2020 OPERATION AND MAINTENANCE ANNUAL REPORT

PRESENTED BY: HNTB CORPORATION
PRESENTED TO: MAINE TURNPIKE AUTHORITY



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October 1, 2020

Maine Turnpike Authority
2360 Congress Street
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Ladies and Gentlemen,

We are pleased to submit our 2020 Operation and Maintenance Annual Report for the Maine Turnpike. This report sets forth our findings as to the condition of the Maine Turnpike and our recommendations concerning maintenance, operation, insurance, and deposits to be made to the Capital Improvement and Reserve Maintenance funds and the Operation and Maintenance budget.

Our findings and recommendations are based on a visual inspection of the turnpike facilities performed between April and July, 2020; several additional visual inspections of turnpike facilities made during the year; and, on a careful evaluation of turnpike operation and maintenance procedures. We have periodically reported to the Executive Director, Chief Operations Officer, or Director of Engineering, on other items which warranted prompt attention.

We appreciate the opportunity to provide Consulting Engineering Services and we acknowledge the excellent cooperation of Authority members and personnel in the performance of these services.

Best regards,

Roland A. Lavallee, P.E., PLS
Vice President

TABLE OF CONTENTS

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1. INTRODUCTION

This 2020 Operation and Maintenance Annual Report is based on the findings of a visual inspection of Maine Turnpike (turnpike) facilities; a review of current operating practices; and a review of the insurance coverage currently in effect, all as conducted by the licensed Professional Engineers of HNTB Corporation. It sets forth observations, conclusions and recommendations concerning the condition, maintenance, repair, and operation of the turnpike and its associated facilities. Additionally, this report includes recommendations for the amount of funding required for the proper maintenance, repair, and operation of the turnpike to be deposited into the Capital Improvement fund, Reserve Maintenance fund, and the Operation and Maintenance budget. Finally, recommendations regarding insurance coverage are also provided.

In 1941, the Maine Turnpike Authority (Authority) was created as an independent state agency and given the mandate to construct a turnpike "from some point at or near Kittery to a point at or near Fort Kent". The legislature intentionally delegated the responsibility for turnpike construction and operation and maintenance to the Authority and precluded any financial commitment by the state.

The original 45 miles of turnpike, Section I, from Kittery to Portland opened to traffic in 1947 and Section II, from Portland to Augusta, was completed in 1955. The turnpike also includes a three-mile spur from the turnpike mainline to Route 1 and Interstate 295 in Falmouth. The extension of the Interstate Highway System into Maine in the 1960s and 1970s changed the limits of the Turnpike. The construction of the interstate eliminated the portion north of Augusta and utilized the portion south of York. Since then, the Turnpike has purchased portions of the southerly section of I-95. The southerly terminus is now 75 feet north of the Piscataqua River Bridge while it's northerly terminus remains unchanged.

In 2016, the Authority purchased from the Maine Department of Transportation (MaineDOT) approximately 1,800 feet of I-295 roadway in Scarborough northeast of the existing Exit 44 Toll Plaza. The acquisition was in preparation for the now complete Exit 44 open road tolling (ORT) toll plaza conversion project and included the addition of several regulatory and warning roadside signs, an overhead sign bridge structure with signage, a cantilevered sign structure with signage, and cable guardrail.

Almost two-thirds of the 111 mile turnpike is a four-lane divided highway; the other third is a six-lane divided highway. Turnpike facilities include 201 structures (183 bridges and 18 minor spans), 22 interchanges, 19 toll plazas, an administration building, including the E-ZPass Customer Service Center and the State Police offices, five service areas, and nine maintenance facilities.

The turnpike, designated as I-95, is one of the major north-south highways in the state, extending from Kittery to Augusta, Maine and is part of the National Highway System (NHS). The NHS is comprised of the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The NHS was developed by the United States Department of Transportation (DOT) in cooperation with the states, local officials, and Metropolitan Planning Organizations (MPOs). The Maine Turnpike is the only interstate highway from Kittery to Portland, making it one of the most critical elements of Maine's transportation network (see **Figure 1**). The turnpike is a safe and efficient highway that accommodated approximately 75 million trips with 90.3 million transactions in 2018.

The demands placed on turnpike facilities are enormous. Its roadways, bridges, interchanges, toll plazas, service areas and maintenance areas are subjected to increasing stress due to age, traffic levels, a high weight limit (100,000 lb. trucks allowed), and the demands of the harsh northern New England climate. To ensure the sound condition and effective operation of the turnpike, the Authority funds and implements aggressive Operation

and Maintenance, Reserve Maintenance, and Capital Improvement programs. The vigilance of the Authority through these programs has resulted in a well maintained and efficiently operated turnpike. The Authority looks to continue initiatives such as pavement rehabilitation, bridge rehabilitations and replacements, and system modernization to assure that turnpike facilities meet current safety standards as well as projected demands.

TURNPIKE MAINLINE

Annual Inspection Program

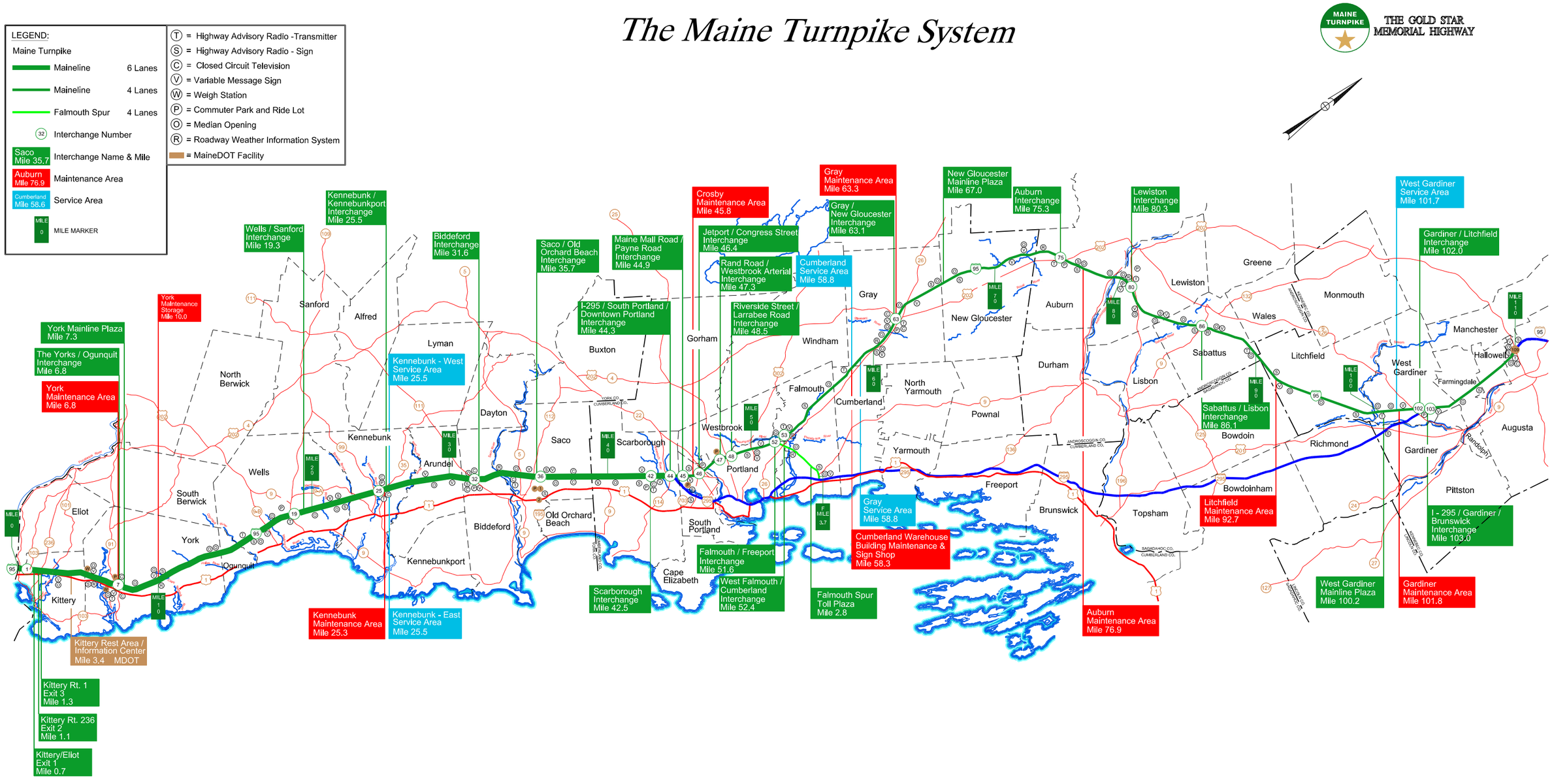
In accordance with Section 806 of the Bond Resolution dated May 1, 1991, HNTB Corporation, as the Consulting Engineer, is required to inspect the turnpike at least once a year and submit to the Authority a report setting forth the following:

- Opinion as to whether the turnpike has been maintained in good repair, working order and condition;
- Advice and recommendations as to the proper maintenance, repair and operation of the turnpike during the ensuing fiscal year and an estimate of the amount of money necessary for such purposes;
- Advice and recommendations as to the amounts and types of insurance to be carried; and,
- Recommendations as to the amount of money that should be deposited into the Reserve Maintenance fund during the upcoming fiscal year.

To comply with the listed requirements, the engineers and staff of HNTB Corporation annually conduct a visual inspection of the entire turnpike. The inspection covers pavement, cut sections, embankments, bridges, roadway lighting, drainage structures, signs, pavement markings, toll plazas, utility buildings, service areas, maintenance areas, and other facilities. This report is based on observations made during the inspection which was conducted between April and July of 2020. The opinions, statements and recommendations made herein are based solely on conditions revealed by visual inspection. No representation or warranty is made that all defects have been discovered or that defects will not appear later. Inspections of specific turnpike facilities are conducted whenever special attention is warranted.

A detailed Annual Inspection Report was submitted to the Authority in August of 2020, to be used in conjunction with this 2020 Operation and Maintenance Annual Report.

FIGURE 1: TRANSPORTATION NETWORK



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2. INSPECTION FINDINGS AND CORRECTIVE MEASURES

The Maine Turnpike has been maintained in generally good condition and presents a favorable appearance. Traffic volumes and the age of the facility necessitate continued high levels of maintenance. The Authority's Maintenance forces undertake routine maintenance while private contractors normally construct larger projects which are publicly bid. These contracts include pavement resurfacing, bridge deck replacements, bridge repairs and painting, slope repairs, and new building construction. The following sections summarize the findings of the 2020 Maine Turnpike Inspection by HNTB Corporation.

Vegetative Cover

Vegetative cover generally includes the grass median and side slopes of the roadway. The inspection revealed that most median slopes are in good condition although the vegetative cover is in poor condition. The width of the median makes maintenance of the vegetation impracticable. The typically gentle slopes of the median allow the sand placed during winter maintenance activities to accumulate and replace the vegetation. The Authority plans to replace the vegetated median with a more practical and maintainable surface as capacity projects are undertaken.

The roadway side slopes are stable with good vegetative cover. Slope locations requiring minor corrective action are detailed in the Annual Inspection Report. Corrective actions are warranted at berm drop-off locations (gravel shoulder directly adjacent to the paved shoulder is too low) where minor gullying may lead to an erosion issue if not mitigated. In most instances, the Authority's Maintenance forces can accomplish this work. The remainder should be completed by Contract.

In 2020, Authority Maintenance forces completed median repairs between Mile 19 and 25 to repair washouts. Similar repairs are expected to extend south of Mile 19 in 2021.

In 2020, median safety improvements, including removing vegetative cover, are scheduled for construction between Mile 0.3 and 1.3 and between Mile 43 to Mile 49.

HNTB Recommendation

We recommend that berm drop-off corrections be completed by Authority Maintenance forces, or included as part of the pavement rehabilitation projects, as warranted. A program to eliminate vegetation from the median, paving the median and replacement of the guard rail with concrete barrier, is also recommended. This will simplify maintenance, increase safety and eliminate the need to mow such a narrow area so close to traffic.

Pavement

Roadway and shoulder pavement are in generally good condition and the riding quality of the turnpike continues to be acceptable.

Each year MaineDOT collects pavement condition data through the state using Automatic Road Analyzer, or ARAN, truck technology. This data is provided to the Maine Turnpike and provides insight into the overall condition of the pavement on the Turnpike system. Data from the past three years, shown in **Table 1,** indicates more than 99% of the pavement on the Turnpike is in good to fair condition.

TABLE 1: PAVEMENT CONDITIONS 2017 - 2019

	2017	2018	2019
Good	53.3%	25.1%	36.1%
Fair	46.5%	74.6%	63.6%
Poor	0.2%	0.4%	0.2%

In accordance with the FHWA published Federal Register (82 FR 5886) final rule established in May of 2017, the performance measures for pavement on the National Highway System have been updated to include "Good", "Fair", and "Poor" conditions. The above reporting and classifications consistent with current FHWA guidelines.

To maintain pavement quality and roadway safety, the Authority has a planned program of pavement rehabilitation and the Authority generally rehabilitates a pavement section approximately every 12 years. **Table 2,** illustrates Pavement Contracts over the past 16 years.

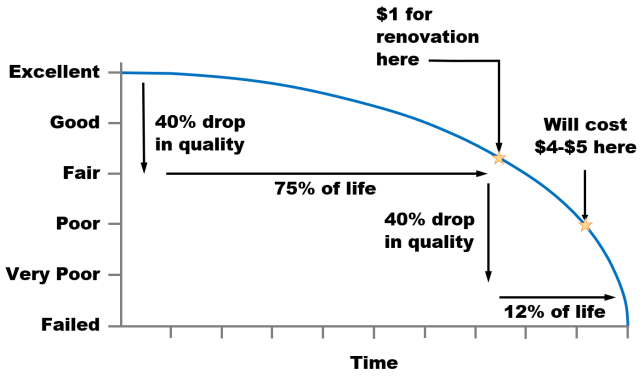
Studies indicate that pavement maintained in good condition costs substantially less to preserve than pavement that is allowed to deteriorate to poor condition. Based on this concept, the Authority's resurfacing program consists of rehabilitating one or more sections of roadway, totaling approximately ten centerline miles each year, to minimize the cost of future repairs.

Figure 2 illustrates the rate of deterioration and relative cost of rehabilitation at various times throughout the Life Cycle of a section of pavement. Evidence that pavement requires rehabilitation includes wheel rutting, excessive cracking, and poor ride quality.

TABLE 2: PAVEMENT CONTRACTS 2006 - 2020

Year	From MM	to MM	Roadway
2020	35.3	42.0	NB/SB
	102.2	102.6	NB/SB
2019	42.0	44.3	NB/SB
	49.3	51.2	NB/SB
2018	44.0	49.3	NB/SB
	74.9	80.7	NB/SB
	98.0	102.2	NB/SB
	Int. 32 & 47		
2017	64.4	68.5	NB/SB
	80.7	88.6	NB/SB
	Int. 86		
2016	54.5	57	NB/SB
	59.5	64.4	NB
	57	64.4	SB
	Int. 63		
2015	51	54.5	NB/SB
	68.5	74.9	NB/SB
	FS0.5	FS3.8	EB/WB
	Int. 46		
2014	23.3	30.3	NB/SB
	102.6	109.1	NB/SB
	57.0	59.5	NB
2013	7.4	13.5	NB/SB
	88.0	92.0	NB/SB
	Int. 7 & 44		
2012	30.0	35.0	NB/SB
	92.0	98.0	NB/SB
	102.0	Plaza	NB/SB
	Int. 42, 45 & 53		
2011	13.3	23.3	NB/SB
	Int. 19 & 48		
2010	2.2	7.0	NB/SB
	44.0	51.2	SB
	45.0	51.2	NB
2009	35.3	43.9	SB
	35.4	44.5	NB
2008	57.0	64.4	SB
	80.8	85.2	NB/SB
	Int. 102 & 103		
2007	64.4	68.5	NB/SB
	25.0	Plaza	NB/SB
	58.0	Plaza	SB
	59.0	Plaza	NB
	Int. 36		
2006	45.3	45.8	SB
	74.9	80.8	NB/SB
	Int. 80		

FIGURE 2: PAVEMENT LIFE CYCLE



Starting in 2014, pavement rehabilitation contracts specified polymer modified asphalt to alter several characteristics of the asphalt, each of which is intended to improve pavement durability, weatherability and performance. This practice has continued into 2020. The areas using this additive will be evaluated to determine if its use is providing adequate benefit.

MILLING OPERATION TO PREPARE EXISTING PAVEMENT TO RECEIVE NEW PAVEMENT

HNTB Recommendation

HNTB recommends MTA continue with the annual maintenance paving program of addressing approximately ten centerline miles per year and the use of polymer modified asphalt surface pavement.

During the 2021 construction season, pavement rehabilitation is recommended from Mile 30.0 to 35.5 consisting of a minimum 1¾" milling, crack sealing, shimming and repaving. Additional paving, crack sailing and drainage improvements are programmed for 2022, and for subsequent years. Maintenance area paving at the Litchfield and Crosby maintenance areas is also recommended beginning in 2021.

DISPENSED AT OVER 350 DEGREES THE RUBBERIZED ASPHALT SEALANT IS INJECTED DIRECTLY INTO PAVEMENT CRACKS DURING CRACK REPAIRS

Bridges and Minor Spans

The Authority is responsible for the operation and maintenance of 183 bridges, defined as spans measuring more than 20 feet in length, and 18 minor spans measuring between 10 and 20 feet in length. The Authority's Operation and Maintenance Program for these structures involves multiple aspects including developing and maintaining a detailed inventory of Authority owned structures, scheduling and completing condition and safety inspections, compiling repair and replacement recommendations, and the development and execution of contracts for repair or replacement. The goals of this program are to accurately forecast bridge and minor span repair needs, identify critical deficiencies, repair and upgrade structures on a timely basis, and to maintain the safe condition of Authority owned bridges and minor spans.

This report quantifies and discusses bridges and minor spans separately. The FHWA National Bridge Inspection Standards requires that bridges be inspected on a predetermined schedule and that the inspection data be reported in the National Bridge Inventory. No federal inspection or reporting requirements exist for minor spans. However, the MaineDOT collects and monitors condition data for minor spans for internal use. Since 2013, the inspection of Authority owned minor spans has been completed and reported using bridge inspection procedures. This process provides

inspection consistency between the Authority and MaineDOT and provides documentation of the condition of the Authority's minor spans.

INSPECTION PROGRAM

Inspections of Authority owned bridges and minor spans are completed by qualified inspectors in accordance with the National Bridge Inspection Standards established by FHWA. There are several different types of inspections that occur based on structure type, information needed, and federal regulations. The different inspection types are discussed in more depth in the following sections. Once these inspections are complete, the condition ratings for each structure are compiled and transmitted to the MaineDOT for inclusion in the National Bridge Inventory. The inspection data also becomes part of the Authority's records which are used to develop the rehabilitation and repair program.

The MaineDOT uses AssetWise as their recording platform. The Authority, to maintain consistency and streamline the reporting of bridge condition data, reports inspection data to MaineDOT directly through AssetWise. The MaineDOT has given the Authority access to the online AssetWise database and software to facilitate consistency for all bridge data in the state.

The following is a discussion of the bridge inspection program components:

ROUTINE INSPECTIONS

All Authority owned bridges and minor spans undergo routine inspections on an annual basis. The purpose of these inspections is to identify potential safety concerns, document areas of deterioration and to record condition ratings for key bridge components. The 2020 routine inspection by HNTB identified that the bridges and minor spans along the turnpike range from fair to very good condition. Structures that have been rehabilitated or reconstructed during the past 20 years were found to be in fair to very good condition, while those that have not been recently rehabilitated were generally noted to be in fair condition.

UNDERWATER INSPECTION

The FHWA requires an inspection of underwater bridge elements every five years. Accordingly, an underwater inspection was performed in September 2016 for 26 bridges and culverts that carry the turnpike over rivers and water bodies where certain elements of the substructures or culverts cannot be inspected as part of the routine inspection. No serious structural deficiencies were noted during the 2016 underwater inspection. The overall conditions of the exposed portions of the underwater substructures were fair to good with most deficiencies attributed to freeze-thaw deterioration and abrasion from ice and debris.

The next underwater inspection should be completed in 2021.

DETAILED INSPECTIONS

Detailed inspections are completed on bridges with special features that warrant increased attention and inspection effort. Two sets of turnpike structures, the Androscoggin River Bridges and the York River Bridges, require detailed inspections.

The Androscoggin River Bridges, each measuring 850 feet long, consist of roadway surfaces supported on stringer and floor beam framing systems. The loads from these roadway framing systems are carried almost entirely by two primary girders.

Because these structures are carried by only two primary girders, the bridge has insufficient redundancy to prevent a progressive collapse of all, or part of, the bridge if one of the primary girders were to fail. As a result, these structures are classified as "fracture critical" and are subject to more rigorous inspection requirements as outlined in FHWA's Bridge Inspection Standards. To achieve compliance with these inspection standards, the Androscoggin River Bridges should have a fracture critical inspection completed at least once every 24 months.

The last fracture critical inspection was completed in September 2019. During the inspection several exist-

HANDS-ON INSPECTION OF THE ANDROSCOGGIN RIVER BRIDGE

ing and new deficiencies were noted including numerous cracked welds. The cracks were not located on the primary girders and are not judged to pose a significant safety risk. Continued monitoring will be completed in future inspections and, if the crack size increase over time, the issuance of a repair contract will be recommended. The next fracture critical inspection of this structure is scheduled for 2021.

At the York River Bridges, the girder framing system includes pin-and-link assemblies. Because routine inspection procedures are insufficient to identify defects in the pins, ultrasonic testing of these elements is necessary. the first detailed inspection and ultrasonic testing of the pin-and-link systems at the York River Bridges was completed in December 2011. No serious structural deficiencies were noted during the inspection. The next detailed inspection of the pin-and-link assemblies was scheduled for 2016, however, a 2015 rehabilitation contract involved disassembling, reassembling, and painting the pin-and-links. This was as an acceptable detailed inspection procedure and, therefore, ultrasonic testing was not performed. The next detailed inspection including ultrasonic testing is scheduled for the fall of 2020. The five-year inspection frequency is based on engineering judgement since the FHWA does not have a required frequency for these components.

PIN-AND-LINK ASSEMBLY AT THE YORK RIVER BRIDGE

SPECIAL DAMAGE INSPECTIONS

Special damage inspections are conducted as a result of collisions or when a condition requiring a more detailed inspection is noted. When this occurs, HNTB conducts an immediate field investigation to determine the extent of the damage and whether it is safe for traffic to continue using the structure. In some cases, emergency repairs or lane restrictions are required to maintain traffic on the structure.

The Two Rod Road Underpass at Mile 42.00 was exposed to high temperatures over the northbound lanes after a vehicle caught fire near the bridge on August 16, 2019. HNTB conducted a special inspection and did not identify damage to the bridge resulting from this incident.

The Central Street Overpass at Mile 107.70 bridge railing was struck by a vehicle on August 28, 2019. HNTB conducted a special inspection and concluded the damaged rail, rail post, and concrete curb required replacement. HNTB prepared plans and specifications for replacement of the damaged bridge rail and rehabilitation of the concrete curb to restore the crashworthiness of the bridge rail system.

The Authority was notified of a large washout at the Leighton Road Underpass at Mile 52.60 on June 1, 2020. The washout occurred when a contractor installing a water line for the local water district released a large volume of water near the bridge abutment. HNTB conducted a special inspection and concluded the damage did not create abutment instability or significantly reduce the load capacity of the bridge. Repair of the eroded area was recommended to restore original conditions, stabilize the embankment slope, and to remove eroded materials from within the Turnpike's ditch line. This work has been awarded to a contractor and is scheduled to be complete by the fall of 2020.

CENTRAL STREET OVERPASS BRIDGE RAIL DAMAGE

The Broadturn Road Underpass at Mile 39.9 was struck by the raised body of a dump truck during paving operations on the Maine Turnpike northbound on August 11, 2020. HNTB conducted a special inspection and concluded the damage was limited to surficial scrapes and gouges.

INSPECTION FINDINGS

During the Annual Inspection, structure components such as the concrete deck, superstructure, substructure, culvert, and river channel conditions are assigned condition ratings. Using these ratings, structures requiring repair are further separated into five groups based on their overall condition and the safety implications of their deficiencies:

» GROUP V - Bridges are not in need of any repair (typically new or recently rehabilitated).

» GROUP IV - Bridges need repair, but of a minor nature. This work can most likely be done by Maintenance crews.

» GROUP III - Bridges need repair, but generally the structural safety is not jeopardized at present.

» GROUP II - Bridges should be repaired as soon as possible. However, the problem is such that a short delay is not likely to create a safety problem. If left too long, it will become a Group I Bridge.

» GROUP I - Bridges need immediate repair. The problem is such that the safety of the highway is in danger if the repair is not made quickly. For example, heavy concrete deterioration under bridge bearings, scour around bridge foundations, weakened girders due to impact, etc.

Table 3, Bridge and Minor Span Tabulation, illustrates the number of structures in each group category based on the 2020 Annual Bridge inspection. Data from previous years has also been provided for reference.

The grouped structures are then further prioritized for repair or replacement considering factors such as safety, bridge age, importance, rate of deterioration, scour susceptibility, load capacity, and traffic volumes.

Higher priorities are typically assigned to bridges and minor spans that are classified as "structurally deficient." In 2017 FHWA updated the definition of "structurally deficient" to be consistent with the FHWA published "Federal Register (82 FR 5886)" final rule. Under the updated definition a "structurally deficient" bridge requires that only one key structural component be in "Poor" or worse condition. The key structural components primarily include: Deck, Substructure, Superstructure, and Culvert. If any one of these components has a condition rating of 4 or less the bridge is classified as structurally deficient. A structure classified as structurally deficient is not necessarily unsafe; however, these structures require repair and maintenance in the near future to ensure they continue safe operation.

Additionally, the "Federal Register (82 FR 5886)" final rule created three additional bridge classification categories that were reported for the first time in 2018. A bridge with all the key components having a condition rating of 7 or higher is classified as being in "Good" condition. A bridge with one or more key components having a condition rating of 4 or lower is classified as being in "Poor" condition. A bridge that does not meet the condition requirements of good or poor is classified in "Fair" condition.

TABLE 3: BRIDGE AND MINOR SPAN TABULATION

Bridges						
Year	Group V	Group IV	Group III	Group II	Group I	Total
2020	10	60	113	0	0	183
2019	7	69	107	0	0	183
2018	8	68	107	0	0	183
2017	8	68	107	0	0	183
2016	9	67	108	0	0	184
2015	8	72	104	0	0	184

Minor Spans						
Year	Group V	Group IV	Group III	Group II	Group I	Total
2020	1	5	12	0	0	18
2019	1	5	12	0	0	18
2018	1	5	12	0	0	18
2017	1	6	11	0	0	18
2016	1	6	11	0	0	18
2015	1	4	13	0	0	18

Current Federal regulations require that no more than 10% of the total deck area of National Highway System (NHS) bridges may be classified as structurally deficient, or "poor", for three consecutive years. If 10% or more of the deck area is poor condition FHWA requires that a larger portion of the State Agency's Federal Funding be reapportioned to bridges on the NHS. Maine Turnpike bridges located on the NHS network are included in the State of Maine's NHS bridge inventory.

Since 2009, a primary focus of the Authority's bridge program has been to repair or rehabilitate "Poor" condition (i.e., structurally deficient) bridges. The 2009 inspection noted 24 "Poor" condition bridges equaling 13.60% of all Authority owned bridges and 14.24% of Authority owned bridges on the NHS. The Authority's focus on the repair or replacement of "Poor" condition bridges has been successful. The 2020 inspection found no Authority owned bridges are in "Poor" condition. By comparison, 5.4% of the nation's bridges, and 8.3% of Maine's bridges, are in "Poor" condition. A tabulation of Authority owned bridges in "Good," "Fair," and "Poor" condition, based on total deck area by year, is provided in **Table 4**.

During the 2020 bridge inspection, no "Poor" (i.e., structurally deficient) bridges or minor spans were identified. **Table 5**, Structurally Deficient ("Poor" Condition) Structure Summary, provides a listing of all Authority owned structures classified as "structurally deficient" since 2017. The table also identifies programmed repairs and rehabilitation dates for these bridges. The Authority's planned bridge and minor span rehabilitation program is reviewed and adjusted after each year's inspection program. A continued emphasis on the repair or replacement of structurally deficient bridges and minor spans, if identified during the Annual Inspection, is recommended.

TABLE 4: TABULATION OF "GOOD," "FAIR," AND "POOR" CONDITION DECK AREAS

Year	All Authority Owned Bridges			NHS Authority Owned Bridges		
	"Good"	"Fair	"Poor"	"Good"	"Fair"	"Poor"
2020	30.30%	69.70%	0.00%	25.00%	75.00%	0.00%
2019	34.30%	65.70%	0.00%	29.20%	70.80%	0.00%
2018	34.80%	63.76%	1.44%	28.73%	68.36%	2.91%
2017	-	-	2.29%	-	-	1.94%
2016	-	-	0.68%	-	-	0.00%
2015	-	-	1.14%	-	-	0.00%
2014	-	-	3.37%	-	-	2.65%
2013	-	-	3.20%	-	-	2.65%
2012	-	-	1.59%	-	-	0.77%
2011	-	-	8.62%	-	-	10.80%
2010	-	-	9.43%	-	-	11.75%
2009	-	-	13.60%	-	-	14.24%

TABLE 5: STRUCTURALLY DEFICIENT ("POOR" CONDITION) STRUCTURE SUMMARY

Year	Structure Name	Structure Type	Mile Marker	Status
2020	N/A[1]	N/A	N/A	N/A
2019	N/A[1]	N/A	N/A	N/A
2018	Crediford Brook	Minor Span	18.75	Rehabilitatoin completed in 2018
	I-295 S.B. Underpass	Bridge	102.50	Rehabilitatoin completed in 2018
2017	Crediford Brook	Minor Span	18.75	Rehabilitatoin completed in 2018
	Mousam River (Northbound)	Bridge	25.00	Rehabilitatoin completed in 2019
	Cobbosseecontee Stream (Northbound)	Bridge	99.20	Deck repairs completed in 2017. Bridge rehabilitation scheduled for completion in 2020.
	Cobbosseecontee Stream (Southbound)	Bridge	99.21	Deck repairs completed in 2017. Bridge rehabilitation scheduled for completion in 2020.

[1] No bridges were structurally deficient in 2020 or 2019.

2020 BRIDGE REHABILITATION AND REPLACEMENT PROJECTS

Several rehabilitation and repair contracts are ongoing in 2020. These contracts include deck replacement, concrete rehabilitation, replacing substandard bridge elements such as joints, railings and end posts, increasing bridge under clearance, improving load capacity, and other miscellaneous repairs.

The following is a brief summary of ongoing bridge work in 2020:

MILE 33.4 BOOM ROAD UNDERPASS

The work includes substructure repairs, deck repairs, removal and replacement of the bituminous overlay and waterproof membrane.

MILE 41.4 BEECH RIDGE ROAD UNDERPASS

The work includes substructure repairs, deck repairs, removal and replacement of the bituminous overlay and waterproof membrane.

MILE 44.9 EXIT 45 INTERCHANGE RECONSTRUCTION

The project includes demolition of the existing two-lane bridge and the construction of a new four-lane bridge.

MILE 44.6 CUMMINGS ROAD UNDERPASS

The work includes demolition of the existing two-lane bridge and the construction of a new four-lane bridge.

MILE 46.70 & 46.71 STROUDWATER RIVER OVERPASS (NB & SB)

The work at these two bridges includes bridge improvements including deck replacement and widening, substructure repair and widening, and raising profile to increase the bridge and roadway cross-slope.

MILE 47.90 & 47.91 MAINE CENTRAL RAILROAD OVERPASS (NB & SB)

The work at these two bridges includes bridge improvements including deck replacement and widening, substructure repair and widening, and raising profile to increase the bridge and roadway cross-slope.

MILE 49.00 & 49.01 WARREN AVENUE OVERPASS (NB & SB)

The work at these two bridges includes bridge replacement to provide a wider bridge with improved vertical clearance over Warren Avenue.

MILE 83.7 GROVE STREET UNDERPASS

The work includes substructure repairs, deck replacement.

MILE 99.20 & 99.21 COBBOSSEECONTEE STREAM OVERPASS (NB & SB)

The work at these two bridges includes widening the bridge by adding a girder line, deck replacement, and substructure widening.

2020 Emergency Bridge Repairs

Emergency bridge repairs are periodically required and are usually related to collisions caused by vehicles hauling loads exceeding legal limits. Minor repairs are completed by Authority Maintenance forces; however, significant repairs warranting heavy equipment or specialty services, such as heat straightening, are completed through construction contracts. The Authority's program of increasing the vertical clearance of underpasses during rehabilitation projects

MILE 44.6 CUMMINGS ROAD UNDERPASS

COBBOSSEECONTEE STREAM OVERPASS (NB) MILE 99.2

has resulted in a significant decrease in the number of yearly overheight vehicle impacts. However, several structures with substandard vertical clearance remain. These structures have an increased risk of being struck by an overheight vehicle.

Two emergency bridge repairs have been completed since the issuance of the 2019 Operation and Maintenance Annual Report.

Emergency bridge railing repairs, including the replacement of damaged bridge railing, posts and concrete curbing, were completed by turnpike maintenance crews at the Central Street Overpass at Mile 107.70 in the fall of 2019.

A contract to repair slope erosion and abutment undermining at the Leighton Road Underpass at Mile 52.60 was issued for construction in August 2020. Construction is scheduled to be complete by October 2020.

HNTB RECOMMENDATION (2021 BRIDGE REHABILITATION PROJECTS)

Based on the findings of the 2020 Bridge Inspection Program, HNTB recommends the following bridge repair and rehabilitations for 2021:

MILE 68.6 BENNETT ROAD UNDERPASS

The work includes substructure repairs, deck repairs, and removal and replacement of the bituminous overlay and waterproof membrane.

MILE 86.1 ROUTE 9 UNDERPASS

The work includes substructure repairs, deck repairs, and removal and replacement of the bituminous overlay and waterproof membrane. Additionally, adjustments to the roadway striping will be completed to improve sight lines for vehicles turning onto Route 9 from the Turnpike off ramps.

MILE 89.1 MARSH ROAD UNDERPASS

The work includes substructure repairs, deck repairs, and removal and replacement of the bituminous overlay and waterproof membrane.

MILE 102.0 GARDINER LITCHFIELD UNDERPASS

The work will include relocation of the turnpike's southbound on-ramp and permanent removal of the existing bridge.

HNTB RECOMMENDATION (2021 BRIDGE PAINTING PROJECTS)

The Authority has implemented an effective painting program intended to address deteriorating paint conditions. The program reduces the potential for costly future repairs that are necessary to correct steel corrosion. Since 1990, over 50 Authority owned bridges have been repainted, with the most recent painting projects occurring in 2018. Based on current bridge paint conditions additional painting contracts are not expected to occur until 2022.

During project development, the cost of repainting existing steel girders versus replacing the steel girders should be considered for all bridge rehabilitation projects. This analysis should consider cost, the load capacity of the existing girders, and the condition of the existing paint system.

BRIDGE OPERATIONS AND MAINTENANCE PROGRAM

HNTB recommends the following annual bridge maintenance activities on Maine Turnpike bridges:

- **DECKS** Sweep (power broom) and flush with ordinary water (preferably power rinse) particularly the gutter areas. Patch obvious delaminations and potholes, and scaling. Remove loose spalls over lanes of traffic.
- **PARAPETS** Power rinse. Periodically apply concrete sealer.
- **SUPERSTRUCTURE** Power rinse the beams/girders and bearings, particularly at expansion joint locations.
- **SUBSTRUCTURE** Power rinse and/or clean debris from bridge seats, periodically apply concrete sealer.

The Authority maintains detailed bridge files as part of their bridge Operation and Maintenance Program. In accordance with FHWA requirements, these bridge files contain inventory and appraisal information such as bridge geometrics and age, as-built drawings, condition ratings, safe load capacities, and scour evaluations.

LOAD RATING OF IN-SERVICE BRIDGES

In 2014, the Authority completed its initiative to develop load ratings for all their bridges. Load ratings are used primarily to understand the safe load capacity of bridges and to identify structures that should be posted for load limits. Additionally, load ratings are

used to evaluate overweight permit load requests and to aid in the prioritization of bridge repair projects. These uses require that bridge load ratings are reliable, uniformly consistent, and current. The results of these load ratings were reported to MaineDOT and are saved in the Authority's bridge files. HNTB recommends the completion of a bridge load rating when bridge construction with significant alterations is completed, or each time the condition rating of a key element drops below established thresholds set by FHWA.

The Authority has begun the process of rating all their applicable bridges for the new "Emergency Vehicle" requirements laid out in the FHWA Memorandum on "Load Rating for the FAST Act's Emergency Vehicles" with 2018 Revisions dated March 16,2018. Since 2019, the Authority, HNTB, and the MaineDOT have been working together to develop rating computations that meet the FHWA requirements and deadlines. To date, Emergency Vehicle updates have been performed on structures with State Legal Load ratings below 1.0, as well as structures considered to be the most likely to require posting as a result of FAST Act Emergency Vehicles. Work is currently on-going to identify and evaluate additional structures that require updated ratings in accordance with the FAST Act and, where necessary, implement load postings or program bridges for strengthening or rehabilitation.

SCOUR EVALUATIONS

In 2012, the Authority had HNTB complete scour evaluations for 24 river crossings (14 bridges and 10 culverts). The evaluations were completed to ensure compliance with the FHWA National Bridge Inspection Standards, Title 23, CFR 650, Subpart C. Individual reports for each structure were created, and in summary, the evaluations concluded that no Authority owned bridges or culverts were scour critical.

BRIDGE GEOMETRICS

The Maine Turnpike Authority's bridge inventory includes structures that are not compliant with current geometric design guidelines. These structures have narrow lanes or shoulder widths, substandard clearances, or the inability to handle current traffic volumes. When practical, the Authority should consider including improvements such as bridge raising and shoulder widening in their Capital Improvement Program to address substandard bridge geometrics.

Ancillary Structures

The Authority is responsible for 121 ancillary structures including 43 overhead sign bridges, 13 overhead cantilever sign structures, 1 light bridge, 10 AVI mast-arms, 3 traffic signal mast arms, 8 space frames, 12 variable message signs on posts or butterfly supports, 4 overheight detectors, 8 weather stations, and 19 bridge-mounted signs. These structures carry regulatory, route marker, warning, and specialty signage and toll equipment. Routine ground-level inspections of the Authority's ancillary structures are conducted yearly as part of the annual inspection. No significant issues were observed during the 2020 inspection.

The Authority owns one aluminum sign structure, located at Mile 8.3 southbound, which is required to receive a hands-on inspection every two years per FHWA guidance. Hands-on inspections are more robust than routine ground level inspections whereas the inspector is required to be within an arm's length of all components during the inspection. These inspections allow for a closer and more detailed review of conditions. The 2019 hands-on inspection of this structure determined the structure is in good condition with no significant deficiencies observed.

OVERHEAD SIGN STRUCTURE INSPECTION

Sign structures, high mast light poles, mast arms and other ancillary structures located over, or immediately adjacent to, turnpike facilities require hands-on inspections every five years per FHWA guidance. In 2020, hands-on inspections were performed for 81 Authority owned assets. All assets were found to be in generally good condition; no significant deficiencies were observed.

HNTB RECOMMENDATION

We recommend continuing to complete routine inspections of structures annually. Additionally, we recommend a hands-on inspection of all overhead sign structures in 2026. This recommendation is consistent with the FHWA guidance that a typical two tower, two or four post sign bridge with a steel superstructure, be hands-on inspected every six years. The aluminum sign structure should receive a hands-on inspection every two years.

Drainage

The roadway's surface drainage system (consisting of side slopes, drainage ditches, catch basins, and cross culverts) was inspected and found to be in fair to good condition. An important component of roadway drainage is allowing for storm water to sheet flow from the pavement down the side slope. The presence of winter sand buildup under guardrail prevents sheet flow resulting in a channelized flow which may lead to an erosion issue.

Routine berm, ditch, and side slope maintenance and repairs are required for proper upkeep of the highway. Minor drainage, slope repairs, and maintenance are completed by the Authority while larger repairs are completed by contractors. Catch basin repair, pipe repair, winter sand removal, and slope repairs are completed as part of the pavement rehabilitation projects, while isolated areas requiring significant repair are typically bid as a Contract and completed separately. We recommend the continuation of this practice.

Numerous rivers and streams pass under the turnpike through box culverts and culvert pipes. All box culverts and pipes 60" in diameter or greater are inspected annually (a total of 68 individual culvert ends). In addition to inspecting the culvert ends, HNTB also inspected the inside of these culverts that could be accessed safely. These culverts were found to be in satisfactory condition. Culverts that could not be accessed safely were inspected from each end and, if inadequate visibility to the interior of the culvert existed, they were flagged for special inspections. The special inspections occurred in 2018 and were performed by vendor using robotic cameras. The 2018 special inspection of 18 culverts found the culverts to generally be in satisfactory condition.

Culvert pipes 36" to 54" are inspected every five years and were most recently inspected in 2018. They were found to be in fair to satisfactory condition. These pipes should be inspected again in 2023.

Prior to 2013, cross-culverts 30” and smaller were not inspected as part of the Annual Inspection. The Authority requested the inspection of these culverts over the five-year period starting in 2013 and ending in 2017. **Table 6**, on the following page, provides a summary of when these Pipe Inspections were completed. This inspection cycle was started again in 2019 and is ongoing.

These pipes were found to be in good to poor condition. Many of the cross-culverts are reinforced concrete under the core roadway but change to metal under the side slopes. While the concrete portion of the culverts are generally in fair to good condition, many of the metal pipe ends are in poor condition. Common issues observed in the metal pipe ends are rusted flow lines, disconnected joints, and disconnected metal flared end sections. Common issues observed in the reinforced concrete pipe ends are inlets and outlets that are either partially or completely obstructed by heavy vegetation or debris and buried inlets and outlets. These conditions lead to erosion issues on the side slope which may eventually impact the roadway.

Periodically the Authority issues contracts to repair drainage issues that the Authority’s Maintenance forces cannot repair due to their location or the type of equipment required to cost effectively complete the repair.

TABLE 6: PIPE INSPECTIONS

Year Inspected	Locations Culverts 30" and Smaller
2020	Mile 0.3 to Mile 25
2019	Mile 25 to Mile 49
2017	Mile 25 to Mile 50
2016	Mile 0.3 to Mile 25
2015	Mile 60 to Mile 68
	Mile 75 to Mile 90
2014	Mile 50 to Mile 60
	Mile 68 to Mile 75
	Falmouth Spur
2013	Mile 90 to Mile 109

HNTB RECOMMENDATION

We recommend the locations rated poor in the detailed Annual Inspection Report be monitored by the Authority. Locations that can reasonably be repaired by the Authority's Maintenance forces should be repaired. Areas that are not feasible for repair by the Authority's Maintenance forces should be programmed for repair through a construction contract. These repairs include the complete removal of the deteriorated metal pipe ends and their replacement with high density polyethylene or reinforced concrete pipe, along with slope and drainage channel stabilization. Drainage repairs should be included in the pavement rehabilitation contracts.

ROADWAY DRAINAGE CULVERT

Guardrail and Safety Improvements

The Authority has continued its program of improving safety by upgrading large sections of the roadway side slopes each year. These improvements include removal of vegetation and guardrail upgrades.

GUARDRAIL

Through the AASHTO/FHWA partnership, an agreement was executed in 2015 to define actions needed to fully implement the Manual for Assessing Safety Hardware (MASH) over the course of several years. The MASH guidelines replace its predecessor's guidelines defined in the National Cooperative Highway Research Program (NCHRP Report 350), published in 1993. MASH guidance includes four important parts:

1. Agencies are urged to establish a process to replace existing highway safety hardware that has not been successfully tested to NCHRP Report 350 or later criteria.

2. Agencies are encouraged to upgrade existing highway safety hardware to comply with the 2016 edition of MASH either when it becomes damaged beyond repair, or when an individual agency's policies require an upgrade to the safety hardware.

3. For contracts on the National Highway System with a letting date after December 31, 2019, only highway safety hardware evaluated using the 2016 edition of MASH criteria will be allowed for new permanent installations and full replacements. (This also included a number of earlier dates in 2017 and 2018 for specific subsets of "highway safety hardware".)

GUARDRAIL UPGRADES

4. Temporary work zone devices, including portable barriers, manufactured after December 31, 2019, must have been successfully tested to the 2016 edition of MASH. Such devices manufactured on or before this date, and successfully tested to NCHRP Report 350, or the 2009 edition of MASH, may continue to be used throughout their normal service lives.

A program to upgrade and modernize Maine Turnpike guardrail on an as-needed basis has been in place since the mid-90's and remains active.

This program includes the following:

- Installation of thrie beam guardrail or median concrete barrier at select locations;
- Closing median openings that are not critical for authorized vehicles;
- Constructing new median openings at areas with adequate sight distance;
- Installing Emergency Vehicle Ramps to eliminate the use of median openings, or where new openings cannot be constructed;

» Replacing non-crash attenuating guardrail terminal end sections with impact attenuating units;

» Adjusting guardrail heights;

» Improving strength of guardrail at locations where the guardrail was in close proximity to bridge piers;

» Adding guardrail; and,

» Constructing new terminal end – anchored end sections.

In 2018, upgrades to guardrail were started from Mile 74.9 to 80.7 as part of a pavement rehabilitation improvement contract. Similarly, improvements were made from Mile 35 to 42 in 2020. The practice of including guardrail and safety improvements within the yearly paving contracts, or within new Toll projects, has been successful and should continue.

EMERGENCY VEHICLE RAMPS

Emergency vehicle ramps allow for emergency vehicles to enter and exit the turnpike mainline at gated locations. In addition, these ramps allow maintenance vehicles to change direction without crossing the mainline. These ramps allow for improved safety by improving emergency vehicle response time and improved winter maintenance operations. In 2020, the Authority issued construction contracts for the installation of emergency ramps at Cider Hill Road at Mile 6.2, Mountain Road at Mile 10.0, Burnt Mill Road at Mile 19.9, and Forest Avenue/Riverside Industrial Park at Mile 50. These ramps are scheduled to be complete by the end of 2020.

ROADWAY SIDE SLOPES

A program to clear vegetation in close proximity to the roadway commenced in 2012. This clearing improves safety by removing vegetation in close proximity to the roadway and facilitates winter maintenance by minimizing shading of the roadway. **Table 7** illustrates contracts issued specifically to address Side Slope Clearing since 2012. No side slope clearing contracts were issued in 2019. However, side slope clearing has occurred as part of other recent projects including the York Toll Plaza reconstruction project, emergency vehicle ramp contracts. In 2021, side slope clearing is proposed for areas in the vicinity of the Saco River Bridge at Mile 33.0, and also near Exit 32 as part of a planned project to improve the southbound off-ramp.

TABLE 7: SIDE SLOPE CLEARING

Year	Locations
2020	Exit 45
2019	N/A[1]
2018	Mile 42.0 to Mile 45.0
	Mile 85.0 to Mile 85.8 (SB)
	Mile 93.0 to Mile 100.8
	Exit 103
2017	Mile 44.7 to Mile 61.8
	Falmouth Spur
2016	Mile 75 to Mile 83
	Mile 99 to Mile 109
2015	Mile 63 to Mile 75
2014	Mile 51 to Mile 63
2013	Mile 82.9 to Mile 93.0
2012	Mile 92.8 to Mile 100.3

[1] No contracts

SIDE SLOPE CLEARING

When practical, Turnpike maintenance crews clear brush and small trees along the tree line to maintain the current tree line.

HNTB RECOMMENDATION

HNTB recommends that guardrail continue to be monitored and repaired as needed. Upgrades such as adjusting guardrail height are still needed as a regular activity and should be reviewed yearly for possible inclusion in the paving rehabilitation contracts. We also recommend that any entity installing or maintaining roadside safety hardware, including Authority Maintenance forces and contractors, be trained for completing this work in accordance with the manufacturer's instructions.

In addition, HNTB recommends that the Authority continue to study the feasibility of constructing other emergency vehicle ramps at select locations. We also recommend that the Authority continue the clearing of vegetation in close proximity to the roadway.

Lighting

The roadway lighting system is in generally good condition. During the annual inspection, HNTB noted that most interchanges and service plazas had a few lights that were not operating. Some of these lights were located at the Kennebunk Service Plazas which are under construction. Authority Maintenance forces replace or repair lights as required to maintain acceptable lighting levels.

In 2010, the Authority implemented a pilot study by installing Light Emitting Diode (LED) lighting at the Cumberland Service Area, Exit 46 Area, the Exit 45 canopies, Crosby Maintenance, and the Kennebunk Park & Ride lot. While LED lights are costlier to purchase, they have longer service life and use substantially less electricity to operate. The success of these trial locations has led the turnpike to replace all similar lights with LEDs. As of 2018 all lighting system fixtures have been upgraded to LED fixtures, with the exception of the York and Gardiner Toll Plazas. The lights located at these plazas are scheduled to be replaced or removed by 2021 as part of planned toll plaza reconstruction projects.

In2020, HNTB completed a hands-on inspection of 30 weathering steel high mast light poles and determined all were in generally good condition.

HNTB RECOMMENDATION

The Authority should continue to maintain their roadway lighting system on a regular basis to minimize the number of outages.

We recommend the high mast lights continue to receive annual routine inspections, and hands-on inspections matching the frequency of overhead sign structures. Debris, including road sand and excessive vegetation, should be removed from around the bases and foundations of high mast light poles to minimize the potential for corrosion.

Signage

The Authority maintains its signs in generally good condition. The Authority's Sign Shop fabricates the majority of the regulatory, route marker, warning, and specialty signs on the Maine Turnpike and routinely replaces signs that are damaged, faded, or otherwise in poor condition.

In 2016, the Authority initiated a four-year plan to upgrade and replace their existing guide signs. The first contract was awarded in 2016 for upgrades from Exit 75 to Exit 109. The second contract was awarded in 2017 for upgrades from Exit 25 to Exit 63. The third contract was awarded in 2018 for upgrades for Exits 32, 36, 42, 44, and 45. The fourth contract was awarded in 2019 for upgrades from Exit 1 to Exit 19. The Authority's maintenance forces will fabricate and install new signs for Exit 25 and Exit 19 northbound in 2020 and 2021.

Additional guide sign upgrades between Mile 45 and Mile 48 are being completed as part of the ongoing Portland-area widening project.

HNTB RECOMMENDATION

HNTB recommends completing the remaining guide sign upgrades at all service plaza locations by 2023. HNTB also recommends the Authority continue to monitor, maintain, and replace the regulatory, route marker, warning, and specialty signs as needed.

Roadway Markings

The Authority's Maintenance forces re-stripe the turnpike once a year to maintain roadway markings in good condition. In 2020, the roadway will be re-striped twice, once in the spring and once in the fall, in an effort to improve the visibility of pavement markings in the mid to late winter months. The Authority is also utilizing reflectorized pavement marking tape installed in grooves at interchange ramps and to supplement the white skip lines on the mainline. The tape improves visibility of the pavement markings in wet conditions and at night.

Double yellow lines in two-way traffic areas in the interchanges are typically painted twice a year. Newly paved areas are also painted twice per year. The paint lines are adequately maintained.

HNTB RECOMMENDATION

HNTB recommends the Authority continue their current roadway marking practices.

TURNPIKE MAINLINE

Toll Plazas

TOLL COLLECTION EQUIPMENT

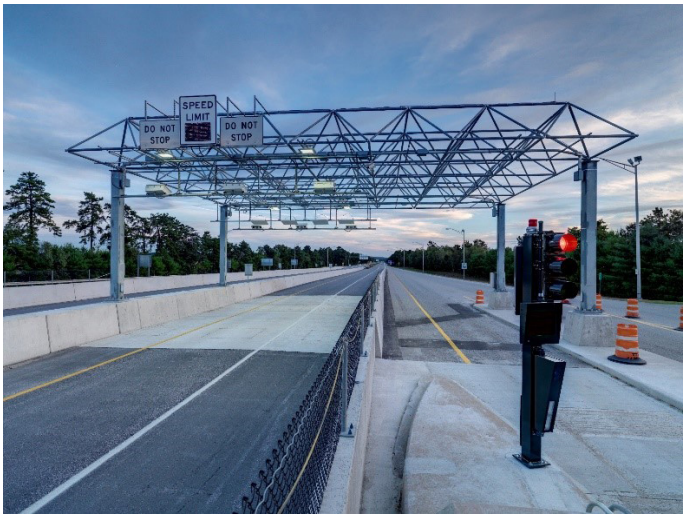
A May 2013 Toll System Assessment Report outlined that the legacy cash toll collection system installed in 2004 provides acceptable levels of performance, reliability and system uptime availability based on the originally intended functionality. However, the system is reaching the end of its anticipated life. The Authority has implemented a program of converting its legacy cash toll collection system at all toll plazas to a new toll collection system called the "Infinity System". The Infinity System has specific infrastructure requirements such vehicle detection loops installed in a concrete roadway slab with non-metal reinforcement. The slabs must meet specific dimensional requirements to accommodate the way the loops are embedded in the concrete slab to sense vehicles and interact with other toll collection equipment.

The Infinity Toll System offers the following advantages to the Authority:

- Provides programmed system enhancements for violation enforcement in staffed lanes, video audit, and reduced maintenance costs.
- Using loops embedded in concrete slabs for vehicle classification eliminates maintenance concern associated with the use of treadles.

The Infinity Toll System has been installed throughout the entire system except for the York and West Gardiner I-295 mainline toll plazas, and at the Exit 45 side plaza.

The new toll system is functioning as intended and is scheduled for installation at the remaining toll plazas by 2022.



NEW GLOUCESTER TOLL PLAZA ORT, MILE 67.0

TOLL PLAZAS

The turnpike's 19 toll plazas are comprised of tollbooths, canopies, gantries, utility buildings and other structures. Sixteen of the toll plazas have recently been rehabilitated and upgraded as part of the system-wide upgrade to the Infinity System discussed in the previous section. The tollbooths and canopies are rated in fair to good condition while some other components, such as concrete slabs, bumpers and tunnels, are rated in poor to good condition.

Replacements for the remaining three plaza locations are currently being constructed or designed.

MAINLINE TOLL PLAZAS

The six mainline plazas shown in Table 8 generated nearly $105 million in toll revenue in 2019. This accounted for nearly three-fourths of all toll revenue

collected by the Authority. The remaining toll revenue was generated by the 13 side toll plazas. A Tabulation of Traffic, Revenue and E-ZPass Usage is illustrated in **Table 8**.

Some items of note:

» The biggest contributors to Maine Turnpike toll revenue are as follows:
  - The York Toll Plaza is the greatest single contributor, accounting for more than 40% of all Maine Turnpike toll revenue.
  - The side toll plazas collectively account for about one-fourth of all toll revenue.
  - The mainline plaza at New Gloucester is the next highest contributor, accounting for almost one-eighth of all toll revenue.

» South of New Gloucester, E-ZPass users account for more than 80% of all transactions. At the two plazas north of New Gloucester, E-ZPass usage is closer to 70%.

» At the plazas located on the I-95 mainline (i.e. York, New Gloucester, and W. Gardiner I-95), trucks account for slightly greater than 10% of all traffic. The share of trucks averages nearly 5% at most other locations.

» E-ZPass usage among trucks is extremely high. Trucks equipped with E-ZPass now account for more than 90% of all truck transactions throughout the Maine Turnpike.

YORK TOLL PLAZA

The existing York Toll Plaza was constructed in 1969 and is challenged by both operational and safety issues. The existing toll system has also reached the end of its useful life. The plaza is rated in fair to poor condition.

The Authority secured the needed permits to construct a new ORT Plaza at Mile 8.8 approximately one mile north of the existing plaza. Construction of this new plaza began in the fall of 2018 and is scheduled for completion in the summer of 2021.

REPLACEMENT YORK TOLL PLAZA

NEW GLOUCESTER TOLL PLAZA

In April 2013, the Authority opened the ORT lanes at the New Gloucester Toll Plaza. The cash booths, slabs and toll collection equipment were also replaced or rehabilitated. As a result, this plaza is rated in good condition. The plaza is scheduled for additional Infinity System toll equipment upgrades in the fall of 2020.

WEST GARDINER I-95 TOLL PLAZA

In November 2016, the Authority opened the ORT lanes at the West Gardiner I-95 Toll Plaza. The cash booths, slabs and toll collection equipment were also replaced or rehabilitated. As a result, this plaza is rated in good condition. The plaza is scheduled for additional Infinity System toll equipment upgrades in the summer of 2020.

TABLE 8: TABULATION OF TRAFFIC, REVENUE AND E-ZPASS USAGE

Traffic Characteristic	York	Exit 44	Exit 52	New Glouces-ter	West Gardiner I-95	Gardiner I-295	Side Toll Plazas
Annual Tolled Traffic (millions)*	20.1	9.5	5.3	6.9	3.8	8.7	35.9
Annual Revenue ($millions)**	$59.33	$9.39	$5.25	$15.33	$6.62	$8.61	$35.47
Share of Total Turnpike Revenue	42.4%	6.7%	3.8%	10.9%	4.7%	6.1%	25.3%
Truck% (MTA Classes 3-6)	10.4%	5.0%	5.6%	11.8%	11.3%	7.8%	3.9%
Overall E-Z Pass%	83.9%	81.2%	82.3%	78.6%	72.6%	69.3%	81.4%
Truck E-ZPass%	92.7%	89.3%	90.6%	94.1%	91.1%	87.0%	91.6%

* This table only counts vehicles that paid tolls; it excludes violators and non-revenue vehicles.

**Annual revenue totals are after business and personal discounts for Maine-based E-ZPass accounts are applied.

WEST GARDINER I-295 TOLL PLAZA

The existing West Gardner I-295 Mainline Toll Plaza is rated in fair to poor condition and is functionally obsolete. The age of the toll plaza, the outmoded conditions of the existing tollbooths, canopy and tunnel, and location under an existing bridge, make upgrade and expansion of the existing facility problematic. Construction of a new plaza, including the installation of highway speed lanes, began in 2019 and is scheduled for completion in 2021.

WEST GARDINER I-295 TOLL PLAZA REPLACEMENT

EXIT 44 TOLL PLAZA

In May 2019, the Authority opened a new ORT toll plaza at Exit 44. Exit 44 connects the Maine Turnpike to I-295 south of Portland making it vitally important to the interstate transportation network. This plaza is in new condition.

EXIT 52 FALMOUTH SPUR TOLL PLAZA

In December 2017, the Authority opened the ORT lanes at the Falmouth Spur Toll Plaza and all the cash toll collection equipment was replaced. Exit 52 connects the Maine Turnpike to Interstate I-295 north of Portland and is an integral part of the transportation network. Several elements were replaced or rehabilitated as a part of this work including new westbound toll booths, new slabs, and a new access tunnel. As a result of the 2017 upgrades and ORT conversion, this plaza is rated in good condition.

Side Toll Plazas

The Authority programmed the replacement of all the cash toll collection equipment at all toll plazas along with an infrastructure repair and upgrade. This program is complete at all plazas except Exit 45.

The Exit 45 toll plaza canopy and tollbooths are rated in fair to good condition while other components, such as concrete slabs, bumpers and tunnels, are rated in poor to fair condition. The replacement of this toll plaza is included as part of the Exit 45 Interchange Reconfiguration project and will include the construction of two new ramp toll plazas, and removal of the existing plaza. The project is scheduled to be complete in 2022.

Construction for toll system upgrades to include automatic vehicle classification at Exit 86 and Exit 75 were completed in 2017 and 2019 respectively.

EXIT 45 RECONSTRUCTION

Service Areas

There are five service plazas in four locations on the turnpike; Kennebunk northbound (NB) Kennebunk southbound (SB), Cumberland SB, Gray NB, and West Gardiner.

In 2007, new buildings were completed, and parking was improved for cars and trucks at Kennebunk NB and SB, Cumberland SB, and Gray NB service plazas. The new service plaza located at the confluence of the turnpike (I-95) and I-295 in West Gardiner opened in November 2008.

Each location has a fuel service station and food services. At the three larger plazas (Kennebunk NB and SB, and West Gardiner) there is also a convenience store. Cumberland and Gray service plazas were converted from Starbucks/convenience stores into Burger Kings with drive-throughs in 2016.

The fuel system for Gray service plaza is being replaced and is scheduled for completion during the Summer of 2020. The Cumberland SB fuel system received repairs and was satisfactorily tested in the Spring of 2020 allowing the existing system to remain in operation for another five years; annual testing will be required after this 5-year extension. The fuel systems for the Kennebunk SB and NB Service Areas were replaced in late 2018 and early 2019, respectively.

A parking expansion at the Kennebunk Service Plazas is currently under construction with completion scheduled for 2021.

All service areas were identified having a range of "maintenance repair" items that should be addressed to preserve the infrastructure in their current condition; all are captured in the Building Maintenance Item Summary.

KENNEBUNK SERVICE PLAZA FUEL SYSTEM

Maintenance Facilities

Nine Maintenance Facilities are located along the turnpike. Each maintenance area has a different combination of buildings ranging from material storage, to vehicle and equipment storage, to repair facilities and offices as shown in **APPENDIX A**. Between 1992 and 2012, seven of the nine Maintenance Facilities were upgraded.

In 2020 work was completed on the expansion and upgrade of eight vehicle storage garages built in the 1960's to better accommodate modern plow truck configurations. The proposed work, located at five separate maintenance facilities, improved storage conditions, enhanced access for maintenance, and incorporated upgraded electrical and HVAC systems.

MAINTENANCE GARAGE EXTENSIONS

A new Mechanics Garage is currently under construction at the Litchfield Maintenance Facility with construction completion scheduled for the spring of 2021.

Construction of a new 5-bay maintenance garage at the York maintenance facility, and a new 8 bay garage at the Crosby maintenance facility, is scheduled for construction in 2021. Design of the project is currently underway.

All maintenance areas are in fair to good condition.

HNTB RECOMMENDATION

In 2016, maintenance reports for the maintenance areas were created and are updated as part of each annual inspection cycle. HNTB recommends the Authority's Maintenance forces actively address the maintenance items reported.

3. TOLL COLLECTION SYSTEM

Electronic Toll Collection

The Authority operates its Electronic Toll Collection (ETC) system as a closed-barrier toll system from the York Toll Plaza north to the New Gloucester Toll Plaza, and as an open-barrier toll system from the New Gloucester Toll Plaza north to the turnpike terminus in Augusta. The open-barrier toll system allows free travel between interchanges within the limits of the mainline barrier toll plazas on the northern section of the turnpike. All trips between Exit 75 in Auburn and Exit 86 in Sabattus are toll-free. It is estimated that toll-free trips account for roughly 2%-3% of all trips on the Maine Turnpike north of Exit 7. The trips on the Maine Turnpike between the I-95 Piscataqua River Bridge and Exit 7 are also free and account for about 17% of trips on the entire Maine Turnpike.

NEW GLOUCESTER ORT PLAZA

E-ZPass Group

On February 1, 2005, the Maine Turnpike Authority implemented its current electronic toll collection (ETC) system, E-ZPass. One of the greatest benefits to the Authority for converting to E-ZPass was admittance into the E-ZPass Group, formerly known as the Inter Agency Group (IAG). The E-ZPass Group includes 38 toll agencies that operate toll roads, bridges and tunnels in 18 states from Maine to Florida and west to Illinois. The E-ZPass Group's primary mission is to enable E-ZPass members and affiliated toll operators to provide the public with a seamless, accurate, interoperable electronic method of paying tolls and fees while preserving and enhancing the E-ZPass program. The backbone of the E-ZPass Group's system is a network of customer service centers and computer systems used to support approximately 41 million E-ZPass toll tags currently in circulation. As a result, many travelers from other states pay their toll to the Maine Turnpike in a cashless mode through the transponder. This reduces congestion and the need for larger toll plazas.

Membership in the E-ZPass Group allows the Authority a voice in one of the largest interoperable and reciprocal ETC systems in the world. This group collectively manages the procurement and deployment of the E-ZPass technology.

Started in 1990 with seven agencies, today the E-ZPass Group boasts approximately 28 million accounts that accounted for 3.8 billion transactions in 2019.

Toll Schedule

On November 1, 2012, the Authority increased cash and E-ZPass toll rates to raise additional toll revenue to meet the 30-year plan of maintenance and rehabilitation of the turnpike's network of bridges, inte changes and pavement, as well as paying off debt.

For cash-paying passenger vehicles, the updated toll is $3.00 at the York Toll Plaza; $2.25 at the New Gloucester Toll Plaza; $1.75 at the West Gardiner Toll Plaza; $1.50 for motorists traveling north from Exit 19 in Wells, and south from Exit 63 in Gray; and $1.00 at all other locations. Maine E-ZPass fares increased by

E-ZPASS SIGNAGE

15%, from 6.7 cents per mile to 7.7 cents per mile. The E-ZPass fares are also structured in such a way that they are equal to or less than the cash rate for a given movement.

A passenger car traveling the full length of the turnpike pays $7.00 (6.6 cents per mile), while five-axle tractor trailers pay $28.00 (26.4 cents per mile). E-ZPass patrons who have an E-ZPass tag from other toll system highways are charged the cash fare.

For those who acquire their E-ZPass tag from the Authority, the following discount programs are available:

VOLUME BASED DISCOUNT PROGRAM

The Authority offers the Volume Based Discount Program to all Maine E-ZPass account holders. Under this system, the total fare for travelers of the turnpike is discounted by 25% if more than 30 one-way trips occur in a month, and a 50% discount if 40 or more one-way trips occur in a month as shown in the **Table 9**.

The Volume Based Discount Program replaced the previous Commuter Discount Program that began in 1982 and ran through 2012.

PERSONAL

Patrons who drive a motorcycle, passenger car, van, or pickup with four tires or less can establish a Personal Account. Advantages of a personal account include having tolls automatically deducted from your prepaid balance when traveling on the Maine Turnpike or other E-ZPass compatible facilities, no-stop payment of tolls and often paying less than but never more than the cash fare. Trips are charged based on the lesser of the current cash fare or the E-ZPass rate per mile fare. Passenger cars with a Maine-based E-ZPass account save an average of 34% compared to the cash rate, before the Volume Based Discount mentioned earlier.

BUSINESS

Business Accounts are intended for commercial vehicles. As with passenger cars, commercial vehicles having an E-ZPass tag from the Maine Turnpike Authority are charged the lesser of the current cash fare or the underlying per-mile rate. Commercial vehicles that enroll in this program can establish either a prepaid or a post-paid account. The post-paid account requires a $5,000 surety bond, and it qualifies the account holder for a volume discount (see below). The pre-paid account does not require a surety bond, but neither does it provide a volume discount.

POST-PAID PLAN VOLUME DISCOUNT

Commercial vehicles having a post-paid E-ZPass account with the Maine Turnpike Authority receive an additional "volume discount" based on the amount of their monthly tolls. **Table 10** describes how the Post-Paid Plan Volume Discount program works. In essence, all tolls in excess of $50 for the month are discounted by up to 20%. On a system-wide basis, post-paid E-ZPass business accounts receive an average volume discount of over 17%. This discount program is in addition to the already-discounted E-ZPass fares described earlier. For post-paid commercial vehicles, the combined effect of the E ZPass discount and the volume discount is to produce an average savings of nearly 40% compared to the cash fare.

TABLE 9: VOLUME BASED DISCOUNT PROGRAM

Number of Trips (Per Month)	Volume Based Discount Program (Personnel Accounts Only)
30-39	25% discount applied to monthly account trips
40+	50% discount applied to monthly account trips

TABLE 10: POST-PAID PLAN VOLUME DISCOUNT

E-ZPass Charges (Per Month)	Post-Paid Plan Volume Dicsount (Business Accounts Only)
Between $0 and $50	No discount
Between $50 and $100	10% discount off everything over $50
Between $100 and $300	$5 discount plus 15% off everything over $100
Over $300	$35 discount plus 20% off everything over $300

4. TRAFFIC MANAGEMENT AND TECHNOLOGY

Since opening in 1947, the Maine Turnpike has served as the transportation lifeline for the state. In 1956, a total of 3.8 million vehicles traveled on the turnpike. This volume rose to over 60 million in 2003, and was nearly 75 million in 2019.

Two common measures of turnpike traffic are annual Vehicle-Miles Traveled (VMT) and annual number of trips. In 2018, the Maine Turnpike logged 1.42 billion VMT while serving 74.8 million trips north of Exit 7. VMT south of Exit 7 was an additional 0.15 billion VMT for an additional 14 million trips.

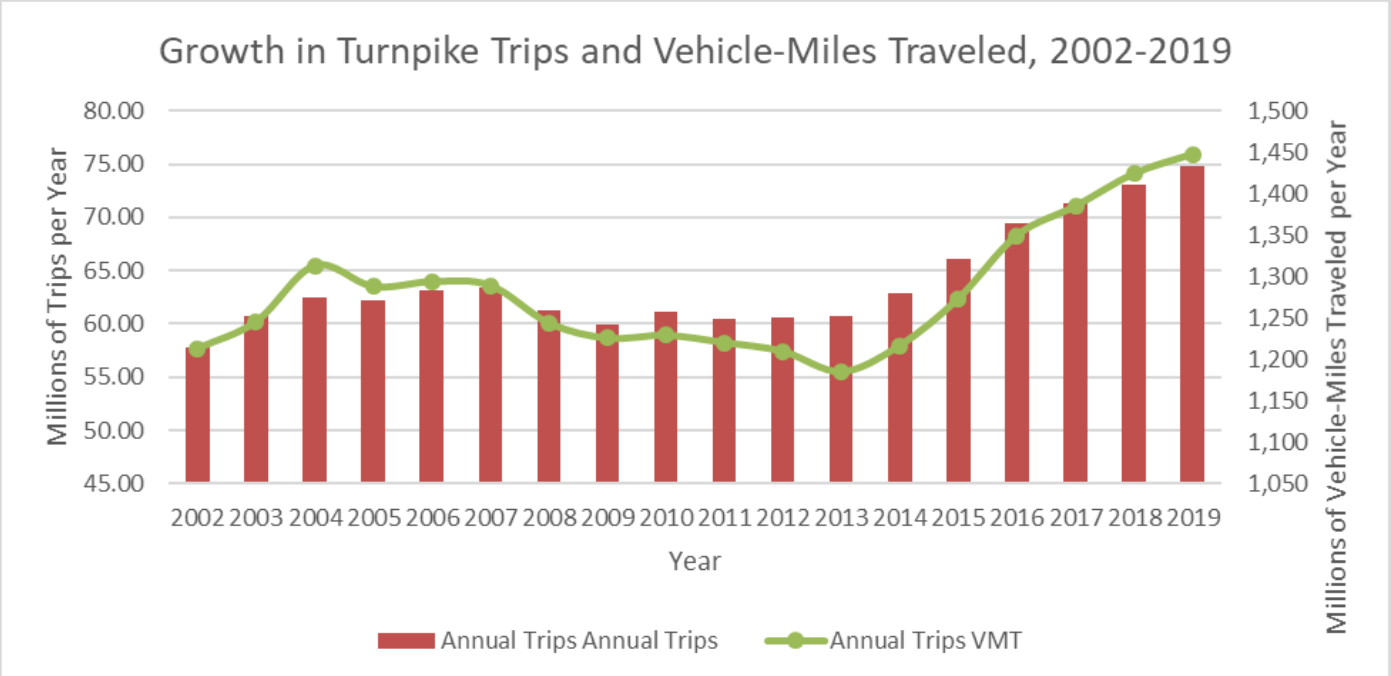
FIGURE 3 illustrates the trends of both measures over the past 16 years. VMT and Annual Trips both experienced rapid growth in the early-2000's, but following this period of growth, both measures became relatively stagnant from 2005-2013. Since then, both measures have increased by approximately 20%--a remarkable level of sustained growth. VMT in 2019 for the portion of the Maine Turnpike north of Exit 7 was higher than it was in last year's high-water mark by approximately 1.6%. In fact, 2019 was another record-setting year for the Maine Turnpike. The total number of trips served in 2019, 74.8 million, was the highest annual trip total in Maine Turnpike history (for the section of the Maine Turnpike north of Exit 7).

The average trip length on the Maine Turnpike north of Exit 7 was 19.3 miles in 2019, slightly less than the average trip length of 19.5 miles observed in 2018. This suggests that trip patterns changed very little over the past year. The overall trip length is down by just over 15% in the last decade, when the average trip was 20.4 miles. Some of this reduction in trip length may be attributed to the growth in shorter trips in the Greater Portland area, which saw the greatest reduction in trip length north of Exit 7.

Beginning in March 2020, numerous events related to the COVID-19 pandemic converged in a relatively short period of time, dramatically reducing economic activity and—as a consequence— suppressing Turnpike traffic as well. At the peak of the COVID crisis in late March and early April 2020, traffic volumes on the turnpike were cut by nearly half, levels not seen since the 1970s. The impact was most profound on passenger cars; commercial traffic was less affected.

Starting in early May, the Maine economy began a process of gradual reopening and of slowly relaxing personal restrictions. This process has been accompanied by growth in traffic on the Maine Turnpike with traffic volumes continuing to rebound over the summer months. By August 2020, traffic volumes were down approximately 22% from August 2019 levels.

FIGURE 3: VMT AND ANNUAL TRIPS



Reduced Speed Limit Signs

As part of an overall effort to reduce vehicle speeds and crashes during poor travel conditions, Authority Maintenance forces added eight new flashing "45 MPH Reduced Speed Limit" signs that are controlled remotely from the Turnpike Communication Center. These new signs supplement the existing 10 remotely operated reduced speed limit signs. Currently all reduced speed limit signs on the Turnpike are controlled remotely from the Turnpike Communication Center. In addition, all new ORT lanes are specified to include variable speed limit signs.

Traffic Count Stations

To gather accurate and timely traffic data, the Authority began installing traffic count stations at interchanges in 1996. Each station is composed of a Type 170 Controller housed in a traffic cabinet. The controller currently utilizes side-fired radar technology to continuously record traffic volume and speed data. The system enables the Authority to collect the data automatically. Seven count stations covering Exits 1, 2, and 3 (ramps plus mainline) were installed in February 2016.

Roadway Sensors

Roadway Weather Information Systems (RWIS) were installed in the fall of 2008 at the Saco River Bridge Overpass in Saco and at the Eagles Nest Bridge Overpass in Gray. The RWIS measures the surface temperature of the road, road state, and roadway friction. These RWIS units provide information that can help maintenance supervisors make cost effective decisions regarding chemical applications regarding the potential for inclement weather. The pavement sensors are used to understand road conditions. Road conditions can be reported as dry, damp, wet, frost or ice. The Authority has programmed funds to install more RWIS units on the turnpike. During the winter of 2016/2017 the Authority engaged a vendor to produce a heat map of the Maine Turnpike in order to facilitate the proper locations to install the remaining systems in 2017. The Authority installed two forecasting stations in 2017 and four monitoring stations in 2018.

Variable Message Signs (VMS)

The Authority currently maintains a network of Variable Message Signs (VMS) to provide motorists with critical real-time traffic information. There are 17 VMS installed at different locations along the turnpike, primarily focused in the more heavily traveled southern section. The signs typically advise turnpike patrons of current traffic conditions, weather restrictions, accidents, and delays. Message displays are controlled by turnpike dispatchers from the communication center at the Maine Turnpike Authority Headquarters. The 17 VMS were recently upgraded with new controllers and power supplies, extending the useful life of these VMS.

In 2017 the Authority installed two additional VMS at the southbound Kittery weight station at Mile 4.3 and on I-195 Westbound, just east of the Saco Exit 36 Toll Plaza. In 2019 the Authority installed one additional VMS at Mile 32.5 northbound and one each northbound and southbound near Bald Hill Road at Mile 71.6.

Twenty-two Portable Changeable Message Signs (PCMS) have been deployed long-term throughout portions of the turnpike for incident management purposes and can be controlled from the communication center in the same manner as the fixed VMS.

Highway Advisory Radio

The Authority installed its first Highway Advisory Radio (HAR) transmitter in Saco in 1997 and, since that time, has expanded the system to cover nearly the full length of the turnpike. Transmitters along the turnpike are located in strategic locations to provide information at critical decision points along the highway, typically at or near interchanges.

In 2011 an additional HAR transmitter was installed in the vicinity of the Kennebunk Service Plazas to better cover a gap in reception between adjacent transmitters. In 2019 the HAR transmitter near the existing York Toll Plaza was relocated south to Mile Marker 6.2 and two new transmitters were constructed at Mile Markers 15.4 in Wells and 58.3 in Cumberland to further reduce gaps in reception.

The Highway Advisory Radio Transmitter Locations are listed in **Table 11** below. Each transmitter location is supplemented by signs advising motorists to tune their radios to 1610 AM to receive real-time turnpike information.

In 2007, the Authority upgraded 11 transmitter sites and the software platform located in the Turnpike Communication Center. This upgrade synchronized all the HAR transmitters improving coverage on the mainline.

An additional HAR transmitter will be installed in the vicinity of Brighton Avenue at Mile 48.3 by 2021.

Prerecorded messages are continually broadcast to provide information about traffic conditions, weather, and construction zones. The Turnpike Communication Center has the ability to control and quickly update messages. The HAR system is a significant resource for providing information to motorists.

HIGHWAY ADVISORY RADIO SIGN

TABLE 11: HIGHWAY ADVISORY RADIO TRANSMITTER LOCATIONS

Town/City	General Location	Mile Marker
York	I-95 SB at Cider Hill Underpass	6.2
Wells	I-95 SB at Tatnic Road Underpass	15.4
Wells	I-95 SB at Sanford Road Overpass	19.1
Kennebunk	I-95 NB at Fletcher Street Overpass	25.3
Saco	I-95 NB at Boom Road Underpass	33.4
Scarborough	I-95 NB at Holmes Road Underpass	43.0
Falmouth	Exit 53 On-Ramp	53.0
Cumberland	I-95 NB at Sign Shop	58.3
Gray	I-95 SB at Gray Maintenance	63.3
Auburn	Exit 75 NB On-Ramp	75.4
Lewiston	Exit 80 SB On-Ramp	80.3
Litchfield	I-95 NB at Marsh Road Underpass	89.2
West Gardiner	I-95 NB at West Gardiner Toll Plaza	100.2
Augusta	I-95 SB, N. of Winthrop Street Underpass	108.7

Closed Circuit Television (CCTV) System

There are currently 13 CCTV cameras transmitting streaming video 24-hours a day, seven days a week, to monitors located in the communication center at the Maine Turnpike Authority Headquarters. Still images from these cameras are also viewable on the Maine Turnpike website.

The CCTV cameras are located at the following locations:

» York Toll Plaza - NB & SB
» Exit 25 (Route 35) - NB & SB
» Exit 32 (Route 111) - NB & SB
» Between Exits 32 & 36 (Boom Road) - NB Only
» Between Exits 36 & 42 (Flag Pond Road) - NB & SB
» Exit 42 (Holmes Road) - NB Only
» Exit 63 (Gray) - NB & SB
» Mile 108.8 – SB Only

These cameras allow the Turnpike Communication Center to view traffic in the vicinity of these heavily traveled interchanges. In 2016, HNTB recommended an additional CCTV in the Kittery area to monitor the high crash location around Exit 1 area in this highly congested corridor.

Two additional CCTV cameras are located with the Road Weather Information Systems (RWIS) that were installed in the fall of 2008 at the Saco River Bridge in Saco and Eagles Nest Overpass in Gray. These cameras are providing still images viewable through the RWIS website only at this point in time, but the cameras do have the capability to provide streaming video. These cameras are anticipated to be incorporated into the CCTV system in the near future.

Four additional trailer-mounted CCTVs were purchased after 2010 for temporary work zone monitoring and incident management.

One additional CCTV was installed in 2018 and is collocated with the newly installed VMS at the Southbound Kittery weight station. Six Additional CCTV were installed in 2019 and are located with the RWIS at York River north median, Mile 10.00 southbound, Mile 74.20 southbound, Androscoggin River southwest end post, Mile 86.15 northbound, and Presumpscot River east median.

Overheight Vehicle Detection System

Many of the turnpike bridges have been struck and damaged by overheight loads. This issue has been mitigated by the Authority's policy of increasing the underclearance as part of bridge rehabilitation projects and by constructing new bridges with a minimum of 16.5' of underclearance. However, several bridges still have minimal underclearance and have a potential for damage if struck by an overheight vehicle. The Authority is addressing this concern by the implementation of an Overheight Vehicle Detection System at select locations. These systems detect overheight vehicles and send a signal to a flashing sign that notifies the driver of an overheight vehicle to come to a stop. The Turnpike's Communication Center is also notified of the occurrence and receives video of the incident. A system was installed on Auburn Interchange in 2013 and on the mainline in West Gardiner in 2014. A system currently in place on the Warren Avenue Bridge will be removed following completion of bridge replacement, now under construction.

Zoom Turnpike Express

The Maine Turnpike Authority provides partial funding for the ZOOM Turnpike Express, a commuter bus service operating between Biddeford, Saco, and Portland. In August 2016, the Maine Turnpike Authority approved a new 2-year MOA with the operator of ZOOM to provide funding until 2020. In June 2020 the Maine Turnpike Authority approved extending the current subsidy agreement with Zoom Turnpike

Express for another six months, commencing on July 1, 2020. The MTA provides a designated bus pick-up and drop-off area at the Exit 36 Park & Ride lot; and the MaineDOT has parking at the Exit 32 Park & Ride lot in Saco.

The commuter bus provides an alternative to driving on the most heavily traveled commuter route in the state. Typically, ZOOM buses serve about 100 travelers per weekday. The heaviest months of use are September and October.

A regular one-way fare on ZOOM costs $5.00, with a 10-ride ticket costing $40.00. There are also monthly commuter cards available for $120. ZOOM riders are eligible to transfer for free to any connecting Shuttle bus, Metro, or South Portland bus route.

ZOOM TURNPIKE EXPRESS BUS

Go Maine Program

Since April 2013, the Maine Turnpike Authority has administered the GO MAINE Program. GO MAINE is a statewide commuter program designed to help commuters find information on alternatives to commuting alone. GO MAINE helps match up carpoolers online and rewards people for using a "green commute."

In October of 2015, GO MAINE switched ride matching software providers to Agile Mile. When commuters sign up with Agile Mile, they can match with other commuters who are doing similar commutes. While it is mostly used for carpool matches, it can be made for vanpools, transit and even biking. An innovative component of Agile Mile is that commuters can earn rewards for the "green" trips that they take. Rewards include discounts from online, national, and local companies, along with periodic drawings for larger prizes.

Since 2017, GO MAINE has hosted an event known as WAY 2 GO MAINE, a business vs. business challenge in October. The goal of this event is to inspire green commuting, to reward those who use green commutes, and to normalize the act of not driving alone. GO MAINE attempts to pursue this goal in a fun and competitive way. The WAY 2 GO MAINE event has grown since its inception and has seen participation by some of Maine's largest employers (along with many smaller ones) throughout the state.

Between July 2019 and July 2020 there were 1,194 GO MAINE accounts created, raising the total number of accounts to 9,228. During this period 119,488 green trips were recorded saving an estimated 113,817 gallons of fuel and reducing carbon dioxide emissions by an estimated 1,115 tons. Since the beginning of the COVID-19 pandemic the number of participants engaging in telecommuting has roughly tripled.

Park & Ride Lot Program

Currently, the Authority maintains a network of 14 Park & Ride lots located at or near most interchanges. The Authority recently updated the Park & Ride policy to be more consistent with the policy of the MaineDOT. One of the major changes is that vehicles can now park more than 24-hours in the Park and Ride lots during non-winter months.

The Authority strongly encourages motorists to utilize its Park & Ride lots to reduce congestion on the turnpike through ridesharing. The Authority monitors the use of these lots to assure that adequate capacity is available.

Figure 4 on the next page summarizes overall Park & Ride Lot Usage from 2001 through 2020 (on the day of the survey). The survey is completed yearly week-

days between 9 a.m. and 5 p.m. to capture lot usage during working hours. The 2020 survey found fewer cars than recent years. This discrepancy is attributed to the completion of the survey in April when travel was significantly reduced due to the COVID-19 pandemic.

The following observations may be drawn from the figure above:

» Over the past 20 years, total Park & Ride lot usage has stayed in a fairly narrow range from 600 vehicles (recorded in 2001) to 700 vehicles (recorded in 2019).

» In 2020, total usage on the day of the survey was 350 vehicles. Given that a total of 1,181 spaces were available, the overall system operated at just under 30% of its capacity. This significant decrease can be attributed to the COVID-19 pandemic which reduced overall traffic on the interstate and limited use of ride sharing lots due to social distancing requirements.

Four noticeable increases in park and ride usage have been noted over the past two decades:

» In the fall of 2005, when fuel prices rose rapidly in the wake of Hurricane Katrina.

» In the spring of 2008, when fuel prices hit record highs.

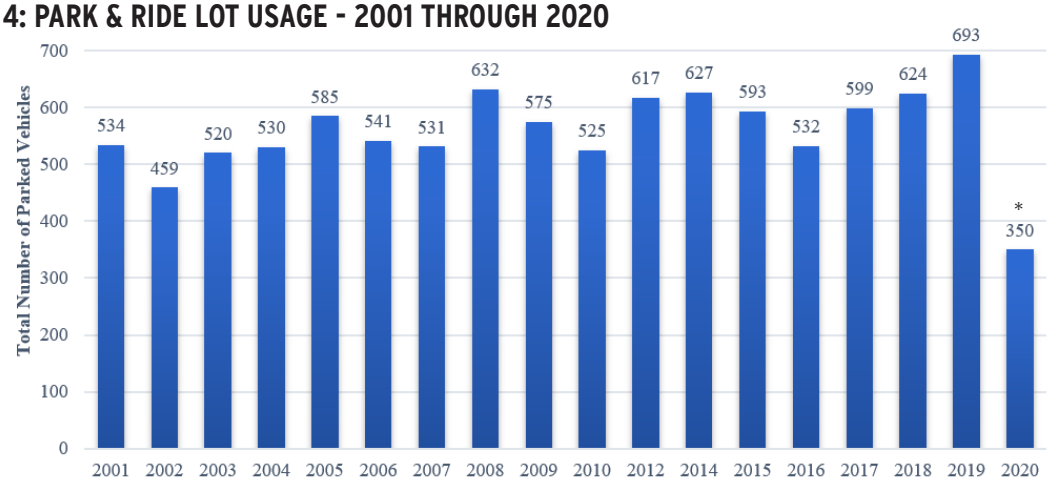
» In the spring of 2012, when fuel prices again climbed abruptly after a temporary reprieve in prices over the winter.

» In 2014 following the opening of the new, larger park and ride lot in Lewiston.

» In 2019 at the peak of a long period of economic expansion and traffic growth on the turnpike

Table 12 summarizes Park & Ride Lot Usage per Location, on the day it was surveyed, as part of the 2020

FIGURE 4: PARK & RIDE LOT USAGE - 2001 THROUGH 2020



* Number of parked vehicles recorded in 2020 was lower than typical due to COVID-19 pandemic

TABLE 12: PARK AND RIDE LOT USAGE PER LOCATION - 2020

Town	Location	Owner	Spaces	2020 Spaces Used	% Capacity
York	Chases Pond Road, US - 1 Connector		26	7	26.9%
Wells	Maine Tpk Exit 19, adj. to Wells Trans Ctr.	MTA	100	37	37.0%
Kennebunk	Maine Tpk Exit 25 SB, on Rt. 35	MTA	52	18	34.6%
Biddeford	Maine Tpk Exit 32, on Rt. 111	MTA	155	82	52.9%
Saco	I-195 Exit 1, on Industrial Park Road		135	22	16.3%
Scarborough	Maine Tpk Exit 42, shared w/Cabela's Parking Lot	MTA	66	10	15.2%
S. Portland	Maine Tpk Exit 45, on Rt. 703		111	21	18.9%
Portland	Maine Tpk Exit 46, adj. to toll plaza	MTA	68	13	19.1%
Westbrook	Larrabee Road, near Maine Tpk Exit 47		91	26	28.6%
Gray	Maine Tpk Exit 63, on US-26	MTA	127	20	15.7%
Lewiston	Maine Tpk Exit 80 - Route 196	MTA	93	19	20.4%
W. Gardiner	Maine Tpk Exit 102, near Rt. 126	MTA	54	18	33.3%
		Overall	1,078	293	27.2%

Annual Inspection of the Maine Turnpike. The table also records the number of spaces available at each lot, as well as each lot's operational capacity. The 2020 Park & Ride Lot usage survey completed on June 23rd and 24th.

As this table indicates, the three busiest lots on the turnpike are Saco (Exit 36; Owned by MaineDOT), Biddeford (Exit 32), and Gray (Exit 63). These three lots combined serve about 42% of the Authority's Park & Ride customers. The Exit 63 Park & Ride Lot was relocated and doubled in size in 2015 due to interchange construction.

Turnpike Safety and Law Enforcement

In 2019, there were 975 reportable crashes on the Maine Turnpike mainline. Slightly more reportable crashes occurred in the northbound direction (497 v. 478). This is likely the result of increased traffic and winter weather events that occurred during the of 2018/2019 season.

A High Crash Location is defined as a roadway node or segment that has more than eight crashes in a three-year period, and a Critical Rate Factor (CRF) greater than 1.0. The CRF relates the crash rate at a location to the statewide crash rate average for a similar type of facility.

From 2017 - 2019, there were sixteen High Crash Locations (HCL) on the Maine Turnpike, which includes the mainline, toll plazas, and interchange ramps. This is a decrease of one compared to the previous three year period. A Summary of HCLs and their corresponding locations (2017 - 2019) are shown in **Table 13**.

Law enforcement services on the turnpike are provided by Troop G of the Maine State Police. Troop G is funded entirely by the MTA and located in the MTA Administration Building. With access at Exit 46, Troop G has a safe entry/exit to the turnpike mainline, and good accessibility to the public. In addition, Troop G now benefits from a modern facility with state-of-the-art law enforcement components similar to other recently constructed state police facilities.

Troop G consists of a Lieutenant, five Sergeants, three Corporals and twenty-five Troopers assigned to the turnpike. At full strength, Troop G has 35 troopers. They patrol the entire turnpike, 24-hours a day, 365 days per year. This provides turnpike patrons with a very high level of coverage.

These troopers are dedicated to making the road safer by enforcing speed limits; assisting disabled motorists; detecting and apprehending operators who are under the influence of drugs or alcohol; and, enforcing other Maine State laws.

In October 2016 the Authority started a State Farm safety patrol program to cover P.M. peak hours in the Portland area year-round, and in the Kittery area during the summer season. In October 2018 the Authority staff recommended expanding this successful service to cover additional hours. This service remains in operation.

TABLE 13: SUMMARY OF HIGH CRASH LOCATIONS (2017-2019)

Town/City	Location Description	Crashes	CRF
Kittery	Intersection - Exit 2 C-D SB On Ramp	8	1.80
Kittery	Exit 2NB Off Ramp	8	3.86
York	Exit 7 SB Off Ramp	9	2.68
Saco	I-95 SB - Prior to Exit 36	27	1.06
Scarborough	I-95 NB - South of Exit 44	11	1.03
South Portland	I-95 NB - North of Exit 46	46	1.70
Portland	I-95 SB - North of Exit 47	26	1.16
Falmouth	I-95 SB - South of Exit 53 On Ramp	9	1.00
Cumberland	I-95 SB - South of Cumberland Service Plaza	29	1.1
Gray	I-95 NB - South of Exit 63 NB Off Ramp	10	1.13
Gray	I-95 NB - North of Exit 63 NB On Ramp	8	1.02
Gray	I-95 NB - Exit 63 to New Gloucester Tolls	14	1.09
New Gloucester	I-95 SB - Around the New Gloucester Toll Plaza	14	1.06
Auburn	I-95 NB - South of Exit 75 NB Off Ramp	12	1.07
Auburn	I-95 NB - Exit 75 to Exit 80	10	1.34
Lewiston	I-95 NB - North of Exit 80 near Plain Road	17	1.00
Litchfield	I-95 NB - Around Lunts Hill Road	15	1.36

5. MAINE TURNPIKE AUTHORITY/MAINEDOT JOINT INITIATIVES

Operations & Maintenance

As part of 2013 LD 1538 (the MTA Omnibus Bill), the Authority is providing transportation dollars or credit to the MaineDOT for projects and initiatives that will provide a benefit to the Authority. This includes MaineDOT projects that physically connect to the Maine Turnpike or are consistent with the overall Maine Turnpike Authority mission. Alternative Programs, such as the ones identified below, are included in these transportation dollars provided to the MaineDOT.

The Authority and the MaineDOT have a long history of working together to provide an efficient transportation system. Since 1995, the Authority provided winter maintenance and litter patrol for a fee on a two mile stretch of I-95 (from Kittery to York) previously owned and maintained by the MaineDOT (sharing with NHDOT, the winter maintenance of the Piscataqua River Bridge). In 2016 the Authority purchased the two mile stretch of I-95 (from Kittery to York) and is no longer reimbursed for the related maintenance work in that roadway section from the MaineDOT. Winter maintenance of the Piscataqua River Bridge however is still reimbursed.

In 2004, the two agencies agreed that the Authority would provide winter maintenance on I-195, and the MaineDOT would provide winter maintenance at the Kittery Rest Area and the Park & Ride lot in South Portland. Additional discussions occur annually to confirm that all overlap points are being covered in the most efficient manner. In 2018, the MaineDOT called and needed help painting pavement markings on I-295 in Portland. The Authority forces worked the night shift during week of August 5th to assist in this effort. The Authority coordinates with the MaineDOT when developing pavement rehabilitation projects. This relationship has provided some consistency for Interstate paving specifications between the two agencies however, both agencies still have differing standards.

The Authority and MaineDOT also work together regarding storm-water issues. Permitting processes through Maine Department of Environmental Protection (MaineDEP) are reviewed jointly by both agencies and three-party agreements are signed so that MaineDOT and Authority are treated the same for transportation purposes.

Park & Ride Lot Coordination

The Authority and MaineDOT continue to coordinate on the use, condition, and improvements to Park & Ride lots. The Authority, in coordination with MaineDOT, performed an updated inventory of all Park & Ride lots throughout the State of Maine in the spring of 2013. This involved an inventory of available parking spaces, an assessment of signing and amenities, and a count of the number of vehicles served by each lot.

The Authority and MaineDOT agree to continue to work to identify future Park & Ride lot needs through the continued inventory and evaluation of these lots. These are described in Section 4.

Alternatives Program Coordination

The Authority has participated in and funded all, or part, of Alternative Programs that were deemed to have a direct or indirect benefit to the Maine Turnpike. Examples of these Alternative Programs include GO Maine and ZOOM Turnpike Express. These are described in more detail in Section 4.

Project Development

The Authority coordinates with the MaineDOT on projects that are located near the Maine Turnpike.

In Auburn, the Authority provided land to the MaineDOT for a bus terminal and parking area. This project was completed in 2019

In Kittery, MaineDOT and the Authority are coordinating regarding ongoing bridge preservation work at the Piscataqua River Bridge linking Maine and New Hampshire.

Additionally, the MaineDOT and the Authority worked together on the I-295 corridor study to understand the implications to the Maine Turnpike traffic flow and surrounding areas. This effort led to the installation of travel distance and time signage along the Maine Turnpike in 2019 to encourage motorists to travel I-95, thereby relieving congestion on I-295.

This working relationship also involves the planning and construction of projects. Both agencies worked together on the Maine Turnpike West Gardiner Service Plaza project, the Central York County and the Gorham East-West Corridor Studies.

6. PLANNING STUDIES

As the Authority evaluates possible new transportation projects, various planning studies must be undertaken to evaluate and identify the best available alternatives. Recent or ongoing planning studies are described in the following paragraphs.

Exit 32 Feasibility Study

The Authority completed a study looking at safety and capacity concerns related to the Exit 32 interchange and Route 111 in Biddeford. Specifically, the purpose of the Study is to use short and long term solutions to address building queues on the Exit 32 southbound off ramp, improve capacity at the Exit 32 and Route 111 intersection, and to improve accessibility between local communities and the Turnpike. Alternatives evaluated were designed to increase capacity near the existing interchange and to remove vehicles from congested areas by providing new connections. These alternatives include additional off-ramp lanes, signal modifications, new connections to Route 111 and South Street, and new interchange configurations.

The draft report recommends short, medium and long-term solutions that add capacity over time. Short-term recommendations included queue detection on the southbound approach to the intersection of Exit 32 and Route 111 as well as an increased deceleration length for the southbound off-ramp. Mid-term recommendations included a new connection from the Turnpike to Route 111 and a second southbound off ramp lane. The recommended long-term improvement involved a reconfiguration of the existing interchange. A connection from South Street proposed by others would be an additional mechanism to remove vehicles from the congested intersection of Exit 32 and Route 111. Design and implementation of short-term alternatives is underway.

Exit 36 Feasibility Study

The Authority recently completed a feasibility Study in 2019 in the vicinity of Exit 36 and Route 112 with the goal of identifying long-term improvements and addressing regional transportation issues. Specifically, the Study sought to evaluate the potential for managing and improving access to Route 112, making safety improvements at intersections, maintaining and improving easy access to and from the Turnpike, and separating local and through traffic as much as practicable.

The Study documents existing conditions and evaluates Alternatives that address transportation congestion and safety deficiencies. Alternatives were evaluated based on transportation measures, environmental resources, land use, cost and funding and property impacts. The Study concluded with the recommendation that a modification of Exit 36 be implemented first, followed by a Route 112/Route 5 Connector completed under a separate schedule. Construction of the Exit 36 modification is scheduled for completion in 2024.

Exit 45 Feasibility Study

In 2018, two feasibility studies were completed for the Authority that evaluated several interchange alternatives at Exit 45 (the Maine Mall Exit) in South Portland. The first, the Exit 45 Conceptual Assessment of Interchange Alternatives, evaluated the need to replace the obsolete toll system and infrastructure which could no longer be maintained, address safety and operational deficiencies of the existing interchanges, and improve the substandard vertical clearance and deteriorating condition of the Exit 45 underpass bridge.

Seven interchange concepts were evaluated. Three were recommended for further evaluation: 1) a modified No-Build, 2) Interim Diamond Interchange, and 3) a Full Build Diverging Diamond Interchange.

The second feasibility study, the Exit 45 Analysis of Recommended Alternatives, documented a detailed refinement, evaluation and feasibility of the three recommended alternatives to address short and long-term needs. The Interim Diamond interchange, which can accommodate a future Gorham Connector, was the recommended alternative.

Based on this recommendation, Exit 45 is currently being reconstructed as a Diamond Interchange to accommodate growing traffic numbers with two new ramp toll plazas and wider bridge. The existing bridge over the turnpike has been hit on numerous occasions by over height vehicles and will be replaced and raised approximately 6 feet to provide a 16.5-foot clearance over the Maine Turnpike. The existing toll booth will be removed and two new ramp toll plazas with both cash and electronic toll collection on either side of the mainline of the turnpike will be constructed.

The Maine Turnpike Authority worked with the Army Corps of Engineers (ACOE) on the Exit 45 Preload Contract that was advertised in August 2019. Construction of the Interim Diamond Interchange is scheduled to be completed in 2022.

Gorham Corridor Study and Alternatives Analysis

The Gorham Corridor Study began in the spring of 2009 at the direction of the 123rd Maine State Legislature and was a major new transportation and land use study of the corridor immediately west of Portland. This area is the location of what has historically been the fastest-growing residential market in Maine. The study's goal was to evaluate all the options and find the right package of alternatives to protect homeowner's quality of life over the long-term, without adding excess transportation capacity.

The study began when the municipalities of Gorham, Westbrook, Scarborough, and South Portland signed a joint resolution in 2007 asking for such a study, specifically to assess the feasibility of a new Maine Turnpike Spur that will connect to the terminus of the Gorham By-pass located approximately 4.5 miles northwest of Maine Turnpike Exit 45. The resolution stated that existing ways to manage traffic congestion, such as widening roads and adding turning lanes, will have a negative effect on their downtowns, village centers and neighborhoods. Both the Authority and MaineDOT officials believed that integrating all modes of transportation (transit, bike, pedestrian) was an integral part of the study.

A Final Study Report was completed in the fall of 2012. Since that time, the Authority has been coordinating with the United States Army Corps of Engineers (ACOE) to finalize a project purpose statement and determine next steps moving forward.

In 2017, a bill was introduced to the Maine State Legislature that would allow the Maine Turnpike Authority to borrow up to $150 million to plan, design and build a spur from the terminus of the Gorham Connector at Route 114 in South Gorham to the Maine Turnpike in the area of Exit 45 in Scarborough. This bill, LD 905, was voted and signed into law in May of 2017.

In 2019, a traffic and revenue feasibility study was completed for the Authority and concluded a new Gorham Connector would be financially viable. Work continues on a Gorham Connector Alternatives Analysis evaluating a range of capacity adding roadway alternatives and ongoing coordination with the ACOE.

Safety and Capacity Study

Periodically, the Authority requests that a Systemwide Traffic Operation and Safety Study of the Maine Turnpike be conducted to assess both current and future operating conditions of all interchanges, mainline sections, ramps, and toll plazas between Kittery and Augusta. Typically, the Safety and Capacity Study is prepared every five years.

Based on the data collected and results of the analyses performed for this study, a series of recommendations are presented. These recommendations include possible future improvements (such as roadway or interchange ramp widening, addition of toll plaza capacity, and safety improvements), an approximate timetable of when the improvements become necessary, and an estimate of the forecasted construction costs. This document is used by the Authority as a long-range planning tool. HNTB most recently prepared a 2015 System-wide Traffic Operation and Safety Study that is currently used for capital planning and budgeting purposes. Projects currently being advanced from the 2015 Study are improvements to the Exit 44 SB on-ramp, which was completed in July 2018, Exit 44 ORT opened in June 2019, and widening of the Maine Turnpike in the greater Portland region.

Portland Area Mainline Needs Assessment

The Authority completed a Portland Area Mainline Needs Assessment which is looked at growing safety and capacity issues on the Maine Turnpike between Exits 44 in Scarborough and Exit 53 in West Falmouth. The purpose of the Needs Assessment was to evaluate a full range of reasonable alternatives to address identified issues. Existing and future conditions were evaluated, and alternatives including Transportation Demand Management (TDM), Transportation System Management (TSM), various tolling strategies, enhanced/expanded transit alternatives, and widening/capacity expansion alternatives were considered.

The Authority assembled a Public Advisory Committee (PAC) to provide input to the Needs Assessment process and information. This PAC consisted of transportation, land use, commercial, and safety individuals who provided a broad-range of knowledge and experience to the process. The Needs Assessment was completed in 2018 and concluded that widening and modernization of the Turnpike Mainline through the Portland area was appropriate and prudent.

Construction of the Portland-Area Mainline Improvements project is underway and includes adding a third lane in each direction, together with drainage and median improvements, between Mile Marker 44 and 49. This work is scheduled for completion in 2022.

Study of the Future Needs of the Piscataqua River Bridge

Summer peak hour traffic volumes on the southern end of I-95, including the Piscataqua River Bridge, result in significant congestion and motorist delay, especially during peak travel hours. To address this concern, the Authority is working together with MaineDOT on this MaineDOT-led effort to evaluate, prioritize and implement potential transportation alternatives to improve traffic flow on I-95 between New Hampshire and Maine. The study area consists of the stretch of I-95 from Exit 3 in New Hampshire north to Exit 2 in Maine, including the Piscataqua River Bridge.

In recent years the Authority worked collaboratively with MaineDOT to complete improvements to the Dennett Road bridge and to assess what enhancements can be made to improve highway throughput, such as the use of part-time shoulder use on the I-95 Piscataqua River Bridge. A MaineDOT bridge rehabilitation project at the Piscataqua River Bridge is currently underway and includes bridge preservation activities as well as modifications to allow part-time shoulder use during periods of heavy traffic. The installation of median barrier at the bridge approaches is also included to improve safety.

7. FUNDING

Recommendations will include possible future improvements (such as roadway or interchange ramp widening, and safety improvements), and an estimate of the forecasted construction costs.

Funds for the operation, maintenance and improvement of the Maine Turnpike are deposited into accounts designated for specific purposes. These accounts are:

CAPITAL IMPROVEMENT FUND:

» Includes specific projects to upgrade roadway facilities and improve highway safety, such as the Electronic Toll Collection system.

RESERVE MAINTENANCE FUND:

» Includes projects that exceed the constraints of normal maintenance, such as bridge reconstruction programs.

OPERATION AND MAINTENANCE FUND:

» Includes routine operation and maintenance work carried out by Authority personnel such as daily operations, repairs, and improvements.

The details of each fund are described below, as well as the recommended amounts of money to be deposited for fiscal year 2020. In addition, the recommendation regarding insurance coverage is included.

Capital Improvement and General Reserve Fund

As part of the Sensible Transportation Policy Act, the Authority identified projected deficiencies in turnpike facilities that needed to be addressed in the near- and long-term. From this planning effort, the Authority developed a Capital Improvement Program that detailed the need to significantly expand the extent of rehabilitation and maintenance work. The result of this effort made clear that routine maintenance programs could no longer stem the deterioration of turnpike facilities nor provide the higher level of operational efficiency made possible by current technologies.

The Capital Improvement Program was proposed for projects that require a faster pace of reconstruction work due to compelling public safety interests and for projects intended to significantly enhance operations. At the end of 2020, we estimate this fund will have a balance of $63,034,688. Including carryover projects from 2020, we estimate $136,534,353 in Capital Improvement expenditures in 2021.

We recommend depositing $73,500,000 into the Capital Improvement and General Reserve Fund for 2021 projects.

Reserve Maintenance Fund

The Reserve Maintenance Fund dedicates the revenue required to keep turnpike infrastructure safe and in proper operational condition. This category normally funds contract work, which exceeds the scope of routine maintenance such as bridge rehabilitation, bridge painting, and annual paving projects. The recommended deposit to the Reserve Maintenance Fund for fiscal year 2021 is $40,000,000.

Operation and Maintenance Fund

Operation and Maintenance work is usually carried out by Authority personnel and includes activities such as administration, toll collection, snow plowing, minor repair work, sign replacements and other activities. We estimate that the cost of Operation and Maintenance during 2021, exclusive of Reserve Maintenance and Capital Improvement expenditures, will be in the amount of $49,223,687. This estimate is based on careful examination of 2020 expenditures and an evaluation of factors expected to influence these costs during 2021.

Insurance

Based on the replacement values provided by HNTB, the current Maine Turnpike insurance coverage appears to adequately protect the properties, interests, and operations of the Authority. Insurance is provided under a number of policies including a comprehensive commercial package; worker's compensation; and public officials and employee's liability. A detailed schedule of insurance is presented in **APPENDIX B**.

APPENDIX A

Appendix A - Maintenance Area Buildings

Description	York Mile 7	Old York Mile 10	Kennebunk Mile 25	Crosby Mile 46	Sign Shop Mile 58	Gray Mile 63	Auburn Mile 77	Litchfield Mile 93	Gardiner Mile 102	TOTAL
Maintenance Garage, 3 Bay		1						1		**2**
Maintenance Garage, 4 Bay			1			1			1	**3**
Maintenance Garage, 5 Bay				1						**1**
Maintenance Garage, 8 Bay			2	1		1	1	1		**6**
Maintenance Garage, 10 Bay			1	1						**2**
Salt Shed	1	1	1	1		1	1	1	2	**9**
Sand/Salt Storage Building	1		2	1		1	2	1	1	**9**
Flammable Storage Building	1		1	1						**3**
Storage/Body Shop Building						1				**1**
Cold Storage Building	1		1	1	1			1	1	**6**
Hazardous Waste Storage Vault						1				**1**
Central Inventory Building					1					**1**
Sign Shop					1					**1**
Storage/Tool Shed					1	1				**2**
Office Building				1						**1**
Office Building, 5 Bay Garage							1			**1**
Office Building, 6 Bay Garage						1				**1**
Office Building, 7 Bay Garage								1	1	**2**
Office Building, 10 Bay Garage			1							**1**
Office Building, 14 Bay Garage	1									**1**
Fuel Distribution System	1			1		1	1			**4**
Generator Building	1		1	1		1	1	1	1	**7**

APPENDIX B

Appendix B - Schedule of Insurance

THE MAINE TURNPIKE AUTHORITY
Schedule of Insurance
2020-2021
Comprehensive Package Policy Including Turnpike Property
Underwritten by the Acadia Insurance Company — Agent: Cross Insurance

			Premium Amt
Commercial Property	**Policy No. CPA1000627-37**	**Term: October 1, 2020 to October 1, 2021**	**$296,666.00**

Risk	Coverage	Limit	Remarks
Fire and Related Blanket	Buildings	$95,247,000	Agreed Amount and
	Contents	$30,416,655	Replacement Cost
	Extra Expense & Loss of Rents	$3,611,500	
	Boiler and Machinery	$129,175,155	
	(excludes bridges, overpasses & underpasses)		
	Earthquake Excluding Bridges	$10,000,000	
	Flood	$10,000,000	
	Scheduled Property:		
	Miscellaneous Unscheduled Locations	$500,000	
	Bridges, Overpasses, and Underpasses	$328,327,000	
	Ordinance of Law Coverage	$10,000,000	
	Fine Arts	$200,000	
	Property In Transit	$100,000	
Inland Marine			
a. Direct Physical loss or damage	Scheduled Maintenance Equipment *	$6,532,155	
b. Direct Physical loss or damage	Valuable Papers	$500,000	
	EDP Includes E-Z Pass Equipment*	$1,302,026	
	Radar Counters, Radios, camera equipment, Signs and transmitting equipment		
	Message Boards*	$2,403,474	

***Included in the Contents Limit on Policy**

			Premium Amt
Business Auto	**Policy No. CAA1000628-37**	**Term: October 1, 2020 to October 1, 2021**	**$251,955.00**

Comprehensive	Bodily Injury Liability, CSL, BI & PD	$1,000,000	Each Occurrence
	Uninsured Motorist	$1,000,000	Each Occurrence
	Medical Payments	$5,000	Per Person
	Hired & Non-Owned Liability	$1,000,000	
	MCS-90		Included
Auto Physical Damage	Comprehensive and Collision $1,000 Deductible Applies to PPT		
	Comprehensive and Collision $3,000 Deductible Applies to light, medium and heavy trucks and trailers		
	Hired Physical Damage	$200,000	
	Garagekeepers	$100,000	

Comprehensive General Liability Policy

Underwritten by Acadia Insurance Co. Agent: Cross Insurance

			Premium Amt
General Liability	**Policy No. CPA1000627-37**	**Term: October 1, 2020 to October 1, 2021**	**$84,202.00**
	Comprehensive General Liability		
	Each Occurrence Limit	$1,000,000	
	Personal & Advetising Injury	$1,000,000	
	General Aggregate Limit	$2,000,000	
	Products-Completed Ops Aggregate	$2,000,000	
	Fire Legal Liability	$300,000	
	Premises Medical Payments	$10,000	
	Employee Benefits Liability	$1,000,000	

**$25,000 premises/operations BI/PD per claim deductible applies with a $175,000 aggregate

Comprehensive Crime

Underwritten by Travelers Agent Cross Insurance

				Premium Amt
	Policy No. 106807620	**Term: October 1, 2020, to October 1, 2021**		**$6,589.00**
Crime	Coverage	Limits	Deductible	
	Employee Theft	$2,000,000	$10,000	
	Forgery or Alteration	$2,000,000	$10,000	
	On Premises	$2,000,000	$10,000	
	In Transit	$2,000,000	$10,000	
	Money Orders/Counterfeit Money	$2,000,000	$10,000	
	Computer Fraud	$2,000,000	$10,000	
	Computer Restoration Expense	$1,000,000	$10,000	
	Funds Transfer Fraud	$2,000,000	$10,000	
	Claim Expenses	$10,000	$0	

Worker's Compensation Self-Insurance Excess Policy

Underwritten by Arch Insurance Company; Agent: USI Insurance Services

Premium Amt

Policy No. WCX 0059427 02 **Term: February1, 2018 to February 1, 2019** **$121,108.00**

Policy in keeping with the laws of the State of Maine;
cancellation; 60 days
$750,000 Insurers retention for each accident
or each employee for disease insurer's Limit of
Indemnity for each employee for disease

1. As respects Coverage A (worker's compensation)
   - Statutory Each Accident
   - Statutory Aggregate - Disease
2. As respects Coverage B
   - $1,000,000 Each Accident
   - $1,000,000 Aggregate - Disease

$23,534,755Total Estimated Annual Remuneration - February 2017-2018
Claim Service: Cannon, Cochran Management Service, Inc.

PAGE 2

Public Officials and Employees Liability

Underwritten by ACE American Insurance Company — Agent: Cross Insurance

				Premium Amt
Policy No. EON M00608592 007		**Term: October 1, 2020- October 1, 2021**		**$49,418.00**
Public Officials Employee Liability	Elected and appointed officials and all full-time and part-time employees	$5,000,000 each loss and aggregate for each policy year	Retention: $50,000 loss	

Fidelity Bond-Public Officials

Underwritten by Travelers Insurance Company: — Agent TD Insurance , Inc

Member of Authority	**Term**	**Amount of Bond**	**Remarks**	Premium Amt
Peter S. Mills Executive Director Policy No. 105619973	May 24, 2019-2020	$500,000	Insures faithful performance of duties by the individual	**$1,750.00**
Douglas D. Davidson Treasurer Policy No. 105220484	January 1, 2019-2020	$500,000		**$865.00**
Jonathan Arey Secretary Policy No. 105220456	January 2, 2019-2020	$50,000		**$175.00**

Fiduciary Responsibility
Underwritten by ACE Insurance Company — Agent: Cross Insurance

		Premium Amt
Policy No. G25749522 008	**Term: October 1, 2020-October 1, 2021**	**$7,795.00**

Limit $2,000,000
Provides protection for your errors/omissions or negligent acts in connection with handling of employee benefit plans: Maine State Health Insurance Plan; Maine State Dental Insurance Plan; Maine Turnpike Group Life Insurance Plan; and Maine State Retirement System

Group Hospital-Surgical
Effective April 1999

Primary Coverage	Aetna	Full semi-private room allowance

Self-Insured Workers Compensation Bond
Underwritten by Travelers Insurance Company

		Premium Amt
Policy No. 103464379	**Term: December 2020**	**$960.00**

Obligee: Maine Bureau of Insurance

Privacy & Network Liability Insurance
Underwritten by Travelers — Agent: Cross Insurance

		Premium Amt
Policy No. 106807615	**Term: October 1, 2020-October 1, 2021**	**$53,178.00**

A. Limit of Liability for Insuring Agreements	Each Claim	**Retention**
A. Network and Information Security	$10,000,000	$100,000
B. Communications and Media	$10,000,000	$100,000
C. Regulatory Defense Expense	$10,000,000	$100,000
Policy Aggregate Limit	$10,000,000	

Excess Cyber Liability
Underwritten by Philadelphia Insurance Company — Agent: USI Insurance

		Premium Amt
Policy No. PHSD1279465	**Term: October 1, 2020-October 1, 2021**	**$7,977.00**

	Each Claim	Aggregate
Limits of Liability	$ 2,000,000	$ 2,000,000