

**U.S. DEPARTMENT OF TRANSPORTATION  
REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND  
EQUITY “RAISE”  
GRANT APPLICATION**

Project Name: **Northern Maine U.S. 1 Road Improvement Project**  
Project Type: Road Resurfacing and Safety Improvements  
Project Location: Rural, Frenchville, Maine – 2<sup>nd</sup> Congressional District  
Funds Requested: \$25,000,000 – 66.2% of Total Project Cost  
Other Federal Funds Matched: \$ 5,200,000 – 13.8% of Total Project Cost  
Non-Federal Funds Matched: \$ 7,550,000 – 20.0% of Total Project Cost  
Total Project cost: \$37,750,000

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### **Project Summary**

Maine Department of Transportation (MaineDOT) is seeking \$25,000,000 (66.2%) from a U.S. Department of Transportation (USDOT) Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant. The total cost of the project is \$37,750,000, of which \$7,550,000 (20.0%) will be matching funds from MaineDOT with the balance, \$5,200,000 (13.8%), coming from Maine's Core Federal Funds.

The *Northern Maine U.S. 1 Road Improvement Project* ("Project") will:

- a) Bring two substandard sections of the region's only east-west thoroughfare into compliance creating a cohesive, modernized and standardized regional roadway.
- b) Upgrade the topography, subsurface, road surface, shoulders, drainage, retaining walls, and guardrails along two adjacent sections of U.S. Highway 1 (US 1) near Frenchville, Maine, a total of 10.4 miles.
- c) Repair, upgrade, and standardize critical safety features along the road.
- d) Upgrade the roadway shoulders to meet today's standards for drivers and provide a safe surface for bicyclists along this recently-designated *U.S. Bicycle Route*.
- e) Ensure that vital connectivity is preserved for residents in this very rural part of the country.

The Project includes stabilizing the road subsurface, easing crests and dips in the road's topography, replacing drainage pipes and culverts under the road, repairing or replacing retaining walls, modernizing crash barriers, upgrading the road's shoulders from gravel to pavement, and increasing the speed limit—all to ensure the right-of-way is safer for vehicles and also meets *U.S. Bicycle Route* standards.

There are numerous safety benefits for drivers, tourists, bicyclists, and residents living along the road, benefits that align with USDOT's goal of *capital investments in surface transportation that will have a significant local or regional impact*. This Project will have both. Local impacts include safely connecting rural residents to essential goods and services offered throughout the region, including education, medical facilities, employment, food, family, and more. This is especially important for residents living in a region that sees average annual snowfall of 90 inches or more. Regional Project impacts help strengthen northern Maine's agricultural, lumber, and tourism economy. US 1 is the 'red carpet' that brings tourists to the area, the path that connects the region's diverse agricultural products to market, and the primary route for raw materials vital to Maine's lumber and paper industry.

The Project aligns with USDOT's infrastructure goal of *guiding strategic investments that enable more efficient movement of people and goods*. Roads have always been the primary means of moving people and goods. As time goes on, roads improve along with the vehicles that use them. The Project allows freight, passengers, bicyclists, and even pedestrians to move more efficiently because road improvements can permit higher speeds, increased throughput, and a means to congregate all of them safely on the same right-of-way.

The Project aligns with goals *that result in good-paying jobs* by employing planners and contractors throughout the construction process. An improved road sustains farming jobs in a state that has struggled with shifting employment over the past several decades. Lumber and paper mills have dwindled from more than a dozen to just a few, and the result has been job losses. Farming and tourism, which both heavily rely on good roads, have helped replace lost jobs.

The Project will greatly *improve safety* for motorists, trucks, bicyclists, and pedestrians by ensuring the repair, upgrade, and standardization of both common and critical safety features necessary to eliminate dangers along the road.

The Project will *explicitly address climate change* by strengthening the only east-west thoroughfare in the region—a region that often sees 90 inches or more of average snowfall annually. Snowplowing and road salt take a heavy toll on the road surface, drainage, and safety barriers which will be significantly updated by the Project. Furthermore, Maine depends heavily on the environment for tourism and the funding it provides, therefore, MaineDOT is passionate about protecting it.

While the Project does not directly address *racial equity* as northern Maine historically is not as diverse as other parts of the country or New England, Maine is committed to and supportive of attracting a more diverse population. As it does, the state will ensure individuals of all races are provided equal opportunity and equal access to the resources that help Maine and all its people flourish.

MaineDOT is an accomplished, experienced, and responsible recipient of past successful TIGER, FASTLANE, INFRA, and BUILD grants and can be relied upon to fully fund and commence the project in advance of the 2024 obligation date, and to complete the project by the 2029 requirement without risk. This Project will create long-lasting positive impacts on communities in the region, ensuring the preservation of safe, reliable, and convenient vehicle flow for residents, tourists, and businesses in this very rural state.

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**Project Narrative**

**I. Project Description**

At 2,369 miles, U.S. Highway 1 (US 1) is the longest north-south road in the United States.<sup>1</sup> It stretches from Fort Kent, Maine, to Key West, Florida, paralleling the wider and more popular Interstate 95. As interstates were developed in the 1960s, US 1 and other highways void of limited access benefits began to decline in popularity. However, in northern Maine there is no interstate highway and few roads traverse the vast forestland covering much of the topography. US 1 is as significant to northern Maine today as it was when first constructed in the 1930s and '40s. Since that time, various sections have seen periodic improvements. Over the past 25 years, piece by piece, most of US 1 in Aroostook County underwent full reconstruction, but a few sections have not. The section reaching all the way up eastern Maine to Madawaska near the northern tip has been mostly reconstructed and is part of the NHS. Meanwhile, about half the portion beyond Madawaska to Fort Kent, which is not NHS, was built to modern standards between 1987 and 2009. The other half of that portion, which are the *final two sections* that make up the Project, have lagged considerably behind. The Project calls for full reconstruction of these final two sections, a total of 10.4 miles, required to complete this remaining gap in US 1.

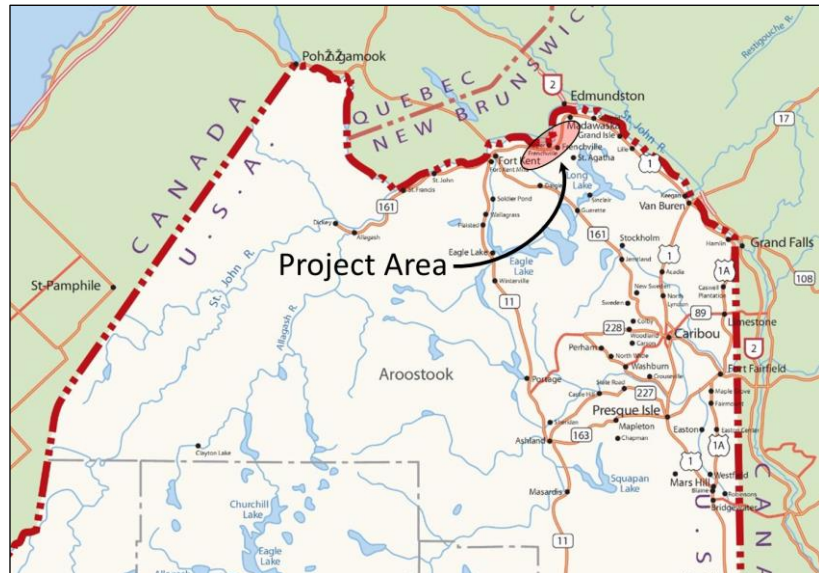


Figure 1 Map of northern Maine.

The section reaching all the way up eastern Maine to Madawaska near the northern tip has been mostly reconstructed and is part of the NHS. Meanwhile, about half the portion beyond Madawaska to Fort Kent, which is not NHS, was built to modern standards between 1987 and 2009. The other half of that portion, which are the *final two sections* that make up the Project, have lagged considerably behind. The Project calls for full reconstruction of these final two sections, a total of 10.4 miles, required to complete this remaining gap in US 1.

Paralleling the Saint John River—which defines the U.S./Canadian border—for more than one-third of its mileage in northern Maine, US 1 is the primary east-west thoroughfare for residents, tourists, and commerce—primarily in the form of vegetables and lumber—critical to Maine’s economy. Aroostook County, Maine’s northernmost and largest by square mileage, is not only home to the first 150 miles of the iconic road, but contains more US 1 mileage than any other

<sup>1</sup> [https://magicvalley.com/america-s-longest-north-south-highways/article\\_f42f6adc-2084-5036-a39d-7487c860b9e1.html](https://magicvalley.com/america-s-longest-north-south-highways/article_f42f6adc-2084-5036-a39d-7487c860b9e1.html)

county in Maine or any county in the other 13 states that host the road. (US 1 also extends through the District of Columbia). US 1 is the only highway on the *National Highway System* in Aroostook County, a county the size of Connecticut and Rhode Island combined. Earlier in 2021, the FHWA designated the portion of US 1 within the St. John Valley as the *St. John Valley Cultural Byway/Fish River Scenic Byway*, the latest of only 184 National Scenic Byways in the U.S. The highway received the honor given its cultural significance since it weaves through a historic region first settled by the French during the 17<sup>th</sup> and 18<sup>th</sup> centuries.

The highway is also a 2021 *U.S. Bicycle Route* (USBR 501) designee, stretching from Bangor, Maine along the Saint John River to Allagash, 27 miles southwest of Fort Kent.



Figure 2 US 1 west of Frenchville.

route follows parts of the *Katahdin Woods and Waters Scenic Byway* and passes near Maine’s tallest peak, Mount Katahdin—part of the newly designated *Katahdin Woods and Waters National Monument*, site of the north end of the Appalachian Trail. “The designation of *U.S. Bicycle Route 501* in northern Penobscot and Aroostook counties will attract visitors to this largely rural region of Maine, showcasing a wide cross section of Maine’s geographical, natural, historical, and cultural offerings,” says Jay Kamm, Senior Planner at Northern

Maine Development Commission.<sup>2</sup> Given the commercial truck traffic on this route, it is important a paved shoulder exists for bicyclists to maintain stability while heavy trucks are passing. While biking is a popular summer activity, snowmobiling is a winter passion of Mainers and tourists attracted to the region. US 1 is frequently used to transport snowmobiles via trailers to the state’s northern snowmobile trailheads. The University of Maine calculates snowmobiling brought \$459 million into Maine’s economy during the 2018-2019 winter season.<sup>3</sup> Similarly, riding ATVs is another popular tourist activity in northern Maine and ATVs are also frequently transported via trailers along US 1. Given all of the cultural, recreational, and economical significance of this route to the region, it is time for it to be modernized to today’s safety and usage standards. This vastly rural region needs the support of a RAISE grant to afford these necessary improvements.

Note that someone driving US 1 more than 2,000 miles from Fort Kent south to Key West will spend their first few miles driving north. That’s because the road follows the Saint John River; the international border. The route provides local connections between Fort Kent and Madawaska as well as regional and international ones through Aroostook County and neighboring New Brunswick Province in Canada. The two segments of US 1 that the Project

<sup>2</sup> <https://www.adventurecycling.org/about-us/media/press-releases/the-u-s-bicycle-route-system-expands-to-27-states-and-14-000-miles/>

<sup>3</sup> <https://umaine.edu/news/blog/2020/02/18/new-report-details-economic-impact-of-snowmobiling-in-maine/#:~:text=Snowmobiling%20generated%20%24459%20million%20in,and%20the%20state%20Snowmobile%20Program>

## NORTHERN MAINE U.S. 1 ROAD IMPROVEMENT PROJECT

aims to improve are between two international border crossings. Both segments are in major disrepair and stand to benefit from reconstruction that will allow people and goods to move more efficiently. Due to sparse funding, the previous band-aid approach to making US 1 repairs has adversely impacted the traveling public who's been forced to endure roadway deterioration. The proposed improvements will end deferred maintenance and reduce the need for ongoing and repeated minor repairs for a lengthy period of time.

It can be challenging to connect with family via poor roads. For generations, Acadians (descendants of the French who settled in what is today Eastern Canada's Maritime provinces and northern Maine) and Mainers have viewed the Saint John Valley not as part U.S. and part



Figure 3 Map of Project area.

Canada with the waterway as an absolute boundary. Instead, they viewed the Valley as one cohesive land. Both sides of it, in what today are Maine and New Brunswick, were known in the early 1800s as the "land between two countries." Those living in the region had strong ties to the land, but not to either nation. The official Saint John River boundary between the U.S. and Canada was settled in 1840, but even after this delineation people of the Valley continued to feel a regional connection and less of a connection to a particular nation. As a result, there are close family ties between U.S. and Canadian citizens in this region that continue to this day. Acadian heritage is celebrated throughout the region. The need for the U.S./Canadian border to be formidable, including this remote part of it, became prevalent only during the past 20 years or so as terrorism threats and political forces called for tighter border security. Previous generations often had dual citizenship, which some still possess even today. For many, the desire for employment, shopping, dining, and entertainment lead people to look across the border. The need to cross the border for everything from family to pharmaceuticals is common and US 1 is the "conveyor belt" residents ride to reach the few border crossings.

US 1 is a Minor Arterial Highway, non-NHS, and classified by MaineDOT as Highway Corridor Priority 2. Volume projections of current and future traffic are noted in the accompanying chart. For the past 25 years, MaineDOT has been reconstructing and modernizing US 1 piece by piece, applying funding to the road in sections, recognizing how critical the route is while also meeting the infrastructure needs of the much higher populated southern Maine.



Figure 4 (left) Road surface cracking and breaking apart near edge, creating instability for vehicles, bicycles, and pedestrians using shoulder. (Right) Gravel shoulder compromised by erosion, wash boarding, and pavement cracking.

But over time, more and more of the road has undergone reconstruction. This Project calls for modernizing two of the final four sections of US 1 in Maine that require reconstruction—two separate short sections of roadway located two and a half miles apart: one immediately east and one west of the town of Frenchville. (The two other sections are in eastern Maine and will be completed around the same time as these two sections with other funding sources.) For this Project, one section is a 5.69-mile segment between Madawaska and Frenchville, beginning 0.91 miles northeasterly of Hill Avenue (near Madawaska) and extending 5.69 miles (in a southerly direction) to 0.57 miles south of Starbarn Avenue in Frenchville.

	West of Frenchville	East of Frenchville
AADT	2,320 vehicles	3,560 vehicles
% Trucks	10% 232	9% 320.4
Work Zone Distance	4.67 miles	5.69 miles
Directional Orientation	East-West	North-South
Towards Town of	Fort Kent	Madawaska
2030 AADT Projected	2,540 vehicles	4,540 vehicles

The second section begins 0.4 miles north of Church Ave. (Charette Hill Rd.) and extends (in a westerly direction) 4.67 miles. The two segments are only 2.5 miles apart. Since overall, the highway runs north to south through Maine, planners refer to driving away from ‘Mile Marker 1’ as southbound, even though some sections of the highway on that drive point you east and north. The speed limit on the Project sections ranges from 35–50 mph. Project work includes:

- reconstructing the road while preserving its main core and right-of-way
- easing pavement and cross slope conditions
- making roadside safety improvements, including new guardrails and crash barriers
- adjusting vertical curves to match the existing horizontal alignment
- raising the vertical alignment by approximately 4 inches to accommodate the pavement rehabilitation using full-depth pavement reclamation (recycling the existing pavement material as part of the base for the new pavement instead of discarding it)
- full shoulder reconstruction with pavement
- drainage and retaining wall improvements
- new tie-ins for side roads, driveways, and business access roads along the corridor

Plans include constructing paved shoulders between 4–6 feet wide throughout the Project, which means laying approximately 230,000 square feet of pavement to areas where gravel shoulders currently exist. Additional safety improvements include adding more than 3,700 feet of new guardrail and upgrading an additional 7,000 feet of existing guardrail to protect vehicles from the steep embankment towards the railroad tracks (in some places) and the Saint John River below. Given the region’s harsh winters, drainage systems are critical to drawing rainwater and melting road-plowed snow away from the road. Drainage improvements include replacing 42 culverts and adding approximately 6,000 feet of closed drainage to freely drain the roadway base and ensure longevity of the pavement. The highway will have some open drainage sections, pipes, and box culverts. Nine box culverts will house streams with two of those requiring fish passage. The proper size of all 9 culverts has been determined by MaineDOT’s environmental team. One at-grade railroad crossing will also be improved. Additionally, ground slopes between the road and the river will be improved. The Project includes slope stabilization to protect the road, reduce potential erosion into the nearby river, and ensure a stable road surface for decades. The new roadway pavement will have a 20-year design life. The drainage system, culverts, and pipes are designed to last 50–75 years. Utility poles carrying above-ground utility lines will be repositioned in some locations along the Project corridor to provide needed clearances. There are no underground utilities within the limits of the Project. The regional utility company will pay all costs associated with utility relocation.



Figure 5 Compromised guardrail high above a steep slope along the road.

The Project’s safety features are critical to the road’s modernization efforts and the desire to close US 1’s final safety and sustainability gaps and build modern infrastructure with climate change resiliency in mind. Safety features will reduce both the *number* and *severity* of accidents in a region that sees 90 inches or more of average annual snowfall, including 30 days with a minimum of one inch of snow and 40–60 days of sub-zero temperatures each year. While these numbers contribute to the important winter tourism economy, they also present challenges for regional roadways and their users.<sup>4</sup> That’s why MaineDOT’s environmental project planning includes:

- designing the road surface and selecting surface material most capable of withstanding snowplow activity and road salt applications.
- using guardrails that meet today’s height and strength standards to withstand impacts from today’s larger and heavier vehicles while also providing sufficient crash protection
- applying sufficient base and sub-base gravel that includes recycling the current road surface into it.
- building wide shoulders of pavement instead of gravel which provide stability for bicyclists and pedestrians.

<sup>4</sup><https://www.maine tourism.com/plan/weather/#:~:text=Average%20annual%20snowfall%20in%20Maine, inches%20in%20the%20Northern%20Interior>



- improving intersection geometry so that access to and from driveways, side streets, and intersecting roads will be safer for everyone, especially in poor weather.
- ensuring all drainage infrastructure, including fish passage culverts, intersecting roadways, abutting driveways, and roadside safety features all improve the resiliency of US 1 in northern Maine.

During reconstruction planning, MaineDOT evaluated several criteria to ensure the road will be safer and more suitable for elements like headlight sight distance. Some road sections will have crests and dips flattened moderately to provide better drivability. Given the scope of drainage work, the road's horizontal alignment will match the existing Route 1 centerline. As a result, many existing horizontal curves will undergo adjustments to superelevation consistent with MaineDOT design guidance. Ultimately, designers aim to satisfy user comfort while balancing project impacts and construction costs. The road will have 11-foot-wide travel lanes, as measured within the road striping with a 4- to 6-foot paved shoulder and 3 percent straight grades in normal crown sections. Where guardrail is built, the face of it will be located 16 feet from the centerline with a 3-foot paved shelf. In unique locations the guardrail panel will be reduced to 2 feet to minimize costly slope fills. In many locations, bituminous curbing is proposed to reduce impacts to adjacent property.

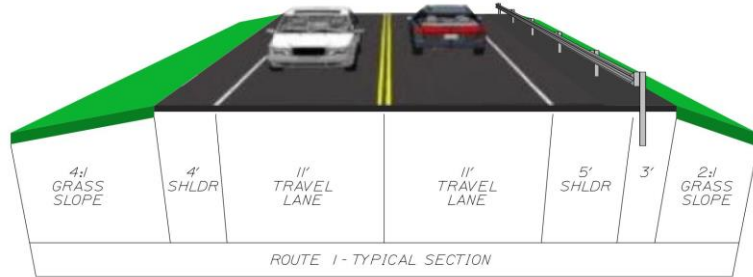


Figure 6 A rendering of a typical section of the reconstructed road.

If a RAISE grant is not awarded and the Project is not completed as described, this portion of US 1 will continue to exist as the weak link in the chain that is northern Maine's primary road. While repairs will be made from time-to-time, important components of the road such as the culverts that allow for fish passage will not be as effective as they could be today and may be threatened with collapse in the future. As pipes and culverts eventually fail, they will be replaced. That failure will most likely occur sporadically, meaning exhaustive repairs would be



Figure 7 A section of retaining wall holding up an embankment below the road surface is compromised and threatening a private driveway below.

required in piecemeal with little advance notice which would be suboptimal use of the Department's time and resources as well as an ongoing sudden inconvenience for motorists. Furthermore, the speed limit would not be raised. While there will be periodic rehabilitation work, those efforts are only stop-gap measures to hopefully prevent eventual road closure. Bicyclists, pedestrians, and drivers would see little improvement to the current road condition. Maintenance and repairs will not change the fact that eventually the asphalt's sub-base will deteriorate to the point that even more frequent repairs will be required, a wasteful use of funds.

## **Quantitative and Other Facts**<sup>5</sup>

- The \$37,750,000 in roadway infrastructure investment will yield \$34,653,131 million in economic output for this region on a discounted basis over 30 years.
- The project has a benefit-cost ratio of at least 1.13 to 1 based on an NPV at a 7% discount rate over 30 years.
- Savings come from improvements in travel time that result from speed limit increases, safety feature improvements (reducing accidents and injuries), avoided future road and slope maintenance (and costs), avoided reroute miles for passenger and commercial vehicles, avoided pollutant emissions (from reroutes), as well as the residual value from many aspects of the Project—which have 50 to 75-year lives.
- Total amount of RAISE FY 2021 funds requested: \$37,750,000 (66.2% of the total cost of the project).
- Eligible matching funds are \$12,750,000, 33.8 percent of the total project cost, which includes Maine’s core federal funding.
- Non-Federal spending on the Project is \$7,550,000 committed by MaineDOT.<sup>6</sup>
- Previously incurred expenses are forecast at \$1,495,000 by the end of 2021.
- Total Cost of the Project: \$37,750,000.

## **II. Project Location**

Farming and ancillary businesses are the primary sources of employment in the Saint John Valley. The region’s fertile soil is ideal for growing potatoes, broccoli, canola, and certain grains. US 1 is vital to connect these crops to markets throughout New England and Canada. Meanwhile, once the manufacturing backbone of Maine, the forest products industry has shrunk over the past few decades from more than a dozen lumber mills during much of the last century to four that remain today. That is due primarily to foreign competition. Much more recently, with home prices on the rise following a year of pandemic uncertainty, the lumber industry is seeing a modest resurgence in Maine because lumber prices have skyrocketed nearly 250% over the last year or so as demand for homes far outpaces available inventory, according to the National Association of Home Builders. But prices are beginning to stabilize.

Like Maine’s lumber industry, the paper industry has also suffered closures and job losses. At the turn of this century there were 12 paper mills in Maine and now just five remain.<sup>7</sup> One of them is Twin Rivers Paper Company in Madawaska. This is the only paper mill in northern Maine; the next closest is 110 miles south. US 1 is the primary truck route for logs moving to this important mill as well as to Canadian lumber mills east of Maine. It’s also a primary truck route for finished paper going from mill to market. Northern Maine is also home to abundant limestone, which moves from quarries to markets via US 1.

There are three U.S./Canadian border crossings along US 1 in northern Maine. They include Fort

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<sup>5</sup> See *Appendix A*, Benefit-Cost Analysis

<sup>6</sup> See *Appendix F*, Match Letter

<sup>7</sup> <https://www.farmcrediteast.com/knowledge-exchange/Blog/todays-harvest/forest-industry-in-the-northeast>

Kent/Clair, Madawaska/Edmundston, and Van Buren/Saint Leonard. A new Madawaska Bridge and border station is under construction and scheduled to be completed in 2024. Until that time, the current bridge linking Madawaska, Maine with Edmundston, New Brunswick is unable to handle truck traffic. In October 2017 the 100-year-old bridge was restricted to vehicles weighing five tons or less due to structural deterioration. Therefore, trucks are forced to detour over US 1 to the next closest border crossing (at Fort Kent). This adds additional truck traffic to the route.

In such a remote region, there are not many hospitals or schools. The region's primary institution of higher education is the University of Maine at Fort Kent, located along the route. The university is an academic center for Acadian and French American culture and heritage. It attracts French-speaking Mainers statewide with an enrollment of about 1,600 students.<sup>8</sup> The next closest school is a community college 50 miles away; the next closest university is 170 miles south. Northern Maine Medical Center (NMMC) is the region's primary hospital, has more than 50 beds, and offers medical and mental health care—including northern Maine's only child, adolescent, and adult inpatient psychiatric units. A 45-bed rehabilitation and skilled nursing facility also serves the Saint John Valley at the Forest Hill Rehabilitation and Skilled Nursing Center in Fort Kent.<sup>9</sup>

- GPS coordinates:
  - West of Frenchville: Begin 47.279738, -68.435818 End 47.291316, -68.525909
  - East of Frenchville: Begin 7.354172, -68.354637 End 47.282227, -68.377835
- The Project is in Aroostook County, Maine.
- The Project is in Maine's 2nd Congressional District, represented by Jared Golden (D-ME). The state is represented by U.S. Senators Susan Collins (R-ME) and Angus King (I-ME).<sup>10</sup>
- This is a Rural Project. Aroostook County, Maine is not located in a *Census-Designated Urbanized Area*.
- The Project is not in an *Area of Persistent Poverty*.
- It is not located in an *Opportunity Zone*.<sup>11</sup>

According to Census data over the last 10 years, of Maine's 16 counties only 6 have experienced a population reduction with Aroostook County having the highest at -6.5%. That population decline has created an older average population with 24.9 percent of the county population now 65 or older.<sup>12</sup> Measures such as median household income, poverty, home values, internet access, and those with a bachelor's degree are all lower in the county than the state or U.S. average.<sup>13</sup>

Employment opportunities in the region have diminished as paper and lumber mills and the

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<sup>8</sup> <https://www.usnews.com/best-colleges/university-of-maine-fort-kent-2041>

<sup>9</sup> <https://www.nmmc.org/about-us/>

<sup>10</sup> See *Appendix E*, Letters of Support

<sup>11</sup> <https://www.maine.gov/decd/business-development/opportunity-zones>

<sup>12</sup> Annual Estimates of the Resident Population for Counties in Maine: April 1, 2010 to July 1, 2019, <https://www.census.gov/data/datasets/time-series/demo/popest/2010s-counties-total.html>

<sup>13</sup> Census Bureau:

<https://www.census.gov/quickfacts/fact/table/US,ME,arostookcountymaine/PST045219>

manufacturing jobs they supported vanished in the wake of mill closures. The resulting unemployment leads to economic disadvantages throughout the region but by focusing on tourism, some parts of Maine have been able to combat unemployment.

Of all the states in the U.S., Maine has the highest proportion of residents living in rural areas, some 61.3% according to Census Bureau data compiled by the website *stacker*.<sup>14</sup> The rural nature of the state is exhibited by the fact that 89% of the total land in Maine is forestland.<sup>15</sup>

	Unites States	Maine	Aroostook County
Population, percent change	6.30%	1.20%	-6.70%
Persons 65 years and over	16.50%	21.20%	24.90%
White	76.30%	94.40%	94.80%
Median home value	\$217,500	\$190,400	\$99,600
Household with broadband internet	82.70%	82.10%	69.20%
Persons with bachelor's degree, age 25+	32.10%	31.80%	19.20%
Persons with a disability, under age 65	8.60%	11.70%	16.50%
Persons without health insurance, under age 65	9.50%	10.10%	13.80%
Median household income	\$62,843	\$57,918	\$41,123
Persons in poverty	10.50%	10.90%	15.50%
Population per square mile	87.4	43.1	10.8

A May 2020 report released by TRIP, a national transportation research nonprofit, evaluated the safety and condition of the nation’s rural roads and bridges. “The report finds that Maine’s rural roads and bridges have significant deficiencies. Twenty-one percent of Maine’s rural roads are rated in poor condition—the tenth highest rate in the nation—and 21 percent are in mediocre condition. Thirteen percent of Maine’s rural bridges are rated in poor/structurally deficient condition, the seventh highest rate in the nation... There were 112 fatalities on Maine’s non-Interstate, rural roads in 2018. The rate of traffic fatalities on Maine’s non-Interstate, rural roads is significantly higher than the fatality rate on all other roads in the state—1.39 fatalities per 100 million vehicle miles of travel vs. 0.37. Rural roads are more likely to have narrow lanes, limited shoulders, sharp curves, exposed hazards, pavement drop-offs, steep slopes and limited clear zones along roadsides.”<sup>16</sup> All of this puts great pressure on funding because there is great need in a vast but sparsely populated state.

Like other states, Maine struggles to find new ways to fund infrastructure, and the challenge is great. As Maine’s overall population remains stagnant, the opportunity to grow gas tax receipts becomes slim. Maine Transportation Commissioner Bruce A. Van Note wrote in a January 25,

<sup>14</sup> <https://stacker.com/stories/2779/states-biggest-rural-populations>

<sup>15</sup> <http://maineforest.org/wp-content/uploads/2016/09/Maines-Forest-Economy-10-12-2016.pdf>, page 2 of pdf

<sup>16</sup> <https://tripnet.org/reports/maine-rural-roads-trip-news-release-2020>

2021 *Bangor Daily News* op/ed:<sup>17</sup>

*Right now, there is uncertainty associated with each of the three legs of the department’s funding stool. State Highway Fund revenues have dropped as a result of people traveling less. The federal government, under the new administration and Congress, could take new action to address federal transportation funding. Further, discussions about upcoming bonds, a prudent funding option while interest levels remain at historic lows, will begin soon.*

*Even with this uncertainty, we are releasing the latest edition of our three-year work plan for calendar years 2021, 2022 and 2023. It is based on many assumptions, but those assumptions have been advised by the hundreds of years of cumulative engineering and policy experience at the Maine Department of Transportation. This work plan contains 2,180 work items with a total value of \$2.71 billion. This list of work is diverse in terms of geography, mode and size.*

*This work plan includes paving work, bridge replacements, culvert improvements, road striping, new pedestrian and bicycle facilities, and investments in our ferry service. No matter the size or scope, each of these projects is important because it will impact our customers — the people who rely on Maine’s vast infrastructure network. This work plan also aims to expand partnership programs, support existing and emerging businesses, refocus investment in Maine villages, enhance planning and communication, and confront climate change.*

Therefore, despite all the recent financial uncertainty added to an already challenged funding structure, Maine continues to realize the importance of identifying, planning, and funding projects that have the greatest positive impact on Mainers and climate change.

### III. Grant Funds, Sources and Uses of all Project Funding

#### a) Costs and Funding Sources and Uses

	MaineDOT	Other Federal	RAISE	Project TOTALs
<b>Preliminary Engineering (PE)</b>	\$ 400,000	\$ 1,600,000	\$ -	<b>\$ 2,000,000</b>
<b>Right of Way Acquisition (ROW)</b>	\$ 230,000	\$ 920,000	\$ -	<b>\$ 1,150,000</b>
<b>Construction Engineering (CE)</b>	\$ 350,000	\$ 1,400,000	\$ -	<b>\$ 1,750,000</b>
<b>Construction</b>	\$ 6,570,000	\$ 1,280,000	\$ 25,000,000	<b>\$ 32,850,000</b>
<b>Project TOTALs</b>	<b>\$ 7,550,000</b>	<b>\$ 5,200,000</b>	<b>\$ 25,000,000</b>	<b>\$ 37,750,000</b>
<b>Percentage of Project Totals</b>	20.0%	13.8%		
	<b>33.8%</b>		<b>66.2%</b>	

<sup>17</sup> <https://bangordailynews.com/2021/01/25/opinion/contributors/transportation-work-plan-will-stretch-every-dollar-and-prepare-maine-for-the-future/>

The MaineDOT portion of the Project is \$7,550,000 and the parties are committed to providing those funds and to completion of the Project.

b) State Matching Funds

Non-Federal funding for the Project comes from MaineDOT. MaineDOT is a cabinet-level state agency with primary responsibility for statewide transportation by all modes of travel. MaineDOT employs approximately 1,800 people and expends or disburses more than \$675 million per year, including federal, state, and local funds. The primary source of transportation funding in Maine is gas tax revenue, which by statute, can be used for highways and bridges only. Both nationally and in Maine, this source of funding has decreased as more fuel-efficient vehicles lead to a decrease in the amount of gasoline purchased. The funding source for the Project will be State General Obligation Bonds. In Maine that comes from state bonds to be approved by the legislature and taxpayers in 2022 and 2023. Due to its significant economic and transportation impact on the entire state and region, this Project has been prioritized by MaineDOT. “In November 2019, 76% of Maine voters approved the latest \$105-million General Fund General Obligation (G.O.) transportation bond. This bond provides \$85 million for highway and bridge projects and \$15 million for multimodal projects. Additionally, based upon widespread support in recent years, Maine’s work plan is based upon the assumption that the Governor, the Legislature, and the voters will approve two additional \$100 million General Fund G.O. bonds in November 2020 and November 2021. Without annual bonds of this amount or other funding sources to replace it, substantial cuts will be necessary from the capital programs.”<sup>18</sup>

MaineDOT has done a full assessment of life cycle costs for the Project and is also committed to properly maintaining the road throughout its service life. MaineDOT’s Asset management strategy is described on their website at: <https://www.maine.gov/mdot/about/assets/docs/>. The strategy is based on Highway Corridor Priority (HCP) and Customer Service Levels (CSL):

- HCP: MaineDOT has gathered and analyzed straightforward, common-sense factors including the economic importance of the road as determined from input from regional economic development districts, federal functional classification, heavy haul trucking use and the amount of relative traffic on the road by region. With this and other data, MaineDOT has classified all 23,400 miles of Maine public highways into six, easy to-understand priority levels.<sup>19</sup>
- CSL: The next step is defining easy-to-understand customer service levels appropriate to the priority of the state’s roads (1-5). We are using another intuitive scale: A, B, C, D and F. Using existing data on the safety, condition and service of the road, we can determine its

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<sup>18</sup> MaineDOT Three-Year Work Plan, [https://www.maine.gov/mdot/projects/workplan/docs/2020/WorkPlan2020\\_2021\\_2022%20Jan\\_14\\_2020.pdf](https://www.maine.gov/mdot/projects/workplan/docs/2020/WorkPlan2020_2021_2022%20Jan_14_2020.pdf), page vi

<sup>19</sup> <https://www.maine.gov/mdot/about/assets/hwy/>

NORTHERN MAINE U.S. 1 ROAD IMPROVEMENT PROJECT

customer service level. The result is a fair, consistent measure of how a road compares to other roads of the same priority across the state.<sup>20</sup>

MaineDOT has dedicated NHPP funding from FHWA. The department’s Transportation Asset Management Plan outlines the plan for all NHS highways and bridges and can be found at <https://www.maine.gov/mdot/publications/docs/plansreports/MaineDOT-Transportation-Asset-Management-Plan-final.pdf>.

c) The funds noted above will go towards Preliminary Engineering, Construction Engineering and Right-of-Way Acquisition first, with the balance, all RAISE grant funding going towards project Construction.

d) Project Budget

<b>SLOPE STABILIZATION</b>	1	LS	x		=	\$1,000,000
<b>ROAD GRAVEL</b>	256000	CY	x	\$32.00	=	\$8,192,000
<b>ROAD PAVEMENT</b>	57000	TON	x	\$140.00	=	\$8,000,000
<b>ROAD EXCAVATION</b>	180000	CY	x	\$21.00		\$3,780,000
<b>SAFETY APPLICANCES (GUARD RAILS, ETC.)</b>	1	LS	x	\$500,000.00		\$500,000
<b>ROCK EXCAVATION</b>	17500	CY	X	\$70.00		\$1,225,000
<b>DRAINAGE</b>	1	LS	x	\$3,800,000.00	=	\$3,800,000
<b>COFFERDAMS</b>	1	LS	x	\$1,000,000.00	=	\$1,000,000
<b>TRAFFIC CONTROL</b>	1	LS	x	\$1,000,000.00	=	\$1,000,000
					=	
<b>MISCELLANEOUS (SWECP, FIELD OFFICE, ETC.)</b>					=	\$1,250,000
<b>MOBILIZATION</b>					=	\$1,750,000
<b>CONTINGENCIES</b>					=	\$1,353,000
<b>TOTAL CONSTRUCTION COST</b>					=	<b>\$32,850,000</b>
<b>PRELIMINARY ENGINEERING</b>					=	\$2,000,000
<b>RIGHT OF WAY</b>					=	\$1,150,000
<b>CONSTRUCTION ENGINEERING</b>					=	\$1,750,000
<b>OTHER:</b>					=	\$0
<b>TOTAL PROJECT COST</b>					=	<b>\$37,750,000</b>

Contingency amounts estimated at the 10% level are imbedded in the Project costs to cover any unanticipated cost increases.

<sup>20</sup> <https://www.maine.gov/mdot/about/assets/docs/CSLMethodology.pdf>

MaineDOT is experienced with road replacements of this magnitude and larger, and plans to complete construction by August 2025, well within the September 2029 statutory deadline.

	Funding Year						
	2020	2021	2022	2023	2024	2025	2026
Preliminary Engineering (PE)	\$ 780,000	\$ 650,000	\$ 400,000	\$ 170,000			
Right of Way Acquisition (ROW)	\$ 13,000	\$ 52,000	\$ 300,000	\$ 785,000			
Construction				\$ 7,000,000	\$ 13,000,000	\$ 10,700,000	\$ 2,150,000
Construction Engineering (CE)				\$ 300,000	\$ 600,000	\$ 600,000	\$ 250,000
<b>Project TOTALS</b>	<b>\$ 793,000</b>	<b>\$ 702,000</b>	<b>\$ 700,000</b>	<b>\$ 8,255,000</b>	<b>\$ 13,600,000</b>	<b>\$ 11,300,000</b>	<b>\$ 2,400,000</b>

#### IV. Selection Criteria

The rural states of northern New England have not been home to minorities at the same level other parts of the Northeast and the nation have. As a result, Maine and neighboring New Hampshire and Vermont all have very low minority populations—each with fewer than 2% of their population Black, fewer than 5% Hispanic, and fewer than 1% Native American.<sup>21</sup> In the Civil War era, plantation farming was not part of Maine’s economy the way it was in the mid-Atlantic and South. Maine’s economy was built on forestry, shipbuilding, and textiles—industries that traditionally did not employ or attract Blacks in the north in great numbers.<sup>22</sup> Furthermore, extremely challenging winters in northern New England prevented cities from growing to the same size and scale as those farther south and following the Civil War, many Blacks moved to big cities to begin anew. In more recent times, the lack of a solid manufacturing base and the slow and steady decline in the once vibrant lumber and paper industries further contributed to the absence of a diverse population and the prevalence of a rural one. As the population remained stagnant, these states underinvested in infrastructure for decades. That led to a gradual and steady decline in their rural populations being connected to each other and to the rest of the country in the same manner that urban transportation investment mobilized urban residents. With that history in mind, MaineDOT recognizes, as USDOT does, that now is the time to reverse the trend. Infrastructure investment connects communities to jobs and careers, medical care, education, family, goods, services, and the arts and entertainment. Infrastructure also creates high-paying and meaningful jobs—construction, civil engineering, and a wide array of support jobs—to help the economy thrive. But perhaps most importantly, Maine believes that infrastructure investment will help attract a more racially and ethnically diverse population and the value and vibrancy that it brings. Focused on one of the most economically challenged states in the Northeast, the Project is regionally significant and addresses past underinvestment and aging transportation infrastructure that has allowed a slow and steady decline in connecting rural Americans to each other and to resources. The Project improves transportation access and reliability for all, creates a better road as the EV revolution approaches, enhances safety, and allows for a speed limit increase along the route. Also consistent with USDOT, MaineDOT recognizes the need to grow economies by strengthening the movement of job-supporting freight, improving reliable and affordable transportation, and enhancing health and safety.

##### 1) Primary Selection Criteria

<sup>21</sup> <https://www.census.gov/quickfacts/fact/table/NH,VT,ME,US/PST045219>

<sup>22</sup> <https://www.mainepublic.org/maine/2019-02-19/why-is-maine-so-white-and-what-it-means-to-ask-the-question>



a) Safety

The number of crashes on this very rural stretch of road has been on the rise. Over the last 10 years, there has been at least one accident monthly on this 10-mile stretch of US 1. Excluding the effect of COVID-19, which diminished traffic volume and corresponding accident rates, the most recent four years (2016–2019) averaged 29% more crashes than the five years prior to that. As might be expected where winters are extreme, accidents are concentrated during months of bad weather (November–March) when 60% of the accidents occurred.

The safety features to be added or upgraded are designed to improve safety as well as to prevent crashes and their severity. Issues common to country roads which presently exist include narrow lanes, soft and narrow shoulders, minimal guard rails, sharp curves, frequently exposed hazards, pavement drop-off areas, and extreme curves and hills. The current guardrails have been compromised from years of previous crashes, erosion issues, and the damaging freeze/thaw cycle in the region. Shoulders are narrow and soft and make biking and walking along the road dangerous. Some sections of the road sit high above a rail line and the bluff of the Saint John River. The soil helping hold the road up has been eroding away over the years.

The road's gravel shoulders will be replaced by asphalt and widened to provide a much safer paved path for vehicles. That's important for driver comfort and confidence, especially in the winter when ice and snow make the road slick and a wide shoulder provides an extra degree of safety and comfort. As a *U.S. Bicycle Route* designee, the road should be upgraded with safe and lengthy bike journeys in mind. Shoulders should be paved and wide enough to bike comfortably. These features benefit pedestrians as well. With no area sidewalks, it is common for people to go for a walk or walk their dogs along the road's shoulders.

A safe road is also one that's comfortable to drive. Improving the road's geometry will help drivers access it to/from intersecting roadways. That will be a big help for large trucks, including commercial truck traffic that currently must encroach into adjacent lanes to make a turn onto the road. *The new or improved safety features and increased pavement and shoulder width added to this 10+ mile stretch of US 1 yields \$2.75 million in economic benefit to the region on a discounted basis over the 30-year analysis period.*

b) Environmental Sustainability

When planning infrastructure improvements in a state that sees between 50 and 90 inches or more of average annual snowfall between the southern parts of the state and the northern parts of the state, respectively, MaineDOT has always thoroughly considered the impact a changing climate has on mobility. MaineDOT's Climate Initiative is laid out on their website at <https://www.maine.gov/mdot/climate/>. MaineDOT is a key partner in the *Maine Climate Council*. MaineDOT also realizes



Figure 8 The amount of snowfall in northern Maine requires frequent use of snowplows and road salt.

weather events that include large amounts of rainfall occur more frequently than in past years. That's why roads and bridges are designed to withstand the effects of 100-year storms. MaineDOT also considers *more frequent* freeze-thaw cycles, which can degrade pavement, pipes, and culverts more rapidly than simply freezing temperatures.

Replacing and upgrading ditches, pipes, and culverts will ensure stormwater and ice is managed properly. Water and snow melt will be drawn away from the road surface, away from the subsurface, and allowed to flow rapidly away from US 1. This preserves the road surface and the layer beneath it.

Despite being a remote region, US 1 through Frenchville connects Fort Kent and Madawaska which are both community service centers. In fact, Madawaska is being considered in the state plan for EV infrastructure expansion.

MaineDOT utilizes the EPA EJSCREEN for all federally funded projects and Project information may be found in Appendix G, EJSCREEN.<sup>23</sup> *By improving this stretch of US 1 with few practical reroute options and avoiding numerous future pavement preservation projects, the Project saves \$238,000 in emissions on a discounted basis over the analysis period.*

### c) Quality of Life

Since Maine has the nation's largest percentage of residents living in rural areas, the need to have strong and reliable connections to a city service center is important for people's quality of life. US 1 connects individuals to jobs, healthcare, services, retail, restaurants, and tourism.

According to U.S. Census Block Data, the Town of Frenchville has census blocks with 9-20% of population low-income along the Project area. People of Color blocks range from 2-6%. The Project will not require any relocations and will not have significant environmental impacts. The Project will improve an existing road and reduce safety risks for all users of the transportation system, including vehicles, pedestrians, and bicyclists. It will improve safety and quality of access to community service centers and jobs.

MaineDOT recently updated its *Public Involvement Plan* which outlines the department's efforts to ensure disadvantaged populations are afforded meaningful opportunities for public involvement.<sup>24</sup> Additionally, this Project ensures safe, efficient access for all users of the transportation system and by extending the service life of the existing infrastructure it avoids impacts outside the existing right-of-way, which have the potential to disproportionately impact



Figure 9 One of four large culverts along the Project area.

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<sup>23</sup> <https://www.epa.gov/ejscreen>

<sup>24</sup> <https://www.maine.gov/mdot/planning/docs/2021/pipdraft-02012021.pdf>

disadvantaged populations.

Furthermore, MaineDOT has initiated communication with environmental agencies and baseline data has been collected to identify natural and cultural resources potentially affected by the Project. 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.

The threat that a structural or safety component of the road will fail is ongoing. Given the remote area and lack of roads in the region, there are few opportunities for reroutes or detours. And in the years ahead, repaving will be required more frequently as the base of the road continues to deteriorate under the road surface. Repaving would cost several million dollars for the full 10-mile section each time it is required, every seven years. And it would only be a “band-aid” repair, a wasteful use of funds and a frequent interruption for users. If the Project is completed, then repaving will only need to take place once in the middle of the 30-year analysis period.

The Project creates wider lanes and shoulders as well as improved topography allowing an increase to the posted speed limit by five miles per hours in most places. *This speed increase saves travel time for residents of the region and those traveling through it yielding motorists \$5.18 million in savings on a discounted basis over the 30-year analysis period.*

d) Economic Competitiveness



Figure 10 Potato farming in the region.

Highways are the nation’s primary means of rapidly moving goods and people far distances in a cost-effective manner. Highways help connect families and communities, deliver medical supplies, and keep store shelves stocked. An efficient transportation network helps keep prices low and product availability high. Long periods of challenging weather make roads even more crucial to connecting goods and services and the people who need them. In northern Maine, there is but one primary highway—US 1—and

two primary economic drivers: farming and lumber. The diverse crops of northern Maine include potatoes, broccoli, canola, and grains. Maine ranks 3<sup>rd</sup> in the U.S. for maple syrup<sup>25</sup> production and 10<sup>th</sup> nationwide for potatoes.<sup>26</sup> These crops are shipped throughout New England and eastern Canada. Some remain in the state, such as potatoes for processing, in this case into French fries, before being shipped out once packaged which requires some crops to access US 1 twice. This

<sup>25</sup>[https://www.nass.usda.gov/Statistics\\_by\\_State/Pennsylvania/Publications/Survey\\_Results/2019/Maple%20Syrup%202019.pdf](https://www.nass.usda.gov/Statistics_by_State/Pennsylvania/Publications/Survey_Results/2019/Maple%20Syrup%202019.pdf)

<sup>26</sup> [https://www.nass.usda.gov/Publications/Todays\\_Reports/reports/pots0920.pdf](https://www.nass.usda.gov/Publications/Todays_Reports/reports/pots0920.pdf)

broad reliance on US 1 means it needs to be efficient as possible.

Once the manufacturing engine of Maine, the forest products industry has shrunk over the past few decades but is making a slight comeback as lumber demand and prices rise. Transportation costs are a key element to keeping Maine wood products competitive and disjointed two-lane routes through rural areas don't make transportation as efficient as it needs to be.

Like Maine's lumber industry, the paper industry has also suffered as demand for newsprint dwindled. Food containers and cardboard have helped the industry turn the corner a bit as take-out food and online retail rose during the pandemic. Twin Rivers Paper Company in Madawaska is the only paper mill in northern Maine. US 1 is the primary truck route for logs moving to this important mill as well as to Canadian lumber mills east of Maine. It's also a primary truck route for finished paper products traveling from mill to market. Northern Maine is also home to limestone quarries. The stone moves from quarry to market via US 1.

As baby boomers age and exit the workforce, Aroostook County is looking to diversify its workforce while also turning the tide and increasing the population. Employers in manufacturing and trades are actively seeking women to enter careers they may not have previously considered including agriculture, heavy machinery operation, lumber mill work, and truck driving. Many see it as a win-win because it helps the local economy grow and provides good wages in a county where the cost of living is generally low.<sup>27</sup> Good roads are critical component to many of these jobs, for the safety and livelihood of workers. As the state looks to replace lost lumber-related jobs in the region, US 1 will be host to the workforce of today. The speed improvements described in quality of life also create savings for the regional economy.

e) State of Good Repair

This Project sustainably improves the resilience of US 1 and the transportation system in Aroostook County by rehabilitating the roadway pavement structure (pavement, base and subbase gravel), all the drainage facilities (including environmental fish passages locations), improving access to/from intersecting roadways and abutting driveways, and improving roadside safety features such as guardrails and side slopes.

The Reason Foundation, a nonpartisan public policy research group, found in 2018 that "Maine declined 21 positions from 4th to 25th in the overall [highway performance] rankings, as the state saw dramatic drops of 26, 40, and 26 positions for rural Interstate pavement, rural arterial pavement, and urbanized area congestion rankings, respectively. Maine's ranking last year may have been an aberration, as the year prior



Figure 11 A drainage pipe under US 1.

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<sup>27</sup> <https://bangordailynews.com/2019/08/08/news/aroostook-county-employers-pitch-ladies-on-trades/>

the state was 23rd in the overall ranking.”<sup>28</sup> Nearly all of the Houlton to Madawaska corridor has been built to modern standards and the majority of that work was completed by 1996. This section is part of the NHS. Meanwhile, the Madawaska to Fort Kent section, which includes the Project, has lagged considerably behind. Slightly less than half of the section has been built to modern standards; that work was performed between 1987 and 2009. Now is the time to strengthen the final links in the chain and bring the entire road to a state of good repair. It’s important that rural roads such as this one be just as safe and comfortable to commute on as roads in more populated areas. Poor pavement conditions, compromised guardrails, and shoulders that have pieces of asphalt and sparse gravel in them need repair so that this entire stretch of road is safe and reliable. This Project is the most economically efficient means of upkeep for this roadway. *By completing the Project and avoiding repeated, more modest but expensive pavement preservation projects and an inevitable slope repair, MaineDOT saves over \$22 million on a discounted basis over the 30-year analysis period.*

## 2) Secondary Selection Criteria

### a) Partnership

MaineDOT regularly conducts public meetings to introduce and/or detail projects and any updates to the community as well as to receive feedback. In the wake of the COVID-19 pandemic, MaineDOT now conducts these meetings online, allowing more people the opportunity to attend in a convenient manner. MaineDOT is in the process of hosting meetings and receiving feedback regarding this Project. The town of Frenchville has been very supportive, citing “...the vital role this highway plays in the lifeblood of the St. John Valley.”

HNTB and T.Y. Lin International Group are both under contract for delivery of the Project. HNTB is a national transportation infrastructure firm offering extensive design, engineering and planning services to federal, state and local clients in both the public and private sectors. For more than 100 years, HNTB has successfully delivered critical bridge and highway design projects nationwide and have partnered with MaineDOT on more than 20 projects in recent years. T.Y. Lin International Group is a global engineering services firm with expertise across all areas of infrastructure including roadways, highways, aviation, and bridges. They have partnered with MaineDOT on more than 20 projects in recent years.

### b) Innovation

i. Innovative Technologies – There are no innovative technologies involved with this Project.

ii. Innovative Project Delivery

Further mitigating any Project delay, MaineDOT and various other state and federal departments have executed agreements to review environmental impacts expeditiously but thoroughly. MaineDOT will take advantage of the following innovative agreements with FHWA where

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<sup>28</sup> <https://reason.org/wp-content/uploads/25th-annual-highway-report.pdf> (pdf page 10, document page 7)

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 2015-2020 and 2016-2021.
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. USFWS, NOAA’s National Marine Fisheries Service Programmatic Agreement for the State of Maine Between MaineDOT, FHWA Maine Division, USFWS Regarding Endangered Species Act Section 7 Consultation for Canada Lynx.
7. Memorandum of Agreement for Stormwater Management Between the MaineDOT, MTA and Maine Department of Environmental Protection.
8. Nationwide Programmatic Section 4(f) Evaluation for use of Historic Bridges.

- iii. Innovative Financing
  - There is no innovative financing involved with this Project.

**V. Environmental Risk Review**

a) Project Schedule

During the feasibility study and SEIS processes, numerous risks were contemplated but each has a comprehensive mitigation strategy. Preliminary design is currently underway and has identified roadway and culvert configurations that have

ACTIVITY	DATE
PROJECT KICKOFF/Effort Begin	6/30/2014
INITIAL TEAM MEETING	8/13/2016
PRELIMINARY ALIGNMENT COMPLETE	7/26/2018
PUBLIC MEETING	6/10/2021
PDR/ PRELIMINARY PLAN COMPLETE	1/3/2022
PUBLIC MEETING	7/17/2022
PLAN IMPACTS COMPLETE	8/3/2022
NEPA COMPLETE	9/14/2022
PS&E COMPLETE	1/30/2023
PROJECT ADVERTISING	2/8/2023
CONTRACT AWARD	3/10/2023
CONSTRUCTION BEGIN	4/10/2023
ENVIRONMENTAL APPROVALS COMPLETE	5/29/2023
R/W CERTIFIED	12/3/2023
CONSTRUCTION/Effort Complete	8/22/2025

the potential to meet both the goals of the Project and the needs of the communities. A more refined analysis of these solutions is now being completed to establish a preferred design solution for the Project. The final recommendations for the Project will be summarized in a preliminary design report scheduled for completion in January 2022. Following preliminary design, the Project will be advanced to an approximate 30% design level, including identification of Project impacts, by August 2022, so that environmental approvals can commence. The final design schedule for the project has been developed to support advertisement for construction in February 2023. Reconstructing the road is expected to begin in the spring of 2023 and take approximately two years to complete. This schedule would have the newly reconstructed roadway complete in summer 2025.

b) 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 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 and be incorporated into design efforts. While the Project components have cumulative benefits being completed together, the two sections of US 1 reconstruction have independent utility and will be classified separately as Categorical Exclusions in accordance with 23 CFR 771.117(c) (26). 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 September 14, 2022.

ii. Other Agencies

**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*.

Identification of historic resources is complete. MaineDOT's Historic Coordinator has completed architectural survey of the project area. Two properties along US 1 were determined eligible for listing on the National Register of Historic Places. The design team will work to avoid and minimize impacts and resolve any adverse effects to these properties in consultation with the Historic Coordinator and the Maine Historic Preservation Commission as outlined in 36 CFR 800 and the MaineDOT Section 106 Programmatic Agreement. The properties are:

- 1267 Frenchville Road, Fort Kent, ME
- 1583 Frenchville Road, Fort Kent, ME

**Section 4(f) of the Department of Transportation Act:** The MaineDOT Cultural Coordinator has reviewed the Project to identify potential Section 4(f) resources. The project, as currently proposed, will require the transportation use of one recreational property protected by Section 4(f); the Saint John River Boat Launch. The proposed action would require the use of approximately 1,832 square feet for temporary construction rights for driveway grading, approximately 3,162 square feet for a permanent drainage easement for culvert replacement, and approximately 2,195 square feet for a permanent slope easement for slope stabilization. This action does not constitute a net adverse effect to the activities, features, or attributes that qualify the resource for protection under Section 4(f). On April 14, 2021, FHWA Maine Division concluded that the transportation project is properly determined to have a de minimis impact on the Saint John River Boat Launch. The National Register-Eligible properties listed above are protected by Section 4(f) of the U.S. Transportation Act. The design team will work to avoid and minimize use of Section 4(f) properties.

**Endangered Species Act (ESA) and Essential Fisheries Habitat (EFH):** The Project is not located within designated Essential Fish Habitat. MaineDOT has identified the Federal Endangered Species and EFH (where applicable) within the Project areas.

The Project is located within the range of the federally threatened Northern Long-Eared Bat. 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 U.S. Fish and Wildlife Service Northern Long-Eared Bat 4(d) Rule.

The Project is also location within the range of the federally listed (DPS) Canada Lynx. Informal Section 7 consultation with U.S. Fish and Wildlife Service regarding potential effects to Canada Lynx will be required. MaineDOT anticipates that the Project may affect, but not adversely, Canada Lynx.

Federally listed Furbish Lousewort is located in the Project vicinity but not within the Project area. MaineDOT anticipates that the Project will have No Effect to Furbish Lousewort.

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

**Section 404 Clean Water Act Permit (U.S. Army Corps of Engineers):** Freshwater wetland impacts are expected in order to perform the required work. MaineDOT will avoid and minimize temporary and permanent wetland 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.

**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.

iii. Public Engagement

MaineDOT held a virtual public outreach meeting for the Frenchville east portion of the Project in June 2021. There will be a virtual public meeting for the Frenchville west portion of the Project in the fall. MaineDOT is providing on-demand virtual meetings in lieu of in-person meetings featuring on-demand video presentations and other documentation describing the Project. This has allowed these important public meeting to continue safely in the wake of the COVID-19 pandemic.

iv. State and Local Approvals

This Project is included in the Statewide Transportation Improvement Program (STIP) and is consistent with MaineDOT’s long range plan. It can be found in *Maine Department of Transportation–Statewide Transportation Improvement Program 2021-2022-2023-2024* dated May 13, 2021 and available at <https://www.maine.gov/tools/whatsnew/attach.php?id=4651213&an=1> . The document is searchable by the Project’s WIN numbers, 022656.00 (west of Frenchville) and 022657.00 (east of Frenchville), located on pages 59 and 60, respectively.

c) Assessment of Project Risks and Mitigations

Project Risks	Mitigations
Environmental permitting/restriction <ul style="list-style-type: none"> <li>• Federally Endangered Canada Lynx</li> </ul>	Minimize in water work <ul style="list-style-type: none"> <li>• 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<sup>29</sup></li> <li>• Choose a final design that minimizes impacts to Canada lynx.</li> </ul>
<ul style="list-style-type: none"> <li>• National Register Eligible Properties protected under Section 106</li> </ul>	<ul style="list-style-type: none"> <li>• Design will avoid and minimize permanent or temporary impacts to these properties.</li> </ul>

<sup>29</sup> <http://www.maine.gov/mdot/maspc/>

<ul style="list-style-type: none"> <li>• Historic properties and St. John River Boat Launch protected by Section 4(f) of the U.S. Department of Transportation Act</li> </ul>	<ul style="list-style-type: none"> <li>• Design will avoid and minimize permanent or temporary impacts to these properties.</li> </ul>
<ul style="list-style-type: none"> <li>• Wetland impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Wetland impacts will be avoided and minimized. Use of In-lieu fee mitigation payments to the Maine Natural Resources Compensation Program will streamline compensatory mitigation for unavoidable wetland impacts</li> </ul>

d) Other

1. **Electric Vehicle Charging Corridors:** In June 2019, Governor Janet Mills signed a law to create the *Maine Climate Council* to combat climate change. The Council developed a four-year plan for climate action titled *Maine Won't Wait* to help the state meet its greenhouse gas emission reductions goals. Electrification of the transportation sector was identified in the plan as one of the most effective emission reduction strategies for Maine. It involves expanding both the number of electric vehicles on the road along with available charging stations. Greenhouse gas modeling suggests that to meet the emissions reduction goals, Maine will need to have 41,000 light-duty electric vehicles on the road by 2025 and 219,000 by 2030. The widespread adoption of electric vehicles in Maine will be accelerated with a *Clean Transportation Roadmap* that will identify necessary policies, programs, and regulatory changes needed to meet the state's ambitious electric vehicle and transportation emission reduction goals. This will include recommendations on how to provide equitable access to electric vehicles and charging infrastructure. *Efficiency Maine Trust* already provides rebates for electric vehicles. In December 2020, they expanded the program to include used electric vehicles and they increased rebate amounts for low-income customers, governmental entities, tribal governments, and certain non-profits. The rebates address some equity concerns around transportation, but there are still low-income individuals, older adults, and those living in rural areas who continue facing unmet transportation needs.

MaineDOT is currently working on revising a strategic vision for rural transit to identify gaps and needs in the existing programs as well as an electric vehicle replacement plan. Additionally, MaineDOT will be re-acquiring and expanding the GO Maine rideshare program in 2022 to enable users to travel from origin to destination safely and efficiently across modes and providers, regardless of location, income, and disability. As Maine continues to reduce emissions in the transportation sector by way of fleet electrification, there will be significant changes in driver preferences and needs. That's why MaineDOT has been planning for these changes.

## VI. Benefit Cost Analysis

The BCA estimates more than \$34,653,000 in benefits on a discounted basis over the 30-year analysis period. The highway safety benefits for the Route 1 Frenchville project have been calculated based on the AASHTO Highway Safety Manual. The safety benefits are based on the improvements to the roadway that take into consideration traffic volumes, number of crashes, change in lane and pavement widths, change in side slopes. Based on this information, the annual safety benefits are conservatively estimated at the mid-point of the range:

NORTHERN MAINE U.S. 1 ROAD IMPROVEMENT PROJECT

- Frenchville–Fort Kent - Route 1 (4.7 miles) – Annual Safety Benefit is \$119,000.
- Frenchville–Route 1 (5.7 miles) – Annual Safety Benefit is \$158,000.

Benefits accrue due to speed increases

7% NPV Summary over 30 Years		
	Costs	Benefits
CAPEX - Project Cost	\$30,792,976	
Maintenance Costs		\$22,419,651
Safety Savings		\$2,754,297
Travel Time & Ops Costs Savings		\$5,175,286
Travel Time & Ops Costs Avoided		\$3,060,228
Emissions Avoided (3% discount rate)		\$238,240
Residual Value of the Project		\$1,005,429
<b>TOTAL</b>	<b>\$ 30,792,976</b>	<b>\$34,653,131</b>
Benefit-Cost Ratio		1.13

across the Project miles saving travel time for motorists and commercial vehicles. Also included as benefits in the BCA are the net reduction in maintenance costs for the Project area, which over 30 years on a discounted basis exceed \$22 million as the Project allows for one-time improvements versus numerous preservation projects and higher annual maintenance that over time are far more expensive. In addition to the necessary paving costs, they include a significant near term and inevitable slope repair. These benefits were determined during a full life-cycle cost analysis of maintaining the roadway structure throughout the 30-year analysis period and beyond.

Additionally, the residual value of the new stretch of roadway with numerous drainage and 100-year structure after 30 years in service is included. All are discounted over the 30-year period at seven percent to calculate the NPV of each of the cash flows.

It will produce a safer, more efficient, and accommodating roadway for motorists, freight haulers, and bicyclists. The project is cost effective as stated in the BCA with more than \$34,652,000 of benefits, discounted at 7% over 30 years (emissions benefits discounted at 3%) and a Benefit-Cost Ratio of 1.13.

**Grant Request Supporters\***

MaineDOT’s grant request for RAISE 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 to Secretary’s office*)

U.S. Senator Susan Collins  
U.S. Senator Angus King  
U.S. Congressman Jared Golden

**State Elected Officials/Offices**

Governor Janet Mills  
Senate President Troy Jackson–Maine Senate District 1  
R. Danny Martin–State Representative

**Local Government**

Town of Frenchville  
Town of St. Agatha  
City of Madawaska

**State and Local Organizations**

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

\* Due to the impact of COVID-19, numerous letters are not yet available but will be delivered to USDOT. MaineDOT will post all received letters on our website noted above.

**APPENDIX**

Benefit-Cost Analysis	A
Map	B
Cost Estimate/Project Budget	C
Gantt Chart	D
Letters of Support	E
Match Commitment Letters	F
EPA EJSCREEN	G