Chapter 1
Purpose and Needs

Chapter 1 details the underlying purpose and needs to which the project's sponsors are responding with alternatives in Chapter 2. Chapter 1 provides an overview of the decision makers and decision-making process and provides a foundation for the remainder of the document.

Chapter Contents

1.1 Introduction

Maine Department of Transportation (MaineDOT) and Federal Highway Administration (FHWA) have undertaken the I-395/Route 9 transportation study to identify a regional solution that would improve transportation-system linkage, safety, and mobility between I-395 and Route 9 in southern Penobscot County, Maine.

The study area is located east of the City of Bangor and I-95 (exhibit 1.1). The City of Brewer and the Towns of Holden and Eddington comprise the majority of the study area. Small portions of the town of Clifton and the town of Dedham in Hancock County are also in the study area. The study area is generally bounded by the Penobscot River to the west, Route 1A to the south, Route 9 to the north, and Route 46 to the east, encompassing approximately 54 square miles.

The greater Bangor area is the economic and employment center for the north-central Maine region and a center for goods movement because of its proximity to the Interstate system and Canadian markets.

The opening of I-395, the State of Maine's east–west highway initiative, and the creation of the federal National Highway System (NHS) established the impetus for this study (see DEIS section 1.1 Study History).

1.2 Study Purpose

A detailed description of the study purpose and needs was presented in the Draft Environmental Impact Statement (DEIS) Chapter 1 Purpose and Need, which has been incorporated by reference into this Final Environmental Impact Statement (FEIS).

The purposes of the I-395/Route 9 Transportation Study are to (1) identify a section of the NHS in Maine from I-395 in Brewer to Route 9 in Eddington, consistent with the current American Association of State Highway and Transportation Officials (AASHTO)

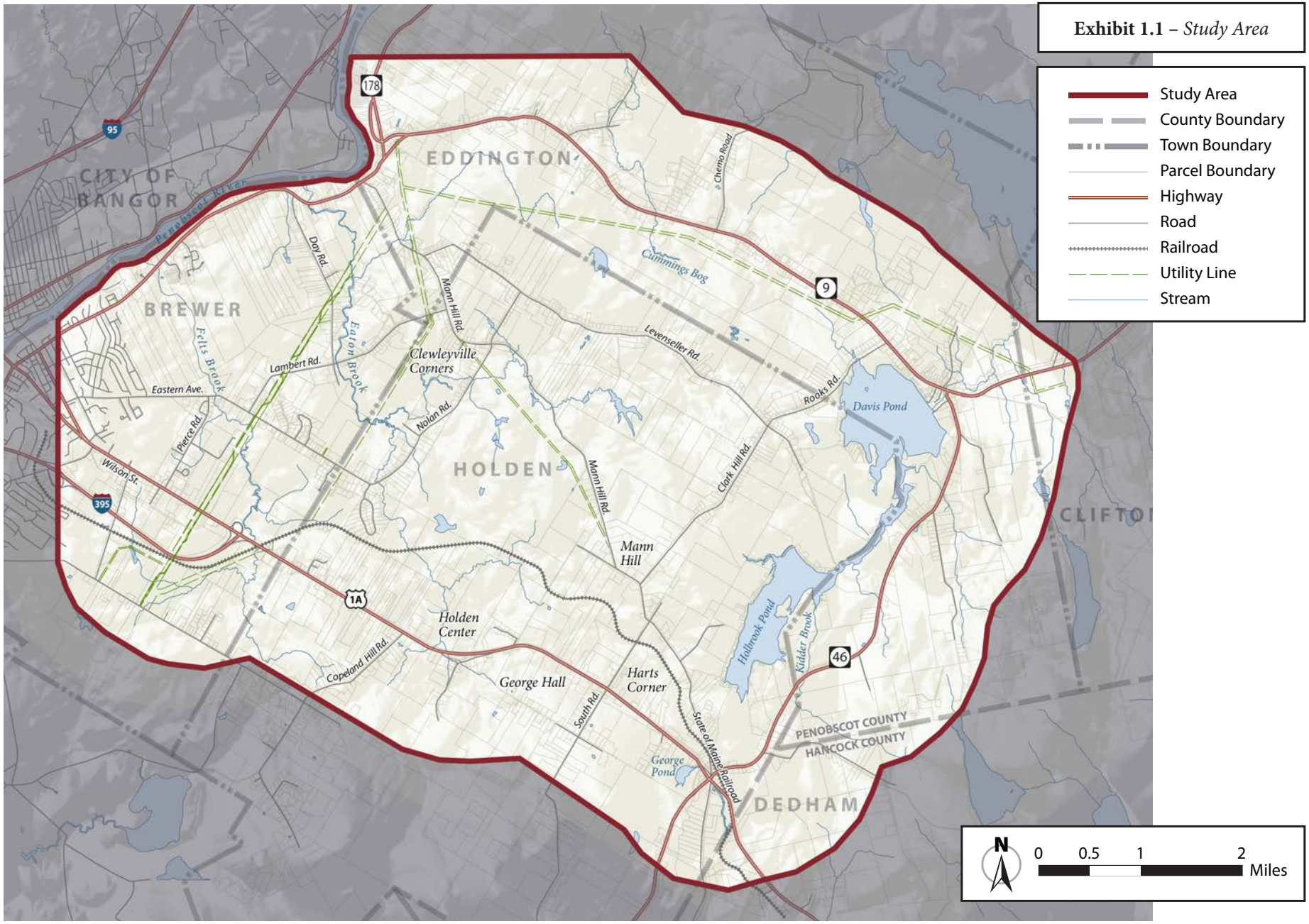
Exhibit 1.1 – Study Area
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Road
Railroad
Utility Line
Stream
CITY OF BANGOR
Penobscot River
EDDINGTON
BREWER
HOLDEN
DEDHAM
CLIFTON
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
9
395
1A
46
Chema Road
Cummings Bog
Day Rd.
Mann Hill Rd.
Levenseller Rd.
Rooks Rd.
Davis Pond
Clewleyville Corners
Lambert Rd.
Eaton Brook
Felts Brook
Eastern Ave.
Pierce Rd.
Nolan Rd.
Wilson St.
Clark Hill Rd.
Mann Hill
Holden Center
Copeland Hill Rd.
George Hall
Harts Corner
South Rd.
Holbrook Pond
Kidder Brook
George Pond
State of Maine Railroad
N
0
0.5
1
2
Miles

A Policy on Geometric Design of Highways and Streets; (2) improve regional system linkage; (3) improve safety on Routes 1A and 46; and (4) improve the current and future flow of traffic and the shipment of goods to the interstate system.

The logical termini of the project was identified and defined as (1) I-395 near Route 1A and (2) the portion of Route 9 in the study area.

The segment of highway connecting I-395 to Route 9 would have independent utility; Route 9 would continue to operate with sufficient capacity and at virtually the same operating speed without the need for improvement.

In compliance with Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) is required to prepare a basic purpose statement to determine compliance with the 404(b)(1) guidelines. Accordingly, the USACE determined that the basic project purpose "…is to provide for the safe and efficient flow of east–west traffic and shipment of goods from Brewer (I-395) to Eddington (Route 9), Maine, for current and projected traffic volumes."

In support of this study, a public advisory committee (PAC) was assembled. The PAC consisted of volunteer citizens who are representatives of city and towns in the study area and the adjoining areas. The role of the PAC is to meet periodically throughout the study to review and comment on the activities and work performed and

General Requirements for a Discussion of Purpose and Needs in an Environmental Impact Statement

- The requirement for a discussion of purpose and needs in an Environmental Impact Statement is to "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." (40 Code of Federal Regulations [CFR]1502.13)
- The purpose and needs section is in many ways the most important part of a study and chapter of an EIS :
  - » It establishes why agencies are proposing to spend potentially large amounts of money while at the same time causing environmental impacts.
  - » A clear, well-justified purpose and need section explains that the expenditure of money is necessary and worthwhile and the priority that the action resulting from the study would be given relative to other needed highway projects.
  - » Although environmental impacts are expected to be caused by the project implemented resulting from the study, the purpose and needs section should justify why impacts are acceptable based on the project's importance.
- The discussion of purpose and needs should be as concise and understandable as possible. This discussion, which can be as short as one or two paragraphs, is important for general context and understanding, as well as to provide the framework in which "reasonable alternatives" to the proposed action would be identified. The discussion does not include a description of alternatives.

The purpose should be stated in only a few sentences.

Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers (USACE) for the discharge of dredged or fill material into waters of the United States, including wetlands. Section 404(b)(1) of the Clean Water Act provides guidance to the USACE for issuing permits; compliance with the 404(b)(1) guidelines is required. The 404(b)(1) guidelines require the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA).

to provide insight to local features, issues, and concerns. The PAC assisted in developing the statement of the study's purposes and why it is needed.

In recognition of these overall study purposes, the PAC developed the following set of goals that the study should seek to address:

- safer travel from Route I-395 to Route 9
- travel efficiency
- neighborhood protection
- economic development
- environmental protection
- long-range, comprehensive planning
- connectivity with other roads and towns
- access for emergency vehicles and general traffic
- historical/archeological preservation
- financial return for investment

1.3 Study Need

The need (i.e., the problem) for transportation improvements is based on poor roadway geometry in the study area combined with an increase in local and regional commercial and passenger traffic that has resulted in poor system linkage, safety concerns, and traffic congestion.

1.3.1 Poor System Linkage

Continuity in the transportation system is essential for efficient vehicle movements and travel patterns and safety. System continuity can be defined and measured by how often an existing highway transitions between wider, higher-speed segments to narrower, lower-speed segments. System linkage and improved mobility results from smooth interconnections and transitions between regional, high-speed, high-capacity highways. In connecting these types of highways, highway-design principles attempt to provide for gradual and consistent transitions in travel speed, roadway geometry, and capacity.

Vehicles traveling through the study area from I-395 to Route 9 generally proceed from I-395 to Routes 1A, 46, and 9 — a path that has abrupt transitions in travel speed, roadway geometry, and capacity, as follows:

- I-395 is a principal arterial highway between I-95 in Bangor and Route 1A in the study area. I-395 is a controlled-access highway with two eastbound and two westbound lanes separated by an approximate 50-foot grass median. It connects to Route 1A, in Brewer with a partial cloverleaf interchange. I-395 has a posted speed of 55 mph and has a paved shoulder approximately 10 feet wide.
- Route 1A is a principal arterial highway connecting the greater Bangor and Brewer area

with Ellsworth and the coast at Bar Harbor. West of the I-395 interchange, Route 1A has two eastbound lanes and two westbound lanes. East of the I-395 interchange, Route 1A has one eastbound lane, one westbound lane, and a center turn lane from Brewer to approximately 1.3 miles east of the I-395 interchange. The remainder of Route 1A in the study area and to the coast has one eastbound and one westbound lane with no center turn lane. Access to Route 1A from its adjacent properties is not controlled and is subject to the state's rules on access management. Route 1A in the study area is posted at 25 to 45 mph, depending on location, and has a paved shoulder approximately 6 feet wide. The land uses adjacent to Route 1A in the study area are primarily commercial and residential with some undeveloped and underdeveloped areas. Over time, the areas adjacent to Route 1A are becoming increasingly more commercial.

- Route 46 is a two-lane collector road connecting Route 1A to Route 9. Access to Route 46 from adjacent properties is not controlled and is subject to Maine's rules on access management. Portions of Route 46 are steep and exceed the State of Maine's design criteria. Route 46 is posted at 35 or 45 mph and has a gravel shoulder approximately four feet wide. The land cover adjacent to Route 46 is primarily mature forested areas with scattered residences and open areas. Approaching Route 9, the land uses adjacent to Route 46 are primarily residential. Because of the mature forest canopy, considerable portions of Route 46 are shaded, and snow and ice cover does not melt rapidly.
- Route 9 is a two-lane principal arterial highway connecting the greater Bangor and Brewer area with Washington County and the Canadian Maritime Provinces to the east. Access to Route 9 from its adjacent properties is not controlled and is subject to Maine's rules on access management. Route 9 is posted at 35 or 55 mph with some school zones, depending on location in the study area, and has a paved shoulder approximately eight feet wide. The land uses adjacent to Route 9 in the study area are primarily commercial and residential with some undeveloped and underdeveloped areas. Over time, the areas adjacent to Route 9 are becoming increasingly more developed. To the east of the study area, the land uses and land cover adjacent to Route 9 quickly become less developed and more forested, and the speed limit increases to 55 mph. Most of the land adjacent to Route 9 east of the study area to the Canadian border is undeveloped.

Logical termini are features such as cross-route locations that are considered rational end-points for a transportation improvement and that serve to make it usable.

A principal arterial highway is a highway found in both urban and rural areas that connects urban areas, international border crossings, major ports, airports, public transportation facilities, and other intermodal transportation facilities.

A controlled-access highway is a highway that provides limited points of access. Interstate highways are controlled-access highways in which access points occur only at interchanges.

Access Management
The 119th Maine Legislature approved LD 2550, An Act to Ensure Cost-Effective and Safe Highways in Maine. The purpose of the Act is to ensure the safety of the traveling public and protect highways against negative impacts of unmanaged access.

The Act specifically directs the MaineDOT and authorized municipalities to promulgate rules to ensure safety and proper access on all state and state-aid highways with a focus on maintaining posted speeds on arterial highways outside urban compact areas.

More information can be found at http://www.state.me.us/mdot/planning-process-programs/amprogram.php.

The results of these deficiencies in system linkage are safety concerns, delays in passenger and freight movement, and conflicts between local and regional traffic.

1.3.2 Safety Concerns

Locations in the study area exhibit higher crash rates than other locations in Maine with similar characteristics.

Data were collected and analyzed to identify high crash locations (HCLs) using a critical rate factor (CRF). The CRF of an intersection or roadway section is a statistical measure of that location's crash history as compared to locations with similar geography, traffic volume, and geometric characteristics. When a CRF exceeds 1.00, the intersection or portion of a roadway has a higher-than-expected crash rate. Those locations with a CRF higher than 1.00 and more than eight crashes in a three year-period are considered HCLs.

Data were collected and analyzed to identify HCLs in the study area (exhibit 1.2). MaineDOT crash data for January 2004 through December 2008 indicate 10 HCLs that meet the criteria in the study area (MaineDOT, 2007c; MaineDOT, 2010).

The majority of crashes occurred on clear days with dry road conditions (MaineDOT, 2000b).

1.3.3 Traffic Congestion

Since the extension of I-395 from Bangor to Route 1A in 1986, traffic volumes in the study area have increased steadily. This growth has been most pronounced along Route 46 between Routes 1A and 9, which has become more widely used by both passenger vehicles and trucks as a connection among I-95, I-395, and Route 9.

Much of the truck traffic in the study area is through-traffic. Most of the truck trips are between the Canadian Maritime Provinces and Washington County at the eastern end, and Penobscot County and the New England states at the western terminus of the trips (MaineDOT, 2000a). Approximately 80 percent of truck traffic on Route 9 uses Route 46, and approximately five of six heavy trucks that use Routes 46 and 1A also use I-395 (MaineDOT, 2001). Route 46 south of Route 9 exhibited the greatest annual growth rate (i.e., annual growth factor of 1.121) in heavy-truck traffic between 1983 and 1996 of all roadways in the greater Bangor area (BACTS, 1998).

Estimates of the current and future annual average daily traffic (AADT) for all vehicles and heavy trucks were determined based on MaineDOT traffic count data (exhibit 1.3).

In 2008, with the economic downturn and increase in the price of gas, traffic in the study area has not grown as fast as previously thought. The MaineDOT and FHWA anticipate the growth in traffic and traffic

Exhibit 1.2 – *High Crash Locations*

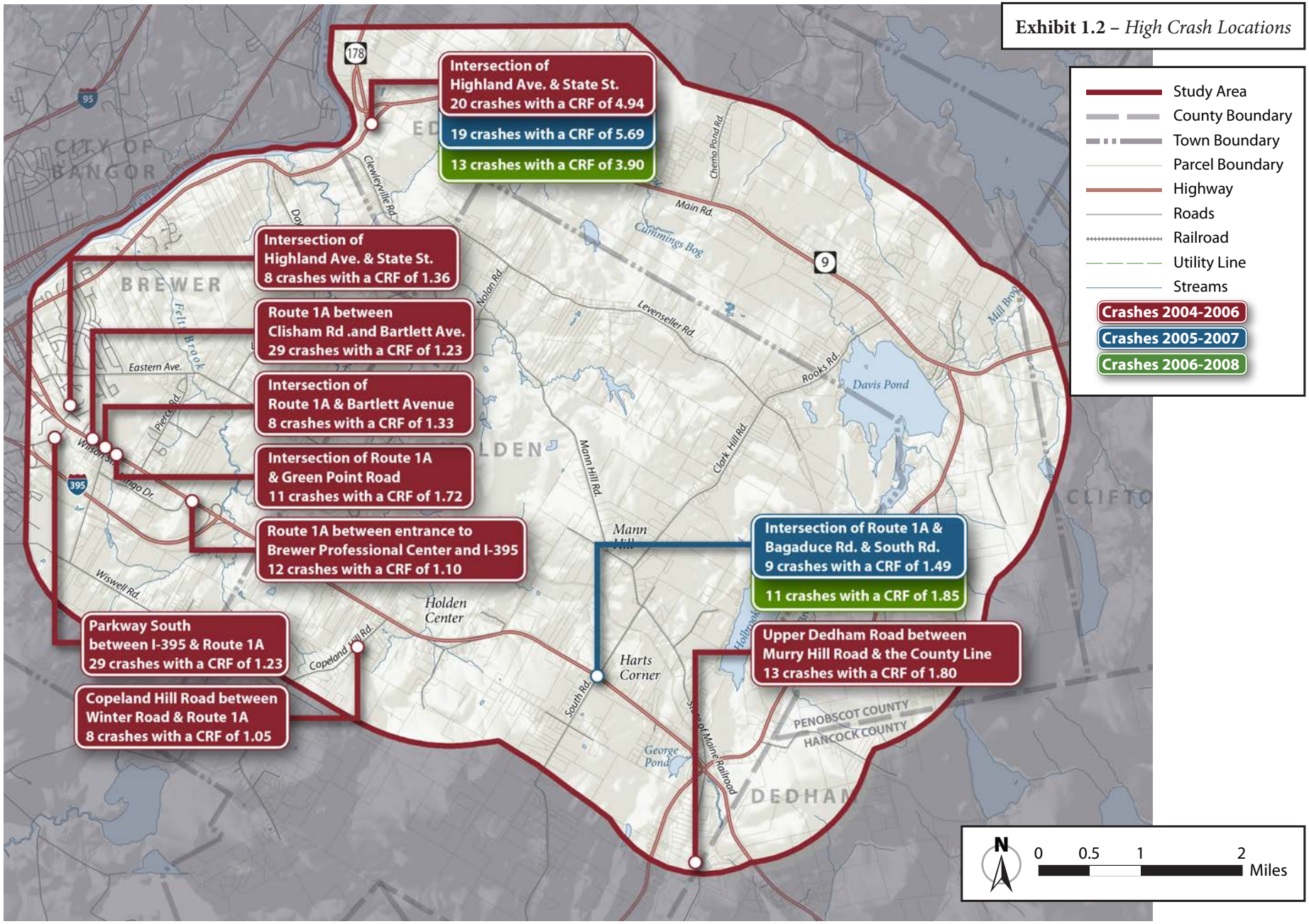

Exhibit 1.3 – *Existing and Future Traffic*

Location	1998 AADT	2006 AADT	2010 AADT	2035 AADT	2010 Truck AADT	2035 Truck AADT	% Growth 1998–2035	Growth Per Year 1998–2035
Route 1A east of I-395	18,140	20,370	22,236	33,070	1,569	2,449	82%	2.57%
Route 1A west of Route 46	16,550	15,220	16,976	30,600	1,569	2,449	85%	2.65%
Route 1A east of Route 46	11,220	11,260	12,116	18,870	1,569	2,449	68%	2.13%
Route 46 south of Route 1A	1,920	1,870	2,021	3,130	265	281	63%	1.97%
Route 46 north of Route 1A	2,270	2,270	3,058	8,570	604	1,167	278%	8.67%
Route 9 east of Route 178	6,440	6,870	7,156	8,730	569	662	36%	1.11%
Route 9 west of Route 46	4,780	5,050	5,129	5,410	604	1,167	13%	0.41%
Route 9 east of Route 46	5,100	5,400	5,830	10,940	879	1,535	115%	3.58%

volumes originally forecasted for the study area for the year 2030 won't materialize until the year 2035. By 2035, traffic volumes on Route 46 between Routes 1A and 9 are forecasted to increase by approximately 6,300 vehicles (i.e., 278 percent) (MaineDOT, 2007a).

The projected increases in traffic would lead to more traffic congestion. To help measure the traffic congestion problem and the quality of traffic flow, the MaineDOT modeled existing (i.e., 1998 and 2006) and future (i.e., 2035) design hour volumes (DHVs) of traffic for three roadways in the study area: Routes 1A, 9, and 46. The DHV is the 30th highest hour of travel during a year at a given location; therefore, it accurately reflects the heaviest summer travel congestion.

The MaineDOT used the DHVs to determine the volume-to-capacity (v/c) ratio, operating speeds, and overall level of service (LOS) for the following five roadway segments within the study area: (1) Route 1A east of the I-395 interchange and west of Route 46; (2) Route 1A east of Route 46; (3) Route 46 between Routes 1A and 9; (4) Route 9 east of Route 178 and west of Route 46; and (5) Route 9 east of Route 46.

The v/c ratio is a measure of traffic demand on a roadway (expressed as volume, "v") compared to its traffic-carrying capacity (expressed as capacity, "c"). For example, a v/c ratio of 0.7 indicates that a roadway is operating at 70 percent of its capacity.

The average travel speed is an important measure of the quality of traffic flow because it reports traffic flow in terms that most people can understand and to which they can relate their own experiences.

LOS is a qualitative measure of the performance of a roadway describing operational conditions. Generally, the LOS is defined in terms of speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience (exhibit 1.4). Six LOS "levels" are defined for each type of roadway with different analyses and definitions for each type. Letters designate each "level" with LOS A representing the best operating conditions and LOS F representing the worst. Each LOS represents a range of operating conditions and relies heavily on the perceptions of drivers. In developed areas, LOS D is typically the "worst" traffic condition considered acceptable during normal peak hours.

In evaluating the performance of roadways, the v/c ratios and average operating speeds should be considered together with LOS, which is more of a qualitative assessment. The three performance measures do not necessarily indicate the same need to improve a roadway. For example, a roadway improvement may address an unfavorable LOS, but the roadway may already have ample capacity. Similarly, improvement in a road could reduce the v/c ratio but only have a minimal impact on average travel speed.

Exhibit 1.4 – *LOS Thresholds on Two-Lane Rural Highways*

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptors
A		55+	Highest quality of service. Free traffic flow; low volumes and densities. Little or no restriction on maneuverability or speed. **No Delays**
B		50	Stable traffic flow; speed becoming slightly restricted. Low restriction on maneuverability. **No Delays**
C		45	Stable traffic flow but less freedom to select speed, change lanes, or pass. Density increasing. **Minimal Delays**
D		40	Approaching unstable flow. Speeds tolerable but subject to sudden and considerable variation. Less maneuverability and driver comfort. **Minimal Delays**
E		35	Unstable traffic flow with rapidly fluctuating speeds and flow rates. Short headways, low maneuverability, and low driver comfort. **Significant Delays**
F		25-	Forced traffic flow. Speed and flow may drop to zero with high densities. **Considerable Delays**

Exhibit 1.5 – *DHV, v/c Ratio, Average Travel Speed, and LOS for Roadways Segments*

Year	DHV	v/c Ratio	Average Travel Speed (mph)	LOS Rural Two–Lane Road
Route 1A east of I-395				
1998	1,840	0.63	34.6	E
2006	2,001	0.69	33.2	E
2035	3,269	1.12	varies	F
Route 1A east of Route 46				
1998	1,282	0.43	44.1	D
2006	1,268	0.43	44.2	D
2035	2,123	0.72	37.5	E
Route 46 between Routes 1A and 9				
1998	244	0.14	45.1	C
2006	197	0.12	45.6	C
2035	1,006	0.40	40.8	D
Route 9 east of Route 178				
1998	641	0.27	41.2	D
2006	629	0.26	41.3	D
2035	873	0.36	39.5	E
Route 9 east of Route 46				
1998	505	0.20	43.9	D
2006	573	0.23	43.5	D
2035	1,267	0.46	39.3	E

The MaineDOT estimated the v/c ratios, operating speeds, and overall LOS of these roadway segments using peak season 1998 and 2006 travel conditions and forecasted peak season 2035 travel conditions (exhibit 1.5). Route 1A east of the I-395 interchange and west of Route 46 is forecasted to decrease in service from LOS E in 1998 to LOS F by 2035 (MaineDOT, 2007a). LOS F represents heavily congested flow with traffic demand exceeding capacity (Transportation Research Board, 1998). Route 1A east of Route 46 is forecasted to decrease from LOS D in 1998 to LOS E by 2035 (MaineDOT, 2007a). LOS E is defined as traffic flow on two-lane highways having a time delay of greater than 75 percent. Passing under LOS E conditions is virtually impossible. LOS E is seldom attained over extended sections of level terrain on more than a transient condition; most often, small disturbances in traffic flow as LOS E is approached cause a rapid transition to LOS F (Transportation Research Board, 1998).

The intersection of Routes 1A and 46 is a signalized intersection. This intersection handles traffic traveling to and from the areas of Downeast Maine and traffic to and from the Ellsworth area and the coast. In 1998, the overall performance of this intersection was estimated using peak-volume conditions at LOS B (exhibit 1.6). By 2035, with increases in traffic volume and corresponding increases in delays, this intersection is forecasted to decline to an overall performance of LOS F. LOS F at a signalized intersection describes a control delay exceeding 80 seconds per vehicle. This LOS occurs when arrival flow rates exceed the capacity of the intersection (Transportation Research Board, 1998).

Exhibit 1.6 – *LOS Criteria for Signalized Intersections*

Level of Service	Control Delay Per Vehicle (Seconds)
A	< 10
B	> 10 and < 20
C	> 20 and < 35
D	> 35 and < 55
E	> 55 and < 80
F	> 80

Exhibit 1.7 – *LOS Criteria for Individual Approaches to Unsignalized Intersections*

Level of Service	Control Delay Per Vehicle (Seconds)
A	< 10
B	> 10 and < 15
C	> 15 and < 25
D	> 25 and < 35
E	> 35 and < 50
F	> 50

The intersection of Routes 46 and 9 is an unsignalized intersection. This intersection handles traffic traveling to and from Bangor (and the Interstate system) and Downeast Maine. Unsignalized intersections are not defined by an overall LOS for the intersection; individual approaches to the intersection are evaluated in terms of delay (measured in seconds) and expressed by a LOS. Threshold LOS values for individual approaches to unsignalized intersections are lower for unsignalized intersections (exhibit 1.7) than for signalized intersections because of the difference between idling at a stop sign, actively looking for a gap in traffic, and idling at a traffic signal, passively waiting for the green phase. The more onerous activity of searching for a gap and the uncertainty of when that gap would arrive makes delay at a stop sign more difficult than at a traffic signal.

In 1998, the delay on the northbound approach of Route 46 to the intersection of Routes 46 and 9 was estimated using peak volume conditions to be 6.5 seconds (LOS A) (exhibit 1.8). By 2035, with increases in traffic volume, this delay is forecasted to increase to 119.4 seconds (LOS F). LOS F at an unsignalized intersection occurs when there are insufficient gaps of suitable size to allow side-street traffic to safely cross through a major-street traffic system (Transportation Research Board, 1998).

The November 2011 change in weight restrictions on I-95 had an impact on truck traffic patterns in Maine, particularly on highways north and east of Portland. Limited vehicle classification data collected during the 2010 pilot study and an extensive 2012 follow-up

Exhibit 1.8 – *Delay on Route 46 at the Intersection of Routes 46 and 9*

Year	Delay (Seconds)
1998	6.5
2006	5.6
2010	7.5
2035	119.4

short-term vehicle classification counting program in central, eastern, and northern Maine provided new information on Class 10 (tractor-trailers with six axles) travel patterns. These class counts, along with data from permanent classification sites, were compared to 2011 class data to identify corridors where changes in Class 10 volumes and travel patterns have appeared.

The lifting of the 80,000-pound weight restrictions on the toll-free portions of the Interstate showed definite shifts of 6-axle truck traffic toward toll-free Interstate highways and away from parallel state highways and the Maine Turnpike, where the restriction has long been 100,000 pounds.

Exhibit 1.9 –
The NEPA Process

1.4 Federal and State Decisions and Actions

The MaineDOT and the FHWA, with input from the public and the federal and state regulatory and resource agencies, will decide which action to take in accordance with the National Environmental Policy Act (NEPA). The NEPA process is intended to help public officials make decisions based on an understanding of the environmental consequences and to take actions that protect, restore, and enhance the environment (40 CFR Part 1500.1) (exhibit 1.9).

This document identifies reasonable alternatives and assesses their potential transportation, social, economic, and environmental impacts. NEPA requires federal agencies to consider the impacts of their actions on the natural, social, economic, and cultural environment and to disclose those considerations in a public decision-making document referred to as an Environmental Impact Statement (EIS). The EIS is first circulated publicly as a DEIS. Following publication of the DEIS, a public hearing is held to solicit additional public input for the federal decision-making process. Public input is accepted during an open public-comment period following publication of the DEIS.

The purpose of this FEIS is to provide the FHWA, the MaineDOT, other federal and state agencies, and the public with a full accounting of the anticipated environmental impacts of the alternatives developed for meeting the study's purpose and needs and identifies the preferred alternative–Alternative 2B-2. The EIS serves as the primary document to facilitate review of the proposed action by federal, state, and local agencies and the public. The EIS will provide full discussion of potential environmental impacts and will inform decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment (40 CFR Part 1502.1). An EIS must briefly discuss the purpose and need for the proposed action, the range of alternatives considered, the resultant environmental impacts from the proposed action, and the agencies and

people consulted during the planning of the proposed action and identifies the preferred alternative.

Publication of the FEIS would be followed by the FHWA issuing a Record of Decision (ROD). The ROD would accomplish the following:

- State the decision.
- Identify all alternatives considered by the lead agencies in reaching their decision, clearly stating the reasons for selecting the environmentally preferred alternative. An agency may discuss preferences among alternatives based on relevant factors, including economic and technical considerations and agency statutory missions. An agency will identify and discuss all such factors, including any essential considerations of national policy that were balanced by the agency in making its decision, and state how those considerations entered into its decision.
- Identify the LEDPA.
- State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program would be adopted and summarized where applicable for any mitigation (40 CFR Part 1505.2) and will include the comments on the FEIS with responses.

This FEIS provides the MaineDOT with the decision-making tool required by the Sensible Transportation Policy Act (STPA), which mandates that the MaineDOT "evaluate the full range of reasonable transportation alternatives for significant highway construction or reconstruction projects." The MaineDOT actions that may proceed after completion of the NEPA process may include final design, property acquisition for use as transportation right-of-way, and construction.

This EIS integrates the requirements of Section 404 of the CWA and provides information in support of the preliminary permit application submitted to the USACE. The USACE provides oversight and regulates activities in the nation's waters. A Section 404 individual permit would be required from the USACE for the discharge of dredged or fill material into the Waters of the United States, which include wetlands. Section 404(b)(1) of the CWA provides guidance to the USACE for the issuance of permits; compliance with Section 404(b)(1) is required. Section 404(b)(1) requires project sponsors to select the Least Environmentally Damaging Practicable Alternative (LEDPA).

A permit would not be issued if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. The LEDPA should be

determined prior to completing the FEIS/ROD because the ROD documents the Preferred Alternative.

The objective of this FEIS is to identify a solution that furthers the study purpose, satisfies the needs of the study, and minimizes adverse environmental and social impacts at an affordable cost and identifies the preferred alternative, explains the basis for its selection, describes coordination efforts, and includes agency and public comments, responses to the comments and required findings and/or determinations (40 CFR 1502.14(e)).

1.5 Applicable Regulations, Guidance, and Required Permits and Approvals

The following statutes and orders apply to the proposed action and were considered during the performance of this study and preparation of this EIS:

- American Indian Religious Freedom Act (AIRFA)
- Archeological and Historical Preservation Act (AHPA)
- Archeological Resources Protection Act (ARPA)
- Clean Air Act (CAA), 40 CFR 50
- Coastal Zone Management Act of 1972 (CZMA), 15 CFR 930
- Community Environmental Response Facilitation Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 40 CFR 373 and 41 CFR 101-47
- Endangered Species Act, as promulgated at 50 CFR 17
- Environmental Impact and Related Procedures, 23 CFR 771, signed March 24, 2009
- Environmental Quality Improvement Act
- Executive Order 11514 Protection and Enhancement of Environmental Quality
- Executive Order 11593 Protection and Enhancement of the Cultural Environment
- Executive Order 11988, Floodplain Management, 42 FR 26951, signed May 24, 1977
- Executive Order 11990, Protection of Wetlands, 42 FR 26961, signed May 24, 1977
- Executive Order 12088 Federal Compliance with Pollution Control Standards
- Executive Order 12372, Intergovernmental Review of Federal Programs
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, signed February 11, 1994
- Executive Order 13007, Indian Sacred Sites
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, 65 FR 50121, signed August 11, 2000

- Farmlands Protection Policy Act, 7 CFR 658 and 7 CFR 657
- Federal Facility Compliance Act
- Federal Records Act, 36 CFR 1222, 1228, 1230, 1232, 1234, 1236, and 1238
- Federal Register, Environmental Impact and Related Procedures; Final Rule, 23 CFR Parts 635, 640, 650, 712, 771, and 790; and 40 CFR Part 622, August 28, 1987
- Federal Register, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR Parts 1500-1508, November 29, 1978
- Fish and Wildlife Coordination of 1956, as amended, 16 USC 661-667e
- Historic Sites Act, 36 CFR 65
- Magnuson–Stevens Fishery Conservation and Management Act, 50 CFR Part 600
- Maine Department of Environmental Protection, Natural Resources Protection Act, 38 Maine Revised Statutes Annotated (MRSA), Chapter 3 § 480 et seq.
- Maine Department of Environmental Protection/ Maine Department of Transportation, Stormwater Memorandum of Understanding
- Maine Endangered Species Act, 12 MRSA § 7751
- Maine Hazardous Waste, Septage, and Solid Waste Management Act, 38 MRSA § 1301, 1979
- Maine Revised Statutes, Sensible Transportation Policy Act of 1991, 23 MRSA § 73
- Migratory Bird Treaty Act of 1918, 16 USC, 703-712
- Native American Graves Protection and Repatriation Act (NAGPRA), 43 CFR 10
- Public Law 91-190, National Environmental Policy Act of 1969, 42 USC § 4321 et seq., signed January 1, 1970
- Public Law 95-217, Clean Water Act of 1977, 33 USC § 1251-1376
- Resource Conservation and Recovery Act (RCRA), 40 CFR 260-281
- Safe Drinking Water Act, 40 CFR 141
- Section 106 of the National Historic Preservation Act of 1966, as amended, 16 USC 470
- Sections 401 and 404 of the Clean Water Act (CWA)
- Section 6(f) of the Land and Water Conservation Act of 1965, 16 USC 460
- Toxic Substances Control Act (TSCA), 40 CFR 761
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 USC 61
- 23 CFR 774 Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites
- 23 USC. 111, Access to the Interstate System

The MaineDOT would be required to obtain the following permits and approvals prior to the advertisement of construction:

- Section 404 (of the CWA) Individual Permit: The USACE provides oversight and regulates activities in the nation's waters. A Section 404 individual permit would be required from the USACE for the discharge of dredged or fill material into the waters of the United States, which include wetlands. Section 404(b)(1) of the CWA provides guidance to the USACE for the issuance of permits; compliance with Section 404(b)(1) is required. Section 404(b)(1) may only permit discharges of dredged or fill material into waters of the United States that represent the LEDPA, so long as the alternative does not have other significant adverse environmental consequences.
- Natural Resources Protection Act (NRPA) Permit: A NRPA Permit is required from the Maine Department of Environmental Protection (MDEP) for projects in, on, over, or adjacent to protected natural resources. Protected resources are coastal wetlands, great ponds, rivers, streams, significant wildlife habitat, and freshwater wetlands.
- Section 401 Water Quality Certification: Section 401 of the CWA regulates the discharge of dredged or fill materials into waters. A Section 401 Water Quality Certification is required from the MDEP to ensure that the project would comply with state water-quality standards. Typically, the Section 401 Water Quality Certification would be issued concurrently by the MDEP with the NRPA Permit.
- Coastal Zone Management Consistency Determination: The portion of the study area in the city of Brewer is within the state's statutory coastal zone and subject to the provisions of the Coastal Zone Management Act (CZMA) of 1972 and the Maine CZM Program. The Maine Department of Agriculture, Conservation and Forestry administers the Maine Coastal Program. For efficiency, consistency reviews and determinations are rendered following the review and approval of state permit applications. This project would require a NRPA Permit issued by the MDEP and would require a CZM Consistency Determination issued with the NRPA Permit.