

## Project Description

### I. US Route 1 North Project Context

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, however the Project location is one of the few remaining sections that has not been modernized.

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 adjacent to the route. The next closest school is a community college 50 miles away; the next closest university is nearly 60 miles away in Presque Isle. 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. The next closest hospital outside of Fort Kent is nearly an hour away in Caribou. A 65-bed rehabilitation and skilled nursing facility also serves the Saint John Valley at the Forest Hill Rehabilitation and Skilled Nursing Center in Fort Kent.

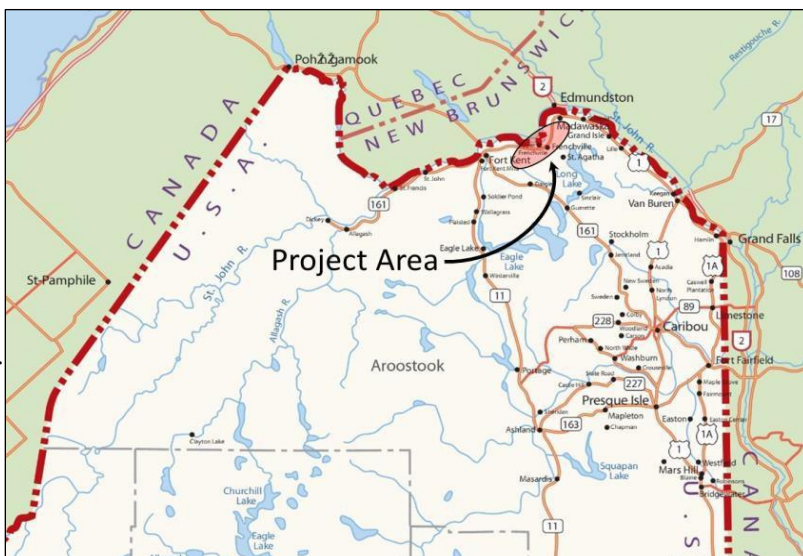


Figure 1: General Map of Project Area in Northern Maine.

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 county in Maine or any county in the other 13 states<sup>2</sup> that host the road. US 1 is the only highway on the National Highway System (NHS) in Aroostook County, a county the size of Connecticut and Rhode Island combined. In 2021, the Federal Highway Administration (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 17th and 18th centuries.

<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)

<sup>2</sup> US 1 also extends through the District of Columbia

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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.

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. Prior to COVID, the University of Maine calculated 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.

The route provides critical 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 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. The need to cross the border for everything from family to pharmaceuticals is common in the St. John Valley and US 1 is the “conveyor belt” residents ride to reach these two border crossings.

Due to limited funding, the previous band-aid approach to making US 1 repairs has adversely impacted the traveling public who has been forced to endure roadway deterioration. The proposed improvements will modernize and bring the road into a state of good repair and reduce the need for ongoing and repeated repairs for a lengthy period of time. 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 Rural MPDG grant to afford these necessary improvements.

## II. US Route 1 North Project History

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. Over the past 25 years, MaineDOT has been reconstructing and modernizing most of US 1 in Aroostook County segment by segment. Despite recognizing how critical the route is a few segments have not yet been reconstructed due to funding constraints.

	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

Table 1: Traffic Volume Projects for both Segments

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 but was designated as a Critical Rural Freight Corridor, 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

<sup>3</sup>[https://digitalcommons.library.umaine.edu/sfr\\_studentpub/2/#:~:text=The%20results%20conclude%20that%20snowmobiling,economy%20was%20over%20%24606%20million](https://digitalcommons.library.umaine.edu/sfr_studentpub/2/#:~:text=The%20results%20conclude%20that%20snowmobiling,economy%20was%20over%20%24606%20million)

reconstruction of these final two sections, a total of 10.4 miles, required to complete this remaining gap in US 1.

### III. US Route 1 North Project Statement of Work

#### *Technical and Engineering Aspects of the Project*

This project calls for modernizing two of the final four sections of US 1 in Maine that require reconstruction. 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; and
- 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. One at-grade railroad crossing will also be improved.



*Figure 2: Compromised guardrail high above a steep slope along the road.*

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 nine culverts has been determined by MaineDOT’s environmental team. The drainage system, culverts, and pipes are designed to last 50–75 years. 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.

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.

The Project’s safety features are critical to the road’s modernization efforts and the desire to close

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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 100 inches or more of average annual snowfall and temperatures often averaging below zero each year.<sup>4</sup> While these environmental factors contribute to the important winter tourism economy, they also present challenges for regional roadways and their users. That is 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.
- 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.

### *Current Design Status of the Project*

This project has completed Preliminary Design and is ready for Final Design. 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.

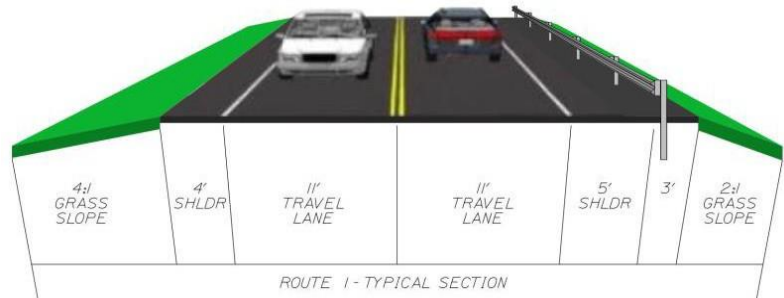


Figure 3 : Route 1 Typical Section

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.

### *Transportation Challenges Project is Addressing*

<sup>4</sup>[https://visitaroostook.com/info/seasons#:~:text=The%20winters%20also%20find%20the,100%20inches%20\(254%20cm\).](https://visitaroostook.com/info/seasons#:~:text=The%20winters%20also%20find%20the,100%20inches%20(254%20cm).)

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The challenges the Project will address are primarily related to safety, quality of life, and state of good repair. If a MPDG 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 or the paved shoulders to increase the safety and mobility of bicycles cannot be funded. As the roadway and culverts eventually fail, they will be replaced. That failure will most likely occur sporadically, meaning exhaustive repairs would be 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 users. 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.

### IV. US Route 1 North Project Location Narrative

The Project is located in Aroostook County, Maine. This is a Rural Project as Aroostook County, Maine is not located in a *Census-Designated Urbanized Area*. The Project is not in an *Area of Persistent Poverty* and is not located in a *Historically Disadvantaged Community*.<sup>5</sup>

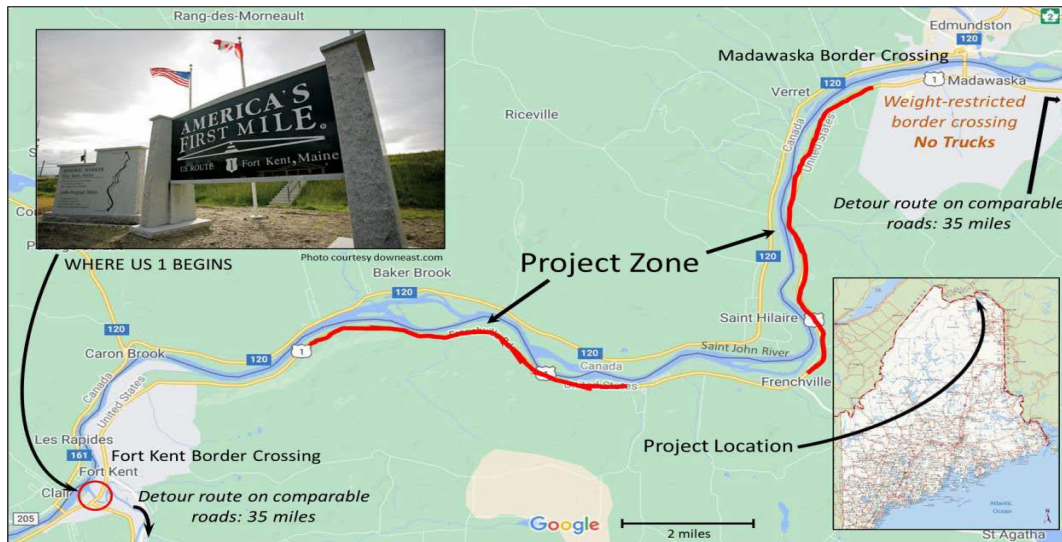


Figure 4: Project Location Map by Segment.

The Project is comprised of two sections of US 1 in Maine located two and a half miles apart: one immediately east and one west of the town of Frenchville. The GPS coordinates for each segment of the project are:

- West of Frenchville: Begin 47.279738, -68.435818 End 47.291316, -68.525909
- East of Frenchville: Begin 47.354172, -68.354637 End 47.282227, -68.377835

The section West of Frenchville begins 0.4 miles north of Church Ave (Charette Hill Rd.) and extends (in a westerly direction) 4.67 miles. The section East of Frenchville 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.

<sup>5</sup><https://maps.dot.gov/BTS/GrantProjectLocationVerification/>