Chapter 2
Alternatives Analysis

Chapter 2 presents the alternatives analysis. It introduces the range of reasonable alternatives developed to meet the study purpose and needs and the USACE's basic project purpose. It identifies those alternatives retained or dismissed from more detailed study and the reasons for their retention or dismissal.

Details of the alternatives identification, development, analysis, and screening process are available in the MaineDOT's *Transportation Improvement Strategies and Alternatives Analysis Technical Memorandum and U.S. Army Corps of Engineers Highway Methodology Phase I Submission, October 2003*. This publication is available on study website on the "Resources" page (www.i395-rt9-study.com).

From 2001 to 2011, the MaineDOT and the FHWA conceptually designed and analyzed the No-Build Alternative and more than 70 build alternatives that could potentially satisfy the study purpose and needs and the USACE basic project purpose (exhibit 2.1). In conceptually designing and analyzing alternatives, the MaineDOT and the FHWA consulted with regulatory and resource agencies at the state and federal level, local officials, special-interest groups, and the public. At the end of the process of identifying, developing, analyzing, and screening alternatives, four alternatives, including the No-Build Alternative, were retained for further consideration and detailed study.

2.1 Maine Sensible Transportation Policy Act Analysis

The STPA applies to significant highway projects in Maine, which are defined as projects that increase capacity by constructing one or more through-travel lanes, a highway at a new location, and a bridge at a new location. The STPA recognizes that there are

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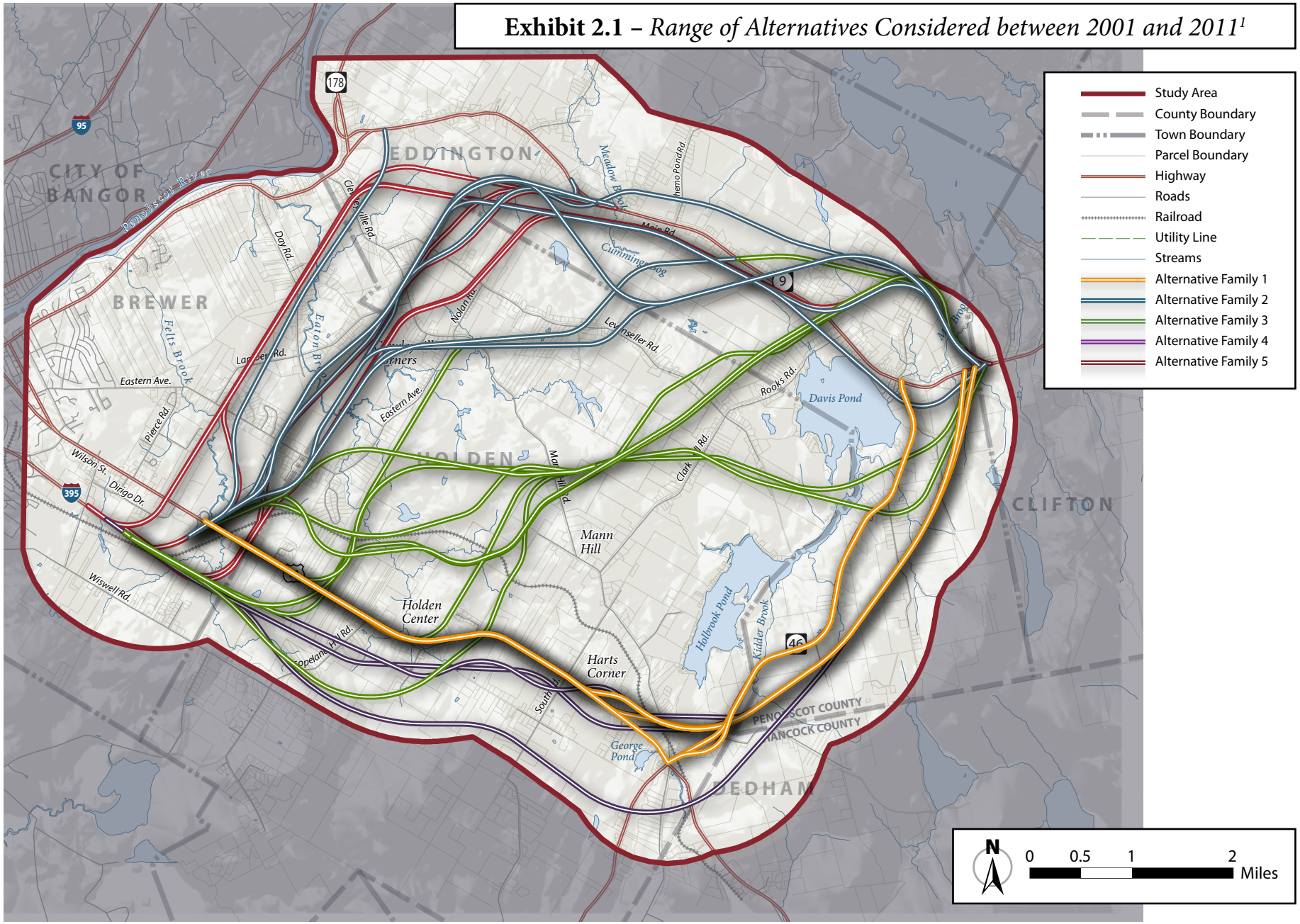
Exhibit 2.1 – *Range of Alternatives Considered between 2001 and 2011*[1]



[1] **Note:** *Alternative alignments shown here have been grouped into families. For a detailed discussion of each family, please refer to Appendix C*

benefits and costs (i.e., financial, energy, and environmental) associated with transportation improvements and provides policies and management strategies for the analysis of those issues. This rule requires the MaineDOT to consider available and future modes of transportation and to minimize the effects of transportation on public health, air quality, water quality, land use, and other natural resources.

Modes other than highway improvements were considered but dismissed, given the study's purpose and needs. To improve the quality and quantity of traffic flow, improvements to the existing highways through Transportation Systems Management (TSM) and Travel Demand Management (TDM) were considered.

2.1.1 Transportation Systems Management

TSM consists of low-impact highway and intersection geometric improvements, as well as operational strategies, that improve traffic flow through an area. Whether implemented separately or in combination with TDM strategies, TSM improvements may reduce or delay the need for improvements and upgrades that would be necessary if no action were taken.

The TSM alternative consisted of increasing the size and capacity of the Route 9/46 intersection (exhibit 2.2). This intersection was conceptually designed to have additional through-travel and turn lanes. The improvements to this intersection could be accomplished within the existing rights-of-way of Route 9 and Route 46 with no impact to the natural and social features adjacent to the intersection. The MaineDOT is committed to improving the intersection of Route 9 and Route 46; given the future need and the limited scope of the improvements to the intersection, the improvements will be added to future work plans for MaineDOT.

Exhibit 2.2 – *Route 9 and 46 Intersection Traffic*

Intersection Route 9 & Route 46	1998 PM DHV No Build			2010 PM DHV No Build			2035 PM DHV No Build		
	Volume	Movement Delay Per Vehicle Delay (sec.)	Movement Level of Service (LOS)	Volume	Movement Delay Per Vehicle Delay (sec.)	Movement Level of Service (LOS)	Volume	Movement Delay Per Vehicle Delay (sec.)	Movement Level of Service (LOS)
Rte 9 EB Thru	199	5.5	A	241	6.3	A	266	7.7	A
Rte 9 EB Right	22	4.5	A	23	5.7	A	56	7.0	A
Rte 9 WB Left	63	8.8	A	107	10.0	B	385	17.5	C
Rte 9 WB Thru	167	5.6	A	221	7.7	A	210	16.4	C
Rte 46 NB Left	25	9.1	A	23	12.2	B	59	126.3	F
Rte 46 NB Right	76	5.6	A	112	6.5	A	406	118.7	F

The TSM alternative was dismissed from further consideration because it would not satisfy the study's purpose and would not meet the system-linkage and traffic-congestion needs because it would not improve the traffic congestion and quality of traffic flow on

Route 1A. It is not practicable as it does not meet the overall project purpose. To improve the traffic congestion and quality of traffic flow on Route 1A to generally acceptable levels, physical improvements beyond the scope of TSM would be required.

2.1.2 Travel Demand Management

TDM consists of strategies to reduce demand for travel during periods of peak traffic flow through an area. TDM strategies normally attempt to accomplish one of two goals:

- remove vehicle trips from the highway network or
- shift trips from periods of high traffic demand to periods of low traffic demand

TDM strategies for removing vehicle trips from highways include ride-sharing programs and improvements to transit networks. Strategies to shift traffic from periods of high demand to periods of low demand include programs such as encouraging employers to offer their employees flexible work hours.

The TDM alternative consisted of briefly considering the major employers in the region and further opportunities to institute and expand ride-sharing programs. The TDM alternative was focused on the Route 1A corridor. The TDM alternative did not consider the Route 9 corridor in detail because it does not have a concentration of major employers or a high concentration of commuter traffic during peak periods.

TDM strategies work best in areas with a high concentration of commuter traffic during defined peak periods. Most traffic congestion in the study area is caused by increased heavy truck and automobile traffic—often with an origin or destination outside the study area and region—and a lack of system linkage.

The TDM alternative was dismissed from further consideration because TDM strategies are unavailable and they would not satisfy the study's purpose and would not meet the system-linkage and traffic-congestion needs because it would not improve the traffic congestion and quality of traffic flow on Route 1A. It is not practicable in that it does not meet the overall project purpose. To improve the traffic congestion and quality of traffic flow on Route 1A to generally acceptable levels, physical improvements beyond the scope of TDM would be required.

2.2 Alternatives Identification, Development, and Analysis Process

Alternatives were identified, developed, and analyzed in accordance with requirements of the NEPA and Section 404 of the CWA. The NEPA requires the MaineDOT and the FHWA to consider the impacts

of an action on the environment and to disclose those impacts in a public decision-making process.

Alternatives generally should be discussed at a comparable level of detail. Although the No-Build Alternative (generally consisting of maintenance and short-term minor improvements) might not seem reasonable for satisfying the study purpose and needs, it must always be included in the analysis with its consequences fully developed. The No-Build Alternative serves two purposes: (1) it may be a reasonable alternative, especially for situations in which the impacts are great and the need is relatively minor; and (2) it is a baseline against which other alternatives can be compared.

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Section 404 requires a permit from the USACE before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from regulation (e.g., certain farming and forestry activities).

Under Section 404, no discharge of dredged or fill material into waters of the United States may be permitted if (1) a practicable alternative exists that is less damaging to the aquatic environment, or (2) the nation's waters would be significantly degraded. To be granted a permit, the project must show that it has, to the extent practicable:

Practicable may be defined as "available and capable of being done after considering cost, existing technology, and logistics in light of the overall project purpose."

The regulations implementing the NEPA (40 CFR 1502.14) require that the lead agencies:

a. Rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives that were eliminated from detailed study, briefly discuss the reasons for their elimination.
b. Devote substantial treatment to each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits.
c. Include reasonable alternatives not within the jurisdiction of the lead agency
d. Include the alternative of no action.
e. Identify the agency's preferred alternative or alternatives, if one or more exists, in the DEIS and identify such alternative in the FEIS, unless another law prohibits the expression of such a preference.
f. Include appropriate mitigation measures not already included in the proposed action or alternatives.

Wetlands subject to Section 404 can be defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

- taken steps to avoid waters and wetlands impacts
- minimized potential impacts on waters and wetlands
- provided compensation for remaining unavoidable impacts

2.2.1 Initial Screening

The first step in the alternatives development process was to establish the study purpose and needs (i.e., the transportation problems warranting identification of reasonable alternatives). Concurrently, the MaineDOT and the FHWA compiled an inventory of the natural, socioeconomic, and cultural resources of the study area (MaineDOT, 2003). Using this information, the MaineDOT and the FHWA, with assistance from the PAC and the public, identified a wide range of potential 1,000-foot-wide corridors for alternatives that appeared to satisfy the purpose and needs of the study and were practicable, while avoiding and minimizing impacts to people and resources. The logical termini of the build alternatives were identified and defined to consist of (1) I-395 near Route 1A and (2) the portion of Route 9 in the study area.

In May 2001, the MaineDOT and the FHWA, with public and PAC assistance, identified potential corridors for alternatives using low-level, high-resolution aerial photography and mapping of the land use, social features, and natural resources of the study area. The MaineDOT and the FHWA compiled and refined the suggested corridors into 45 alternatives. These initial 45 alternatives fit into the following four broad "families":

- **Family 1: The Upgrade Alternatives.** Widening and other improvements to Route 1A (from I-395 to Route 46) and Route 46 (from Route 1A to Route 9) approximately 10 miles long. Although one upgrade alternative was initially considered, six upgrade and five partial-upgrade alternatives ultimately were considered.
- **Family 2: The Northern Alternatives.** Alternatives that began at the I-395/Route 1A interchange and generally proceeded in a northerly direction to connect with Route 9. These alternatives were five to 10 miles in length, depending on the distance on Route 9 used as part of the alternative. Twelve alternatives in this family were ultimately studied.
- **Family 3: The Central Alternatives.** Alternatives that began at or near the I-395/Route 1A interchange and generally proceeded north and east through the study area to Route 9 east of Route 46. These alternatives were seven to 11 miles in length, depending on the distance on Route 9 used as part of the alternative. Due to natural resources and an attempt to minimize

the impact to them, these "central" alternatives merged in a common area in the center of the study area north of Mann Hill Road. The MaineDOT created a "match line" at that point, with the central alternatives branching to the east and west of it, creating components 3A through 3K; the components were then combined to form alternatives. The six components on the western side of the match line (i.e., 3A though 3F) matched the four components on the east side (i.e., 3G through 3J), which in turn connected to Route 9. One component, 3K, extended the central alternatives bypassing East Eddington to the north and connected to Route 9 east of Route 46. Using all possible combinations of the six western components, the four eastern components, and component 3K, 36 possible central alternatives were initially created. Five other alternatives (for a total of 41) in this family were ultimately developed by modifying some of the initial 36 alternatives.

- **Family 4: The Southern Alternatives.** Alternatives that began near the I-395/Route 1A interchange and that were south of Route 1A and east of Route 46. These alternatives paralleled Routes 1A and 46 and intersected Route 9 in East Eddington. These alternatives were approximately 11 miles in length. Four alternatives

The preliminary alternatives analysis and screening was performed in accordance with the USACE—New England Division's "*The Highway Methodology Workbook*" to identify and document potential impacts generated by construction of those alternatives (USACE, 1995). Potential impacts were based on the limits of cut and fill necessary to construct, operate, and maintain a four-lane highway with two travel lanes in each direction and a divided median within an approximate 250-foot-wide right-of-way. The preliminary alternatives analysis quantified impacts to the following:

- Wetlands
- Hydric soils (for the purposes of this analysis, hydric soils were assumed to be wetlands)
- Surface waters and water crossings with the potential to support anadromous fish (i.e., saltwater fish that return to freshwater streams and rivers to spawn)
- Wildlife habitat
- Notable wildlife habitat (i.e., threatened and endangered species habitat, deer-wintering areas, Maine Natural Areas Program Data, inland waterfowl and wading bird habitat)
- Surface impacts over significant groundwater aquifers
- Surface impacts over high-yield aquifers
- Floodplains
- Community wells
- Active farmland, prime farmland soils, and soils of statewide importance
- Areas of potential hazardous waste
- Commercial and residential areas
- Other land (e.g., transportation, recreation, education)
- Residential and commercial displacements
- Residences within 500 and 1,000 feet
- Archeological areas
- Historic resources listed on or potentially eligible for listing on the National Register of Historic Places

The engineering feasibility of each alternative was considered as part of the preliminary alternatives analysis. In addition to the ability to satisfy the design criteria, the following were quantified for each alternative:

- Length
- Bridges (the number and total length of bridges)
- Amount of cut, fill, and total earthwork required (in millions of cubic yards)
- Deepest cut (in feet)
- Deepest fill (in feet)
- Number of roadway and railway crossings
- Average grade (in percent)
- Average curvature (in degrees)

were identified and considered: 4A, 4B, 4C, and 4D.

The MaineDOT conceptually designed and refined alternatives within the 1,000-foot-wide corridors.

To reduce the number of alternatives identified and conceptually designed to a reasonable range, the MaineDOT and the FHWA sought to identify one alternative from each family to be studied in detail. The decision of whether to dismiss or retain alternatives for further analysis was based on their ability to satisfy the study purpose and needs, results of the preliminary impacts analysis, and consideration of overall engineering feasibility. If more than one alternative in each family fully satisfied the study purpose and needs and was practicable, the alternative was selected based on potential impacts to the features and resources. Alternatives that were more environmentally damaging than others were dismissed from further consideration and alternatives that were the least environmentally damaging were retained for further consideration.

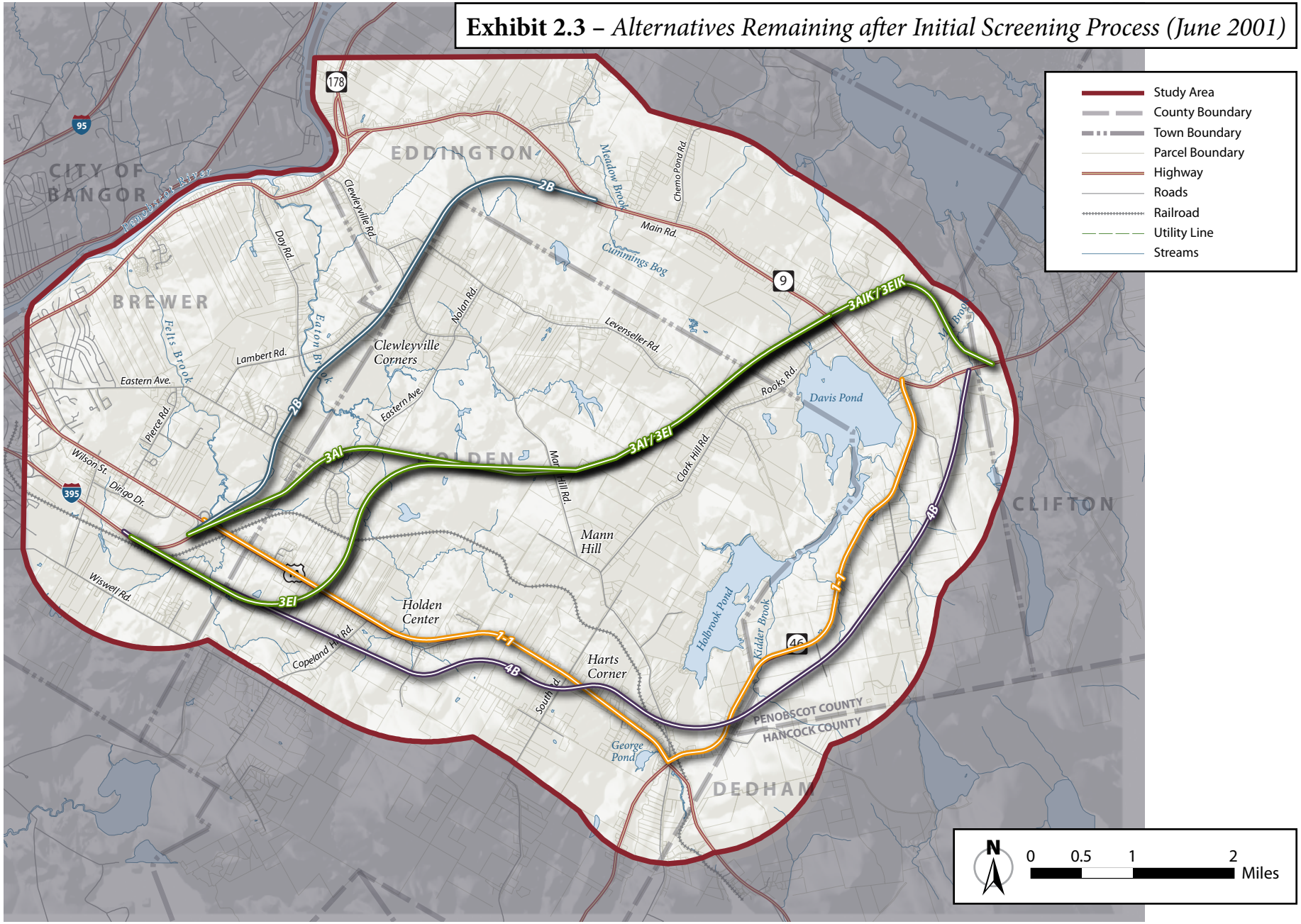
In June 2001, the MaineDOT and the FHWA, using results of the preliminary impacts analysis, dismissed from further consideration 37 of the initial 45 alternatives. The MaineDOT and the FHWA retained the alternative from each family that was the least environmentally damaging to features and resources. In Family 3, the Central Alternatives, no single alternative clearly emerged as having the least impacts; therefore, the MaineDOT and the FHWA chose four that were least environmentally damaging relative to the other Central Alternatives.

The MaineDOT and the FHWA presented the results of the initial alternatives development and screening to attendees at their interagency coordination meetings on eight occasions (chapter 4.2).

The following eight alternatives were retained after the initial screening (the alternatives in Family 5 had not been identified at this time) (exhibit 2.3):

- No-Build Alternative
- Alternative 1-1
- Alternative 2B
- Alternative 3AI
- Alternative 3AIK
- Alternative 3EI
- Alternative 3EIK
- Alternative 4B

Exhibit 2.3 – *Alternatives Remaining after Initial Screening Process (June 2001)*



2.2.2 Continued Development and Screening

Following the initial screening from June 2001 through September 2003, members of the PAC, the City of Brewer, the towns of Holden and Eddington, and the public suggested potential additional alternatives and modifications of other alternatives. The MaineDOT and the FHWA, with input from the cooperating agencies, continued to develop and screen the suggested alternatives along with the eight alternatives retained for further consideration. They presented screening results to the PAC and the public at 13 PAC meetings, one public meeting, and meetings with representatives of the city of Brewer and the towns of Holden and Eddington (chapter 4.3.1).

Family 4 was dismissed from further consideration because other alternatives were less environmentally damaging (e.g., extensive earthwork, impacts to wetlands, and substantial impacts to Camp Roosevelt Boy Scout Reservation).

In June 2004, alternatives were identified and developed parallel to the utility easements with the Bangor Hydro-Electric Company transmission lines. This family of alternatives, which start with the number 5, began at or near the I-395/Route 1A interchange and largely paralleled the electric transmission lines in the City of Brewer and the towns of Holden and Eddington. This family of alternatives consisted of four alternatives approximately 11 miles long. These alternatives were believed to have fewer impacts to wetlands than Family 3 alternatives because the land use had already been disturbed through the construction of power lines.

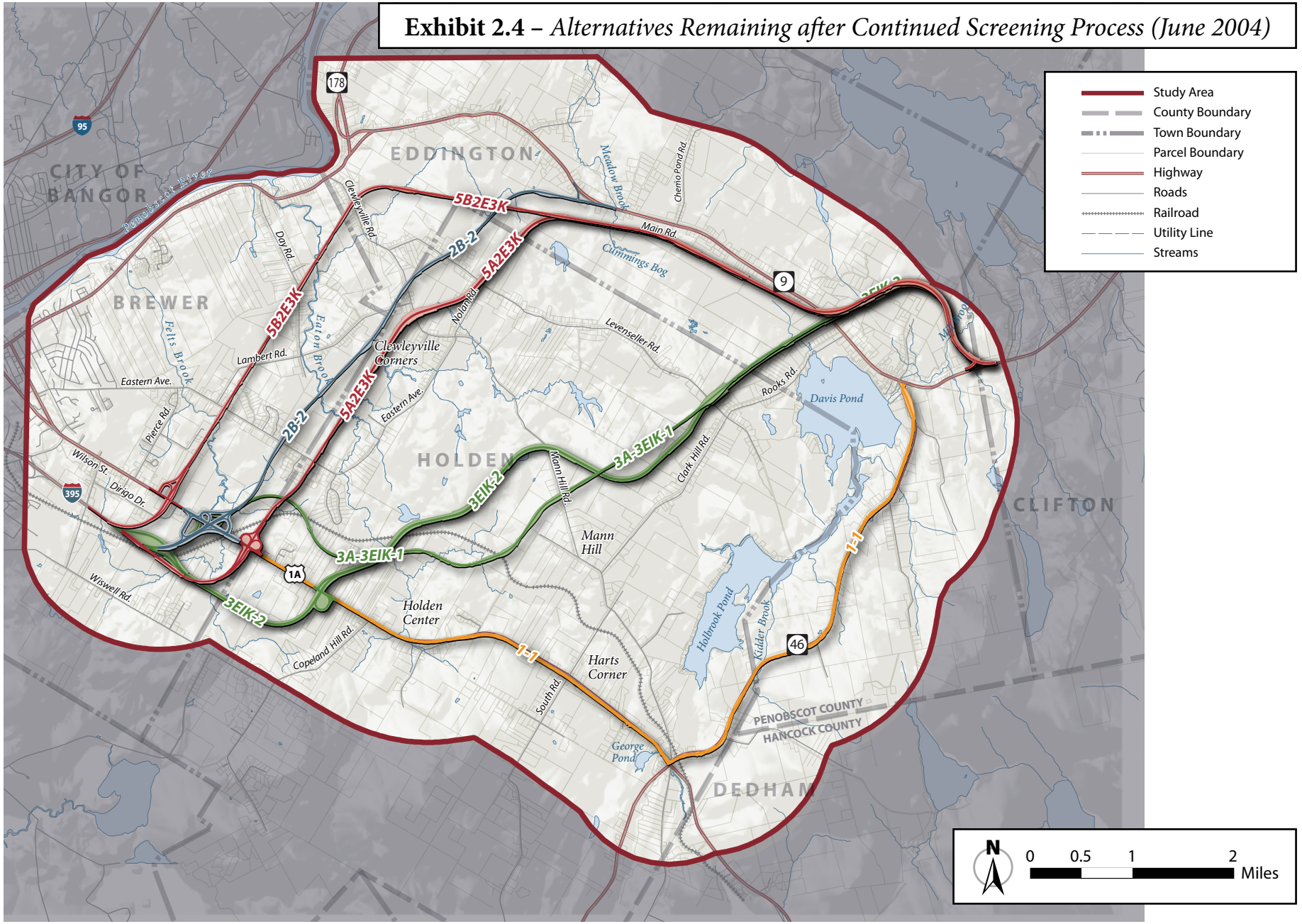
The process of identifying, developing, and screening alternatives or modifying alternatives continued. In January 2008, the following seven alternatives were preliminarily identified for further consideration and development and detailed study (exhibit 2.4):

- No-Build Alternative
- Alternative 1-1
- Alternative 2B-2
- Alternative 3A-3EIK-1
- Alternative 3EIK-2
- Alternative 5A2E3K
- Alternative 5B2E3K

In 2008, the MaineDOT and the FHWA updated the inventory of natural, socioeconomic, and cultural resources in the study area (MaineDOT, 2008d); revised the conceptual designs of the build alternatives; and performed additional scoping with the public and with federal and state regulatory and resource agencies (Chapter 4).

In a continuing effort to avoid and minimize adverse impacts, the conceptual design of the build alternatives

Exhibit 2.4 – *Alternatives Remaining after Continued Screening Process (June 2004)*



retained at the conclusion of the preliminary development and screening process was reconsidered in light of the updated inventory of natural, socioeconomic, and cultural resources in the study area. Refinements to the locations and conceptual design of the build alternatives were made using information from the updated inventory of features.

Additional scoping with the public and with federal and state regulatory and resource agencies was performed in June 2008. Six "connectors" (i.e., a highway connecting to another highway) were identified, developed, and analyzed between the three westernmost build alternatives retained at the end of the preliminary development and screening process.

2.2.2.1 Analysis of Connectors

In a continued effort to avoid and minimize adverse impacts in December 2008, six connectors between the three western most build alternatives were identified, conceptually designed, and analyzed at the beginning of the phase of considering alternatives in detail (exhibit 2.5). One connector for Alternative 5B2E3K was identified, conceptually designed, and analyzed. Five connectors between Alternatives 2B-2 and 5A2E3K were identified, conceptually designed, and analyzed, resulting in 12 additional alternatives that were considered. The connectors and the resultant alternatives were conceptually designed and analyzed to the same level of detail as the other build alternatives (exhibit 2.6).

For Alternative 5B2E3K, one connector was considered. It used the existing I-395 interchange with Route 1A and replaced the section of Alternative 5B2E3K between I-395 and Eastern Avenue. This connector would reduce impacts to wetlands and result in fewer displacements of commercial businesses and residences. After considering this connector, Alternative 5B2E3K was modified to create Alternative 5B2E3K-1. Alternative 5B2E3K was dismissed from further consideration because it was substantially more environmentally damaging to wetlands and more displacements of commercial businesses and residences than Alternative 5B2E3K-1.

Five connectors between Alternatives 2B-2 and 5A2E3K were identified and developed resulting in 12 additional alternatives for consideration. Six of these alternatives resulted from connecting Alternative 2B-2 to Alternative 5A2E3K near I-395; the six others resulted from connecting Alternative 5A2E3K to Alternative 2B-2 near Route 9. The alternatives that resulted from connecting Alternative 2B-2 to Alternative 5A2E3K were more environmentally damaging to wetlands and more residential displacements than Alternatives 2B-2 and 5A2E3K and were dismissed from further consideration.

Exhibit 2.5 – *Alternatives and Connectors between the Three Westernmost Alternatives (December 2008)*

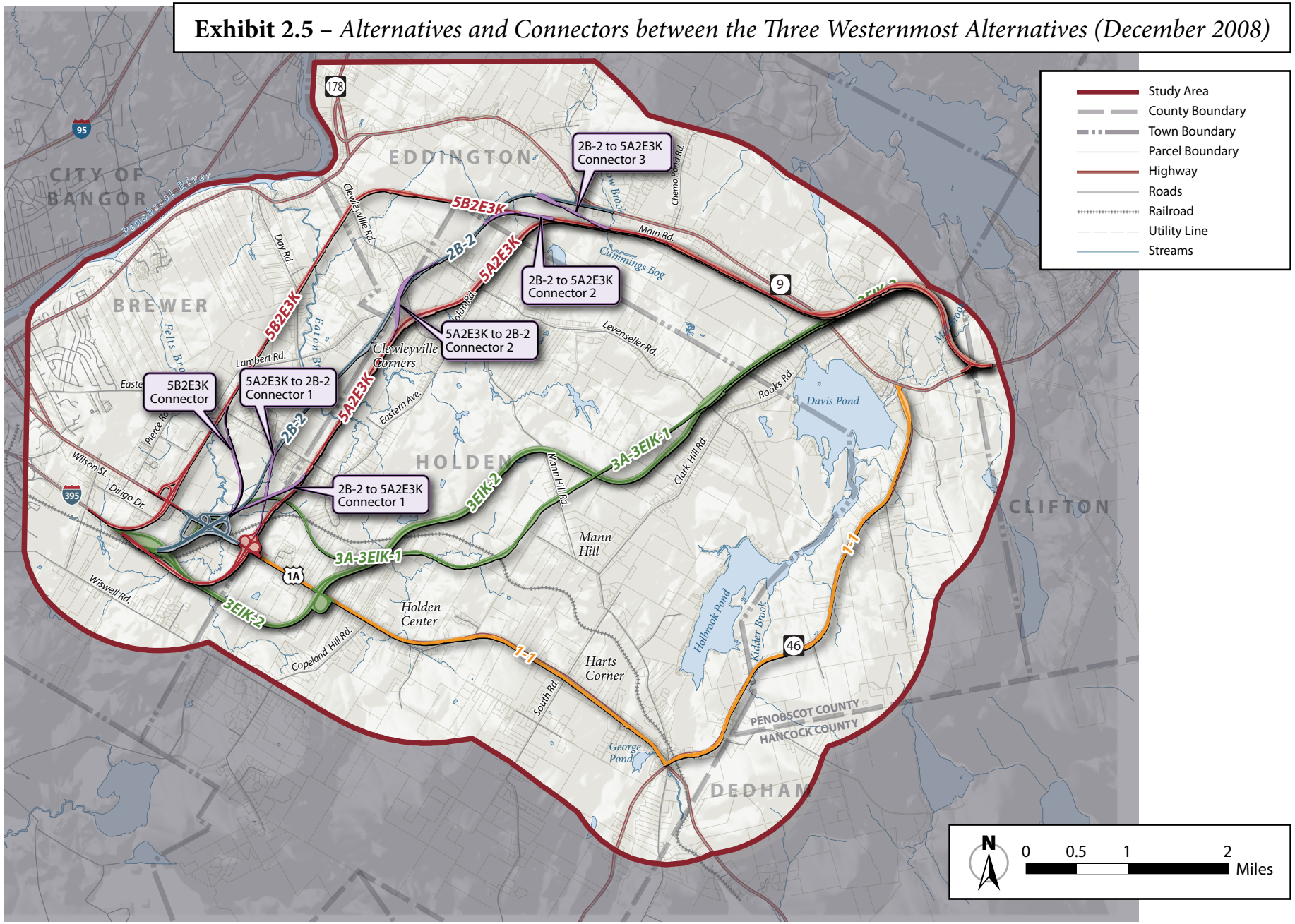


Exhibit 2.6 – *Connectors Analyzed and Impacts to Select Features*

	Design Features	Wetlands (acres)	Streams (feet)	Floodplains (acres)	Displacements	Conclusion
Alternative 5B2E3K	Requires a new interchange with the existing I-395 interchange or construction of a new interchange with Rt. 1A	56	2,350	9	11 residences, Showcase Homes, Wilson Street Holdings Property, and Weathervane Restaurant	Dismissed: More Environmentally Damaging
Alternative 5B2E3K Connector	Three bridges 300 feet long would be required to span Felts Brook	49	2,275	9	9 residences	Dismissed: More Environmentally Damaging
5A2E3K	Two bridges crossing the rail corridor; requires a new interchange with Rt. 1A or interchange with I-395	60	2,065	5	12 residences, Mitchell's, Maine's Military Supply, Brookfield Estates Phase I 8 lots, Phase II	Dismissed: More Environmentally Damaging
5A2E3K to 2B-2 Connector 1	Two bridges crossing the rail corridor; requires a new interchange with Rt. 1A or interchange with I-395	30	1,540	6	15 residences, Brewer Fence Company, Eden Pure Heaters, Mitchell's Landscaping & Garden Center, and Town 'N Country Apartments	Retained: Among Least Environmentally Damaging
5A2E3K to 2B-2 Connector 2	Two bridges crossing the rail corridor; requires a new interchange with Rt. 1A or interchange with I-395; parallels utility corridor	26	1,740	8	5 residences, Mitchell's, Maine's Military Supply, Brookfield Estates Phase I 8 lots and Phase II	Dismissed: More Environmentally Damaging
5A2E3K to 2B-2 via Connector 1 to 2B-2 to 5A2E3K via Connector 2	Two bridges crossing the rail corridor; requires a new interchange with Rt. 1A or interchange with I-395; connects to 5A2E3K paralleling Rt. 9 by 4.5 miles	50	2,120	8	11 residences, Mitchell's, Maine's Military Supply, Beech Ridge development	Dismissed: More Environmentally Damaging
5A2E3K to 2B-2 via Connector 1 to 2B-2 to 5A2E3K via Connector 3	Two bridges crossing the rail corridor; requires a new interchange with Rt. 1A or interchange with I-395; connects to 5A2E3K paralleling Rt. by 9 4.5 miles	48	2,300	6	11 residences, Mitchell's, Maine's Military Supply, Beech Ridge development	Dismissed: More Environmentally Damaging
5A2E3K to 2B-2 via Connector 2 to 2B-2 to 5A2E3K via Connector 2	Connects to 5A2E3K paralleling Rt. 9 lengthening 2B-2 by 4.5 miles; alignment along utility corridor	48	2,330	6	12 residences, Mitchell's, Maine's Military Supply, Brookfield Estates Phase I – 8 lots and Phase II	Dismissed: More Environmentally Damaging

Note: *Direct impacts are based on the conceptual design of a two-lane highway.*

Exhibit 2.6 – *Connectors Analyzed and Impacts to Select Features (continued)*

	Design Features	Wetlands (acres)	Streams (feet)	Floodplains (acres)	Displacements	Conclusion
5A2E3K to 2B-2 via Connector 2 to 2B-2 to 5A2E3K via Connector 3	Connects to 5A2E3K paralleling Rt. 9 lengthening 2B-2 by 4.5 miles; alignment along utility corridor	45	2,500	8	12 residences, Mitchell's, Maine's Military Supply, Brookfield Estates Phase I – 8 lots and Phase II	Dismissed: More Environmentally Damaging
2B-2	Uses existing interchange with Rt. 1A in a modified form	28	1,460	10	8 residences	Retained: Among Least Environmentally Damaging
2B-2 to 5A2E3K Connector 1	Connects to 5A2E3K paralleling Rt. 9 by 4.3 miles	54	2,600	17	11 residences; Brookfield Estates Phase I – 8 lots and Phase II	Dismissed: More Environmentally Damaging
2B-2 to 5A2E3K Connector 2	Allows use of existing interchange with Rt. 1A with modifications; no crossing state-owned rail corridor; connects to alignment along exising utility corridor	60	2,010	16	10 residences; Beech Ridge development	Dismissed: More Environmentally Damaging
2B-2 to 5A2E3K Connector 3	Connects to 5A2E3K paralleling Rt. 9 by 4.3 miles	57	2,420	15	11 residences; Beech Ridge development	Dismissed: More Environmentally Damaging
2B-2 to 5A2E3K via Connector 1 to 5A2E3K to 2B-2 via Connector 2	Uses existing interchange with Rt. 1A with modifications; connects to alignment along utility corridor	29	1,690	18	6 residences; Brookfield Estates Phase I – 8 lots and Phase II	Dismissed: More Environmentally Damaging
2B-2 to 5A2E3K via Connector 1 to 5A2E3K to 2B-2 via Connector 2 to 2B-2 to 5A2E3K via Connector 2	Uses existing interchange with Rt. 1A with modifications; connects to alignment along utility corridor	50	2,270	15	12 residences; Brookfield Estates Phase I development – 8 lots and Phase II	Dismissed: More Environmentally Damaging
2B-2 to 5A2E3K via Connector 1 to 5A2E3K to 2B-2 via Connector 2 to 2B-2 to 5A2E3K via Connector 3	Uses existing interchange with Rt. 1A with modifications; connects to alignment along utility corridor	48	2,465	19	12 residences; Brookfield Estates Phase I development – 8 lots and Phase II	Dismissed: More Environmentally Damaging

Note: *Direct impacts are based on the conceptual design of a two-lane highway.*

Of the six alternatives that resulted from connecting Alternative 5A2E3K to Alternative 2B-2, two were retained for further consideration because they resulted in comparable or less impact to wetlands and fewer residential displacements than Alternatives 2B-2 and 5A2E3K. These alternatives were named Alternative 5A2B-2 and Alternative 5A2E3K-2.

In May 2009, a meeting took place with the federal and state regulatory and resource agencies to review the range of alternatives being considered. It was agreed that Alternatives 1-1 and 3A-3EIK-1 should be dismissed from further consideration. Alternative 1-1 was dismissed from further consideration because it would not further the study's purpose related to the NHS or satisfy the system-linkage need because it would not provide a high-speed, controlled-access connection between I-395 and Route 9. Alternative 1-1 would satisfy the USACE's basic purpose statement. Alternative 3A-3EIK-1 was dismissed from further consideration because it was more environmentally damaging than Alternative 3EIK-2.

A controlled-access highway provides limited points of vehicle access; access is permitted only at interchanges and intersections.

2.2.2.2 Evaluation of Route 9

In December 2009, the system-linkage need and Route 9 were reexamined in greater detail. Specifically, Route 9 was reexamined to understand more fully if it could reasonably accommodate the future traffic volumes that were foreseeable within the next 20 years. The following factors were considered in examining Route 9 in greater detail:

- study purpose and the need for improved regional system linkage
- the geometry and capacity of Route 9
- existing and future traffic congestion (measured in terms of operating speeds and the volume of existing and future traffic compared to the capacity of the highway) and safety
- expectations and concerns of community leaders and the public
- origins and destinations of motorists
- areas of congestion
- system continuity
- land use and community features
- growth trends
- natural resources

After careful consideration of those factors, the MaineDOT determined that Route 9, with the exception of the sections approaching the intersection of Routes 9 and 46 where the posted speed limit is lower than other segments of Route 9, could reasonably accommodate future traffic volumes for the next 20 years without additional improvements beyond the existing right-of-way (exhibit 2.7).

Exhibit 2.7 – *DHV, v/c Ratio, Average Travel Speed and LOS for Route 9*

Analysis Year	DHV	v/c Ratio	Average Travel Speed (mph)	LOS Rural Two-Lane Road
Route 9 East of Route 178				
1998 No Build	641	0.27	41.2	D
2006 No Build	629	0.26	41.3	D
2035 No Build	873	0.36	39.5	E
Route 9 East of Route 46				
1998 No Build	505	0.20	43.9	D
2006 No Build	573	0.23	43.5	D
2035 No Build	1,267	0.46	39.3	E

Two alternatives – 2B-2 and 5A2B-2 – connect with Route 9 near the Eddington School approximately 4.2 miles to the west of Route 46. When these two alternatives were considered with a bypass of the intersection of Routes 9 and 46 similar to the other build alternatives, two additional build alternatives were created: 2B-2-K and 5A2B-2-K.

2.2.2.3 Continued Coordination with the Federal Cooperating Agencies

In September and December 2010, meetings with the federal cooperating agencies took place, the purpose of which was to solidify the range of alternatives to be considered in detail.

The MaineDOT continued its analysis of the Routes 9/46 intersection and concluded that the build alternatives, including those that use portions of Route 9, would improve the quality of traffic flow at the intersection of Routes 9 and 46 and other physically less intrusive improvements (e.g. as adding turn lanes), could be made to the intersection that would further improve the quality of traffic flow at the intersection. For these reasons, the MaineDOT and the FHWA dismissed alternatives that bypassed the intersection of Routes 9 and 46 to the north in favor of further consideration of alternatives that use Route 9.

The MaineDOT, the FHWA, and the federal cooperating agencies further considered the remaining build alternatives and concluded, although available and practicable, Alternatives 3EIK-2, 5A2E3K, 5A2E3K-2, and 5B2E3k-1 were more environmentally damaging than other build alternatives and were dismissed from further consideration (see Appendix C). Alternative 5B2B-2 was created.

2.2.2.4 Alternatives Retained for Further Consideration and Detailed Study

The following four alternatives were retained for further consideration and detailed study:

- No-Build Alternative
- Alternative 2B-2
- Alternative 5A2B-2
- Alternative 5B2B-2

The cooperating agencies concurred with this range of alternatives to be retained for detailed analysis (see Appendix C). Drawings of the build alternatives are shown in Appendix D.

2.3 Range of Reasonable Alternatives Retained for Further Consideration

Four alternatives, including the No-Build Alternative, were retained for further consideration and analyzed in detail (exhibit 2.8).

The build alternatives would be controlled-access highways and were conceptually designed using the MaineDOT design criteria for freeways (exhibit 2.9). Two lanes would be constructed and used for two-way travel within an appropriate 200-foot-wide right-of-way (exhibit 2.10).

After careful consideration of the range of alternatives developed in response to the study's purpose and needs and in coordination with its cooperating and participating agencies, the MaineDOT and the FHWA identified Alternative 2B-2 as their preferred alternative because the MaineDOT and the FHWA believe it best satisfies the study purpose and needs, would fulfill their statutory mission and responsibilities, and has the least adverse environmental impact.

As part of the review of this EIS, the MaineDOT and the FHWA invite comments on their decision identifying Alternative 2B-2 as its preferred alternative.

The final selection of an alternative will not be made until comments on this draft EIS and from the public hearing have been received and analyzed by the MaineDOT and FHWA, and comments have been received in response to the USACE's public notice; all reasonable alternatives are under consideration and a decision will be made after the alternatives' impacts and comments on the draft EIS and from the public hearing have been fully evaluated.

2.3.1 No-Build Alternative

The No-Build Alternative proposes that there be no new construction or major reconstruction of the transportation system in the study area; regular maintenance to I-395 and Routes 1A, 46, and 9 would be

Exhibit 2.8 – *Alternatives Retained for Further Consideration*

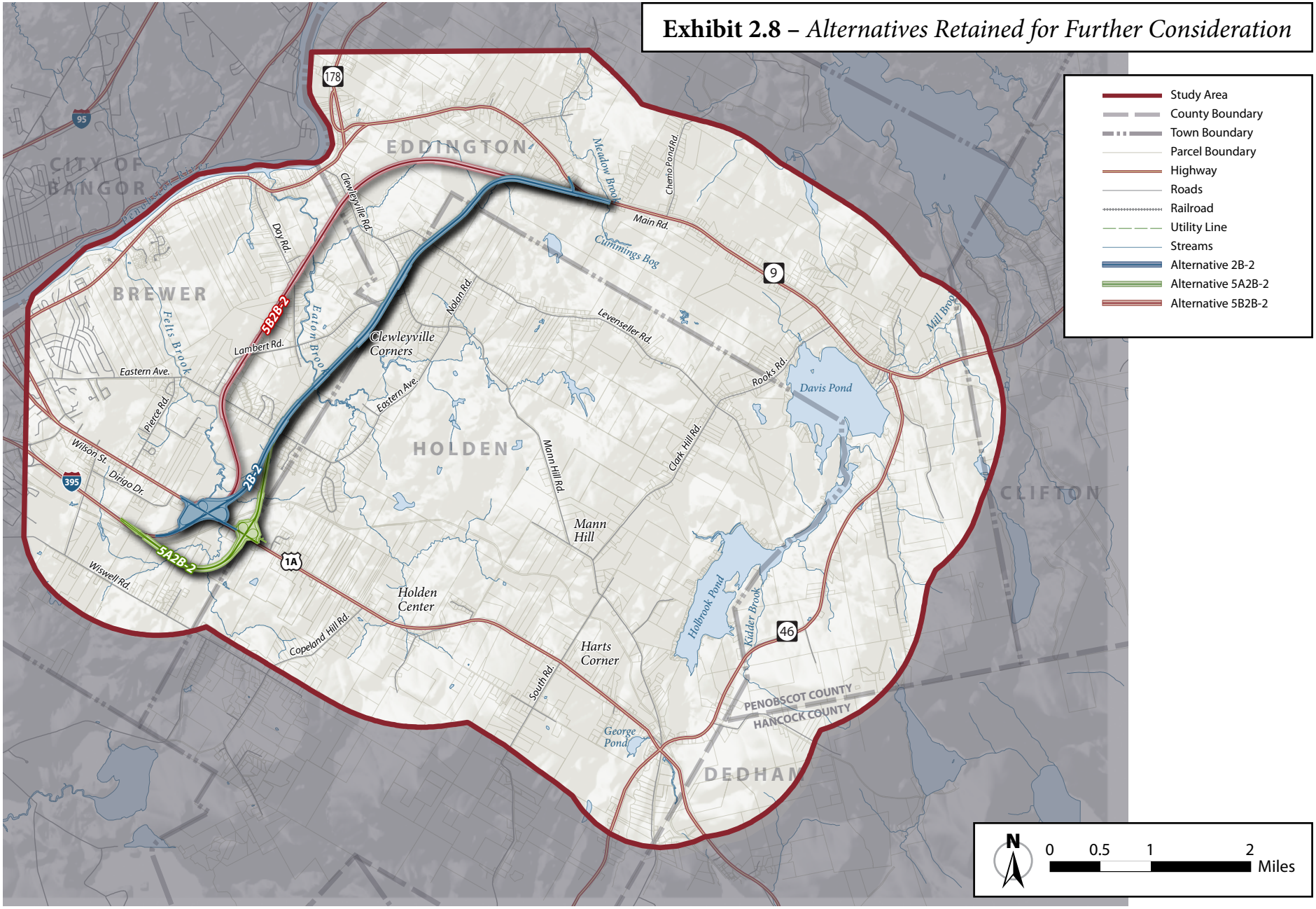


Exhibit 2.9 – *Design Criteria*

Element	*Build Alternatives*
Type of Roadway	Freeways
Design Speed	70 mph
Posted Speed	55 mph
Terrain	Level
Lane Width	12 feet
Shoulder Width	8 feet
Cross Slopes	6.0% Maximum Superelevation 2.1% Normal 4.2% Shoulder – Normal
Clear Zone	Variable. Dependent on design speed, traffic volume, and side slopes
Side Slopes Cut	Front slope at 6:1 Back slope at 2:1
Fill	6:1 / 4:1 (hinged); 2:1 and guardrail when the embankment height is greater than 20 feet
Minimum Stopping Sight Distance	850 feet
Maximum Degree of Curvature	2°45′
Vertical Grades	3% Maximum 0.25% Minimum Desirable 0% Minimum
Minimum Vertical Clearance	16 feet 6 inches over roads 23 feet 6 inches over railroads
Superelevation Transition Length	250 feet

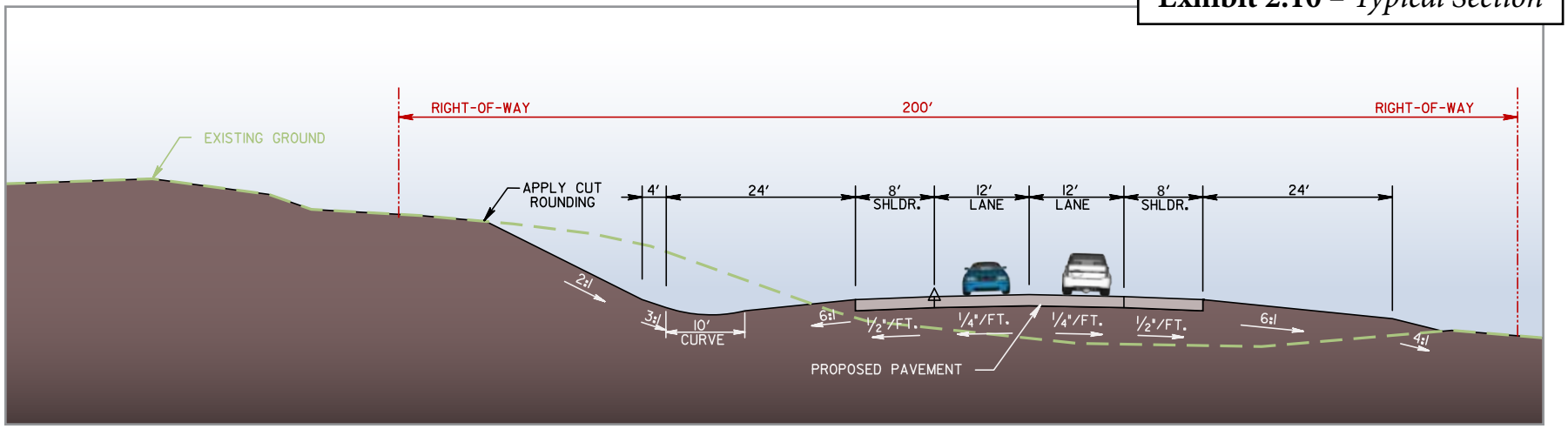
Sources: *American Association of State and Highway Transportation Officials, "A Policy on Geometric Design of Highways and Streets", 5th edition, November 2004; and the MaineDOT Highway Design Guide, 1994.*

continued at its present level; and the intersection of Routes 46 and 9 would be improved.

Improvements to this intersection were conceptually designed to have additional through-travel and turn lanes. The improvements to this intersection could be accomplished within the existing rights-of-way of Routes 9 and 46 with no impact to the natural and social features adjacent to the intersection. The MaineDOT is committed to improving the intersection of Route 9 and Route 46; given the future need (exhibit 2.2) and the limited scope of the improvements to the intersection, the improvements will be added to future work plans for MaineDOT.

Although the No-Build Alternative does not satisfy the study's purpose and needs or the USACE's basic purpose, it is retained for detailed analysis to allow equal comparison to the build alternatives and to help decision makers understand the ramifications of taking no action. The impacts of the No-Build Alternative were fully developed for design year 2035 to demonstrate the full impact of taking no action. Comparing the build alternatives with the current and future No-Build Alternative is essential for measuring the true benefits and adverse impacts of the build alternatives considered in detail.

Exhibit 2.10 – *Typical Section*



2.3.2 Alternative 2B-2

Alternative 2B-2 would continue north from the I-395 interchange with Route 1A, roughly paralleling the Brewer/Holden town line, and connect with Route 9 west of Chemo Pond Road (exhibit 2.11). Route 9 would not be widened to four lanes. The existing I-395/Route 1A interchange would be used (to the extent possible) and expanded to become a semidirectional interchange (exhibit 2.12). A semidirectional interchange reduces left turns and cross traffic; the only traffic movement that would require a left turn would be Route 1A south to Alternative 2B-2 north. The land required for the northern portion of the interchange is owned by the State of Maine.

Alternative 2B-2 would bridge over Felts Brook in two locations at the I-395 interchange. It would pass underneath Eastern Avenue between Woodridge Road and Brian Drive. Alternative 2B-2 would bridge over Eaton Brook, bridge over Lambert Road, pass underneath Mann Hill Road, and bridge over Levenseller Road connecting to Route 9 at a "T" intersection (exhibit 2.13). Route 9 eastbound would be controlled with a stop sign.

Alternative 2B-2 would further the study's purpose and satisfy the system-linkage need in the near term (before 2035). Alternative 2B-2 would be a controlled-access highway and conceptually designed using the MaineDOT design criteria for freeways. Two lanes would be constructed and used for two-way travel within an approximate 200-foot-wide right-of-way.

Route 9 would not be improved, and it would not provide a high-speed, controlled-access connection to the east of East Eddington village. It would satisfy the

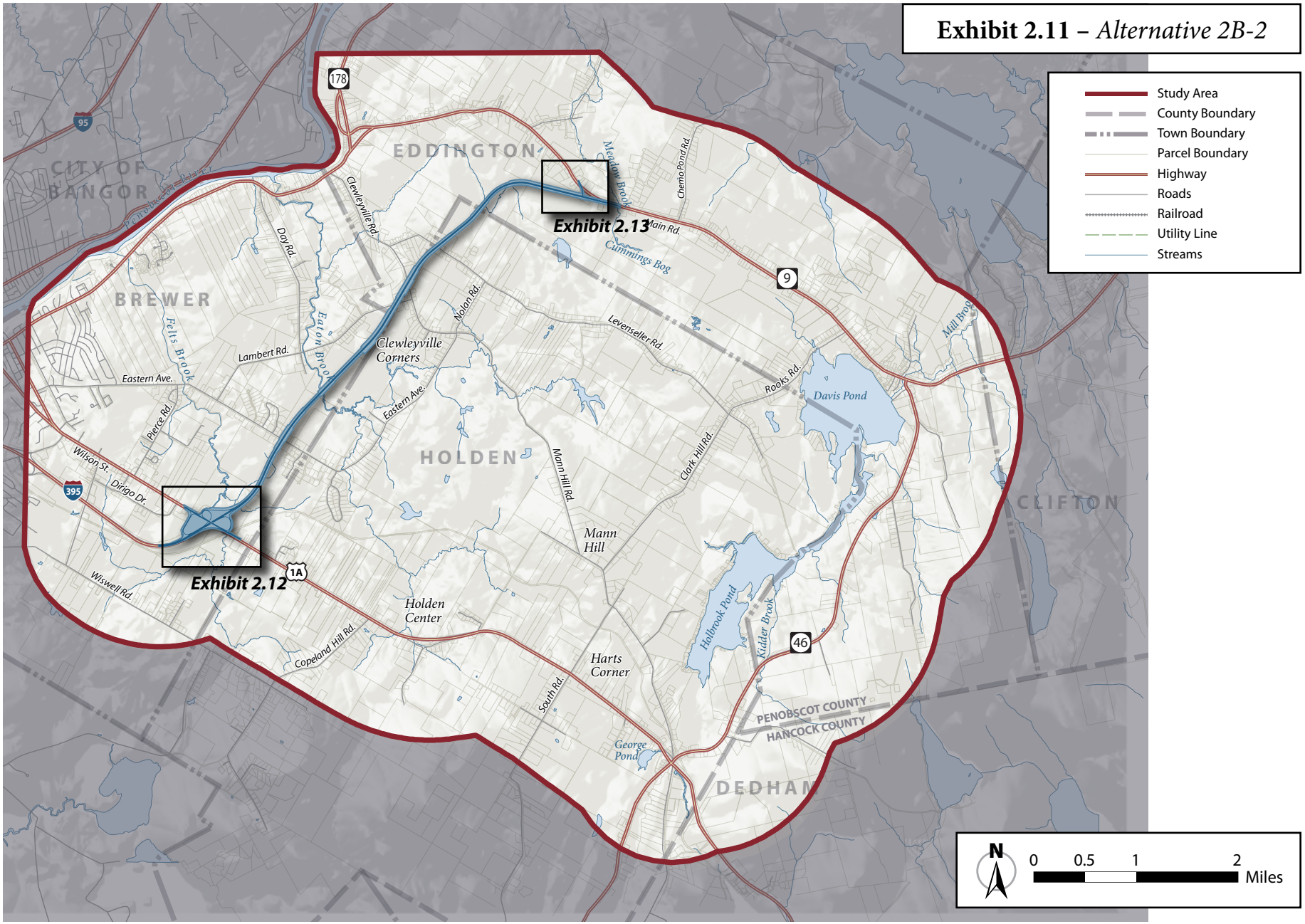


Exhibit 2.11 – Alternative 2B-2
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Roads
Railroad
Utility Line
Streams
EDDINGTON
CITY OF BANGOR
BREWER
HOLDEN
CLIFTON
DEDHAM
Exhibit 2.12
Exhibit 2.13
Clewleyville Corners
Holden Center
Mann Hill
Harts Corner
Davis Pond
Holbrook Pond
George Pond
Cummings Bog
Meadow Brook
Chemo Pond Rd.
Main Rd.
Clewleyville Rd.
Day Rd.
Nolan Rd.
Levenseller Rd.
Rooks Rd.
Clark Hill Rd.
Mann Hill Rd.
Eastern Ave.
Lambert Rd.
Felts Brook
Eaton Brook
Pierce Rd.
Wilson St.
Dirigo Dr.
Wiswell Rd.
Copeland Hill Rd.
South Rd.
Kidder Brook
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
9
395
1A
46
N
0
0.5
1
2
Miles

Exhibit 2.12 – *Interchange of Alternatives 2B-2 and 5B2B-2 and Route 1A*

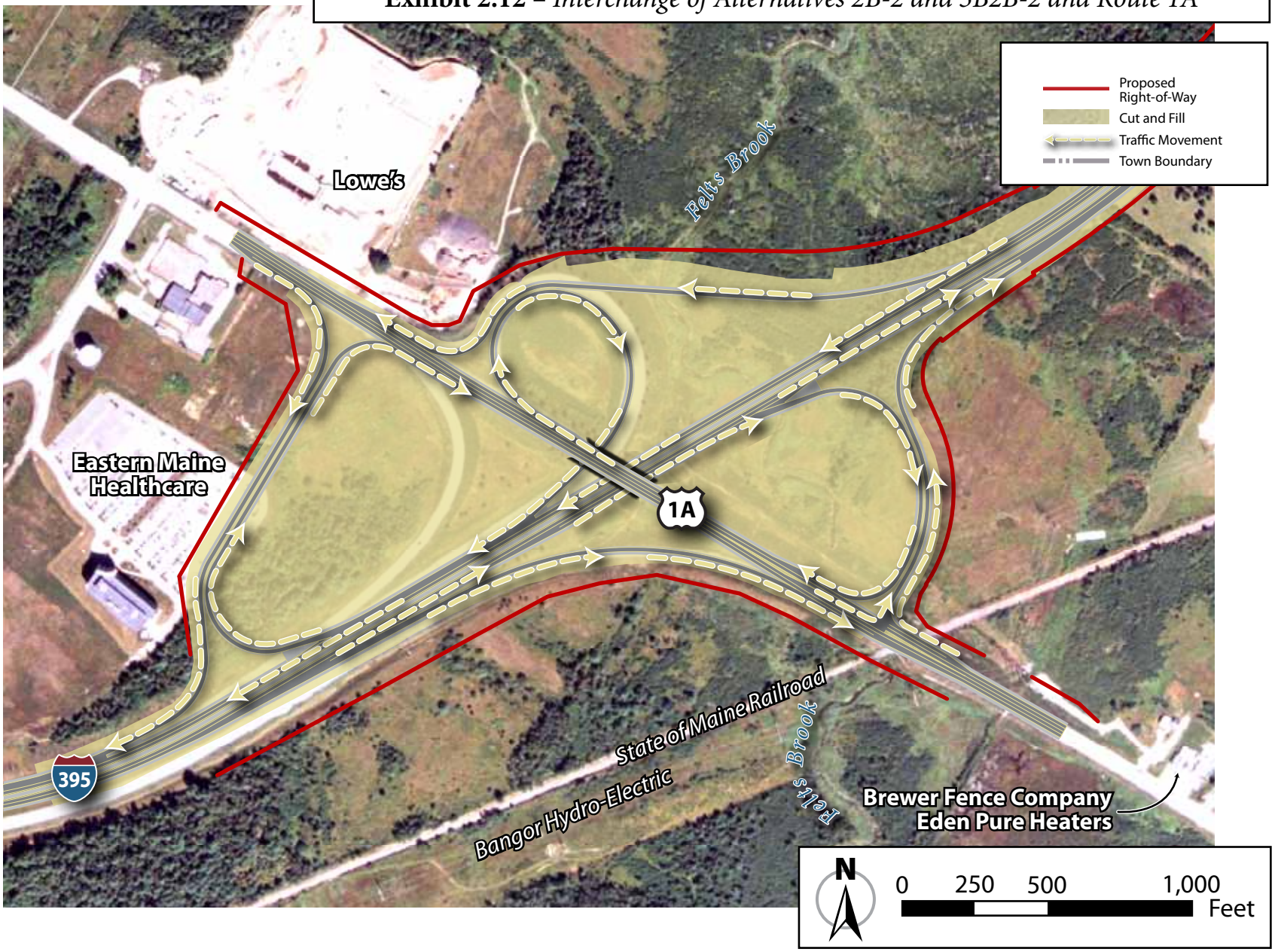
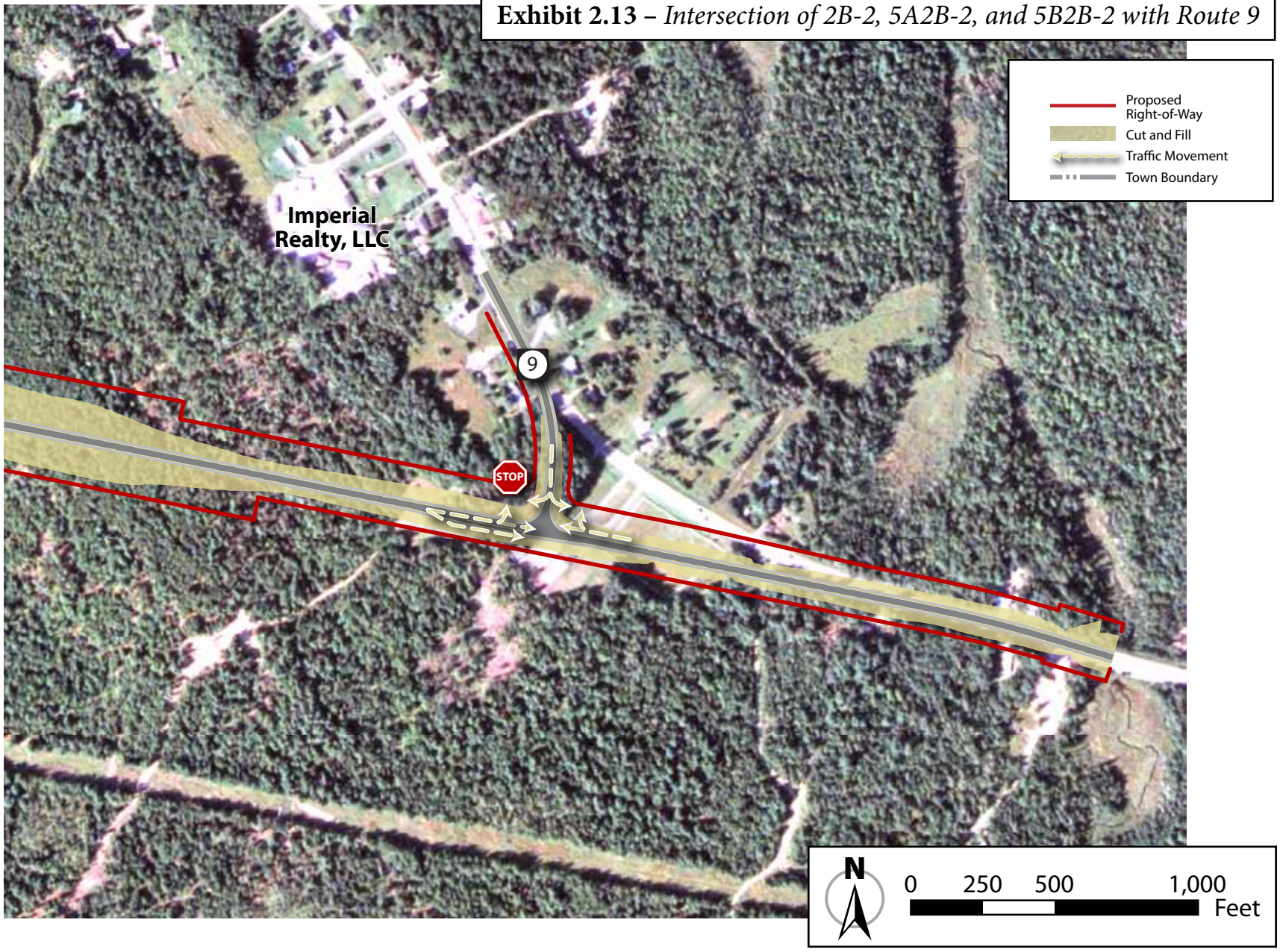


Exhibit 2.13 – *Intersection of 2B-2, 5A2B-2, and 5B2B-2 with Route 9*



study need related to traffic congestion and safety. It would satisfy the USACE's basic purpose statement.

2.3.3 Alternative 5A2B-2

Alternative 5A2B-2 would start from I-395 for approximately one mile along the southern side of Route 1A in the town of Holden before turning northward, crossing over Route 1A, and paralleling the Bangor Hydro-Electric Company utility easement and connect with Route 9 west of Chemo Pond Road (exhibit 2.14). Route 9 would not be widened to four lanes. Alternative 5A2B-2 would connect to Route 1A with a modified-diamond interchange (exhibit 2.15), which would provide all traffic movements and require two left turns across traffic. A left-turn lane would be provided on Route 1A to 5A2B-2 north. The modified diamond-interchange design would reduce the amount of property that must be acquired. It would connect to Route 9 at a "T" intersection (exhibit 2.13). Route 9 eastbound would be controlled with a stop sign.

Alternative 5A2B-2 would further the study's purpose and satisfy the system-linkage need, in the near term. Alternative 5A2B-2 would be a controlled-access highway and conceptually designed using the MaineDOT design criteria for freeways. Two lanes would be constructed and used for two-way travel within an approximate 200-foot-wide right-of-way.

Route 9 would not be improved, and it would not provide a high-speed, controlled-access connection to the east of East Eddington village. It would satisfy the study need related to traffic congestion and safety. It would satisfy the USACE's basic purpose statement.

Alternative 5A2B-2 would require the construction of a new interchange at I-395 and Route 1A in a location with poor soils and the existing interchange would need to be removed. The railroad crossings would be grade separated.

2.3.4 Alternative 5B2B-2

Alternative 5B2B-2 would continue north from the I-395 interchange with Route 1A before turning east and connecting with Route 9 west of Chemo Pond Road (exhibit 2.16). Route 9 would not be widened to four lanes. The existing I-395/Route 1A interchange would be used (to the extent possible) and expanded to become a semidirectional interchange (exhibit 2.12). The only traffic movement that would require a left turn would be Route 1A south to Alternative 5B2B-2 north. This interchange would require more land than a diamond interchange. The land required for the northern portion of the interchange is owned by the State of Maine.

Alternative 5B2B-2 would bridge over Felts Brook in two locations at the I-395 interchange. It would bridge over Eastern Avenue to the immediate east

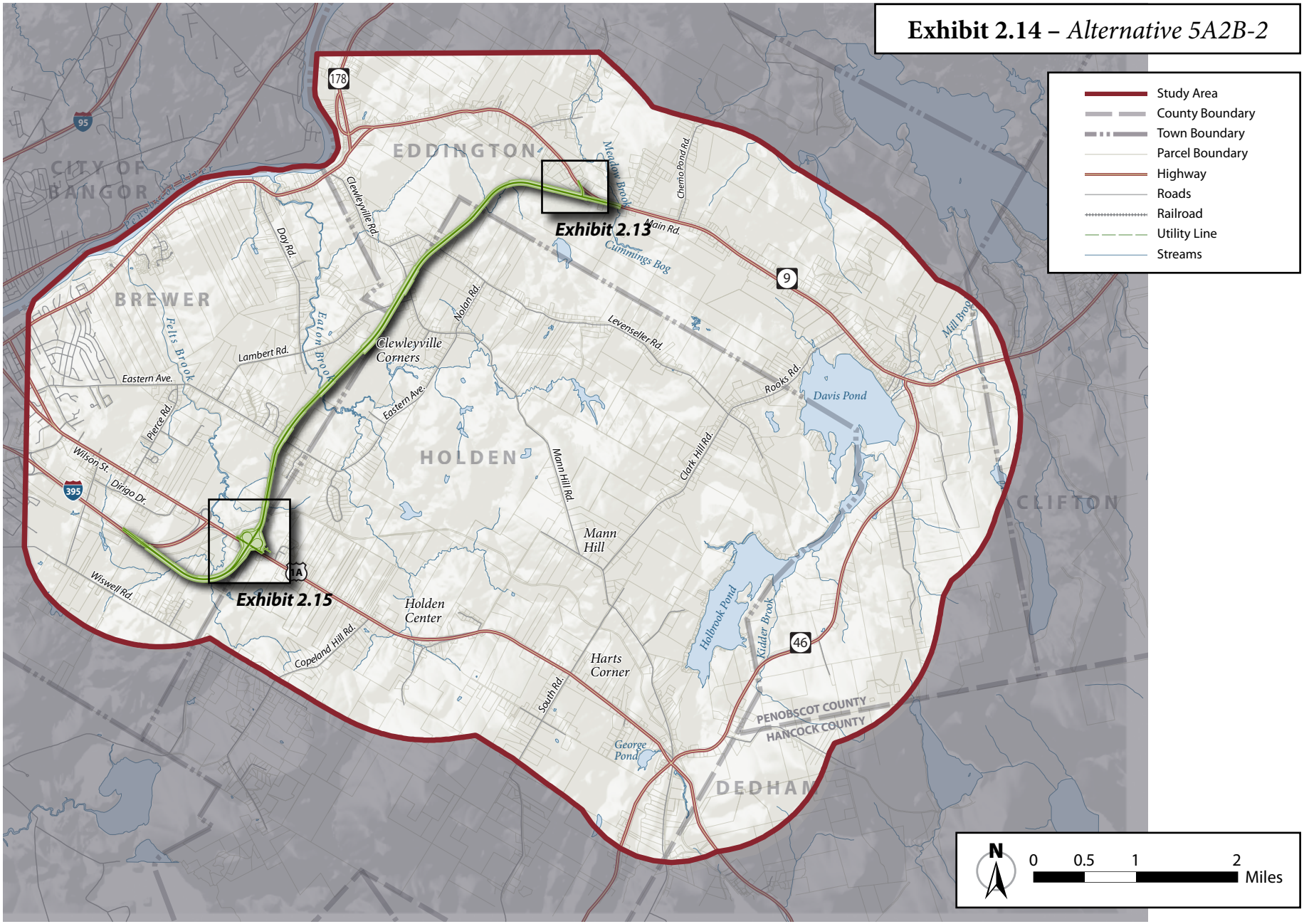
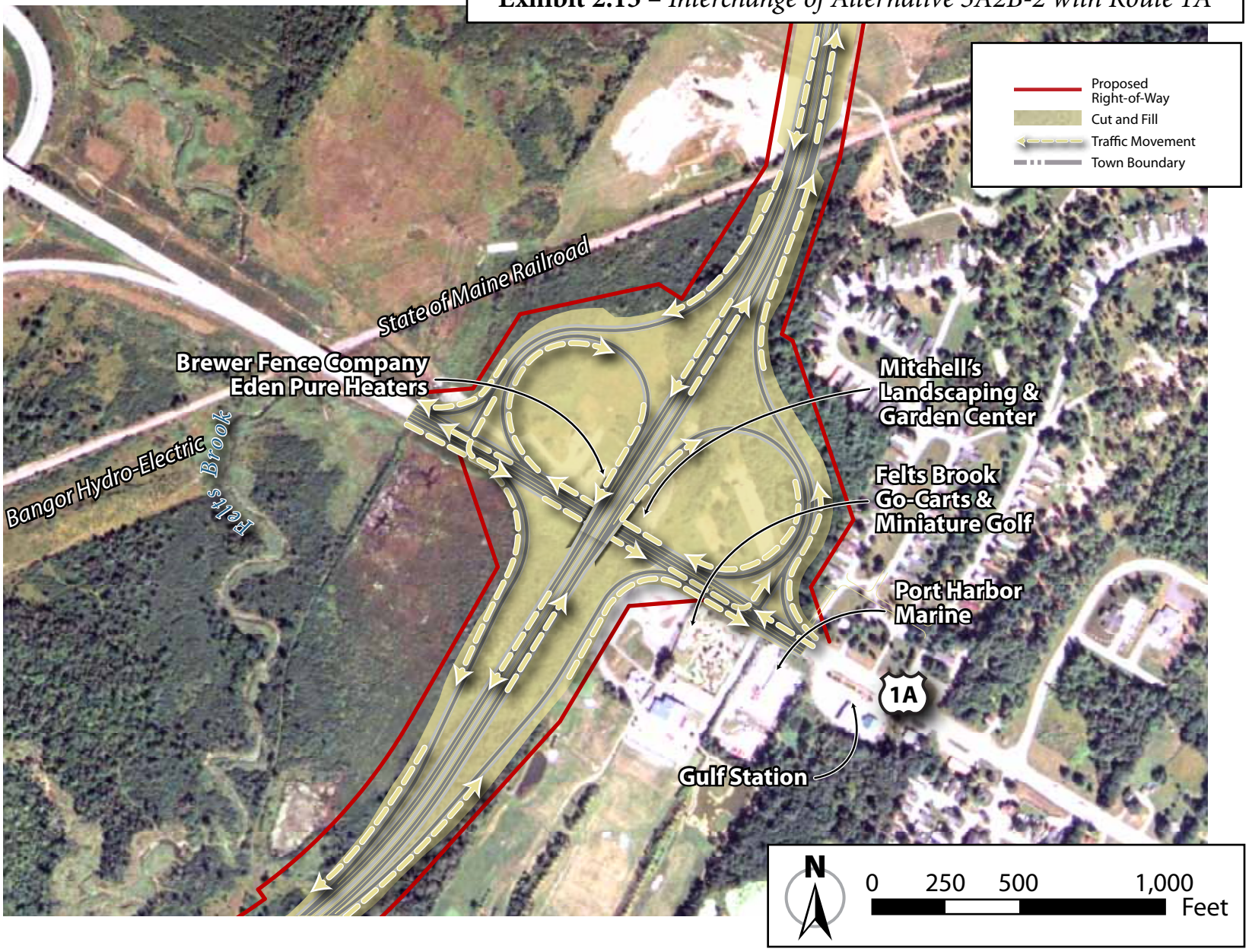


Exhibit 2.14 – Alternative 5A2B-2
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Roads
Railroad
Utility Line
Streams
Exhibit 2.13
Exhibit 2.15
EDDINGTON
CITY OF BANGOR
BREWER
HOLDEN
CLIFTON
DEDHAM
Clewleyville Corners
Holden Center
Mann Hill
Harts Corner
Davis Pond
Hollbrook Pond
George Pond
Cummings Bog
Meadow Brook
Chemo Pond Rd.
Main Rd.
Clewleyville Rd.
Doy Rd.
Eaton Brook
Nolan Rd.
Levenseller Rd.
Rooks Rd.
Mill Brook
Lambert Rd.
Eastern Ave.
Pierce Rd.
Felts Brook
Wilson St.
Dirigo Dr.
Wiswell Rd.
Copeland Hill Rd.
Mann Hill Rd.
Clark Hill Rd.
Kidder Brook
South Rd.
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
9
395
1A
46
N
0
0.5
1
2
Miles

Exhibit 2.15 – *Interchange of Alternative 5A2B-2 with Route 1A*



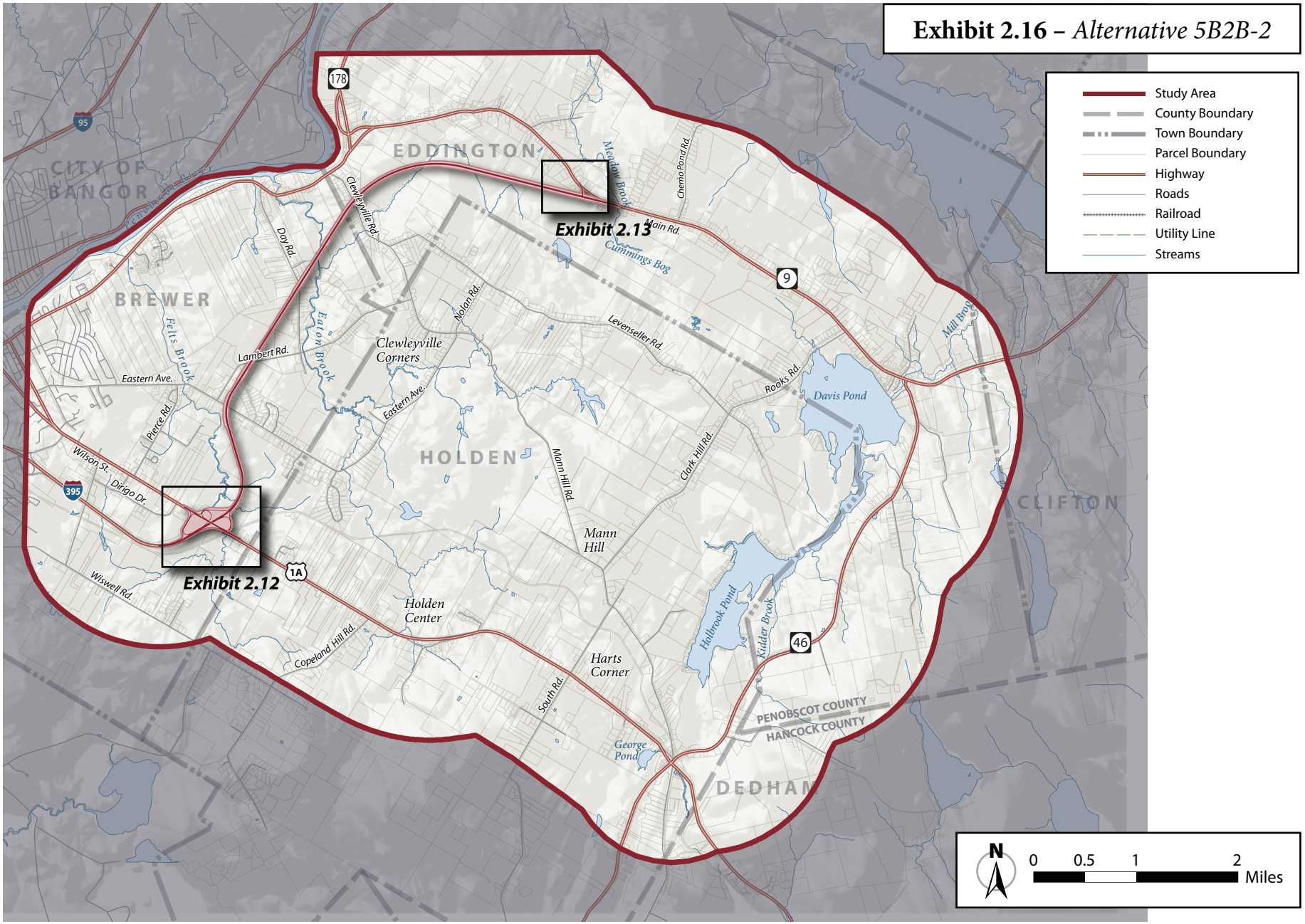


Exhibit 2.16 – Alternative 5B2B-2
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Roads
Railroad
Utility Line
Streams
EDDINGTON
CITY OF BANGOR
BREWER
HOLDEN
CLIFTON
DEDHAM
Exhibit 2.12
Exhibit 2.13
Clewleyville Corners
Holden Center
Mann Hill
Harts Corner
Davis Pond
Holbrook Pond
Cummings Bog
George Pond
Meadow Brook
Chemo Pond Rd.
Main Rd.
Clewleyville Rd.
Day Rd.
Nolan Rd.
Levenseller Rd.
Rooks Rd.
Clark Hill Rd.
Mann Hill Rd.
Eaton Brook
Felts Brook
Lambert Rd.
Eastern Ave.
Pierce Rd.
Wilson St.
Dirigo Dr.
Wiswell Rd.
Copeland Hill Rd.
South Rd.
Kidder Brook
PENOBSCOT COUNTY
HANCOCK COUNTY
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of Lambert Road and bridge over Lambert Road. It would pass under Day Road and Chewleyville Road before turning east and connecting to Route 9 at a "T" intersection (exhibit 2.13). Route 9 eastbound would be controlled with a stop sign.

Alternative 5B2B-2 would further the study's purpose and satisfy the system-linkage need in the near term (before 2035). Alternative 5B2B-2 would be a controlled-access highway and conceptually designed using the MaineDOT design criteria for freeways. Two lanes would be constructed and used for two-way travel within an approximate 200-foot-wide right-of-way.

Route 9 would not be improved, and it would not provide a high-speed, controlled-access connection to the east of East Eddington village. It would satisfy the study need related to traffic congestion and safety. It would satisfy the USACE's basic purpose statement.

2.4 Other Activities Necessary to Construct the Preferred Alternative and Estimated Construction Cost

Each build alternative would require preliminary and final engineering design, acquisition of property, and relocation of utilities prior to construction.

2.4.1 Property to Be Acquired for Each Build Alternative

The conceptual design of the build alternatives included an estimation of land that would need to be acquired and used as a right-of-way for the two-lane highway. The proposed right-of-way width for the build alternatives would be the minimum necessary to accommodate a two-lane highway and averages approximately 200 feet. The limits of the proposed right-of-way are irregular because they are a function of topography, earth-moving activities (i.e., cutting and filling), slopes, existing property boundaries, viability of remaining portions of properties acquired, and continued access to individual properties. The amount of land to be acquired for the construction and operation of the build alternatives was minimized wherever possible.

A preliminary assessment was performed to provide a general understanding of existing properties and ownership and the extent of potential land to be

acquired and used for right-of-ways to construct and maintain the build alternatives. Information was collected from aerial photography and property records from the city of Brewer and the towns of Holden, Eddington, and Clifton. Through analysis of property data, discussions with local officials, and observations, potentially impacted properties within the proposed right-of-ways for each build alternative were identified and quantified. The build alternatives would directly impact from 44 to 70 properties. The area to be acquired and used for right-of-way for the build alternatives ranges from 169 to 211 acres (exhibit 2.17).

2.4.2 Utilities to Be Relocated

The build alternatives were designed to avoid and minimize the impact and relocation of utilities. Construction of the build alternatives would impact electric, telephone, cable television, water, and sewer utilities.

A preliminary assessment of potential impacts of the build alternatives to utilities and their required relocations was performed. Information on utilities was collected from field inspection, interviews with utility owners and representatives, review of utility records and designs, property maps, and aerial photography.

Individual utility companies would be responsible for the cost of relocating utilities inside the rights-of-way of state roads. The MaineDOT would be responsible for the cost of relocating utilities located outside the right-of-ways of state roads.

2.4.3 Estimated Construction Costs

As part of the conceptual design of the build alternatives, a preliminary estimate of the cost to construct them was prepared (in 2011 dollars). The cost to construct the build alternatives ranges from $61 million to $81 million.

The MaineDOT and the FHWA preliminarily considered tolling as one method of partially financing

Exhibit 2.17 – *Summary of Property to Be Acquired*

Alternative	Displacements			Number of Affected Properties	Area to be Acquired (acres)
	Residential	Commercial	Utility		
No-Build	-	-	-	-	-
2B-2/the Preferred Alternative	8	-	-	54	174
5A2B-2	15	4	-	70	211
5B2B-2	6	-	2	44	169

Note: [1]*in 2011 dollars*

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Section 404 requires a permit from the USACE before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from regulation (e.g., certain farming and forestry activities). The Section 404(b)(1) guidelines provide guidance to the Corps for issuing permits; compliance with the 404(b)(1) guidelines is required for the issuance of a permit. The Section 404(b)(1) guidelines require the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA). Critical to the selection of the LEDPA is the recognition of the full range of alternatives and impacts in determining first, which alternatives are (1) practicable, and (2) environmentally less damaging.

the operation and maintenance costs of a build alternative. The MaineDOT and the Maine Turnpike Authority considered the feasibility of tolling the build alternatives to determine if tolling could generate sufficient revenue to (1) cover the construction, operations, and maintenance costs of a toll facility; and (2) provide funding to supplement the operations and maintenance costs of the build alternatives, if one is selected and advanced to construction. Tolling would not be used to supplement the funding for construction of one of the build alternatives due to the low traffic volumes (HNTB, 2010).

The analysis considered two basic types of tolling facilities: a traditional barrier tolling facility (e.g., the York toll plaza in York, Maine) and an open-road tolling facility (e.g., the Hampton toll plaza in Hampton, New Hampshire). The analysis included the following toll schedule:

- Passenger-car cash toll rate would be $1.00 in the opening year
- Heavy-truck cash toll rate would be four times the passenger-car cash toll rate
- E-ZPass rates would be discounted 10 percent off the cash rate
- Commuter rates would be discounted 50 percent off the cash rate
- Toll increases would occur every five years at an annual inflation rate of 2.7 percent
- Toll rates for cash-paying vehicles would be rounded to the nearest $0.05

The analysis concluded that a traditional barrier tolling facility could generate revenue to cover the costs associated with the construction, operations, and maintenance costs of a toll facility and generate

approximately $155,000 annually (in 2011 dollars) to supplement the operations and maintenance costs of one of the build alternatives. The analysis further concluded that an open-road toll facility would not generate enough revenue to cover the construction, operations, and maintenance costs of a toll facility (HNTB, 2010).

Due to the small amount of revenue generated from a toll facility in comparison to the estimated cost of construction, the MaineDOT and the FHWA are not considering tolling as a method of partially financing the operation and maintenance costs of a build alternative, if one is selected and advanced to construction.

2.5 Next Steps If a Build Alternative Is to Be Constructed

The MaineDOT and the FHWA have prepared a permit application in accordance with Section 404 of the CWA for the range of alternatives retained for further consideration and it has been submitted to the USACE. A copy of this Section 404 permit application is contained in Appendix E, and is supported by information throughout this EIS.

If the No-Build Alternative is selected, the MaineDOT and the FHWA would continue to work with local and regional authorities to maintain (to the extent possible) the safety and efficiency of I-395 and the state roads in the study area.

The USACE identifies the LEDPA following its review of the permit application and completion of its public-interest finding.

If a build alternative is selected for construction — through completion of a FEIS, filing of a ROD by the FHWA, and the USACE determination of the LEDPA and issuance of a Section 404 permit — the MaineDOT would work with the affected municipalities to develop a plan to protect the corridor of the preferred alternative from further development. Methods to protect the corridor include development of zoning and local ordinances and selective acquisition of properties as they become available for sale or at risk for further development. The MaineDOT may fund these property acquisitions through its customary programming of state and federal highway-funding mechanisms. Property acquisitions and residential and business relocations would be in accordance with appropriate state and federal laws relevant to acquisition of property for highway purposes.

Once the MaineDOT has a corridor-protection system in place, it would work to develop support for a funding plan. In recent years, many states have found that state highway funds, bonding, and federal core apportionments are needed to maintain the transportation system as it exists, with little in additional funds for new capacity projects. Therefore, the MaineDOT would work with the Governor, region, and state and

federal legislators to devise funding strategies for the full property acquisition and ultimate construction of the selected build alternative.

The MaineDOT would work with the town of Eddington to maintain the safety and preserve the capacity of Route 9 in the study area. The range of possible activities that could be considered to maintain the safety and preserve the capacity of Route 9, in accordance with Maine's rules governing access management, are working with the town of Eddington to change zoning, eliminating existing and future curb cuts, and working with individual landowners to acquire property or development rights.

The acquisition of property for a right-of-way for corridor preservation could begin shortly after the NEPA/Section 404 process is completed. It would take several years to finalize the engineering design before construction can begin. Construction is not anticipated to begin until 2014.

During final design, the MaineDOT would continue to refine the alignment and its right-of-way within the preferred corridor to further avoid and minimize impacts to the natural, social, and economic environments and to coordinate with those that are affected.

In addition to construction and operation of the preferred alternative, the MaineDOT is committed to improving the most heavily congested section of Route 1A from I-395 to Route 46 and the intersection of Routes 46 and 9.

2.6 Most Essential Differences among the Alternatives to Be Considered in Decision Making

Distinct differences exist in the potential direct and indirect impacts from the build alternatives (exhibit 2.18). They help to define the alternatives and assist the MaineDOT and the FHWA in choosing the preferred alternative. A full accounting of the direct, indirect, and cumulative impacts from the No-Build Alternative and the build alternatives to the natural, social, cultural, and economic environments is in Chapter 3.

Exhibit 2.18 – *Direct Impacts of Alternatives*

Alternatives	Physical and Biological																Land Use				
				Streams																	
	Wetlands (acres)	Roadway contaminants within 100 feet[1] (acres)	Roadway contaminants within 160 feet[2] (acres)	Bridges and culverts/feet	Roadway contaminants within 100 feet[1] (acres)	Roadway contaminants within 160 feet[2] (acres)	Sediments within 3,300 feet[2] acres)	Floodplains (acres)	Vernal pools[3]/ dispersal habitat (acres)	Waterfowl and wading bird habitat[4] (acres)	Deer-wintering areas (acres)	Endangered Species	Vegetation (acres)	Undeveloped habitat	Area to be acquired (acres)	Historic Properties	4(f) Properties	Residential displacements[5]	Business displacements[6]	Business impacts[7]
No-Build	-	17	64	-	0.3 ac. (17,000 sq. ft.)	0.7 ac. (29,000 sq. ft.)	12 ac.	-	-	-	-	-	-	-	-	-	-	-	-	-
2B-2/the Preferred Alternative	26	31	66	5 bridges 3 culverts/ 554 feet	0.9 ac. (39,100 sq. ft.)	1.8 ac. (78,300 sq. ft.)	13 ac.	10	1/15	9 acres along Eaton Brook and its tributaries	-	Yes	102	Eliminates two blocks; fragments three blocks	163	No	No	8	-	Eastern Maine Healthcare parking lot – 130 parking spaces (20 percent)
5A2B-2	31	34	71	5 bridges 3 culverts/ 567 feet	0.6 ac. (24,300 sq. ft.)	1.5 ac. (63,000 sq. ft.)	18 ac.	2	1/23	20 acres along Felts Brook and 9 acres along Eaton Brook	-	Yes	136	Eliminates two blocks; fragments four blocks	215	No	No	15	Brewer Fence Company, Eden Pure Heaters, Mitchell's Landscaping and Garden Center, Town 'N Country Apartments	-
5B2B-2	32	30	80	6 bridges 1 culvert/ 222 feet	1.0 ac. (43,700 sq. ft.)	2 ac. (90,000 sq. ft)	17 ac.	11	1/6	3 acres along a tributary to Eaton Brook	3 acres along a tributary to Eaton Brook	Yes	102	Fragments four blocks	186	No	No	6	Bangor Hydro-Electric Co. Building, Maritimes and Northeast Pipeline Compressor Station	Eastern Maine Healthcare parking lot – 130 parking spaces (20 percent)

Notes:
Primary road contaminants are salt and lead.
No-Build Alternative consisted of Route 1A from I-395 to Route 46, and Route 46 from Route 1A to Route 9.
*[1]**Source:** USACE New England District, "Compensatory Mitigation Guidance" , 2010.*
*[2]**Source:** Maine Audubon Society, "Conserving Wildlife On and Around Maine's Roads", 2007.*
[3]All vernal pools are insignificant.
[4] Upland habitat within 250 ft.
[5] The taking of a residence
[6] The taking of a business
[7] An impact to the business without the taking of the business