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Route 1 Thomaston, Maine : Context Sensitive Design Recommendations, September 21, 2011

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**Route 1 Thomaston, Maine
Context Sensitive Solutions Design Recommendations
WIN 017890.00**



Prepared by:
Maine Department of Transportation
Bureau of Transportation Systems Planning
Safety and Scoping Unit

With guidance from:
The Thomaston Public Advisory Committee

Introduction/Project Background

The project area along Route 1 in Thomaston was funded for Preliminary Engineering (PE) and Right of Way (ROW) in the Maine Department of Transportation (MaineDOT) Biennial Capital Work Plan, Fiscal Years 2010-2011. It was selected to follow a Context Sensitive Solutions (CSS) planning process. Context sensitive solutions (CSS) is a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. This approach leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions. For projects such as Route 1 in Thomaston, which is a historic village situated on a road that is federally designated as part of the National Highway System, CSS has proven to reduce overall project costs due to the identification of project elements and the feasibility of different options prior to spending significant resources on project engineering.

Project Location

WIN 017890.00 Route 1 in Thomaston, Maine: Beginning 0.32 of a mile easterly of the Warren town line and extending easterly 2.24 miles to the intersection of High Street.

Map 1: Study Area



Purpose and Need

The primary purpose of this project is to improve safety, roadway geometry, structural capacity, roadway drainage and reduce maintenance costs while minimizing economic, environmental and cultural impacts at a cost commensurate with traffic and roadway function.

The need for the project is generated by:

- Inadequate pavement condition;
- Inadequate roadway drainage;
- Inadequate intersection sight distance leading to inefficient traffic movement;
- Vehicular and pedestrian conflict points creating a High Crash Location;
- Inadequate paved shoulder width; and
- Inadequate bicycle and pedestrian facilities.

Existing Highway Characteristics

- Lane widths throughout the project area vary from 11' to 12'.
- Shoulder widths vary from 3' gravel shoulders to 8' gravel shoulders. In some sections there is a 1'-2' paved shoulder with gravel on the outside of that.
- The current pavement rating, as assessed in 2009, was in Good to Excellent condition based on our Pavement Management System (PMS). This section earned a Pavement Conditions Rating (PCR) of 3.83 to 4.17 on a 5-point scale (with 4.0 to 5.0 comprising the Good to Excellent range). This is a result of the maintenance surface treatment project completed in November 2008. PCR's do not account for base material, shoulders, drainage or longitudinal profile (ride). There is now evidence of transverse cracking and longitudinal cracking in the pavement layer. These cracks allow water to enter the roadbed, which further damages the pavement structure. Without additional investment in the near future, this condition will drop.
- Through the majority of the project limits the drainage is open. In the immediate downtown area there is closed system drainage.
- Existing sidewalks are located along the north side of the roadway from approximately Ridgeview Drive to Stoney Brook Lane. There is also a small section of sidewalks along the south side of the road from Green Street to Knox Street.
- The latest annual average daily traffic (AADT) of 14,010 was counted in 2007. The AADT in 2031, to cover the design life of the reconstructed roadway, is estimated to be 16,810. Current and historical AADT data is included with this report.
- The latest crash data (2008-2010) indicates that there were a total of 22 crashes along this section of Route 1 within a three year period. Of that total, 13 crashes were property damage only, 6 crashes involved a possible injury, and 3 crashes led to nonincapacitating injuries. There is one High Crash Location (HCL) located within the project limits in the downtown area of Thomaston. The location is roadway segment between Green Street (node # 29077) and the Town Office parking lot entrance (node # 30475). The characteristics of the HCL are developed further in the recommendations section of this report.
- The posted speed limit is 55 mph at the start of the project, is lowered to 40 mph as the roadway starts to go through a residential area, is lowered to 30 mph approaching the downtown, is lowered to 25 mph through downtown Thomaston and is raised to 35 mph leaving the downtown area.
- Bridge # 2562 over Mill Creek, built in 1924, is located within the project limits and has a federal sufficiency rating of 73.9 out of 100. Currently, there is no work planned for this structure.
- MaineDOT owned right of way (ROW) for this segment of Route 1 is variable (see included map). Some identified easements have a ROW of 66' while other sections have easement limits of wrought portion.
- A scoping level environmental review of the project area determined that it is within the Atlantic Salmon Distinct Population Segment, Endangered Species Act consultation area. The area is considered Urban with no mapped resources or stream crossings.
- Through the urban segment of the project area there is the potential to encounter Hazardous Materials due to the nature of some of the businesses. These types of businesses are located in the project area:

- Active Gas Station
- Vacant Gas Station
- Dry Cleaners
- Auto Repair Garage

These businesses can be found in the MaineDep Petroleum and Hazardous Waste Database.

- MaineDOT staff are collecting geotechnical data in the Fall of 2011. This data should be available in the Winter of 2011/12.
- Turning Movement Counts were taken at four locations within the project limits:
 - The Oyster River Road intersection
 - The Wadsworth Street intersection
 - The Knox Street/Beechwood Street intersection
 - The High Street intersection

MaineDOT Traffic Engineers should have the data analyzed by the end of Fall 2011.

Public Involvement Process

A kick-off public meeting was held in January of 2011 to introduce the project to the community, gather initial feedback, and recruit members for the volunteer Public Advisory Committee (PAC). A press release was sent to area newspapers advertizing the event. Those interested in participating in the PAC were encouraged to fill out an application that was reviewed by the MaineDOT project manager and the project facilitator to ensure that a wide range of stakeholder interests were represented on the PAC. In addition to the public meeting, information about the project was printed in the local newsletter and posted on the town’s website. The recruitment process generated interest from the nineteen committee members listed below.

Public Advisory Committee (PAC) Members	
John Fancy	Joanne Richards
Jonathan Eaton	Eve Anderson
Bob Snow	Olof Anderson
Rick Catalano	Peter Surek
Phil Netzorg	Patricia Hubbard
Prudy Netzorg	Robert Nedderman
Margaret McCrea	Suzi Barbee
Charles Fleming	Ellen Dyer
James Connon	Valerie Allis
Diana Beach	

Meeting Schedule

Listed below are the meeting dates and agenda items.

Meeting Type / Date	Meeting Type / Agenda
Public Meeting January 26 th	Project Introduction CSS Process Presentation Discussion of Project Area
PAC Meeting March 10 th	Purpose of the PAC Roles and Responsibilities Problem Statement Exercise
PAC Meeting April 13 th	Refine Problem Statement Refine Vision Statement Divide Project Area into Sections
PAC Meeting May 18 th	MaineDOT Presentations on: Environmental/Historic Processes Project Development Process Region 2 Responsibilities Landscape Architect Process
PAC Meeting June 8 th	MaineDOT Local Match Policy Presentation Route 1 Improvements Work Session #1
PAC Meeting July 13 th	Oyster River Rd. Intersection Improvement Options Route 1 Improvements Work Session #2
PAC Meeting August 10 th	Route 1 Improvements Work Session #3 Public Meeting Planning
Public Meeting August 25 th	Project Overview PAC Problem and Vision Statements Draft Recommendations Question and Answer Session
PAC Meeting September 14 th	Overview of Public Meeting Response Present Final Design Recommendations Next Steps
Public Meeting November 2 nd	Talk One-on-One with MaineDOT Staff Present PAC's Final Design Recommendations Question and Answer Session

Problem Statement

The section of Route 1 through Thomaston is a highly traveled corridor of regional economic significance. It is particularly busy during the summer months due to the higher population levels and increased tourism. The roadway within the project limits often experiences conflicts among trucks, cars, pedestrians and bicyclists, creating unsafe conditions for all transportation users. Exacerbating these safety concerns is that vehicles often travel at speeds higher than the posted speed limit as drivers transition from rural to residential to the downtown areas.

Within the project limits there is a historic downtown, a village green, a proposed mixed-use development, a library, several churches, a post office and multiple schools, all of which are walkable, bikeable and drivable destinations. Existing sidewalks are functionally inadequate for pedestrians as they are poorly constructed and maintained, are poorly placed, narrow, adjacent to dangerous drainage ditches, do not provide sufficient connectivity to destinations

and are not Americans with Disabilities Act (ADA) accessible. In addition, the limited number of crosswalks provides insufficient connections for pedestrians and they are a safety hazard due to poor visibility, lack of maintenance and driver inattention. All of these factors and the lack of shoulders cause pedestrians to walk in the vehicle travel way. The lack of shoulders also creates a safety hazard for bicyclists and vehicles as they are all forced to use the same travel way. The dangerous conditions are compounded at certain heavily trafficked intersections of Route 1: Beechwood/Knox Street (including the post office entrance and exit), Oyster River Road, Wadsworth Street, Fish Street and High Street.

This section of Route 1 has drainage issues that create hazards, such as ice on the roadway and the sidewalks, the unsightly buildup of debris and puddling on the road, as well as washouts that can damage both residential property and the road itself. The current drainage solutions, such as ditches along the side of the roadway, are inadequate, poorly maintained, present safety concerns and are aesthetically displeasing.

Vision Statement

The Thomaston Route 1 corridor will safely and efficiently meet the needs of both the regional through traffic and the local transportation users. The infrastructure of Route 1 will support all modes of transportation using the system, including pedestrians, bicyclists and motorists as well as the economically important freight industry. Accounting for the safety of these users will enhance the vitality of this major economic thoroughfare.

As the gateway to the Penobscot Bay region, Thomaston will welcome travelers to its historic downtown and mall area, which feature a unique abundance of historic and architecturally significant homes and buildings. The roadway will maintain the historic and aesthetic village character of the town while providing a modern transportation corridor that allows for enhanced bicycle and pedestrian connectivity within the community, slows regional through traffic to posted speed limits and creates a safer environment for all modes of transportation.

General Recommendations:

A common concern that has arisen at each public meeting and many of the PAC meetings is the need to effectively handle drainage from the roadway. This concern is shared by both abutting property owners and roadway users alike.

Maintain contact with town officials through the design phase to ensure complete understanding of drainage issues such as existing problematic areas that currently do not drain properly. In addition, communication with the town should remain open regarding the old concrete roadbed located beneath the existing road. The town would like to work with MaineDOT to coordinate their sewer line upgrades with the construction schedule.

The committee and general public have expressed a strong desire to minimize impact to abutting property owners. With that thought in mind, the PAC has developed this recommended corridor design in order to meet the needs of residents and visitors while also protecting private property.

The project limits encompass a Historic District. Project design should be considerate of the historic resources of Downtown Thomaston. Additionally, a historic survey has been

conducted by MaineDOT staff and is in the process of being verified by the Maine Historic Preservation Commission.

Although there are sidewalks along a large portion of the north side of Route 1 through the project limits, sidewalks along the south side are not consistent. The PAC was concerned that residents and visitors cannot safely access the existing sidewalks without putting themselves in danger of conflicting with motor vehicle traffic.

Protecting the trees that line the roadway has been identified as a major priority for the PAC as well as the general public. Therefore, it is recommended that project designers shift the centerline of the road if necessary in order to safely and efficiently prevent harm to existing trees while minimizing impact to abutting property owners.

Roadway Recommendations by Section:

The project area was divided into four sections according to the changing characteristics of the roadway and abutting land uses. The sections are identified below with the cross-section dimension recommendations clearly identified. Something to note is that the road will actually be built to provide 12' travel lanes throughout project limits but will be striped at 11'. This has the effect of providing a transportation facility that is strong enough to support the trucking industry but will have the traffic calming effect of a more narrow travel lane. Additionally, some notes concerning specific issues have been documented in each of the sections below.

Map 2: Project Sections



Section 1:

- Start of Project on Warren Side to Oyster River Road
 - 11' Travel Lanes
 - 5' Shoulders
 - Open Drainage
 - Lower speed limit to 50 mph to better match abutting corridor speed limits
 - Shoulders will taper down to 5' from abutting 10' shoulders
 - Drainage issue at Toll Bridge Rd
 - Vertical deficiency before Oyster River Rd

Oyster River Road Redesign

Members of the PAC expressed concerns about the functionality and safety of the Oyster River Road intersection of Route 1 within the project limits. In particular, they noted the difficulty drivers entering Route 1 North from Oyster River Road have seeing oncoming traffic prior to pulling onto Route 1. Some PAC members admitted to using the right turn lane onto Route 1 for left turns because they were able to see oncoming traffic better from that location. MaineDOT staff investigated those claims and found that the sight distance for drivers making a left turn onto Route 1 is inefficient, thereby leading to safety concerns.

Map 3: Oyster River Road Intersection



In addition to enhancing the safety of drivers entering Route 1, the narrower redesign of the Oyster River Road intersection will also serve as a traffic calming feature. The PAC has expressed the desire to landscape the lane surrounding the intersection to serve as a gateway to the village and downtown area of Thomaston. The PAC spoke of moving the “Welcome to Thomaston” sign to this location to invite visitors to their community. The cost estimate included with this report has incorporated landscaping costs as estimated by a MaineDOT landscape designer.

Section 2:

- Oyster River Road to Ship Street
 - 11' Travel Lane
 - 5' Shoulder
 - 5' Sidewalk to start at existing north side sidewalk (across from Ridgeview Drive)
 - 3' Esplanade to start at existing sidewalk
 - Underdrain system would have to be installed where the sidewalk begins
 - Proposed new crosswalk to extend from Ridgeview Drive to start of sidewalk on north side
 - Note: The MaineDOT requires that there be a safe area, such as a sidewalk on Ridgeview Drive for pedestrians to walk to
 - Lower Speed limit to 35 mph to allow for crosswalk and slow traffic entering downtown

Section 3:

- Ship Street to Roxbury Street
 - 11' Travel Lane
 - 5' Shoulder
 - 3' North Esplanade
 - 5' North Sidewalk
 - 5' South Sidewalk (Beginning at Wadsworth Street)
 - Proposed new crosswalk on east side of Booker Street to allow for safer access to schools
 - Proposed new crosswalk on west side of Gilchrist Street to allow for safer access to facilities on south side of roadway from parking areas on north side
 - Drainage issue in front of Mall – drains parking lots set back from road.

Downtown Core Safety Improvements

As stated in the Existing Highway Characteristics section above, there is a High Crash Location (HCL) in the downtown section of the project limits. A High Crash Location is defined as having 8 or more crashes within a three year time period and a Critical Rate Factor (CRF) greater than 1. The CRF quantifies the severity of the crashes in comparison to similar sections of highway throughout the state.

Map 4: High Crash Location



According to the latest crash data (2008-2010) there were 9 crashes in the roadway segment between Green Street (node # 29077) and the Town Office parking lot entrance (node # 30475) during that three year time period. That area has a CRF of 4.81, thereby making that segment of highway an HCL. Of the 9 crashes, 5 were caused by vehicles backing out of the angled parking spots and into oncoming traffic and 4 were caused by vehicles rear ending vehicles stopped for pedestrians in the crosswalk. The downtown safety improvements outlined below are in direct response to the crash data and are intended to make this section of Route 1 safer for all transportation users.

- Eastern intersection of the Main Street Mall to the Post Office
 - Build Bumpouts on both existing crosswalks

- Convert Angled parking to 45 degrees
- Install electronic “No Right on Red” signs at Beechwood and Knox intersections

Map 5: Downtown Safety Improvements



Section 4:

- Roxbury Street to High Street
 - 11’ Travel Lanes
 - 5’ Shoulders
 - 3’ North Esplanade (Ending at Stoney Brook Lane)
 - 5’ North Sidewalk (Ending at existing terminus at Stoney Brook Lane)
 - 5’ South Sidewalk (Ending at Fish Street)
 - Extend the 25 mph zone from where it currently ends at Elm Street to approximately Fish Street
 - High Street intersection should be enhanced with additional lane markings and the addition of flush concrete, brick red medians that will help direct the flow of traffic. Work with traffic engineer to better define this design once turning movement counts have been analyzed.

Both the PAC and the town’s leaders have expressed a desire to extend the south sidewalk to High Street. MaineDOT scoping staff has some initial concerns with the feasibility of building a sidewalk in that location. The land along the outer edge of the roadway slopes abruptly down to Mill Creek, implying that a large quantity of fill would be necessary to construct a sidewalk in that location. Additionally, currently there are no pedestrian facilities along High Street or leading up to the Henry Knox Museum to safely direct pedestrians using that section of sidewalk. Therefore, for that section of sidewalk to be included with the project, MaineDOT engineering staff would need to determine that their construction is feasible, safe, and practical once topographic survey data has been analyzed

High Street Intersection

The High Street intersection, which is the terminus of the project area, was noted by both the PAC and the MaineDOT Region 2 traffic engineer as an intersection that can be problematic for motorists. The conceptual design below was developed by the region engineer as a means to efficiently and effectively direct traffic through the intersection. The

design involves the flush concrete medians along Route 1 to distinguish between turning and through lanes and the painting of arrows. The improvements serve to clarify the intersection for transportation users while maintaining the existing traffic pattern.

Map 6: High Street Intersection



Estimated Project Construction Costs

The estimated project construction cost estimate is included with this report. As part of the scope includes new sidewalks and the potential for enhanced landscaping, there is a local cost share associated with the project. The local share is 20% of the cost of the new sidewalks along the south side of Route 1 and the cost of any additional landscaping the town may choose to do as part of the project. The landscaping estimate below is for the cost of planting trees and shrubs around the reconfigured Oyster River Road intersection. As part of MaineDOT’s local match policy, the Department will fund the improvements to the existing sidewalks as impacting them will be necessary to repair and upgrade the drainage of the Route 1 corridor through Thomaston.

	Full Estimate (2011 dollars)	Estimated Local Share (2011 dollars)
Highway Project	\$6,280,000*	\$128,000
Landscaping		\$10,000 - \$15,000
Total	\$6,280,000	\$138,000 - \$143,000

*Includes all sidewalk costs.

For more information contact:

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