

Basic Project Information	
What is the Project Name?	Downeast Coastal U.S. Route 1 Improvement Project
Who is the Project Sponsor?	Maine Department of Transportation
Was an application for USDOT discretionary grant funding for this project submitted previously?	N/A
A project will be evaluated for eligibility for consideration for all three programs, unless the applicant wishes to opt-out of being evaluated for one or more of the grant programs.	<input type="checkbox"/> Opt-out of Mega? <input type="checkbox"/> Opt-out of INFRA? <input type="checkbox"/> Opt-out of Rural?
Project Costs	
MPDG Request Amount	Exact Amount in year-of-expenditure dollars: <u>\$41,600,000</u>
Estimated Other Federal funding (excl. MPDG)	Estimate in year-of-expenditure dollars: 2,400,000
Estimated Other Federal funding (excl. MPDG) further detail	Other Federal funding from Federal Formula dollars: <u>\$2,400,000</u> Other Federal funding being requested from other USDOT grant opportunities?: \$0 From What Program(s)?:
Estimated non-Federal funding	Estimate in year-of-expenditure dollars: \$11,000,776
Future Eligible Project Cost (Sum of previous three rows)	Estimate in year-of-expenditure dollars: \$55,000,000
Previously incurred project costs (if applicable)	Estimate in year-of-expenditure dollars: \$0
Total Project Cost (Sum of 'previous incurred' and 'future eligible')	Estimate in year-of-expenditure dollars: <u>\$55,000,000</u>
INFRA: Amount of Future Eligible Costs by Project Type	1) A highway freight project on the National Highway Freight Network: _____ 2) A highway or bridge project on the National Highway System: _____ 3) A freight intermodal, freight rail, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility and that is a surface transportation infrastructure project necessary to facilitate direct intermodal interchange, transfer, or access into or out of the facility: \$_____
	4) A highway-railway grade crossing or grade separation project: \$_____
	5) A wildlife crossing project: \$_____

	<ul style="list-style-type: none"> 6) A surface transportation project within the boundaries or functionally connected to an international border crossing that improves a facility owned by fed/state/local government and increases throughput efficiency: \$_____ 7) A project for a marine highway corridor that is functionally connected to the NHFN and is likely to reduce road mobile source emissions: \$_ 8) A highway, bridge, or freight project on the National Multimodal Freight Network: \$
<p>Mega: Amount of Future Eligible Costs by Project Type</p>	<ul style="list-style-type: none"> 1) A highway or bridge project on the National Multimodal Freight Network: \$_____ 2) A highway or bridge project on the National Highway Freight Network: \$_ 3) A highway or bridge project on the National Highway System: \$_____ 4) A freight intermodal (including public ports) or freight rail project that provides public benefit: \$_____ 5) A railway highway grade separation or elimination project: \$_____ 6) An intercity passenger rail project: \$_ 7) A public transportation project that is eligible under assistance under Chapter 53 of title 49 and is a part of any of the project types described above: \$_____ 8) A grouping, combination, or program of interrelated, connected, or dependent projects of any of the projects described above
<p>Rural: Amount of Future Eligible Costs by Project Type</p>	<ul style="list-style-type: none"> 1) A highway, bridge, or tunnel project eligible under National Highway Performance Program: \$55,000,000 2) A highway, bridge, or tunnel project eligible under Surface Transportation Block Grant: \$_____ 3) A highway, bridge, or tunnel project eligible under Tribal Transportation Program: \$ 4) A highway freight project eligible under National Highway Freight Program: \$_____ 5) A highway safety improvement project, including a project to improve a high-risk rural road as defined by the Highway Safety Improvement Program: \$_____ 6) A project on a publicly-owned highway or bridge that provides or increases access to an agricultural, commercial, energy, or intermodal facility that supports the economy of a rural area: \$_____ 7) A project to develop, establish, or maintain an integrated mobility management system, a

	transportation demand management system, or on-demand mobility services: \$__
Project Location	
State(s) in which project is located	Maine
INFRA: Small or Large project	N/A
Urbanized Area in which project is located, if applicable	N/A
Population of Urbanized Area (According to 2010 Census)	N/A
Is the project located (entirely or partially) in Area of Persistent Poverty or Historically Disadvantaged Community?	County – no APP Census Tracts: Tracts 9555, 9556, 9562
Is the project located (entirely or partially) in Federal or USDOT designated areas	Yes/No. If yes, please describe which of the four Federally designated community development zones in which your project is located. Opportunity Zones: Yes (Tracts 9555 and 9559) Empowerment Zones: No Promise Zones: No Choice Neighborhood: No
Is the project currently programmed in the: <ul style="list-style-type: none"> • TIP • STIP • MPO Long Range Transportation Plan • State Long Range Transportation Plan • State Freight Plan 	Yes. This project is included in MaineDOT’s 2022-2024 <i>Work Plan</i> and is included in the Statewide Transportation Improvement Program (STIP) for 2022-2025. It is consistent with MaineDOT’s long-range plan.

**U.S. DEPARTMENT OF TRANSPORTATION
FY 2022 RURAL SURFACE TRANSPORTATION
GRANT APPLICATION**

Project Name:	Downeast Coastal U.S. Route 1 Improvement Project
Project Type:	Capital Project–Highway Rehabilitation
Project Location:	Washington County, Maine – 2nd Congressional District
Funds Requested:	\$41,600,000
Other Federal Funds Matched:	\$ 2,400,000
Non-Federal Funds Matched:	\$11,000,776
Total Project Cost:	\$55,000,000

Contact:	Mr. Christopher Mann, Policy Development Specialist Maine Department of Transportation 16 State House Station Augusta, ME 04333 Telephone: 207-624-3513 E-mail: Chris.A.Mann@maine.gov
----------	---

UEI #:	MP59EXMVEMJ7
--------	--------------



Table of Contents

I	PROJECT DESCRIPTION	1
II	PROJECT LOCATION	12
III	PROJECT PARTIES	
IV	GRANT FUNDS SOURCES AND USES OF ALL PROJECT FUNDING	14
V	PROJECT OUTCOME CRITERIA	15
VI	BENEFIT-COST ANALYSIS:	23
VII	PROJECT READINESS AND ENVIRONMENTAL RISK	28
VIII	PROJECT REQUIREMENTS	

APPENDICES

Standard Form 424, Application for Federal Assistance
Standard Form 424C, Budget Information – Construction Program

Project Narrative

I. Project Description

Washington County, Maine, sometimes referred to as the “Sunrise County” since it is believed to be where sun first rises within in the forty-eight contiguous states, is a rural county that is special to Maine for its beauty and natural-resource based economy. Washington County is one of the least densely populated counties in the state. Due to its rural nature and low traffic volumes, this area of the state is challenged when competing with denser areas for limited statewide capital improvement funds. As a result, Washington County has been underinvested in, especially coastal U.S. Route 1 (US 1), the primary coastal route serving Downeast Maine, which is in direct competition with State Route 9, the major east-west route in Washington County.

Coastal US 1 is vital to the communities and economy of Washington County. It connects small coastal communities, many of which are underserved, to larger service centers, where people work, shop, and obtain medical care and other essential services. It includes large segments of the Bold Coast Scenic Byway and Bikeway and is a priority electric vehicle (EV) corridor. Coastal US 1, along with State Rt. 190 in Washington County, which is considered an extension of US 1, is also an important freight route.

Since its construction in the 1930s and 1940s, various sections of US 1 and State Rt. 190 have seen periodic improvements. Piece by piece, most of the corridor has undergone full reconstruction; the final section in East Machias is currently being reconstructed. However, this piece-meal approach of rebuilding the corridor due to limited funding availability has created an inconsistent corridor with varying shoulder width, inadequate drainage structures, and differing pavement quality with many sections in poor or very poor condition. This patchwork approach has created safety and mobility challenges for motorists, cyclists, and pedestrians and has adversely impacted freight movement and the communities that rely upon it.



Deteriorating road condition and unpaved shoulders along US 1. Photo courtesy MaineDOT

This *Downeast Coastal US Route 1 Improvement Project* will rehabilitate US 1 from Machias to Calais and Rt. 190 from Eastport to US 1 to create a consistent corridor, achieve a state of good repair, and prepare for a changing climate (see Project Limits Map in Appendix A). Specifically, the project will:

- Rehabilitate/overlay 68 miles
- Widen shoulders where attainable to a minimum of 4-5 ft to better accommodate cyclists and

pedestrians

- Replace drainage structures that do not have a 10-year useful life to better withstand the effects of climate change and promote fish passage
- Make roadside safety improvements, including new guardrails, crash barriers, and rumble strips
- Lay the groundwork for future EV chargers to help meet Maine’s electric vehicle plan to bring Level 3 chargers to rural Maine

Transportation Challenges & Project Benefits (by Project Outcome Criteria)

This project will address many transportation challenges as summarized below.

Safety

Challenges: Over 28 miles of the project are rated poor or very poor condition creating safety issues for motorists and cyclists. Lane departure crashes (particularly went off road crashes) are higher than the national average, comprising 87.6% of the crash cost. Additionally, inadequate shoulder width along some sections of the corridor creates safety challenges for cyclists and pedestrians using the corridor to access essential services or cycling the Bold Coast Scenic Bikeway.

Project Solution: The project will restore all pavement to “good condition” and include roadside safety improvements, including new guardrails, crash barriers, and rumble strips to reduce lane departure crashes. This is expected to result in a reduction of 145 crashes, 52 injury crashes, and 6 fatal or serious injury crashes over a decade, which is significant for a rural area. To better accommodate cyclists and pedestrians, this project will widen shoulders, where appropriate, and especially along the Bold Coast Scenic Byway and Bikeway, to a minimum of 5 feet. A complete safety analysis of the Route 1 corridor within the project limits can be reviewed in Appendix C.

State of Good Repair

Challenges: With limited resources to both construct and preserve portions of the project area, large sections of the corridor have fallen into poor condition, while others are still adequate but need a preservation treatment in the short term. Additionally, several drainage structures are in poor condition and not adequate to withstand a changing climate or are barriers to spawning migration of Atlantic Salmon.

Project Solution: The project will restore all pavement to “good condition” and address smaller drainage structures within rehabilitation areas.

Economic Impacts, Freight Movement, and Job Creation

Challenges: The poor condition of the corridor impacts safety, reduces time reliability, and adds costs for residents using the corridor, especially traveling to places of employment and to the trucks hauling freight along the corridor. It also detracts from the Bold Coast Scenic Byway experience, negatively impacting the tourism economy.

Project Solution: Bringing the corridor into a state of very good condition through this project will improve safety, improve time reliability and reduce maintenance costs to motor vehicles and trucks traveling the project limits. It will also improve commodity flows from Eastport north to Calais and will improve the Port of Eastport’s productivity and competitiveness in the global economy. It will also improve the experience of the Bold Coast Scenic Byway to support the tourism economy.

Climate Change, Resiliency, and the Environment

Challenges: Multiple culverts within the project limits do not meet current hydraulic standards and are at risk for flooding from increased rainfall due to a changing climate. Additionally, this is a priority corridor for EV charger installations. However, the road condition is not in good condition to support an EV corridor.

Project Solution: The project will replace drainage structures that do not have a 10-year useful life to with resilient structures sized to better withstand the impacts of climate change and promote fish passage. Additionally, bringing the corridor to a state of good repair is the first step for installing EV chargers along this corridor.

Equity, Multimodal Options, and Quality of Life

Challenges: This corridor is located within areas of persistent poverty and opportunity zones. Many of the communities located along the corridor are underserved, including: Sipayik Passamaquoddy Nation, a growing Latin-X population, and migrant workers. Additionally, nearly a quarter of the population in Washington County is over the age of sixty-five. The current state of the corridor creates safety, mobility, and economic challenges for these communities.

Project Solution: Bringing the corridor to “good condition” and widening shoulders where appropriate will help improve the safety and mobility of the corridor for these underserved communities.

Innovation Areas: Technology, Project delivery, and Financing

This is a priority corridor for EV charging and this project clears the path for charging stations to be located along this corridor at a future date. MaineDOT will use innovative tools such as programmatic agreements to streamline environmental review and process.

Other Infrastructure Investments

The project builds off of other infrastructure investments recently completed or being pursued by MaineDOT and its partners.

- The future Machias Dike project at the beginning of the project limits will be built to accommodate 4’ of sea level rise. It will also provide significantly improved fish passage for many species including the endangered Atlantic Salmon. Natural resource agencies and local NGO’s also plan to restore the coastal wetlands that will be opened up by a wider opening. The back flooding will be approximately 150-400 acres of restoration.
- The US Route 1 project will expand from current work on-going in East Machias, which is investing in improving road surface and shoulder widening, that benefits not only traffic between Machias to Calais, but also Washington Academy, one of the oldest schools in Maine.
- This current work in East Machias, also builds off of recent work in Whiting and Edmunds, that widened shoulders, improved road surfaces and addressed poor visibility related to road curves and ‘hill-blocks-view’ occurrences along this windy coastal highway.
- In April 2022, MaineDOT submitted a letter of intent to FHWA for applying to the 2022 National Scenic Byways Program Notice of Funding Opportunity for “Safety and Facility Improvements to Bold Coast National Scenic Byway.” This letter of intent included the development of the Calais Waterfront Walkway Park. This is the northernmost gateway to the East Coast Greenway, US Bike Route 1, and connects with regional and national bicycling routes and scenic byways in Canada.
- Maine DOT, in partnership with the Department of Homeland Security recently constructed a new land port of entry in Calais – connecting Washington County to Canada. The new facility crosses the Saint Croix River and accommodates increased truck and passenger car capacity.

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

- A roundabout was built at the intersection of the port of entry and Route 1 in Calais to account for increased traffic and freight volumes.
- The pier/breakwater in Eastport was reconstructed and expanded to allow for larger vessels such as cruise ships to berth in Eastport bringing increased tourism capacity to the region. The U.S. Coast Guard expanded and modernized the Eastport facility with new guard and family housing currently under construction in Perry.

II. Project Location

- The Project is in Washington County, Maine.
- GPS coordinates: US 1 (Begin: 44.68652, -67.48519, End: 45.15299, -67.28525); State Route 190 (Begin: 44.97053, -67.07530, End: 44.90656, -66.99727)
- This is Maine's 2nd Congressional District, represented by Jarod Golden (D-ME). The state is represented by U.S. Senators Susan Collins and Angus King.¹
- The Project is located in an *Area of Persistent Poverty* (Tracts 9555, 9556, 9562)
- The Project is not located in a *Historically Disadvantaged Community*
- The project is not located in a *Census-Designated Urbanized Area*
- It is located in an *Opportunity Zone* (Tracts 9555 and 9559)
- It is not located in an *Empowerment Zone, Promise Zone or Choice Neighborhoods*

With a population of roughly 12 people per square mile, Washington County is one of the most rural counties in Maine. Sharing a border with New Brunswick, Canada, Washington County is over 3,258 square-miles with 1,500 miles of coastline and an international river, the Saint Croix River. Washington County is recognized for its natural beauty and amenities. The terrain, along with the quaint coastal seaside towns that are found all along our coast, led to the 125-mile Maine Bold Coast Scenic Byway designation in 2011 and National Scenic Byway Designation in 2021.

Washington County is the second poorest county in Maine. It has a total population of 31,095, with 18% living below the poverty line. The median income is well below the state median of \$57,918, at \$41,347.² Additionally, the county includes areas of persistent poverty (three of which are located within the project limits). The county is home to two tribal communities, including the Sipayik Passamaquoddy Nation (Pleasant Point Reservation), which is one of the fastest growing communities along US 1. The county is also home to the fastest growing Latin-X population in Maine, living near Milbridge and Cherryfield (about 28 miles west of the project limits) and with families from this community calling Machias home. Washington County is also home to a seasonal migrant population that works in the blueberry fields and other seasonal industries. In recent years, Washington County has been hit hard by the opioid epidemic and is still experiencing the ongoing effects.

Area	3,258 square miles
Overall Population	31,095
Population 65+	7,695 (25%)
Native American Population	1,682 (5%)

¹ See *Appendix E*, Letters of Support

² Maine Department of Labor 2019

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

Population Below Poverty Line	5,480 (18%)
Median Household Income	\$41,357

Washington County's economy is based on natural resources, including forestry products, lobster and other fisheries, blueberry harvesting, wreath making, maple syrup production, aquaculture, and elvers. Maine is the largest producer of wild blueberries in the world and in any given year Washington County is home to over 70 percent of Maine's blueberry acreage. The Port of Eastport, located in Washington County, is critical to the natural resource based economy and is located within the project limits.

Appendix A visually shows key points of interest for this project, demonstrating how this corridor is vital to the underserved communities along the project limits, to the movement of freight throughout the region, and to the region's economy. Points of interest include:

Machias and Calais: This project connects the underserved coastal communities living along coastal US 1 to the larger service centers of Machias and Calais. Machias and Calais are home to Washington County's two hospitals, along with Veterans Affairs and VA Medical Centers. They also serve the county with legal services, law enforcement and regional dispatching. Other important facilities in both communities include addiction recovery and support centers.

Tribes: There are two Passamoquoddy communities in Washington County. One community is located within the project limits at Sipayik – Pleasant Point Reservation and the other is north of Calais at Motahkomikuk and Odeneg - Indian Township Reservation. These two communities are closely linked together with relatives and community members daily commuting back and forth along this corridor to access different services.

Bold Coast Scenic Byway & Bikeway: The Bold Coast Scenic Byway extends from Milbridge (about 28 miles west of the project limits) to Eastport. It is a premier cultural and scenic destination for motorists and cyclists, linking visitors with the people, places, and culture that are authentic to Downeast Maine.³ Also along this corridor is the Bold Coast Scenic Bikeway, a 211-mile route on quiet rural roads that extends from West Gouldsboro, at the top of the Schoodic Peninsula, to Calais.⁴ The project limits includes sections of the Bold Coast Scenic Byway and Bikeway. The condition of this corridor is critical to the byway experience and tourism industry in Washington County.

Eastport/Port of Eastport: This project also connects residents to the service center of Eastport. Furthermore, the Port of Eastport is vital to Maine's economy and provides a primary connection to the global economy. This corridor provides the only access to the port and is therefore critical to the movement of freight in and out of the port.

Woodland Pulp Mill and Saint Croix Tissue Mill. The largest employer in Washington County, Woodland Pulp Mill exports pulp to Europe and Far East markets through the Port of Eastport. Raw materials travel up this corridor to the mill and pulp is trucked to the port along this corridor.

Additionally, this corridor is used for freight transport by the following key industries and employers in Washington County:

- **Wyman's Blueberries:** A multigenerational blueberry and berry grower and packer, located in Milbridge, that ships nationally and internationally. It has been in operation since 1874 and

³ <https://discoverboldcoast.com/bold-coast-scenic-byway/>

⁴ <https://discoverboldcoast.com/biking/bold-coast-scenic-bikeway/>

employs over 300 people Downeast.

- **Whitney Wreaths:** One of the largest natural wreath producers on the East Coast and a family-owned company located in Machias since 1988. Whitney Wreaths employs seven people full-time year-round and over one hundred seasonally.
- **Cooke Aquaculture:** Multinational wild and farmed fish corporation and major employer in Washington County with marine salmon farms in Eastport and Machias, and a fresh-water facility on Gardner Lake in East Machias. Employs over 40 people and growing in Downeast, Maine.

III. Project Parties

MaineDOT is the state agency responsible for managing and funding all transportation modes statewide. Employing approximately 1,800 people, the agency expends or disburses more than \$675 million annually, including federal, state and local funds. The funding source of the Project match will be State General Obligation Bonds or other state fund source. A State General Obligation Bond for transportation was last approved by the legislature and taxpayers in 2021. The Project is a MaineDOT priority.

The agency is an experienced, thorough, and responsible recipient of previous TIGER, FASTLANE, INFRA, CHBP, BUILD and RAISE grant funding. USDOT can rely on MaineDOT to fully fund and begin construction no later than 18 months after the date of obligation of funds for the Project and complete the Project by the end of calendar year 2026 without risk. There are no other public or private parties or funders involved in delivering the Project.

IV. Grant Funds, Sources and Uses of all Project Funding

The Project as requested for this RURAL application; cost (M) breakdown follows:

Funds Requested:	\$41.6 – 75.6% of Total Project Cost
Other Federal Funds Matched:	\$ 2.4 – 4.4% of Total Project Cost
Non-Federal Funds Matched:	\$11.0 – 20.0% of Total Project Cost
Total Project Cost:	\$55.0

<i>Project Budget (M)</i>				
COSTS	MaineDOT	Rural	Other Fed	Totals
Preliminary Engineering (PE)	\$0.6		\$2.2	\$2.8
Right-of-Way (ROW)	\$0.1		\$0.2	\$0.3
Construction (CON)	\$9.6	\$38.5		\$48.2
Construction Engineering (CE)	\$0.8	\$3.1		\$3.9
Totals	\$11.0	\$41.6	\$2.4	\$55.0
% Totals	20.0%	75.6%	4.4%	100.0%

MaineDOT has previously incurred \$85,000 in PE & ROW costs from Project start through September 2022. MaineDOT expects to incur another \$125,000 of those costs between October 2022 and end of 2022. Grant funding will be allocated to the construction phase of the Project only. MaineDOT

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

purchases right-of-way via a negotiation process and spends only MaineDOT funds and other federal funds.

<i>Anticipated Expenditures by Year</i>						
Project Element by Year	Prior to 2023	2023	2024	2025	2026	Total
Preliminary Engineering (PE)	\$0.21	\$0.83	\$1.05	\$0.71		\$2.80
Right-of-Way (ROW)						
Construction (CON)	\$0.00	\$15.67	\$21.02	\$7.59	\$7.92	\$52.20
Construction Engineering (CE)						
Totals	\$0.21	\$16.50	\$22.07	\$8.30	\$7.92	\$55.00

Contingency

As with all previous Federal transportation grants applied for, MaineDOT has budgeted appropriate contingency amounts to cover unanticipated cost increases. None of the funds are contingent upon satisfying a condition. Similarly, none of the funds are available for expenditure only during a fixed period.

Federal Limits

None of the requested MPDG funds are subject to any Federal limits.

V. Project Outcome Criteria

a) Safety

Motorists: The Route 1 corridor is rural in nature with low traffic volume and curvy because it follows the coastline. These geometric challenges along with the isolated nature of the roadway leads to a high occurrence of lane departure crashes. Rural roadway departure fatalities in Maine are greater than the national average.⁵ For the project limits, lane departure crashes (particularly went off road crashes) are the highest safety concern, comprising 87.6% of the crash costs over the last 10 years. This project will include a number of safety improvements to reduce total crashes and crash severity with a focus on reducing lane departure crashes, including but not limited to:

- *Rumble Strips:* Centerline and shoulder rumble strips will be installed in all areas where the mileage is 45 mph or about 47 miles. This will reduce head-on crashes by 36% with an estimated annual safety benefit of \$240,186.91 and will reduce off the road crashes by 32% with an estimated annual safety benefit of \$1,585,579.84.
- *Install or Extend Existing Guardrail:* In cases where vehicles are running off the road, they are typically striking embankment/ledge or overturning on the roadside. Based on a screening, this project will install up to four miles of additional guardrail with an annual safety benefit of \$318,672.04.

In addition to these safety measures, this project will include installation of a road weather installation system, include spot tree clearing, upgrade curve signage, install icy curve warning system, and correct super-elevations. Over a 10-year period, these safety measures are expected to result in a reduction of 145 crashes, 52 injury crashes, and 6 fatal or serious injury crashes, which is significant for a rural area. The total annual safety benefit of these measures is \$2.89 million.

⁵ Based on five-year average of rural roadway departure fatality rate per 100 million VMT.

Additionally, this section of Route 1 has a history of being a high hit area for large animals (primarily white-tailed deer). There have been 388 reported crashes with white-tail deer along this stretch over the last ten years. There are currently signs installed at multiple locations along the stretch. New crash hot spot data is currently available as well as advanced information on the effectiveness of different types of signage and mitigation efforts. This project can provide a safer environment for drivers by updating the sign types and placement.



Differing shoulder length along Bold Coast Scenic Bikeway. Photo courtesy MaineDOT.

While the project does not address the issue of commercial motor vehicle parking, there are wide shoulders along portions of the road allowing trucks to pull over briefly to check their safety appliances in a secure manner while allowing enough space for motorists to remain safely moving and unaffected.

Cyclists: There are residents living along this corridor that do not own a vehicle or have a license and bike this corridor daily in all weather conditions to reach places of employment or other essential services. Widening the shoulders, as appropriate, within the project limits, and especially along the Bold Coast Scenic Byway and Bikeway, will make this corridor safer to these cyclists and will encourage more to bike the corridor, helping to address barriers to employment. Furthermore, the safety benefits resulting from this project will help protect tourists cycling the Bold Coast Scenic Bikeway.

Pedestrians: While there are not large numbers of pedestrians using the project area, the nature of the roadway does not lend itself to walking. Residents without vehicles also walk this corridor out of necessity. Expanded shoulders would help these pedestrians feel safer and encourage them to walk more, supporting their physical and emotional health.

Altogether these safety benefits will protect and support the underserved communities living along the corridor, the tourists visiting the region, and the movement of freight along the corridor.

b) State of Good Repair

US Route 1 and State Route 190 within the project limits has been constructed over a long period of time with changing standards and expectations. With the completion of a reconstruction project in East Machias (019198.00) the initial upgrade of the project area will be complete. With limited resources to both construct and preserve portions of the project area have fallen into poor condition while others are still good but need a preservation in the short term. The following table outlines the distinct segments of the project area and the most recent pertinent pavement condition rating:

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

Current Roadway Conditions				
Route	Begin	End	PCR	Current Condition
US Route 1	253.47	260.17	2.25	Very Poor
	260.17	262.02		New
	262.02	263.62	2.83	Poor
	263.62	267.39	4.03	Good
	267.39	270.37	2.21	Very Poor
	270.37	275.53	4.27	Good
	275.53	283.84	2.79	Poor
	283.84	291.55	4.20	Good
	291.55	293.80	2.80	Poor
	293.80	302.06	3.78	Fair
	302.06	304.96	1.88	Very Poor
	304.96	313.14	3.68	Fair
	313.14	315.89	3.44	Fair
315.89	316.65	2.83	Poor	
State Route 9	288.67	289.01	3.99	Good
State Route 190	0.00	2.53	2.55	Very Poor
	2.53	6.48	3.57	Fair

PCR = Pavement Condition Rating 0-5 scale

As the table indicates, over 28 miles of the project are rated poor or very poor condition and require extensive rehabilitation. Another 23 miles are in fair condition and need preservation in the very near future and the remaining sections are in good condition but are projected to need preservation within the construction period of this grant. When this project is complete all pavements will be restored to very good condition consistent with our MaineDOT Transportation Asset Management Plan.

In addition to pavement rehabilitation, as discussed in the safety outcomes portion of the application, there will be a concentrated effort to establish a standard section within the project limits. Within that effort focus will be placed on providing an adequate shoulder for bicycles and pedestrians where technically feasible. The highest priority for these improvements will be where the project limits overlap the Bold Coast Scenic Byway/Bikeway. In accordance with MaineDOT standard practices, as part of the project, roadway features such as guardrail, signage, striping, rumble strips, etc. will be updated.



Deteriorating Shoulder along US 1. Photo courtesy MaineDOT.

Additionally, several significant structures of note will be replaced that are either in poor condition or are barriers to spawning migration of Atlantic Salmon. While the project will address many smaller structures, particularly in the rehabilitation sections, the table below outlines those structures that will be of significant extra cost and consideration. This area of the state is particularly challenged with competing for statewide preservation funds. A number of factors contribute to this dilemma. This Downeast area is somewhat isolated and not home to a great number of general contractors which limits competition in the bidding environment leading to higher costs. The relatively low traffic volumes make it difficult to compete for limited preservation dollars when compared to other areas of the state. State Route 9 is the major east-west route in Washington County and part of the NHS and is in direct competition for these limited dollars.



Large Culvert 4367 – Fish Passage Barrier

The opportunity to advance the condition of the project area will greatly increase the likelihood of maintaining a state of good repair in the future. At the conclusion of this project all pavements will be in good condition and will have similar future deterioration rate into the future. The advantage of this to the Downeast area given the challenges outlined above is work can be packaged in a way that attracts more competition, opens up possibilities for economies of scale, and provides the lowest possible life cycle costs going forward with light treatment alternatives at regular intervals. It is anticipated that these pavements can be maintained into the future at a cost of \$35,000/year-mile as compared to the costs that are two to three times that for more extensive treatments when road conditions go beyond fair condition prior to treatment.

Major Structures to be Replaced				
Structure Type	ID	Type	Condition	Fish Passage
Bridge	2774	Concrete Slab	Fair	Barrier
	6205	Aluminum Pipe	Poor	Barrier
Large Culvert	47382	Corrugated Metal	Fair	Barrier
	47373	Corrugated Metal	Poor	Barrier
	47367	Corrugated Metal	Poor	Barrier
Culverts	88081	Concrete Pipe	Good	Barrier
	88085	Concrete Box	Critical	Barrier

This project will result in travel time savings to motorists of \$24.3 million and maintenance costs of \$39.8 million. If left unimproved, the corridor will continue to deteriorate resulting in additional maintenance costs to residents driving this corridor, increased costs for freight transportation, and negative impacts to tourism.

c) Economic Impacts, Freight Movement, and Job Creation

- 1) Improve system operations to increase travel time reliability and manage travel demand for goods movement

In Washington County, US 1 serves as a key freight corridor for the natural resource-based economy.

Trucks traveling on the Route 1 corridor deliver raw materials from fields, forests, and fisheries to mills, warehouses, store shelves, and the Port of Eastport to serve Maine's businesses and residents and the international market. The Port of Eastport is vital to Maine's economy, exporting seafood, forestry products, and optical fibers. It connects Eastern Maine and the United States to the global market, including to Europe and Far East markets. Eastport has been an important port for clean energy, bringing in wind components for landside wind project developments in Maine and it is currently working with developers on playing an important role in future offshore wind development as well.

Trucking is the dominant mode of freight movement along this corridor and in all of Maine. Statewide, it accounts for 86 percent of all tonnage shipped – inbound, outbound, intra-and inter-state. Freight flows on Maine's transportation network is expected to grow 56 percent by weight and 91 percent by value by 2045. Trucks will continue to be the dominant mode of freight transport in the state.

Eastport north to Calais has been identified as one of the state's freight clusters due to the commodity flows traveling along the corridor by truck and imports and exports through the Port and at highway border crossings connected to US 1. This section of the corridor also scored a truck travel time reliability index of greater than 3 during peak periods, which is the worst index score assigned. Furthermore, part of this corridor has a high truck crash rate of 5-15 crashes per 100 square miles, which is high for a rural part of the state, see Appendix A Maine's Integrated Freight Strategy recognized the importance of this corridor in its recommendations, highlighting further improvements to U.S Route 1 between the Port of Eastport and Calais to improve freight flows and safety as a priority. This project will improve system operations and travel time reliability for the movement of freight along this corridor consistent with the recommendation in our state's freight plan. The project will improve system operations, increase travel time reliability, and manage travel demand to competitively move goods both within the region and to interstate and cross border export markets. Providing competitive freight options to and from Eastport by truck enhances the port's competitiveness with nearby Canadian ports.

Improve multimodal transportation systems that incorporate affordable transportation options

This project will widen shoulders, where appropriate, to better accommodate bicyclists and pedestrians along the project limits, resulting in up to 20 additional miles of widened shoulders. Overall improvements to the corridor will also better accommodate transit. This corridor is serviced by a fixed-route scheduled bus service, West's Bus, which provides connections to Bangor and Brewer (the third largest urban area in the state) for persons in cancer treatment. Downeast Community Partners also provides mobility and transit services to eligible residents along the corridor. Better accommodating more affordable transportation options like biking, walking, and transit is critical to this county.

2) Decrease transportation costs and improve access to employment centers and job opportunities

This corridor provides the only access for coastal communities along the project limits, many of which are underserved communities, to the service centers of Machias, Calais, and Eastport, the major centers of employment for the region. This project will improve access to employment centers for residents within these communities by creating a safer, more efficient, and reliable road for motorists and one that is more inviting to cyclists and pedestrians. It will also decrease transportation costs by reducing vehicle damage and fuel consumption as demonstrated in the Benefit Cost Analysis, Appendix B.

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

3) Significantly improve region and city economic strength via land, capital, labor productivity and rural/urban links

The project limit is the only link between the rural coastal communities along US 1 and the larger service centers of Machias, Calais, and Eastport. Therefore, improvements to this corridor are essential to the rural/urban links within Washington County and the economic strength of the region.

4) Enhance recreational and tourism opportunities

The Bold Coast Scenic Byway and Bikeway are critical to the growing tourism industry in Washington County. Tourists traveling further downeast from Acadia National Park come to the Bold Coast Scenic Byway where they visit the downtowns of coastal villages and towns along the peninsulas just off Route 1. As Acadia National Park grows in popularity and becomes more congested, more tourists are drawn to the Bold Coast Scenic Byway and Bikeway. The byway has become an integral part of the inter-local and region-wide economic development revitalization efforts to improve the local quality of life through expanded amenities and social wellbeing. The corridor's current safety and mobility issues could impact repeat visits or word of mouth advertising of the byway. Locals relying on the foot traffic from the byway are concerned that the poor road conditions will cause visitors not to return. Improvements to this corridor through this project will support the byway, improving the visitor experience, drawing more tourists to the region and supporting the local economies that depend upon it.

5) Supporting good-paying jobs with a free and fair choice to join a union and incorporate strong labor standards

This project does not directly enhance this criterion.

6) Workforce opportunity for historically underrepresented groups to support project development

This project does not directly enhance this criterion.

7) Foster economic growth and development while creating long-term high-quality jobs, addressing acute challenges, such as energy sector job losses in energy communities

Eastport has been an important port for clean energy, bringing in wind components for landside wind project developments in Maine and it is currently working with developers to potentially play an important role in future offshore wind development as well.

8) Support integrated land use, economic development and transportation planning to improve the movement of people and goods, facilitate greater public and private investments and strategies in land-use productivity, including rural main street revitalization or increase in the production or preservation of location-efficient housing

This project will support the GROWashington-Aroostook regional planning initiative which includes, among other goals, reducing transportation costs.

9) Help U.S. Compete in Global Economy

Eastport's top five trading partners have included Canada, China, Italy, Sweden, and Poland. With its naturally deep waters and access to approximately 140 acres of adjacent land ready to accommodate expansion, the Port of Eastport is well poised to increase its role in trade and the global economy. Eastport is also looking to expand and capitalize on new market opportunities. Improvements resulting

from this project will increase the Port's productivity and competitiveness with neighboring Canadian ports and better position the port and the region in the global economy. The project will ensure safe travel between the Port of Eastport and the Calais border crossing. It will also build upon upgrades to Eastport's breakwater through the TIGER program and upgrades to the runway and airport facilities through FAA's discretionary program. These investments in Route 1 will tie all these important projects together and upgrade the weak link in the current freight supply chain and for all travelers in the region.

d) Climate Change, Resiliency, and the Environment

On December 1, 2020, Maine released a four-year plan for climate action titled *Maine Won't Wait*.⁶ This project will directly support the climate change goals and strategies included in this plan.

Resiliency

There are multiple culverts along the roadway that will be replaced under this proposal. The new crossings will be sized to current hydraulic standards which will improve the Route 1 resiliency to any increases in rainfall projections. These new crossings will also provide aquatic connectivity in important stream ecosystems in the downeast area, including the spawning migration of Atlantic Salmon. This will also aid the natural environment's ability to be resilient to any changes in climate.

MaineDOT has completed an unpublished internally available assessment for looking at sections of infrastructure that may be subject to the sea level rise scenarios laid out in *Maine Won't Wait*. This section of highway could be subject to up to 8.8 feet (under certain emissions scenarios) of sea level rise by 2100. This section of Route 1 has 11 locations that could be subject to increased flooding on higher tides by 2100. At this time, the areas along this stretch are not likely to be flooded under normal tidal exchange until after 2050, therefore this proposal will not address raising roadways to aid in resiliency. However, MaineDOT anticipates the possibility of doing this at a later time.

Greenhouse Gas Emissions

Electrification of the transportation sector was identified in *Maine Won't Wait* as one of the most effective emission reduction strategies for Maine. The Route 1 corridor from Machias to Calais is a priority corridor for Level 3 chargers. MaineDOT anticipates following Maine's National Electric Vehicle Infrastructure (NEVI) plan to support these investments. The rehabilitation of this corridor is a necessary first step to support the development of this priority EV corridor. This project will also improve bicycle and pedestrian accessibility, reducing emissions and improving health outcomes.

Environmental Justice, Stormwater & Floodplains

For an overview of environmental justice considerations for this project and impacts related to stormwater and floodplains, please see "Project Readiness and Environmental Risk" Section of this application.

Addressing Environmental Sustainability

- 1) *The project results in greenhouse gas emissions reductions relative to a no-action baseline:* The project would support this by encouraging active transportation modes along the corridor through improved pavement conditions and widening of shoulders. This mode shift would reduce GHG emissions.
- 2) *A Local/Regional/State Climate Action Plan is prepared:* The state climate action plan is located

⁶ https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

here: https://www.maine.gov/future/sites/maine.gov/future/files/inline-files/MaineWontWait_December2020.pdf. The Project would support this plan by laying the groundwork for EV charging installations and replacing drainage structures to better withstand a changing climate.

- 3) *The regional TIP or STIP is based on integrated land use and transportation planning and design that increases low-carbon mode travel, reduction of greenhouse gases and vehicle miles traveled or multimodal transportation choices and/or incorporates electrification or zero emission vehicle infrastructure:* Yes
- 4) *The project sponsor has used environmental justice tools such as the EJSCREEN to minimize adverse impacts to environmental justice communities (<https://ejscreen.epa.gov/mapper/>):* Yes.
- 5) *A Local/Regional/State Energy Baseline Study has been prepared and the project directly supports that study:* The state Climate Action Plan (Maine Won't Wait) includes a plan for renewable energy. Specifically, it outlines a strategy to Grow Maine's Clean Energy Economy that includes taking advantage of New Market Opportunities and supporting Clean Energy Jobs and Businesses. This includes supporting the farming and forest products industry by providing safe, reliable, and efficient transportation within and between markets.
- 6) *The project supports a modal shift in freight (e.g., from highway to rail) or passenger movement (e.g., from driving to transit, walking, and/or cycling) to reduce emissions. The project utilizes demand management strategies to reduce congestion, induced travel demand, and greenhouse gas emissions:* Widening shoulders along the corridor (especially along the Bold Coast Scenic Byway and Bikeway) help make the corridor safer for bicyclists and pedestrians which will increase shifts to those modes.
- 7) *The project incorporates electrification infrastructure (e.g., installation of electric vehicle charging stations, zero-emission vehicle infrastructure, or both):* No, but lays the groundwork for planned EV infrastructure along this priority corridor.
- 8) *The project promotes energy efficiency:* No
- 9) *The project serves the renewable energy supply chains:* Eastport has been an important port for clean energy, bringing in wind components for landside wind project developments in Maine and it is currently working with developers in regard to potentially playing an important role in future offshore wind development as well.
- 10) *The project improves disaster preparedness and resilience to all hazards:* Yes, this project creates a safer Route 1 corridor for motorists, cyclists, and pedestrians, including during snowy conditions and flooding. It is the main emergency corridor for the coastal communities along the corridor and is supported by regional EMS.
- 11) *The project avoids adverse environmental impacts to air or water quality, wetlands, and endangered species, such as through reduction in Clean Air Act criteria pollutants and greenhouse gases, improved stormwater management, or improved habitat:* Yes, based on scope and baseline environmental data, the project will avoid significant environmental impacts. It will improve aquatic connectivity for Endangered Active salmon and will improve safety for vehicles, bicycles, and pedestrians.
- 12) *The project repairs existing dilapidated or idle infrastructure that is currently causing environmental harm (e.g., brownfield redevelopment):* Yes, replaces drainage structures to reduce impacts of flooding and provide aquatic connectivity for spawning migration of Atlantic Salmon.
- 13) *The project supports or incorporates the construction of energy- and location-efficient buildings, including residential or mixed-use development:* No
- 14) *The project proposes recycling of materials, use of materials known to reduce or reverse carbon emissions, or both:* No

e) Equity, Multimodal Options and Quality of Life

Washington County, Maine includes many underserved communities. There are three areas of persistent poverty along the project limits as well as two opportunity zones. Eighteen percent of the population lives below the poverty line and nearly 25% of the population is 65 years of age or older. Additionally, the Sipayik Passamaquoddy Nation – Pleasant Point Reservation lives along this corridor and the corridor is widely used by the growing Latin-X population and a steady seasonal migrant population. Washington County is also experiencing an ongoing opioid crisis. This project will improve the quality of life for these communities in the following ways:

- The Latin-X population in Washington County is growing and moving north to Machias and beyond. Many in this community are lobstering and fishing and their livelihood depends on their harvest making it to Calais and beyond via coastal US 1. A 2017 Report by Colby College and Mano en Mano, a local non-profit dedicated to assisting the Latin-X population in Washington County, listed transportation barriers to services as a major obstacle.⁷
- The Native American community at Sipayik – Pleasant Point Reservation, is one of two Passamaquoddy communities in Washington County, with the other north of Calais at Mohdokmaguk - Indian Township Reservation. These two communities are closely linked together with relatives and community members traveling the project limits to access services and ship products.
- Washington County has been hard hit by the opioid crisis. Both Calais and Machias are home to treatment centers and support organizations that provide essential recovery to persons addicted to opioid drugs. This corridor would be used to transport community members to treatment centers and support organizations. Oftentimes, in the case of an overdose or a relapse back into using, minute mean the difference between life and death, recovery or addiction. This grant would be instrumental in saving and changing lives in Washington County which has nearly three times the rate of overdose deaths per 100,000 population than the State of Maine.⁸

MaineDOT recently updated its Public Involvement Plans, outlining the Department’s efforts to ensure disadvantaged populations and underserved areas are afforded meaningful opportunities for public involvement.⁹ MaineDOT is currently updating its Cooperative Planning Process for Non-Metropolitan Local Officials, which further lays out MaineDOT’s approach to transportation equity and how the department seeks input from tribal communities affected by projects in accordance with the MaineDOT Tribal Consultation Policy. Public outreach for this project will be conducted in accordance with these processes. MaineDOT is also in the process of developing an Equity Outreach Dashboard as part of its virtual public involvement tool PIMA. This dashboard will help identify how MaineDOT is reaching different underserved populations, including Title VI and Environmental Justice requirements along with other data. This can help MaineDOT further understand how it is doing and what else can be done to reach underserved populations. MaineDOT’s goal is to launch this tool in December 2022. Additionally, MaineDOT is finalizing a Demographics Survey that will be included with all of our virtual meetings to measure our effectiveness in reaching underserved communities. For this project, MaineDOT will use the results of demographic surveys and the new Equity Outreach Dashboard to ensure that it reaches the underserved and vulnerable communities within the project limits.

MaineDOT has also launched a new DEI initiative. As part of this initiative, the department is

⁷ Mano en Mano 2017

⁸ MaineCDC 2021

⁹ <https://www.maine.gov/mdot/env/NEPA/public/index.shtml>

developing a DEI statement informed by an agency-wide survey. MaineDOT has also developed an external equity statement that states our commitment to ensuring that all Maine people have access to safe and reliable transportation options. As part of the external equity statement, we have reviewed and identified how MaineDOT addresses equity through its programs and services. MaineDOT will seek broad public input on this external equity statement in Summer 2022. Furthermore, “in accordance with Title VI of the Civil Rights Act of 1964 and other authorities, MaineDOT is committed to ensuring that the fundamental principles of equal opportunity are upheld in all decisions involving our employees and contractors/consultants, and to ensuring that the public-at large is afforded access to our programs and services.”¹⁰

f) Innovation Areas: Technology, Project Delivery, and Financing

Technology: No portion of the Project is believed to meet this outcome criteria. While EV charging is not part of this Project, this portion of US1 is an EV priority corridor and the Project clears the path for charging stations to be located here in the future.

Project Delivery: The parties involved in this grant application are also applying an innovative means with respect to NEPA and permitting for this project through Programmatic Agreements to ensure timely and consistent reviews and accelerate project delivery:

Programmatic Agreements

MaineDOT and various other state and federal departments have executed agreements to expeditiously but thoroughly review environmental impacts from projects. MaineDOT will take advantage of the following agreements, where applicable, to streamline the environmental review and approval process:

1. Programmatic Agreement between the Federal Highway Administration, Maine Division and the Maine Department of Transportation Regarding the Processing of Actions Classified as Categorical Exclusions for Federal-Aid Highway Projects;
2. Programmatic Agreement among Federal Highway Administration, Federal Transit Administration, the Advisory Council on Historic Preservation, the Maine State Historic Preservation Officer, and Maine Department of Transportation Regarding Implementation of the Federal Aid Highway and Federal Transit Programs in Maine;
3. Cooperative Agreement between U.S. Department of the Interior Fish and Wildlife Service (USFWS), FHWA and the MaineDOT for State Transportation Reviews by the USFWS in Maine;
4. Maine Atlantic Salmon Programmatic Consultation finalized January 23, 2017;
5. Programmatic Agreement for the State of Maine concerning identification of listed and proposed species and designation of non-federal representative under the Federal Endangered Species Act between FHWA, Maine Division USACE, & MaineDOT
6. Programmatic Agreement for the State of Maine concerning identification of listed and proposed species and designation of non-federal representative under the Federal Endangered Species Act between FHWA, Maine Division USACE, & MaineDOT.

¹⁰ <https://www.maine.gov/mdot/civilrights/title-vi/>

7. Memorandum of Agreement for Stormwater Management Between the MaineDOT, MTA and Maine Department of Environmental Protection.

Financing: No portion of this project is believed to meet this criteria.

VI. Benefit-Cost Analysis

The BCA (detailed in Appendix A) estimates nearly **92 million** in total benefits over the 30-year analysis period resulting from the \$55 million investment. On a discounted NPV basis (7% for all costs and benefits; exclusive of CO₂ – discounted at 3%), the Project yields a strong benefit-cost ratio of **1.93:1**. Benefits accrue due to the improved transit time for trucks and light vehicles utilizing a roadway that has been elevated to a state of good repair increasing overall travel speeds and significant safety improvements. Benefits for property value increases as a result of this project were not estimated because of the wide ranging impacts and the difficulty to have an objective analysis. There are on-going maintenance net savings, as well as marginal emissions reductions due to shorter transit time. These benefits will greatly enhance the experience for freight deliveries, motorists, and vulnerable roadway users.

Net Maintenance Costs – A modest overall benefit to the Project is the reduced maintenance required post-construction with equivalent annual maintenance needs enhanced by reduced frequency of maintenance patching, spot treatments and future major treatments. Instead, these are replaced

7% NPV Summary over 30 Years (CO ₂ at 3%)		
	Costs	Benefits
CAPEX - Project Cost	\$47,724,756	
Maintenance Costs		\$39,771,809
Safety Savings		\$25,465,664
Time Savings Pavement Condition		\$24,333,654
Emissions Savings from Time		\$2,428,722
TOTAL	\$47,724,756	\$91,999,848
Benefit-Cost Ratio		1.93

with regular preventative maintenance treatments every 8-10 years. This comes at less cost per occurrence. The NPV of the net savings in the build vs. no-build scenario is \$39.8 million

Safety – The calculated nominal *annualized* safety benefit is \$3.88 million and yields an overall NPV of \$25.5 million. These savings are based on an estimated number of net reduced crashes that result from the outlined safety improvements as outlined in the safety analysis presented in Appendix B. Safety cost savings were only taken over the first 12 years of the project as this is the anticipated delay in achieving the desired pavement preservation model and included safety benefits without this rural grant.

Time and Emissions Savings Utilizing the Bypass – The primary benefits to the Project result from truck and other vehicle savings. With a fairly low AADT for a rural area, hundreds of trucks and thousands of vehicles will save more than 359 hours cumulatively per average day when traversing the project area. That results in significant operator and emissions savings. The NPV of the time savings is \$24.3 million and the NPV of the emissions savings is \$2.43 million. Time and Emissions cost savings were only taken over the first 12 years of the project as this is the anticipated delay in achieving the desired pavement preservation model and included safety benefits without this rural grant.

VII. Project Readiness and Environmental Risk

During the development of this application, risks were contemplated, but each has a comprehensive mitigation strategy. Preliminary design is currently underway and coordination between the design team and the environmental team will continue to ensure that the project goals and community needs can be met while avoiding, minimizing, and mitigation potential environmental impacts.

a) Technical Feasibility/Detailed Project Description

The project is made up of three distinct types of work, safety improvements, structures replacements, and pavement rehabilitation and overlay. This section will detail the limits of this work. It will be coordinated through the development phase and bundled to leverage the availability of contractors, seasonal nature, and areas of specialty work.

i. Safety Improvements

Details of the safety improvements analysis and supporting data can be found in Appendix C of this application.

- This project will install centerline rumble strips for the project length where speed limits are 45 mph or greater. Centerline rumble strips have been shown to reduce lane departure crashes in Maine.
- Shoulder rumble strips will be installed at the same locations as centerline. The exact cross sectional location of these in the shoulder will be determined through site specific width and residential density.
- This project will install a road weather information station in Whiting to help alleviate icy road crash concentrations along this section of US 1.
- Curve warning signs will be installed at curves with noted crash history at the following locations:

Potential Icy Curve Warning System Locations

Town Name	BMP	EMP
Whiting	264.71	264.85
Whiting	266.09	266.24
Perry	291.02	291.23

- Guardrails will be installed or extended at the following four locations:

Install or Extend Guardrail

Town Name	BMP	EMP
Whiting	264.54	266.17
Whiting	270.78	270.85
Robbinston	299.92	302.08
Calais	305.95	306.10

- Extensive tree clearing to the edge of right-of-way to mitigate clusters of tree hits by vehicles who left the paved surface at the following locations:

Tree Clearing

Town Name	BMP	EMP
Whiting	266.24	266.55
Perry to Robbinston	298.47	298.65
Robbinston	299.42	299.65
Calais	305.74	305.95

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

- Upgraded curve warning signs will be placed in locations that show a history of lane departure crashes at the following locations:

Curve Signing and Marking Treatments

Town Name	BMP	EMP	Recommended Curve Treatment
Whiting	264.02	264.18	Delineators
Whiting	264.71	264.85	Delineators
Whiting	266.09	266.23	Chevrons Signs, Curve Warning Signs, Painted Edge Line Blocks
Whiting	271.57	271.75	Upgrade Delineators
Whiting	272.86	272.96	Large Arrow Board, Curve Warning Sign, Painted Edge Line Blocks
Dennysville to Pembroke	284.36	284.50	Chevrons Signs, Curve Warning Signs, Painted Edge Line Blocks
Calais	305.80	305.97	Oversize Existing Chevron Signs, Upgrade Existing Curve Warning Signs to Flourescent Sheething
Calais	315.44	315.51	Large Arrow Board, Curve Warning Sign, Painted Edge Line Blocks

- Superelevation will be reestablished on 27 curves on US 1 to meet current safety standards.

ii. Structures Replacement

The following significant structures will be replaced as part of this project:

Major Structures to be Replaced				
Structure Type	ID	Type	Condition	Fish Passage
Bridge	2774	Concrete Slab	Fair	Barrier
	6205	Aluminum Pipe	Poor	Barrier
Large Culvert	47382	Corrugated Metal	Fair	Barrier
	47373	Corrugated Metal	Poor	Barrier
	47367	Corrugated Metal	Poor	Barrier
Culverts	88081	Concrete Pipe	Good	Barrier
	88085	Concrete Box	Critical	Barrier

Cross culverts that do not have a useful life of at least 10 years or are determined to be a barrier to migrating fish will be replaced as part of these efforts in rehabilitation areas.

iii. Pavement Rehabilitation and Overlay

The bulk of this project is to rehabilitate the highway pavements and bring them into a state of good repair that can be economically maintained given the remote location. The following table outlines the detailed treatment by route and milepoint:

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

<i>Proposed Work by Year and Milepoint</i>				
Route	Begin	End	Year	Scope of Work
US Route 1	253.47	260.17	2023	Rehab
	260.17	262.02	2022	2022 Reconstruction
	262.02	263.62	2024	Rehab
	263.62	267.39	2023	Overlay
	267.39	270.37	2024	Rehab
	270.37	275.53	2026	Overlay
	275.53	283.84	2024	Rehab
	283.84	291.55	2026	Overlay
	291.55	293.80	2024	Rehab
	293.80	302.06	2026	Overlay
	302.06	304.96	2024	Rehab
	304.96	313.14	2023	Overlay
	313.14	315.89	2023	Overlay
315.89	316.65	2023	Rehab	
State Route 9	288.67	289.01	2023	Overlay
State Route 190	0.00	2.53	2024	Rehab
	2.53	6.48	2023	Overlay
Year is meant to be Calendar Year, Mile 260.17 to 262.02 is a current project ending in 2022 not part of the Rural Proposal. See Map in the appendix for spatial locations.				

b) Project Schedule

The efforts outlined in this RURAL application are contained within the MaineDOT Work Plan and the latest STIP. The table to the right outlines a high level milestone schedule for the entire project including all components. Due to the overall size, complexity and variations in project scope the overall effort will be broken into several construction contracts and take multiple construction seasons. The first “date” is the pertinent date for the first contract and the “last date” is the pertinent date for the final contract. A detailed gannt chart for all major components can be found in **Appendix D**. Construction on the first year of the project will begin in the spring of 2023 with two contracts, one for 7.5 miles of highway rehabilitation and one for nearly 15 miles of overlay. The final contract will be over 21 miles of overlay to be completed in 2026. The two construction seasons in between will be focused on major rehab projects and significant structure replacements as outlined in the detailed project description. All grant funds will be obligated on or prior to September 30, 2025. Therefore, construction will commence well under 18 months after that. Right-of-way will be required in locations of structures replacement and possibly to accommodate areas of shoulder widening due to ditch relocation. This schedule accommodates the standard right-of-way process for projects of this type.

c) Required Approvals

1. MaineDOT has initiated communication with environmental agencies and interested parties. Preliminary baseline data collection to identify natural and cultural resources potentially affected by the Project is nearly complete. This information will be refined during design and will be used to avoid and minimize impact while meeting the purpose and need of the Project.

i. **National Environmental Policy Act (NEPA):** The (NEPA) process will inform design efforts. Based on the Project scope, the Project will be classified as a Categorical Exclusion in accordance with 23 CFR 771.117(c) (26) or d(13). MaineDOT is currently reviewing the Project and preparing NEPA documentation in accordance with *Programmatic Agreement between the Federal Highway Administration, Maine Division and the Maine Department of Transportation Regarding the Processing of Actions Classified as Categorical Exclusions for Federal-Aid Highway Projects*. Should any issues arise, MaineDOT will work directly with the respective agencies to quickly resolve them. The anticipated date for NEPA completion is highlighted in the project schedule by component Public involvement will be completed in accordance with MaineDOT Public Involvement Plan and the MaineDOT NEPA Public Involvement Plan. These plans can be found at this link:
<https://www.maine.gov/mdot/env/NEPA/public/index.shtml>

ii. **Historic and Archeological:** MaineDOT and FHWA have initiated and will complete the Section 106 process for both sections in accordance with the *Programmatic Agreement among Federal Highway Administration, Federal Transit Administration, the Advisory Council on Historic Preservation, the Maine State Historic Preservation Officer, and Maine Department of Transportation Regarding Implementation of the Federal Aid Highway and Federal Transit Programs in Maine*.

Several sections of Route 1 within the Project have been surveyed for historic resources. The MaineDOT historic coordinator will evaluate the gaps in survey information and consider the highway treatments for each project segment. The design team will work to avoid and minimize impacts. Generally, pavement improvements and culvert replacements do not result in adverse effects. Should they arise because of unique circumstances, MaineDOT and FHWA will resolve adverse effects to historic properties in consultation with the Cultural Coordinator and the Maine Historic Preservation Commission as outlined in 36 CFR 800 and the MaineDOT Section 106 Programmatic Agreement. MaineDOT and FHWA Maine Division will engage federally recognized Tribes, especially for the portions of the project in the Passamaquoddy Pleasant Point Reservation area.

iii. **Section 4(f) of the Department of Transportation Act:** The MaineDOT Cultural Coordinator will review the project corridor to identify Section 4(f) resources. Project details and right-of-way information will be evaluated to avoid and minimize potential Section 4(f) uses. Based on the project scope, and Section 4(f) use that is unavoidable is expected to be *de minimus*.

iv. **Endangered Species Act (ESA) and Essential Fisheries Habitat (EFH):** The Project area includes designated Essential Fish Habitat. MaineDOT and FHWA will incorporate Conservation Recommendations provided by NMFS for any culvert replacements that require in-water work.

The project is located within the range of federally-listed Gulf of Maine Distinct Population segment of Atlantic salmon and its designated Critical Habitat. Stream crossings requiring replacement as part of the project will be sized and designed to meet the Maine Atlantic Salmon Programmatic Consultation, finalized in 2017.

The Project is located within the range of the federally threatened Northern Long-Eared Bat, a new designation since completion of the Record of Decision. MaineDOT anticipates that the Project may affect, but not adversely, the Northern Long-Eared Bat. The Project will be eligible for Streamlined Section 7 Consultation pursuant to the USFWS Northern Long-Eared Bat 4(d) Rule and/or the U.S. DOT and USFWS Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat.

MaineDOT and FHWA will coordinate with federal agencies during Project design to avoid and/or minimize effects to EFH and ESA species and to update the required consultations as applicable in accordance with the Project schedule.

- v. **Section 404 Clean Water Act Permit (U.S. Army Corps of Engineers):**
Freshwater wetland and stream impacts are expected to install replacement stream crossings. MaineDOT will avoid and minimize temporary and permanent wetland and waterbody impacts to the extent practicable. MaineDOT anticipates that wetland impacts and any in-water work will be eligible for Category 2 Permits under the Maine Programmatic General Permit. Use of In-lieu fee mitigation payments to the Maine Natural Resources Compensation Program will streamline compensatory mitigation for unavoidable wetland impacts.
- vi. **Natural Resources Protection Act (Maine Department of Environmental Protection):**
Wetland and stream impacts are regulated by the Maine Natural Resources Protection Act. MaineDOT anticipates that wetland and stream impacts associated with the Project will be eligible for Permit-By-Rule Chapter 305, Section 11, which is a streamlined permit process for State Transportation Facilities.
- vii. **Stormwater (Maine Department of Environmental Protection):** The Project will incorporate Best Management Practices for temporary and permanent management of soil erosion and sedimentation. Permanent measures for treatment of stormwater quantity and quality will be incorporated in accordance with Chapter 500 regulations and the Memorandum of Agreement for Stormwater Management Between the MaineDOT, MTA and Maine Department of Environmental Protection.
- viii. **Floodway/Floodplains:** The Project may require construction of new crossings at waterbodies with designated Zone A and Zone B floodplains. All crossings will be designed to avoid and minimize encroachments into designated flood zones and in accordance with Executive Order 11988. Crossings will generally be designed to improve hydraulic capacity and aquatic connectivity.
- ix. **Environmental Justice:** MaineDOT utilizes the EPA EJSCREEN for all federally funded projects. According to US Census Block Data, the percentage of the population below the poverty level ranges from 14-24 % along Route 1 within the Project.

The Project area includes the Passamaquoddy Pleasant Point Reservation. The Passamaquoddy Tribe is federally-recognized and will require special consideration under Executive Order 12898. The Project area includes areas identified as Disadvantaged using

the [Climate and Economic Justice Screening Tool](#) <https://screeningtool.geoplatform.gov/en/>. Areas east of Route 1, including the towns of Calais and Eastport alignment tract exceed the Health Burden threshold for asthma rates and heart disease and the Clean Energy & Energy Efficiency thresholds for energy burden while exceeding the low income and higher education non-enrollment thresholds.

The Project will not require residential or commercial displacements. The project will improve existing roads and infrastructure and will reduce safety risks for all users of the transportation system, including vehicles, pedestrians, and bicyclists. It will improve safety and quality of access to shopping and jobs. The Project team will engage the public and work to ensure the impacts from the project will not disproportionately impact people of color, low-income, or disadvantaged populations. MaineDOT recently updated its Public Involvement Plans, which outline the Department’s efforts to ensure disadvantaged populations are afforded meaningful opportunities for public involvement. The Plan are available here: <https://www.maine.gov/mdot/env/NEPA/public/index.shtml>

Project Risks	Mitigations
Environmental permitting/restriction <ul style="list-style-type: none"> Federally Endangered Atlantic Salmon DPS and Critical Habitat 	<ul style="list-style-type: none"> Collaborative agreements with MaineDOT, USFWS, USACE, FHWA and MTA under the Endangered Species Act through a process that expedites endangered species consultations and aims to meet both wildlife and Project goals^[1] Choosing a final design that minimizes in water work Constructability reviews will be completed during design to ensure the selected alternative is buildable given the various environmental restrictions

VIII. Project Requirements

Statutory Selection Requirements

Rural Requirement #1

- *Economic impacts:* Bringing the corridor to a state of very good condition through this project will improve safety, improve time reliability and reduce maintenance costs to motor vehicles and trucks traveling the project limits. It will also improve commodity flows through the freight cluster from Eastport north to Calais and will improve the Port of Eastport’s productivity and competitiveness in the global economy
- *Mobility impacts:* The project will result in a more efficient corridor for motorists and trucks. It will also improve conditions for cyclists and pedestrians by widening shoulders where appropriate, and especially along the Bold Coast Scenic Byway and Bikeway, to a minimum of 5 feet.
- *Safety impacts:* The project will restore all pavement to “good condition” and include roadside safety improvements, including new guardrails, crash barriers, and rumble strips to reduce lane departure crashes. This is expected to result in a reduction of 145 crashes, 52 injury crashes, and 6 fatal or

^[1] <http://www.maine.gov/mdot/maspc/>

serious injury crashes over a decade, which is significant for a rural area. To better accommodate cyclists and pedestrians, this project will widen shoulders, where appropriate, and especially along the Bold Coast Scenic Byway and Bikeway, to a minimum of 5 feet.

- *Scale of Impact (national or regional)*: significant regional impact to safety and mobility of the corridor to personal transportation and freight movement and national and global impact of improved operations to support the Port of Eastport's productivity and competitiveness in the global market.

Rural Requirement #2

- The BCA (detailed in Appendix A) estimates nearly **92 million** in total benefits over the 30-year analysis period resulting from the \$55 million investment. On a discounted NPV basis (7% for all costs and benefits; exclusive of CO₂ – discounted at 3%), the Project yields a strong benefit-cost ratio of **1.93:1**.

Rural Requirement #3

- *Specify the Section 150 Goals and summarize how the project contributes to Section 150 goals:*
 - 1) *Safety* – MaineDOT estimates the Project will result in a reduction of 145 crashes, 52 injury crashes, and 6 fatal or serious injury crashes over a decade
 - 2) *Infrastructure condition* – The project will bring the US 1 corridor into a state of very good condition.
 - 3) *Congestion reduction* – Given the rural nature of this corridor, it does not experience high congestion. However, the Project will help mitigate the state freight cluster from Eastport north to Calais.
 - 4) *System reliability* – Surface transportation reliability will improve for personal vehicles and freight movement.
 - 5) *Freight movement and economic vitality* – Trucks traveling on the Route 1 corridor deliver raw materials from fields, forests, and fisheries to mills, warehouses, store shelves, and the Port of Eastport to serve Maine's businesses and residents and the international market. The Port of Eastport is vital to Maine's economy, exporting seafood, forestry products, and optical fibers. It connects Eastern Maine and the United States to the global market, including to Europe and Far East markets. This project will improve safety, improve time reliability and reduce maintenance costs to trucks traveling the project limits. It will also improve commodity flows through the freight cluster from Eastport north to Calais and will improve the Port of Eastport's productivity and competitiveness in the global economy
 - 6) *Environmental sustainability* – The project will replace drainage structures that do not have a 10-year useful life to better withstand the impacts of climate change and promote fish passage.
 - 7) *Reduced project delivery delays* – MaineDOT will work to eliminate delays in Project development and delivery by continuously communicating with contractors and working with them to resolve any delays rapidly. MaineDOT reduces regulatory burdens and improving agencies' work practices by incorporating cooperative agreements into the work process. MaineDOT looks forward to abiding by current performance measures or creating new ones, as well as providing reports for all aspects of any project, including condition levels, injury measures, congestion mitigation, emissions reductions, freight movements, establishing and reporting on performance targets, and how the state is addressing freight bottlenecks.

Rural Requirement #4

- *The following activities have been completed as of the date of application submission:*

Environmental Assessments: Yes/N/A Topographic Surveys: Yes
Metes and Bounds Surveys: No Geotechnical Investigations: No
Hydrologic Analysis: Partial Utility Engineering: No

DOWNEAST COASTAL U.S. ROUTE 1 IMPROVEMENT PROJECT

Traffic/Safety Studies: Yes

Financial Plans: N/A

Revenue Estimates: N/A

Hazardous Materials Assessments: N/A

General estimates of the types and quantities of materials: Yes

Other work needed to establish parameters for the final design: Final survey at structure sites,
Right-of-way mapping finalized where applicable, minor utility coordination

Rural Requirement #5

- *Provide expected obligation date and construction start date, referencing project budget:*

Construction on the Project is expected to begin in a timely manner on 6/1/2023. All components of the Project will be advertised as outlined in the detailed project schedule in Appendix D. All grant funds will be obligated on or prior to September 30, 2025. The Project does have multiple components, these components will be bundled into like work and acceptable contract size to maximize competition and coordinate work sequence along the project.

Grant Request Supporters*:

MaineDOT’s grant request for Rural funds is supported by a diverse group of elected officials, and stakeholders due to the significant economic impact the Project will have on the region. This list of supporters includes:

Members of Congress: *(letters will be sent directly to the Secretary’s office)*

- U.S. Senator Susan Collins (R-ME)
- U.S. Senator Angus King (I-ME)
- U.S. Congressman Jarod Golden (D-ME)

State Elected Officials/Offices:

- Governor Janet Mills
- State Senator Marianne Moore, State Representative Meldon Carmichael, State Representative Robert Alley, State Representative William Tuell and State Representative Billy Bob Faukingham

Other Organizations:

City of Calais
Town of Machias
Downeast Acacia Regional Tourism (DART)
Sunrise County Economic Council (SCEC)
Washington County Community College (WCCC)
Calais School Department
Washington County Government
Woodland Pulp LLC, St. Croix Tissue and St. Croix Chipping LLC
City of Eastport
Washington County EMS

Please visit <http://www.mainedot.gov/grants/raise/>

* MaineDOT will post all received letters on our website noted above.

APPENDIX

Maps	A
Benefit-Cost Analysis	B
Safety Analysis	C
Gantt Chart Schedule	D
Letters of Support	E
Funding Match Commitment Letter	F
Environmental Justice Screen	G