007 Meeting on Information Requests, Informal Public Comments Report  
This meeting reviewed the requests for information that were received and the public comments that were received. Guidelines for addressing the comments and the Task Force's roles were also discussed.
- 3.3. January 24, 2008 Meeting on the *DEIS* Public Comments Work Plan  
Public comments received on the *DEIS* were broken down into Categories A, B and C and a meeting schedule was established to discuss the Category A comments. MaineDOT noted at the meeting that a Phase II Application would be submitted at the conclusion of the Task Force process rather than immediately due to MaineDOT's need to understand the *DEIS* comments and to formulate responses.
- 3.4. February 07, 2008 and February 21, 2008 Meetings on Traffic Diversion Analysis  
Traffic Diversion analyses were presented and discussed at the two-part meeting as the result of public comments that were received. It was concluded that while the further the bypass alignment is from existing Route 1 and thus the less traffic that is diverted from Route 1, all of the Build alternatives fully considered in the *DEIS* meet the Purpose and Need Statement by eliminating congestion. The Purpose and Need Statement for the Wiscasset Route 1 Corridor Study is to "increase safety, enhance mobility (e.g., reduce congestion), and provide a net improvement to the environment in Wiscasset, Maine". The project purpose identified by the U.S. Army Corps of Engineers (ACOE) is to "improve the east-west traffic movements through the town of Wiscasset and surrounding communities along the Route 1 corridor in order to improve public safety and relieve traffic congestion." All of the remaining build alternatives under consideration in the *DEIS* meet the project Purpose and Need and ACOE project purpose; the no-build alternative does not. MaineDOT solicited an independent review of its

traffic diversion analysis to ensure its findings were supportable. The independent review, conducted by FHWA, confirmed that MaineDOT's approach, assumptions and outcome were supportable (see Appendix D).

3.5. March 6, March 20 and April 03, 2008 Meetings on Interchanges

Three meetings were dedicated to identifying and evaluating interchange options in Wiscasset. MaineDOT proposed a half interchange at Route 27 in the *DEIS*. The Town of Wiscasset requested analyses be conducted to consider full interchanges, both at Route 27 and also at Route 218. They reasoned that traffic volumes on Route 27 justified a full interchange there. They also wanted a full interchange at Route 218 to address truck traffic from the Whitefield gravel pits. Without a Route 218 interchange, these trucks would not have access to the bypass and consequently would continue to travel onto Federal Street in the Village Historic District to existing Route 1. Multiple alternatives were presented and it was finally agreed upon that the Route 27 access to the bypass should be a full interchange. However, there was no decision made on Route 218 access, as the Town of Alna was concerned about induced growth. FHWA also expressed concern that the close proximity of the two interchanges could pose safety hazards. The interchanges issue was ultimately resolved at the December 9, 2008 meeting, when it was agreed that a connector road between Route 218 and Route 27 with a full interchange near Route 27 would satisfy the needs of both communities (see Appendix M for interchange concept plans).

3.6. April 24, 2008 Meeting on Interim Traffic Congestion Improvements

At the meeting onset, the Task Force requested that less meeting time should be used to discuss highly technical details. As a result, it was agreed that MaineDOT would develop a matrix summarizing the impacts of each remaining alignment alternative to help the Task Force identify its alignment preferences. It was also agreed that MaineDOT would generate and distribute reports summarizing analyses prior to the meetings so the Task Force could review them in advance and reduce the time spent on presentations. Discussion then focused on what causes traffic delays and what has been done to date to reduce congestion in the Route 1 Wiscasset Village area. It was noted that congestion is caused by a number of factors, including the number of vehicles trying to get through, the transition to a village setting, significantly reduced posted speed limits, pedestrian crossings, traffic movements caused by parking, road curves and cross-sectional changes, a railroad crossing at the bottom of a steep hill, and turning and entering traffic. A history of activities conducted to reduce congestion was also presented:

- Pre-1998: A traffic officer controlled traffic to allow pedestrian crossings (discontinued by the Town of Wiscasset due to budget issues).
- 2000: MaineDOT initiated angled parking in lieu of the perpendicular parking that existed previously and installed a curbed median to prohibit left turns at certain intersections.
- June 2001: MaineDOT eliminated the median and incorporated left turn lanes, converted some connecting streets to one-way only and eliminated one crosswalk. The angled parking had been found to work well and was retained as a permanent change.
- July 2001: MaineDOT added temporary traffic and pedestrian signals at certain intersections and collected traffic data.
- September 2001: MaineDOT returned all traffic to two-way and removed the temporary traffic signals.

- An analysis of the various congestion relief approaches taken concluded that all of the traffic control approaches yielded essentially the same vehicular capacity of about 1,050 vehicles per hour for northbound and 850 vehicles per hour for southbound traffic.

MaineDOT provided the Task Force with a summary of the *DEIS* comments submitted by the public related to downtown traffic congestion, including all potential solutions to consider. Refer to Appendix F.1 for the summary and Appendix F.2 for the recommendations the Task Force elected to pursue.

### 3.7. May 1, 2008 Meeting on Edgecomb Land Use Analysis

MaineDOT presented updated land use maps and discussed further land use updates to the *DEIS* with the Task Force. MaineDOT noted that Englebrekt Road would now be considered a neighborhood and its boundaries were discussed. Recent land developments at Davis Island were discussed but that area was determined to not qualify as a neighborhood. The Task Force also heard Mr. VanOrsdell's proposal for two alternate routes including a tunnel. Also discussed were recent findings for the Gateway-1 Study, which includes midcoast Route 1. Other items of discussion included independent review of the traffic diversion analysis (in process and report expected by the next meeting), and that an update on the potential interim measures to reduce downtown congestion would also be presented at the next meeting.

### 3.8. June 10, 2008 Meeting on Army Corps Process

Jay Clement of the US Army Corps of Engineers (ACOE) provided an overview of the permit and public process required for any project that impacts waters of the United States, and that the ACOE will make a determination of the least Environmentally Damaging Practicable Alternative (LEDPA). The LEDPA is the option (or multiple options, if applicable) that the ACOE deems to be permissible, based on the least adverse impacts on navigation, degradation of aquatic life, and effect on the public interest. He went on to explain that the review is a balancing process, focusing on aquatic and natural environmental impacts, but balancing this also with residential and commercial takings. Following determination of the LEDPA, MaineDOT and FHWA will complete the Final Environmental Impact Assessment and FHWA will then issue its Record of Decision (ROD). Upon final design, MaineDOT will need to obtain the actual ACOE permit, along with a DEP and Coast Guard permit.

MaineDOT announced at the meeting that the old motor court (Race's Cabins) located at the corner of Route 1 and Route 27 in Edgecomb is eligible for the National Historic Register because it is associated with early motor development in Maine, and that its setting, workmanship and materials were all qualifying indicators. If at all possible, the alternatives must avoid the motor court and its use, even if avoidance results in significant cost increases.

MaineDOT presented a matrix developed to summarize all pertinent comparison criteria discussed in the *DEIS*. Three sets of criteria were used: (1) Natural Environment, (2) Human Environment and (3) Transportation and Cost Considerations. Based on the analysis, MaineDOT recommended that alternatives N2/N2h/N2f-2 and N2/N2h be dropped from further consideration for the following reasons:

- N2/N2h/N2f-2 is essentially the same as the N2/N2h/N2f-1, but it cuts across the Englebrekt Road neighborhood;
- N2/N2h is essentially the same as N2/N2a/N2h, but it is more costly and results in a longer bridge with an adverse effect to the historic bascule portion of the railroad bridge.

The remaining alternatives are N2/N8c (N8c), N2/N2a/N2h (N2a) and N2/N2h/N2f-1 (N2f1). Of these, it was noted that N2a appeared to be the best alternative, due to:

- Concerns that the Town of Wiscasset had with N8c regarding its impacts to the historic district;
- MaineDOT's concerns with the N8c at-grade tee intersection with existing Route 1 on Davis Island, the Town of Edgecomb's designated growth area, and also concerns with the at-grade tee intersection with Route 27 to Boothbay, which is already a safety concern due to high speeds and short stopping sight distances;
- Of the two remaining alternatives, N2f1 and N2a are fairly similar in benefits, but N2a was more practical than the other.

A handout was provided regarding analysis of the VanOrsdell tunnel proposal (see Appendix G). A summary of the April 24 and May 1 discussions on Interim Downtown Measures was also handed out. It included ten items recommended for further consideration. The ten items included (1) a safety project at Route 1 in Edgecomb, (2) a Traveler Information System, (3) a permanent traffic counter, (4) evaluating safety concerns at the intersection of Route 1 with Lee Street and Bradford Road in Wiscasset, (5) evaluating safety and congestion concerns at the intersection of Routes 1 and 27 in Wiscasset, (6) developing options for downtown Wiscasset parking, (7) the ongoing issue of pedestrian crossings, (8) traffic calming, (9) revising the I-295 "Coastal Route 1" signs, and (10) reinstatement of a traffic control officer (see Appendix F for further details).

### 3.9. June 26, 2008 Task Force Discussion of Materials Provided to Date

The meeting focused on allowing Task Force members the opportunity to discuss the practicality of the remaining alternatives amongst themselves. By show of hands, the Task Force unanimously endorsed N2a as the one alignment that no one on the Task Force would oppose.

### 3.10. July 24, 2008 Task Force Meeting on Alignment Revisions in Edgecomb

The Task Force was provided maps depicting revisions to all three remaining alignments caused by efforts to avoid the motor court (Race's Cabins), which is eligible for inclusion in the National Historic Register. The changes add about \$1 to \$2 million to the overall project cost. Additionally, a revised comparison of bypass alternatives was distributed to account for the changes in alignment and also to account for environmental field reviews, which provided more detail than had previously been available from GIS mapping of resources. Ranking of the alternatives did not change measurably – see Appendix E. for further details.

Also discussed was the status of the Interim Downtown Measures:

1. Edgecomb Route 1 safety project (traffic stopped ahead sign) – project delayed (all bids rejected due to high cost).
2. I-295 Wiscasset Traveler Information System - the traffic delay information system is in progress, more meetings with local and county emergency services personnel and area chambers of commerce to occur, expect fall 2008 Phase I implementation.
3. Permanent traffic counter – expect it to be installed in the fall of 2008, data will not be posted to the web but will be available on request.
4. Intersection of Lee Street and Bradford Road – no further action recommended (no crashes).

5. Intersection of Routes 1 and 27 in Wiscasset – further analysis is warranted
6. Wiscasset off-street parking – aerial photos provided to Town for their analysis
7. Pedestrian crossing tunnel – concept plan provided, cost estimated at \$4.5 M, expect limited use, drainage and construction issues (ledge), etc. – recommend no further action. As an alternative to a pedestrian tunnel, a floating wharf under Davey Bridge was suggested. This will be considered in an upcoming Bicycle-Pedestrian Plan to be developed for the Town of Wiscasset through the Lincoln County Planner.
8. Traffic-calming plan – hold until the Bypass is built, as it would further impede traffic flow
9. Remove “Coastal” from “Coastal Route 1” signs – recommend no further action (concerns from other communities in the region)
10. Add the reintroduction of a uniformed traffic officer to control pedestrians.

The Task Force reviewed remaining items to discuss, including interim traffic measures and interchanges, and also discussed schedule. Discussion also centered on the need to obtain a final determination on alignment from the regulatory agencies, as many people whose properties are potentially affected are on financial hold until a firm decision is made. It was agreed that a news release would be made to address this concern and to identify the timeline involved.

### 3.11. September 18, 2008 Task Force Meeting on Interchanges

The Task Force discussed several interchange options presented by MaineDOT for each of the three remaining alignment options, both for Route 27 and also for Route 218. For Route 27, the Task Force generally felt a full interchange would be preferred. Group discussion seemed to favor:

N8c – Full Diamond

N2f-1 – No discussion

N2a – Interchange as shown in the DEIS plus 2 ramps

Opinions on the Route 218 interchange generated a wide range of opinions, from Alna being opposed to any interchange to Wiscasset’s preference for a full interchange to provide trucks access onto the bypass. Otherwise, trucks would have no access to the bypass and would be forced to continue traveling on narrow Federal Street to Route 1, both of which are in the historic district. Research into truck traffic emanating from Whitefield gravel pits indicated that it was significant and was unlikely to abate in the next decade. Newcastle also expressed interest in accommodating trucks so as to minimize the number taking Sheepscot Road into that community to avoid traffic delays on Route 1 in downtown Wiscasset. Wiscasset would not support a Route 218 interchange for the N8c option, however, due to its impact to the historic district. MaineDOT noted that alternatives to an interchange, such as a truck route, were going to be developed and evaluated, and that meetings with the Towns of Wiscasset and Alna would be held to further define the problem and the options would be presented to the Task Force. MaineDOT agreed also to evaluate half-interchange options at Route 218.

### 3.12. October 29, 2008 Task Force Meeting on Interim Approaches to Relieve Congestion

The final proposed approaches to address public comments regarding downtown Wiscasset traffic congestion were discussed. See Appendix F.2. through F.5. for details:

- Pedestrian Crossings
  - The Maine Historic Preservation Commission ruled that it would not support the

pedestrian crossing tunnel (See Appendix F.3) due to its visual impacts to the historic district.

- The permanent traffic counter is being installed on Route 1 (vicinity of Wiscasset Ford).
- A crossing guard could be hired in 2009 to better manage pedestrian crossings.
- MaineDOT may be able to partially fund the position for one summer only.
- Other pedestrian control options and off-street parking would be dropped from the Bypass Study, as they will be evaluated in the Wiscasset Bicycle-Pedestrian Study.
- Installation of traffic signals in downtown Wiscasset will not be implemented because they were found in 2001 not to be effective in reducing traffic congestion.
- Local Traffic Control - Intersection of Route 1 and Route 27, Wiscasset – Engineering analysis comparing a traffic signal to a roundabout has shown that a signal would reduce crashes by 25%; a roundabout by 60% (see Appendix I). The roundabout would reduce wait times for Route 27 traffic and improve safety overall, but it would not improve traffic flow for Route 1. The analysis shows that it is not cost-effective to use either signals or a roundabout at this intersection. MaineDOT will examine an unsignalized right-turn lane and report back to the Task Force.
- Parking Control – No further action (part of the Bicycle-Pedestrian Study)
- Traveler Information System
  - Phase I – the manual system was operational from August 28 through October 15, 2008 and was activated 3 times. A final report will be issued shortly.
  - Phase II – design will occur over the winter and meetings will be held with local and regional emergency services personnel and also with area chambers of commerce. The system should be operational by May, 2009 and will be active through mid-October.
  - I-295 static signs – the Task Force asked that MaineDOT install static signs on I-295 to encourage traffic headed to Belfast or further east to use Exit 113 or Rte. 3, respectively. The Traffic Engineering Division of MaineDOT is considering the request.
  - Other – the Task Force asked for guidance to increase ride sharing, car pooling and park-and-ride lots. The *GoMaine* program was described as the best way to address this. Interested communities can speak with MaineDOT for assistance (Susan Moreau, 624-3239).

### 3.13. December 09, 2008 Task Force Meeting on Route 218 Access Options

MaineDOT reviewed the Task Force suggestion to add an island and northbound turning lane at the intersection of Route 1 with Route 27 in Wiscasset. Two options are being developed and the project was funded in the FY2010-2011 biennium (see Appendix I).

The Traveler information System Phase I final report was distributed. Phase II, as discussed at the last meeting, will be implemented in 2009. See Appendix F.5 and F.6, respectively.

The Phase II application to the U.S. Army Corps of Engineers was submitted on Dec. 8. The cover letter states that N2a remains the preferred route by MaineDOT and the Midcoast Bypass Task Force. It also notes that increased land acquisition costs could render the capital cost of all three remaining alternatives essentially the same. The cover letter and application were handed out. A copy of the complete application will be sent to each town represented by the

Task Force, and MaineDOT will notify task force members when the public comment period opens. The ACOE is not bound by the preferred alternative recommended by MaineDOT, FHWA and the Task Force - communities must make clear during the public comment period which alternative they support and why. ACOE decisions are weighted to favor the aquatic environment.

The Task Force reviewed both interchange and non-interchange options to address Route 218 access. In order to (1) address Wiscasset's desire to provide Route 218 trucks access to the Bypass, (2) satisfy Alna's request not to have an interchange located on Route 218, and (3) to address FHWA concerns regarding close proximity interchanges at Route 27 and Route 218, MaineDOT presented three options featuring a connector road between Route 27 and Route 218, one of which featured a full interchange near Route 27. By unanimous show of hands (one abstention and none opposed), the Task Force approved adding a connector road between Route 218 and Route 27 to be integrated with a full interchange near Route 27.

Also discussed was the Town of Wiscasset's potentially illegal posting of Federal Street to trucks. The Town of Wiscasset indicated it had an ordinance in effect prohibiting heavy trucks from using Federal Street, but it was unclear if the Town had notified affected residents, the trucking industry and MaineDOT, as is required by MaineDOT. (NOTE: MaineDOT subsequently found that it has no record of having participated or approved the ordinance, and that it is thus null and void).

## 4. Comparison of Alternatives

MaineDOT and FHWA generated a summary comparison table for the No Build and three remaining alignment alternatives in June 2008 to help the Midcoast Bypass Task Force come to consensus on its preferred alternative (see Appendix E). The challenges in this process were grounded in two areas: the lack of a clearly defined best route when all impacts were objectively evaluated, and the historic lack of agreement among the communities as to the best route due to the radically different impacts each alternative had on each community. The matrix was based on the need to objectively balance the impacts to all three areas of concern: (1) the Natural Environment, (2) the Human Environment and (3) Transportation and Cost Considerations.

In this newly expanded table summarizing the *DEIS* findings, the Natural Environment (wetlands, streams, wildlife, etc.), the Human Environment (displacements, impacts to neighborhoods, etc.) and Transportation and Cost (engineering-related) aspects for each of the remaining no-build and build alternatives were summarized and ranked. Rankings were applied to each remaining alternative to the evaluation criteria, as follows:

- Green color – minor negative impacts (or most favorable benefits)
- Yellow color – moderate negative impacts (or moderately favorable benefits)
- Orange color – substantial or comparatively worst negative impacts (or least favorable benefits).

Overall rankings for each of the three categories for each alignment and overall were then generated as follows (highest scores are best):

- Sum of green-colored cells (each instance has a value of 1 point)
- Sum of green- plus yellow-colored cells (each with a value of 1 point)
- Sum of green- plus yellow- minus orange-colored cells (each with a value of 1 point)
- Sum of green- plus yellow, minus orange-colored cells, (green and orange have a value of 1 point and yellow has a value of ½ point)
- Sum of all of the above (by category and also overall).

Based on the matrix scoring, it was found that the N2a alignment provided the best overall ranking among these criteria. The Midcoast Bypass Task Force agreed by a show of hands with none opposed that N2a should be the preferred alternative.

The Comparison of Alternatives table that was generated for the Midcoast Bypass Task Force has been updated to reflect changes that have occurred since the matrix was presented to them. The table is no longer color-coded or ranked. Differences in the various criteria and their impacts are discussed in the pages that follow each major portion of the table.

### 4.1. Purpose and Need

<b>Criteria</b>	<b>No Build</b>	<b>N8c</b>	<b>N2f</b>	<b>N2a</b>
Improve public safety	No	Yes	Yes	Yes
Enhance mobility (reduce congestion)	No	Yes	Yes	Yes
Provide net improvement to the environment in Wiscasset	No	Yes	Yes	Yes

The No-Build alternative, although it does not meet any of the three Purpose and Need criteria, serves as a basis for comparison of the build alternatives under further consideration.

4.2. Impacts to the Natural Environment

Criteria	No Build	N8c	N2f	N2a
Navigable Waterways <sup>1</sup>	0	0	0	0
Marine Waters				
Eelgrass (acres)	0	0	0	0
Essential Fisheries Habitat (Acres) <sup>1</sup>	0	Min.	Min.	Min.
NRPA & Coastal Zone Management (Acres)	0	0.5	1.2	0.2
Shellfish Habitat <sup>2</sup>	0	0.1	0	0
Marine Worm Habitat <sup>1</sup>	0	0.1	0.2	0
Fresh Water				
Number of Stream Crossings with Freshwater Fishery	0	2	2	23
Freshwater Wetlands (Acres)	0.1	2.0	4.2	3.7
No. of Stream & River Crossings	0	3	4	4
Length of Streams within Bypass Earthwork Area (L.F.)	0	775	1,033	1,263
Bypass Length within 500 L.F. of Streams	0	11,873	14,414	16,819
Vernal Pools				
Total Number Impacted	1	4	6	6
Significant Vernal Pools (Immediately Adjacent)	0	1	1	2
Affected Dispersal Area w/in 250' of Significant Vernal Pools	0	1.2	1.2	1.2
Assessment of Impact to Sig. Vernal Pool w/in 250 feet (Ac.) <sup>4</sup>	TBD	Severe	Severe	Severe
Dispersal Area (Opp. Side) w/in 750' of Vernal Pools <sup>5</sup>	2.5	27.5	32.0	41.7
Direct Impact to Vernal Pools within 750 feet (Acres)	TBD	5.8	10.4	14.4
Essential Habitat (Eagle Nests)	None	None	None	None
Tidal Waterfowl & Wading Bird Habitat (Acres)	0	0.1	0.3	0
Impacts to Floodplain	0	0.2	1.9	0.6
Pier Impacts to Sheepscot River	None	0.4	0.3	0.1
Impervious Area (Acres)	<1%	29.1	31.2	35.8
Change in Annual and 10-Year Stormwater Flows	N/A	15%	15%	15%
Other Considerations				
High Value Forest Impacts (Acres)	0	10.6	13.4	12.7
High Value Grassland Impacts (Acres)	0	5.4	4.5	7.0
Unfragmented Habitat (Blocks)	2	6	7	6
Beginning with Habitat Lower Sheepscot River Focus Area of Statewide Ecological Significance	No Impact	No Impact	No Impact	South End

<sup>1</sup> Requires US Coast Guard and Army Corps of Engineers permits

<sup>2</sup> Included in Coastal Resources

<sup>3</sup> Stream at West Alna Road redefined in 2008 based on field measurements

<sup>4</sup> Assessment of impacts to vernal pool based on pool quality

<sup>5</sup> Salamander eggs found at a stream site in 2008 (not a vernal pool, however)

Following is an analysis of the impacts presented in the table at left:

- 4.2.1. Navigable Waterways – None of the remaining alternatives will impact navigable water ways.
- 4.2.2. Eelgrass - None of the remaining alternatives will impact eelgrass, per visual dive observance conducted in June 2008.
- 4.2.3. Essential Fisheries Habitat – Minimal impacts are expected for all remaining alternatives in the long term and there are no adverse changes in flows. There could be short-term impacts during construction of piers. The timing of construction will help minimize impacts. The N8c bridge is the longest and would thus have the greatest chance of impacting essential fisheries habitat.
- 4.2.4. NRPA and Coastal Zone Management – N2f will have the greatest impact at 1.2 acres. N8c will impact 0.5 acres and N2a will impact 0.2 acres.
- 4.2.5. Shellfish Habitat – N8c will impact 0.1 acres of shellfish habitat; N2f and N2a have no impact.
- 4.2.6. Marine Worm Habitat – N2f impacts 0.2 acres and N8c impacts 0.1 acres. N2a does not impact marine worm habitat.
- 4.2.7. Number of Stream Crossings with Freshwater Fishery – All three build alternatives impact two streams with observed fish populations (5 and 7). N2f and N2a also cross stream 8. MaineDOT will utilize recommendations from the *Waterways and Wildlife Crossing Policy Design and Guidance, July, 2008* and the *2008 Revised MaineDOT Best Management Practices for Erosion and Sedimentation Control* to minimize impacts.
- 4.2.8. Freshwater Wetlands - The impacts to freshwater wetlands are minimal for the No-Build and all three Build alternatives. For the No-Build alternative, less than 0.1 acres would be impacted. For the Build alternatives, N8c would impact slightly more than 2.0 acres. N2f would impact slightly less than 4.2 acres and N2a would impact slightly less than 3.7 acres.
- 4.2.9. Number of Stream and River Crossings – N8c crosses 3 streams (2, 5 and 7). N2f also crosses 3 streams (2, 5, and 8). N2a crosses 4 streams (2, 5, 8 and 9). N8c would have a large impact on stream 7, while N2f would have less impact and N2a would have no impact. No fish are present in stream 9. Aquatic passage for amphibians would be required for stream 10 (N2f and N2a) only if the road is widened, but it is expected that this will be a transition zone to match the cross-section and alignment of Route 1, with only paving occurring at stream 9. MaineDOT will utilize recommendations from *Waterways and Wildlife Crossing Policy Design and Guidance, July, 2008* and the *2008 Revised MaineDOT Best Management Practices for Erosion and Sedimentation Control*. See Table 1 - Stream Crossings Summary located at the end of this section for further details.
- 4.2.10. Length of Streams within Bypass Area Earthwork - The length of streams within bypass earthwork areas are 775 feet for N8c, 1,033 feet for N2f and 1,263 feet for N2a. MaineDOT will utilize recommendations from *Waterways and Wildlife Crossing Policy Design and Guidance, July, 2008* and the *2008 Revised MaineDOT Best Management Practices for Erosion and Sedimentation Control*. See Table 1 - Stream Crossings Summary located at the end of this section for further details.
- 4.2.11. Bypass Length within 500 feet of Streams - Currently there are no water quality regulations that require analysis of impacts within 500 feet of a roadway. A more realistic analysis of impacts to streams within close proximity to a proposed bypass

is to compare the changes in the annual and 10-year storm flows resulting from the increased amount of impervious area within the direct watershed of each stream. The amount of impact is dependent upon where on the watershed the bypass is located, and how the stream enters. Each of the three proposed alignments for the Route 1 bypass alters the peak discharge of several streams that flow into the Sheepscot River. Creation of impervious areas (e.g. pavement) produces changes in runoff patterns during rainfall and potentially affects the volume of flow of flood events. The change in runoff is controlled by the total area of the watershed, the location of the road within the watershed and the surface area of the new pavement. In the case of the Wiscasset bypass, the impervious areas created by the new road are very small compared to the total watershed area and the locations of the alignments do not significantly affect the timing of the peak flows. The projected changes in peak discharge are calculated to be insignificant for all three alignments. All alignments are predicted to have approximately equal impact on the outflows from each watershed. MaineDOT will utilize the recommendations from *Waterways and Wildlife Crossing Policy Design and Guidance, July, 2008* and *2008 Revised MaineDOT Best Management Practices for Erosion and Sedimentation Control* to further reduce impacts to streams.

- 4.2.12. Total Number of Vernal Pools Impacted – All three remaining alignments impact 4 vernal pools (Nos. 1, 2, 3 and 7). N8c is considered to not impact any other vernal pools, though it lies within the south side of Route 1 at vernal pool number 6. The area south of Route 1 at vernal pool number 6 is degraded dispersal habitat, but the area north of Route 1 is not. This is due to the amount of traffic and distance required for amphibians to travel over pavement from the south side of Route 1 to the vernal pool. In addition to the 4 vernal pools impacted by all three build alignments, N2f also impacts vernal pool number 5 (a permanent farm pond that supports amphibian breeding) and vernal pool number 6 (located on the north side of Route 1). N2a does not impact vernal pools 5 or 6. It does however impact vernal pool 8, though its dispersal area may already be disturbed by a recent subdivision development, and the dispersal area of significant vernal pool number 4 by crossing its 750-foot buffer radius. The impact to vernal pool 4 can likely be reduced or may be totally eliminated by adjusting the alignment of N2a in final design.
- 4.2.13. Number of Maine DEP-Defined Significant Vernal Pools Impacted – N8c, N2f and N2a all impact one significant vernal pool (number 2) by crossing its 250-foot radius wildlife habitat area. N2a also impacts significant vernal pool number 4 by crossing its 750-foot buffer radius, but the impact area can likely be reduced or possibly totally eliminated by adjusting the alignment of N2a in final design.
- 4.2.14. Bypass Area within 250 feet of Maine DEP-defined Significant Vernal Pool Wildlife Habitat – All three build alternatives impact 1.2 acres of wildlife habitats within 250 feet of DEP-defined significant vernal pool number 2. There are no impacts within 250 feet of any other DEP-defined significant vernal pool by any of the remaining alternatives.
- 4.2.15. Bypass Area within 750 feet of Vernal Pool Wildlife Habitat – The N2 segment common to all three remaining build alignments separates 27.5 acres of wildlife habitat from the vernal pool side of the bypass at vernal pools numbers 1, 2, 3 and 7. This is the total amount for N8c, as vernal pool number 6 is already disturbed on the north side of Route 1. N2f impacts an additional 4.5 acres (vernal pool 5, manmade and already disturbed), for a total of 32 acres. N2a impacts an additional 14.2 acres, for a total of 41.7 acres. 12.5 acres of the 14.2 acres at vernal pool number 8 are already disturbed by

- development. The remaining 1.7 acres is attributable to vernal pool 4 (Maine DEP-defined as Significant). The impact to vernal pool 4 can likely be reduced or may be totally eliminated by adjusting the alignment of N2a in final design.
- 4.2.16. Assessment of Impact to Vernal Pools within 750 Feet – All three build alternatives directly impact 5.8 acres forested habitat within 750 feet of vernal pool numbers 1, 2, 3 and 4. N8c also lies within the south side of Route 1 at vernal pool 6, but that area is not counted because the area on the south side of Route 1 is not optimal dispersal habitat due to the amount of traffic and distance required to travel over pavement. N2f impacts another 4.6 acres (10.4 acres total) at vernal pool numbers 5 and 6, both of which are manmade. Vernal pool number 6 is included because the N2a alignment is located on the north (vernal pool) side of Route 1. N2a impacts an additional 8.6 acres (14.4 acres total) at vernal pool numbers 4 and 8. Vernal pool number 4 is a significant vernal pool with direct impacts of 3.3 acres, though a new subdivision may have already impacted the dispersal area. N2a also directly impacts 5.4 acres of vernal pool 8 dispersal area. As a mitigative measure, MaineDOT will construct amphibian passage structures under the bypass and will install funneling fencing to guide amphibians towards the pools and away from the roadway through use of a 48” or larger diameter culvert at vernal pools 1, 2, 3, 4, 5 and 7. No passage will be provided at vernal pools 6 or 8.
- 4.2.17. Essential Habitat (Eagle Nests) – There are 2 eagle nests in the area, but the nests are located outside the study area.
- 4.2.18. Tidal Waterfowl and Wading Bird Habitat – It is currently estimated that N8c would include 6 piers in tidal waterfowl and wading bird habitat areas. Only one pier would be within these areas for N2f. N2a would not have any piers in tidal waterfowl and wading bird habitat areas. N8c impacts 0.1 acres and N2f impacts 0.3 acres. N2a does not impact tidal waterfowl and wading bird habitat.
- 4.2.19. Impacts to Floodplain – As described in the November 2008 *Phase II Alternatives Analysis*, floodplains within the study area are adjacent to the Sheepscot River and Polly Clark Stream. The 100-year flood elevation is 11 feet in the lower stretches of Polly Clark Stream and undetermined for the Sheepscot River. The build alternatives will be designed to comply with Executive Order 11988. N8c impacts 0.2 acres of floodplain area, while N2f impacts 1.9 acres and N2a impacts 0.6 acres. The impact areas are largely along streams and bridges could be extended if necessary to reduce or perhaps eliminate any impacts to floodplains.
- 4.2.20. Pier Impacts to Sheepscot River – The effect of piers on Sheepscot River bottom habitat for the N8c alignment is 0.4 acres, while N2f piers impact 0.3 acres and N2a piers impact less than 0.1 acres.
- 4.2.21. Impervious Area – N8c would add 29.1 acres of impervious area, N2f would add 31.2 acres and N2a would add 35.8 acres.
- 4.2.22. Change in Annual and 10-Year Stormwater Flows – This element has been added to better reflect the impacts of stormwater runoff and is a supplement to 4.2.21 Impervious Area. The impact of all three build alternatives is to increase both annual and ten-year stormwater flows by 15%. Refer to Appendix L for further details.
- 4.2.23. Forest Impacts – N8c impacts 10.6 acres of high quality forest, while N2f impacts 13.4 acres and N2a impacts 12.7 acres.
- 4.2.24. Grassland Impacts - N8c impacts 5.4 acres of high quality grasslands, while N2f impacts 4.5 acres and N2a impacts 7.0 acres.
- 4.2.25. Unfragmented Habitat Blocks – All three build alternatives impact one end but do not

bisect undeveloped habitat blocks B (3 acres), C (19 acres) and D (5 acres) for a total direct impact of 27 acres common to all three build alternatives. N8c also impacts a total of 25 acres at the southern end of the 292 acre Block E (24 direct direct and 1 acre indirect), 2 direct acres of the 880 acre Block I and 3 direct impact acres of the 101 acre Block J for a total of 56 acres of direct impact and 1 acre of indirect impacts. N2f impacts four additional blocks: 38 direct acres and 3 indirect acres of the 292 acre Block E, 15 direct acres of Block G (554 acres), 17 direct acres of Block I (880 acres) and 1 direct acre at Block J (191 acres), for a total impact of 98 acres direct and 3 acres indirect for N2f. N2a directly impacts an additional 40 acres and indirectly impacts 3 acres of Block E (292 acres), 52 acres direct and 21 acres indirect at G (554 acres), and 2 direct acres at Block I (880 acres), for a total of 121 acres directly impacted and 24 acres indirectly impacted.

- 4.2.26. Beginning with Habitat Lower Sheepscot River Focus Area of Statewide Ecological Significance – the only alignment impacting the Beginning with Habitat Lower Sheepscot River Focus Area is N2a – it runs through the extreme southwest tip of the Focus Area.

**Table 1 - Stream Crossings Summary**

Stream	N8c	N2f	N2a
Stream #2 Near Route 1 and Old Bath Road	<p>Description: High-gradient stream impacts. The stream could pass strong fish, as the crossing area consists of a rocky segment pool and riffle. The downstream area is impounded and the upstream end is slow with silt bottom.</p> <p>Impacts are common to all. Hydraulically, a 6' diameter by 99' culvert will be needed. This structure would not be conducive to wildlife passage. A wider bottomless structure such as an arch would maintain aquatic passage and a riparian crossing.</p>		
Stream #5 Polly Clark Stream at Willow Lane	<p>Description: This is a drainage swale in a field that drains a wetland and a field. In this area, there is no stream impact, as it does not become stream-like until further down gradient. This alignment will affect the headwaters, but erosion and sediment Best Management practices will reduce impacts to water quality down gradient.</p> <p>Impacts are common to all. It is not a stream in this area, as it is in the headwaters. There currently is a 42 inch culvert on the low volume road and it may not need any separate animal crossing due to the low volume of traffic on Willow Lane.</p>		
Stream #5 Polly Clark Stream at Morris Farm and Route 27 (Gardiner Road)	<p>Description: At this point, the stream is broader with faster flow in a forested canopy. Riparian habitat provides shading and cover to animals.</p> <p>Impacts are common to all and consist of a long channeled flow with increased velocities and scour at the outlet. Hydraulically, a 9.5' diameter by 175' culvert will be needed. It may encourage riparian passage but could also create sheet flow impassable to fish. It is possible that this structure could be modified to keep flow depths passable for fish. Future replacement of the Route 27 structure could accommodate animal passage.</p>		
Stream #7 Unmaned Stream near Deer Run	<p>Description: This stream's primary water source is a wetland swale and groundwater well area north of Route 218. The stream starts at Route 218. The swales downstream of Route 218 add base flow but the majority appears to come from north of Route 218. Signs of scour at the downstream side of Route 218 indicate that there is some flow that crosses under it. This stream has fish and other aquatic life.</p> <p>This impact does not directly occur by crossing a stream but rather by effects of the Route 27-Route 218 Connector to the upper watershed. N2f and N2a do not affect the headwater wetland as much as does N8c. About half of the wetland will be filled, altering the hydrology of the adjacent upland area. The wetland and stream are recharged from overland and adjacent ground-water discharge which will be altered by adjacent highway cuts and fills. Even though only 50 feet of stream will be directly affected, there is potential for the entire stream hydrology to be affected by N8c. The peak flow report indicates that all three build alternatives will increase peak flows by about 15%. This is due to the nature of the watershed.</p>		
	<p>N8c will fill and drain about half of the headwater wetland and will divert rainwater and overland flow away from the stream, affecting about 50 feet of the stream. Actual impacts will not be known until final design. No culvert is currently planned.</p>	<p>The headwater wetland will be filled slightly. This should not adversely affect the hydrology or overland flow into the wetland.</p>	<p>The headwater wetland will be filled slightly. This should not adversely affect the hydrology or overland flow into the wetland.</p>

Stream	N8c	N2f	N2a
Stream #8 Stream adjacent to West Alna Road	This stream lies in a developed area with two roads. The stream on the northerly side of Route 218 is narrow and in a deep incised channel. Fish have been observed near the crossing at West Alna Road and passage must be maintained.		
	Not affected by this alternative	Alignment crosses at a skew to the stream. The stream on the south side of Route 218 is 6 to 8 feet wide and less than one foot deep at low flow. Hydraulically, a 5.5' by 210' culvert is needed. Animal passage for N2f may not be optimal due to culvert length and another culvert type would be needed for passage of all organisms.	Alignment crosses perpendicular to the stream. Hydraulically, a 4.5' by 215' culvert is needed. N2a may encourage riparian passage but could also create sheet flow impassable to fish. It is possible that this structure could be modified to keep flow depths passable for fish.
Stream #9 Stream in Edgecomb-1,000 ft. north of Englebrekt road	Not affected by this alternative	Not affected by this alternative	Alignment crosses the stream about 300' downstream of where it becomes channelized and flows away from the impounded headwater wetland. At this point there is a braided channel, but the flow is maintained by the discharging wetland. Hydraulically a 4.5' dia. by 130' to 174' long culvert is needed. A larger diameter culvert will be considered, as monitoring in Gorham has shown that small mammals use a 4' diameter by 100' long culvert for passage.
Stream #10 east of Cross Road	Description: This stream connects two Scrub Shrub wetlands. The stream is low gradient and is an impounded area, more like a connector. This crossing is used by amphibians with a high turtle mortality rate. Aquatic passage in this area would benefit amphibians. There are minor impacts to stream characteristics from this crossing.		
	Not affected by this alternative	This alignment will extend the drainage structure south of Route 1. The structure should pass aquatic organisms.	This alignment will affect the waterway only slightly south of Route 1. The structure should pass aquatic organisms.

### 4.3. Impacts to the Human Environment

Criteria	No Build	N8c	N2f	N2a
Potential for Induced Development within 1,000' of Interchanges				
No. of Residences	0	15	35	35
No. of Businesses	0	19	10	22
Use of Section 4(f) Properties after Mitigation	0	3	3	3
Adverse Effect to Section 106 Properties				
Architectural	2	3+1 Conditional	3	3
Archeological-Historic	0	1	1+1 Possible	1
Archeological-Prehistoric	0	1	6	0
Other Considerations				
Neighborhoods				
Encroach	N.A.	Bayview Hts. Village Dist.	Bayview Hts. Village Dist. Englebrekt Rd.	Bayview Hts. Village Dist. Englebrekt Rd.
Bisect	N.A.	0	0	0
Community Preferences	N.A.	Historic Dist. Visual Impacts	Englebrekt Rd. Impacts	Least Concern
Impact to Growth Areas	N.A.	Davis Island	N.A.	N.A.
No. Residential Displacements	1	26	27	26
No. Commercial Displacements	2	14	14	13
Year 2030 Reduction in Downtown Village SADT (% / Traffic Diverted)	0	84% 27,600	71% 23,400	49% 16,000
Visual Impacts <sup>7</sup>				
Gateway-1 Distinctive or Noteworthy Views	N.A.	Major	Minor	Minimal
RxR at Main Street, Wiscasset	N.A.	65	5	0
End of Davey Bridge, Edgecomb	N.A.	132	7	2
East End of Cod Cove Bridge, Edgecomb	N.A.	26	6	0
RxR Drawbridge at Clark Point, Wiscasset	N.A.	55	93	70
Total Emissions				
NOx (Kg/Day)	93.8	TBD in FEIS	TBD in FEIS	TBD in FEIS
VOC (Kg/Day)	98.6	TBD in FEIS	TBD in FEIS	TBD in FEIS
TNM Modeled Noise Levels - Hourly Equivalent (dBA)				
No. of Properties at 66 dBA or Greater	9	1	1	3
No. of Prop. Exceeding Current Levels by 15 dBA +	0	2	5	2
7 Per FHWA Guidance. Viewshed impact is defined as the product of the horizontal and vertical angles of impacted views within an observer's field of vision.				

Following is an analysis of the impacts presented in the table on previous page:

- 4.3.1. Potential for Induced Development within 1,000 Feet of Interchanges – N8c would generate the development of an additional 15 residences and 19 businesses within 1,000 feet of interchanges, whereas N2f would generate an additional 35 residences and 10 businesses, and N2a would generate an additional 35 residences and 22 businesses.
- 4.3.2. Use of Section 4(f) Properties after Mitigation – All three build alternatives would impact 3 4(f) properties after mitigation. These 3 properties are the Wiscasset Historic District, the Sortwell Farm and 16 Bradford Road.
- 4.3.3. Adverse Effect to Section 106 Architectural Properties – The no-build and the three build alternatives impact the Wiscasset Historic District. The no-build would also impact the Nickels-Sortwell House, a National Landmark. The three build alternatives also impact the Sortwell Farm and 16 Bradford Road. N8c impacts the Wiscasset Jail and Museum on a conditional basis.
- 4.3.4. Adverse Effect to Section 106 Historic Archeological Properties – N8c impacts one historic archeological site in the vicinity of the Wiscasset Jail and Museum and one at Route 1 in Edgecomb. N2f impacts one site in the vicinity of Polly Clark Stream and one at Route 1 in Edgecomb. N2a impacts one site in the vicinity of Polly Clark Stream.
- 4.3.5. Adverse Effect to Section 106 Prehistoric Archeological Properties - N8c impacts one prehistoric archeological site in the vicinity of Goose Island-Davis Island. N2f impacts one site in the vicinity of Clark Point and another in the vicinity of the shoreline along Engelbrekt Road. N2a impacts the corners of two sites in the vicinity of the proposed bridge near the Edgecomb-Newcastle town line.
- 4.3.6. Encroach on Neighborhoods - All three build alternatives encroach upon Bayview Heights and the Wiscasset Historic District; N2a also encroaches upon the Englebrekt Road neighborhood in Edgecomb. The Ice Pond subdivision located at Clark Point is not considered an existing neighborhood as it is new and it contains no inhabited residences.
- 4.3.7. Bisect Neighborhoods – None of the alternatives bisect existing neighborhoods.
- 4.3.8. Community Preferences - From a community acceptability perspective, N2a presents the least concerns, as evidenced by the Midcoast Bypass Task Force’s consensus decision to not oppose that alternative. The Town of Wiscasset is opposed to N8c due to its impacts to the Historic Village and Jail, and also is opposed due to the large visual presence of the proposed bridge. The Town of Edgecomb is opposed to N2f due to its impacts to Englebrekt Road. The proposed alignment would cut access to the river front and would also cause visual impacts to the Engelbrekt Road residences.
- 4.3.9. Impact to Growth Areas - N8c terminates at Davis Island and therefore impacts Edgecomb’s designated growth area. The bypass will end as an at-grade tee intersection at this location, which could result in safety and traffic delay concerns at the intersection, particularly as Edgecomb develops that section of Route 1.
- 4.3.10. Number of Residential Displacements – The No-Build alternative would displace one residence due to the construction of a flyover at Route 27 in Edgecomb. For the Build alternatives, both N8c and N2a would result in 26 residential displacements, while N2f would result in 27 residential displacements. Though N2a crosses through the Clark’s Point subdivision, only the infrastructure has been built and no residential dwellings exist, so no residential displacements would occur.
- 4.3.11. Number of Commercial Displacements – The No-Build alternative would result in the displacement of 2 commercial establishments due to the construction of a flyover at Route 27 in Edgecomb. For the Build alternatives, N2a would result in 13 commercial displacements, while both N8c and N2f would result in 14 commercial displacements.

- 4.3.12. Year 2030 Reduction in Seasonally Adjusted Daily Traffic - N8c yields the highest reduction in year 2030 downtown seasonally adjusted daily traffic, but it should be noted that all three remaining alignments eliminate traffic delays in downtown Wiscasset, and that reducing the traffic to projected N8c levels was a point of concern with downtown businesses. N2a provides a good balance of improving Level of Service and supporting the downtown economy.
- 4.3.13. Visual Impacts per Gateway 1 Distinctive or Noteworthy Views – N8c provides the greatest disruptive visual impact from public vantage points in what has been rated by the Gateway 1 Study as a Visually Distinctive and Noteworthy viewshed. N2f has minor impacts to public viewsheds and N2a has minimal impacts to the public viewsheds.
- 4.3.14. Visual Impacts from the Railroad Tracks at Main Street in Wiscasset – N8c yields the largest viewshed impact (65). N2f and N2a viewshed impacts are 5 and 0, respectively.
- 4.3.15. Visual Impacts from the End of Davey Bridge in Edgecomb – N8c yields a viewshed impact of 132, whereas N2f and N2a provide viewshed angle products of 7 and 2, respectively.
- 4.3.16. Visual Impacts from Cod Cove Bridge in Edgecomb – the viewshed angle products are 26 for N8c, 6 for N2f and 0 for N2a.
- 4.3.17. Visual Impacts from the Railroad Drawbridge at Clark Point in Wiscasset – the viewshed angle product is 55 for N8c, 93 for N2f and 70 for N2a.
- 4.3.18. Number of Properties at 66 dBA or Greater – The no-build alternative would raise noise levels to 66 dBA at nine properties. N8c and N2f would impact one property and N2a would impact three properties.
- 4.3.19. Number of Properties Exceeding Current Noise Levels by 15 dBA or More – the no-build alternative would not increase noise levels by 15 dBA at any properties. N8c and N2a would impact two properties, while N2f would impact five properties.

4.4. Summary Comparison of Alternatives – Part 3 (Transportation and Cost Considerations)

<b>Criteria</b>	<b>No Build</b>	<b>N8c</b>	<b>N2f</b>	<b>N2a</b>
<b>Traffic Safety &amp; Mobility</b>				
Change in Annual Crashes, 2030	0	-9	-15	-8
Change in VMT, 2030	0	9,700,000	8,500,000	9,300,000
Change in VHT, 2030	0	-1,130,000	-1,090,000	-1,030,000
Estimated Capital Cost, \$M (2006) <sup>8</sup>	\$1.1	\$82.25	\$78.95	\$81.75 <sup>8</sup>
Life Cycle Cost, \$M (100 Years)	N.A.	\$136.01	\$123.88	\$122.02
Benefit-to-Cost Ratio (Life Cycle)	N.A.	2.46	2.43	2.27
<b>Mitigation Costs (Included in Estimated Capital Cost, Life Cycle Cost &amp; Benefit-to-Cost Above)</b>				
Wetland, \$M	N.A.	\$1.35	\$1.45	\$2.05
Wildlife, \$M	N.A.	\$1.40	\$1.80	\$1.70
Historic, \$M	\$0.02	\$0.10	\$0.23	\$0.06
<b>Constructability</b>				
Cofferdam Pier Construct Time (Weeks)	N.A.	32	20-30	6
<b>Earthwork (Cubic Yards)</b>				
Cut (Cubic Yards)	0	920,000	1,150,000	965,000
Fill (Cubic Yards)	0	275,000	420,000	400,000
Excess Earthwork (Cubic yards)	0	645,000	730,000	565,000
Operations	Mobility Decline	Improved Mobility	Improved Mobility	Improved Mobility

<sup>8</sup> Costs updated from DEIS to include new Clark's Point right-of-way and historic preservation costs.

Following is an analysis of the impacts presented in the table on the preceding page:

- 4.4.1. Change in Annual Crashes in 2030 - N2f would yield the greatest reduction in crashes (15), followed by N8c (9) and N2a (8).
- 4.4.2. Change in Vehicle Miles Traveled in 2030 - N2f yields the lowest increase in vehicle miles traveled. All three alternatives provide similar increases in vehicle miles traveled, but N8c generates a greater increase in VMT than do the other two build alternatives because it diverts a greater amount of traffic (9.7 million vehicle hour increase for N8c, versus 8.5 million for N2f and 9.3 million for N2a). See Appendix D-4 for further details.
- 4.4.3. Change in Vehicle Hours Traveled in 2030 - All three alternatives provide similar reductions in vehicle hours of travel (reductions of 1.13 million vehicle hours for N8c, 1.09 million for N2f and 1.03 million for N2a). See Appendix D-4 for further details.
- 4.4.4. Estimated Capital Cost – all three build alternatives are considered essentially equal, though N8c is the highest at \$82.25 M, followed by N2a at \$81.75 M and N2f at \$78.95 M.
- 4.4.5. Life Cycle Cost - N2a provides the lowest (best) 100-year life cycle cost due to its shortest bridge length at \$122 M, versus \$124 M for N2f and \$136 M for N8c. The life cycle costs for N2a are about 11.5% lower than for N8c.
- 4.4.6. Benefit-to-Cost Ratio – N8c provides a slightly higher benefit to cost ratio of 2.46 versus 2.43 for N2f and 2.27 for N2a. The benefits include savings in personal and commercial travel time costs.
- 4.4.7. Wetland Mitigation Costs – the highest cost for wetland mitigation is for alternative N2a at \$2.05 M, followed by N2f (\$1.45 M) and N8c (\$1.35 M). These costs are considered to be essentially equal.
- 4.4.8. Wildlife Mitigation Costs – Wildlife mitigation costs are highest for N2f (\$1.8 M), followed by N2a (\$1.7 M). N8c has the lowest wildlife mitigation cost at \$1.4 M, but as with wetland mitigation costs, these costs are considered to be essentially equal.
- 4.4.9. Historic Mitigation Costs – N2f has the highest historic mitigation costs at \$0.23 M, followed by N8c (\$0.1 M) and N2a (\$0.06 M). These costs also are considered to be nearly equal.
- 4.4.10. Cofferdam Pier Construction Time - N2a yields the shortest bridge construction period, thus providing the least construction impact to the river and essential fisheries. N2a cofferdams could be built within 6 months, versus 20 to 30 months for N2f and 32 months for N8c.
- 4.4.11. Earthwork - While all three remaining build alternatives generate large amounts of earthwork, N2a generates the least amount of excess earthwork (565,000 cy). N8c yields an excess of 645,000 cy and N2f generates an extra 730,000 cy.
- 4.4.12. Operations – all three build alternatives will yield significantly improved operations and an end to the long summer delays currently being experienced. These delays are expected to grow into the future if a bypass is not constructed, due to continued development in the midcoast area and especially along Route 1.

## 5. Responses to March 9, 2009 US Army Corps of Engineers Letter of Comments

The ACOE submitted a letter of comments to the December, 2008 Phase II Application on March 09, 2009 – see Appendix J. for the letter. Essentially, the letter noted that though MaineDOT, FHWA and the Midcoast Bypass Task Force stated their preference for the N2a alignment because it provided the best overall ranking, N2a yields greater impacts to the aquatic and natural environment than does N8c. The letter goes on to say that these two criteria carry the greatest weight in selection of the LEDPA, followed by impacts on the human environment. Though not stated in that letter, the ACOE letter of comments regarding the *DEIS* noted that a permit cannot be issued if public interest is not met, so that must be considered as well. The Midcoast Bypass Task Force has stated that its preference is N2a. Following are responses to the specific points noted in the ACOE letter:

- 5.1. ACOE Comment a. – All three build alternatives provide the same level of improvement to public safety, enhancement of mobility and net improvements to the environment of Wiscasset.

**Response:** The N2a alignment provides the greatest level of safety and mobility. This is because the N8c alignment utilizes at-grade intersections at Davis Island and provides only partial grade separation at the Cross Road intersection in Edgecomb. At-grade intersections are inherently less safe than the grade-separated intersections provided by the N2a and N2f alignments. The grade separations provided by the N2a alignment at Route 27 and at Cross Road in Edgecomb yield significant safety and mobility advantages over N8c. Also, the N8c bridge will yield significant visual and noise impacts to the Wiscasset Historic Village area.

- 5.2. ACOE Comment b. – All three alternatives provide essentially the same level of impact to marine waters.

**Response:** The N8c alignment involves a significantly longer span over the Sheepscot River and also infringes upon aquatic bird habitat. The N2a alignment bridge is short and has no impact on aquatic bird habitat. The worst-case construction period for the N2f span is 20 to 30 weeks and the N8c span is over five times longer than that of the N2a alignment (32 weeks vs. 6 weeks). Though precautions will be taken to reduce them, impacts to aquatic life both during construction and after will be greater for N8c due to the number of piers to be constructed and long-term shading effects.

- 5.3. ACOE Comment c. – N8c is substantially less directly and indirectly damaging to freshwater wetlands and streams. Correcting several shading inaccuracies in your most recent matrix, N8c is also substantially less directly and indirectly damaging to vernal pools and their critical habitat.

**Response:** Impacts to fresh water wetlands are minimal for all three build alternatives, ranging from 2.0 to 4.2 acres. These are small numbers, given the length of the bypass alternatives being considered. There remain opportunities during detailed design to further reduce impacts to freshwater wetlands.

- 5.4. ACOE Comment d. – Shifting to the natural environment, N8c is essentially comparable to the preferred alternative in impact to tidal waterfowl and wading bird habitat and flood plains, and

substantially less directly and indirectly damaging to upland habitats (forest, grasslands, unfragmented blocks, and Beginning with Habitat mapped resources)

**Response:** N8c directly impacts 0.1 acres of tidal waterfowl and wading bird habitat, while N2a has no impact. N2a impacts more floodplain area than does N8c, however (0.6 vs. 0.2 acres). N2a impacts 12.7 acres of high-value forestland vs. 10.6 acres for N8c. These differences in impacted areas are quite small. N2a impacts 7 unfragmented blocks, while N8c impacts 5. Only the extreme southern tip of the Beginning with Habitat mapped resource is impacted by N2a.

- 5.5. ACOE Comment e. – N8c results in at least half as many residential takings and is second best in terms of business takings.

**Response:** Both of these statements are incorrect. Both N8c and N2a result in 26 residential takings, whereas N2f results in 27 takings. N8c result and N2f both result in 14 commercial takings, while N2a results in 13 commercial takings.

- 5.6. ACOE Comment f. – All of the build alternatives appear to have essentially comparable impacts to 4(f) and Section 106 properties.

**Response:** Both N8c and N2a impact 3 Section 4(f) properties, and both impact 3 Section 106 architectural properties, but N8c also conditionally impacts the Wiscasset Jail and Museum. With respect to Section 106 historic archeological impacts, both N8c and N2a impact one property. However, for Section 106 prehistoric archeological properties, N8c impacts one property and N2a does not impact any.

- 5.7. ACOE Comment g. – In all but the “community preference” line item, N8c appears to have similar or slightly better neighborhood impacts to DOT’s preferred alternative. More important, N8c is almost twice as effective as the preferred alternative at reducing downtown traffic levels through diversion out to design year 2030.

**Response:** N8c impacts both the northwest and northeast corners of the Wiscasset Historic Village District, while N2a impacts only the northwest corner. N2a impacts the Englebrect Road neighborhood, however, while N8c does not. There has been much confusion about traffic diversion – it is not a measure of the ability for any alignment to provide better congestion relief. All of the remaining build alternatives effectively eliminate congestion for many years to come. Under the travel growth design assumptions, congestion could be expected to return to year 1980 levels by year 2100 for N8c, by year 2065 for N2f and by year 2040 for N2a.

- 5.8. ACOE Comment h. – N8c has greater visual impact from the selected viewpoints compared to the other build alternatives. There are no standards for visual impact in our standards; visual impact is a subjective determination and one view preference is not necessarily universally held.

**Response:** MaineDOT developed an approach to quantitatively assess visual impacts. Under this approach, the visual impact analysis was based on four publicly accessible locations with representative views of the Sheepscot River:

- Viewpoint 1 - Route 1, intersection of Main Street and railroad crossing, Wiscasset
- Viewpoint 2 - Route 1, east end of Davey Bridge, Edgecomb

- Viewpoint 3 - Route 1, east end of Cod Cove Bridge, Edgecomb
- Viewpoint 4 - Railroad drawbridge, Clark Point, Wiscasset

To gauge the degree of visual impact, the MaineDOT used plan and profile drawings of the preliminary design concept plans, maps, and photographs to determine the average height and distance of the bridges for each alternative. The MaineDOT measured horizontal and vertical angles in degrees to calculate the field of view each bridge would occupy, and then subtracted the bridge infrastructure obscured by topography and vegetation. By multiplying the remaining horizontal and vertical angles, the MaineDOT created a viewshed index to represent the amount of bridge obscuring an observer's field of view. A higher viewshed index number corresponds to greater visual impact. An index value of 1.0 would be equivalent to the visual impact of one's thumbnail when held at arm's length.

It should also be noted that the Town of Wiscasset by an overwhelming vote became opposed to the N8c alignment after having seen renderings of the proposed bridge.

## 6. Conclusions and Recommendations

There is no single or combination of minor improvements coupled with transportation systems management (TSM) and/or travel demand management (TDM) under the no-build alternative that would completely alleviate traffic congestion in the future. The combination of a narrow, two-lane rural road with posted speeds of 45 to 50 miles per hour, high traffic volumes entering a low-speed (25 MPH) historic village with numerous pedestrian and vehicle conflicts, a railroad grade crossing, a steep hill and sharp curves will not be conducive to congestion relief given the current and future projected traffic volumes.

Based on nearly ten years' worth of data collection and analysis, MaineDOT, FHWA and the Midcoast Bypass Task Force have recommended that the ACOE identify build alternative N2a as the Least Environmentally Damaging Practicable Alternative (LEDPA). Given the relatively small differences in impacts to the natural environment, and also given that N2a results in less negative impact to the human environment, MaineDOT, FHWA and the Midcoast Bypass Task Force again recommend that N2a should be selected as the LEDPA. In support of this recommendation, it should be noted that N2a offers a superior solution over the N8c alternative to the existing Route 1-Route 1 Bypass-Route 27 intersection in Edgecomb, essentially eliminating Route 1 left turn conflicts. N8c results in an at-grade tee intersection at the existing Route 1-Route 1 Bypass intersection on Davis Island (a designated growth area by the Town of Edgecomb) and at the Route 27 intersection in Edgecomb, and provides only a limited grade-separated intersection at the Cross Road intersection in Edgecomb.

Once the Least Environmentally Damaging Preferred Alternative (LEDPA) is determined by ACOE, the MaineDOT and FHWA will be able to complete the FEIS and prepare the Record of Decision (ROD). Once the ROD is issued, MaineDOT will be able to take the necessary steps to protect the bypass corridor and to eventually construct the bypass once funding becomes available.

Many residents and businesses located along the remaining build alignments anxiously await the LEDPA decision so they can finally plan their future. A final decision is therefore needed as soon as possible in order to allow these people to make their decisions accordingly.