



Preserving and Restoring Paved Roads

OCTOBER 2026

Report of the Auditor General to
the Nova Scotia House of Assembly

Independence • Integrity • Impact



October 20, 2026

Honourable Danielle Barkhouse
Speaker
House of Assembly
Province of Nova Scotia

Dear Madam Speaker:

I have the honour to submit herewith my Report to the House of Assembly under Section 18(2) of the *Auditor General Act*, to be laid before the House in accordance with Section 18(4) of the *Auditor General Act*.

Respectfully,



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Department of Public Works

Preserving and Restoring Paved Roads



Why We Did This Audit

- The Department of Public Works is responsible for maintaining approximately 23,000 kilometres of paved and gravel roads throughout Nova Scotia.
- Over the last five years, the Department spent almost \$850 million on pavement preservation and rehabilitation, with \$215 million of it being over-budget spending.
- Nova Scotians require a safe provincial road network to transport and access goods, services, employment, and community connections.
- Statistics Canada reports over 70% of Nova Scotia provincial roads are in fair or worse condition.

Key Audit Results

- The Department of Public Works is not making evidence-based decisions when selecting and prioritizing pavement preservation and rehabilitation projects.
- The Department is not completing road pavement preservation and rehabilitation projects at the optimal time to minimize costs and maximize the life of the pavement.
- The Department does not have accurate and up to date information on the condition of Nova Scotia's paved roads.
- Districts do not have a consistent approach for making road pavement preservation and rehabilitation decisions.
- The selection of pavement treatments uses an evidence-based process.
- Annual reporting on completed and in-process road pavement preservation and rehabilitation projects lacks key information.

This report makes

9

Recommendations

to strengthen the preservation and rehabilitation processes for paved roads in Nova Scotia.

Reference Guide – Key Findings and Observations

Paragraph	Key Findings and Observations
Background	
1	<i>Nova Scotia is responsible for maintaining a provincial road network of over 23,000 kilometres</i>
7	<i>Nova Scotia's road network is comprised of four main road categories</i>
9	<i>The Five-Year Highway Improvement Plan outlines planned and completed road work</i>
11	<i>Asset management for road infrastructure should support long-term decision-making</i>
15	<i>The Department received 63,000 road related inquiries through the Operations Contact Centre over two years</i>
16	<i>Timely pavement preservation maximizes road service life and ensures best use of public funds</i>
20	<i>The Department estimated 700 kilometres of paving are required annually but completes an average of 391 kilometres per year</i>
22	<i>Information on infrastructure needs has not been regularly updated</i>
25	<i>Pavement preservation and rehabilitation work is carried out across several categories</i>
27	<i>\$850 million in pavement work has been delivered through the highway funding envelope over five years</i>
29	<i>Audit Scope: Oversight and management of pavement preservation and rehabilitation activities</i>
The Department Does Not Have Accurate and Up to Date Information on the Condition of Nova Scotia's Paved Roads	
30	<i>The Department does not record or track pavement condition observations from staff road patrols</i>
33	<i>Detailed pavement condition data is collected for some roads, but not used by districts to identify road pavement preservation and rehabilitation projects</i>
40	<i>Road condition information is not integrated and does not support decision-making</i>
41	<i>Weaknesses in complaint tracking processes limit data reliability and analysis</i>
44	<i>Public complaint reporting does not support effective planning and decision-making</i>
There is No Consistent Evidence-Based Approach to Road Pavement Preservation and Rehabilitation Decisions	
48	<i>No defined criteria to identify and rank pavement rehabilitation and preservation projects</i>
54	<i>Submissions to head office lack supporting rationale and documentation</i>
58	<i>Department continues to rely on a "worst-first" approach rather than proactive maintenance or a cost-effective strategy</i>
61	<i>Once a pavement project is selected, an evidence-based process is used to determine appropriate treatment</i>
Funding and Project Prioritization Decisions Do Not Support Timely Pavement Preservation and Rehabilitation	
64	<i>Maintenance pave is not being used as intended to preserve pavement condition</i>

71	<i>Failure to preserve roads at the optimal time results in hundreds of millions of dollars in avoidable rehabilitation costs</i>
74	<i>Provincial funding is allocated based primarily on road kilometres rather than pavement condition or lifecycle needs</i>
75	<i>Districts allocate funding across areas within their districts without guidance</i>
76	<i>Current funding model has remained unchanged for almost a decade</i>
Public Reporting on Paved Road Projects Lacks Key Information	
78	<i>Public reporting includes status updates on prior year projects</i>
79	<i>Limited transparency regarding project delays and deferrals</i>
80	<i>Jurisdictional comparisons show variation in reporting practices</i>

Recommendations and Responses

Recommendation	Department Response
Recommendation 1 We recommend the Department of Public Works update the highway infrastructure deficit estimate and Needs Assessment for Bridges, Highways & Fleet in Nova Scotia, and require a comprehensive review and update every five years. <i>See paragraph 24</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 1 Revisit and update existing Needs Assessment and deficit estimate and create a 5-year cycle for updating current infrastructure needs.
Recommendation 2 We recommend the Department of Public Works annually provide government decision-makers with information on the infrastructure deficit, including: • regular updates to the estimated infrastructure deficit using appropriate cost escalation assumptions; and • the options and recommendations to address the current and long-term infrastructure deficit. <i>See paragraph 24</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 2 Provide the Public Works Minister with an annual update, in conjunction with the 5-year plan.
Recommendation 3 We recommend the Department of Public Works centralize the collection, maintenance, and use of pavement condition information from staff road patrols, ARAN road surface data, and other relevant sources to support long-term, evidence-based cost-effective decision-making. <i>See paragraph 40</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 3 Create a tracking system that will be housed at Highway Construction Services and will be populated in conjunction with maintenance staff, Highway Construction Services. To inform the annual plan, roads will be assessed based on the criteria identified in the tracking system.
Recommendation 4 We recommend the Department of Public Works: • standardize its centralized complaint database using consistent complaint categories and defined road segments; and • enhance complaint reporting to district staff by including road-specific location information and summaries of recurring complaints and trends. <i>See paragraph 47</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 4 We will work to standardize database for consistent complaint tracking across the province. This will include developing specific criteria for input into the system.

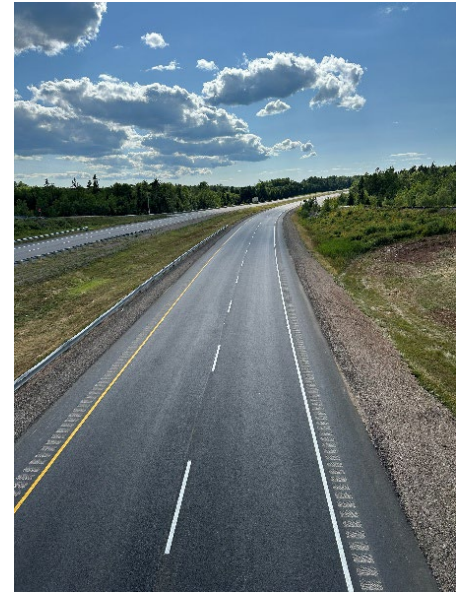
Recommendation	Department Response
Recommendation 5 We recommend the Department of Public Works establish and apply criteria to identify, assess, and prioritize pavement preservation and rehabilitation projects across the province. <i>See paragraph 60</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 5 Creation of best practices document to establish and apply consistent criteria to identify, assess, and prioritize pavement preservation and rehabilitation projects across the province.
Recommendation 6 We recommend the Department of Public Works establish policies and guidance to: • define roles and responsibilities for district and head office staff; • establish a consistent process to identify, assess, and submit pavement preservation and rehabilitation projects; • document the rationale for project selection decisions and changes made throughout the planning process; and • define the information districts must provide to support project submissions. <i>See paragraph 60</i>	 Department Agrees  Target Date for Implementation: Summer 2027 Department Response to Recommendation 6 Creation of guidelines to establish roles and responsibilities for the different staff across the department. We will ensure this is consistent province-wide and identify why/how decisions have been made throughout the process.
Recommendation 7 We recommend the Department of Public Works establish a pavement preservation strategy to: • define the purpose of preservation funding; • establish eligibility criteria for preservation treatments; • identify the optimal point in a pavement's lifecycle for preservation activities; and • prioritize preservation funding to maximize pavement life and reduce future rehabilitation costs. <i>See paragraph 73</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 7 Creation of a procedure document to establish criteria for 100-series highways to identify optimal lifecycle road pavement infrastructure preservation and inform decision-making for what sections of road preservation work should be prioritized.

Recommendation	Department Response
Recommendation 8 We recommend the Department of Public Works review, identify and implement necessary updates to the funding allocation model for pavement rehabilitation and preservation to support evidence-based project selection by incorporating appropriate factors, like lane kilometres, pavement condition, traffic volume, and/or lifecycle requirements. <i>See paragraph 77</i>	 Department Agrees  Target Date for Implementation: Fall 2027 Department Response to Recommendation 8 The Department commits to review the funding model.
Recommendation 9 We recommend the Department of Public Works review public reporting practices in other jurisdictions, identify opportunities to improve information provided in the Five-Year Highway Improvement Plan, and implement those improvements. <i>See paragraph 82</i>	 Department Agrees  Target Date for Implementation: Spring 2027 Department Response to Recommendation 9 The Department commits to review public reporting practices in other jurisdictions and adjust information if there is room for improvement.

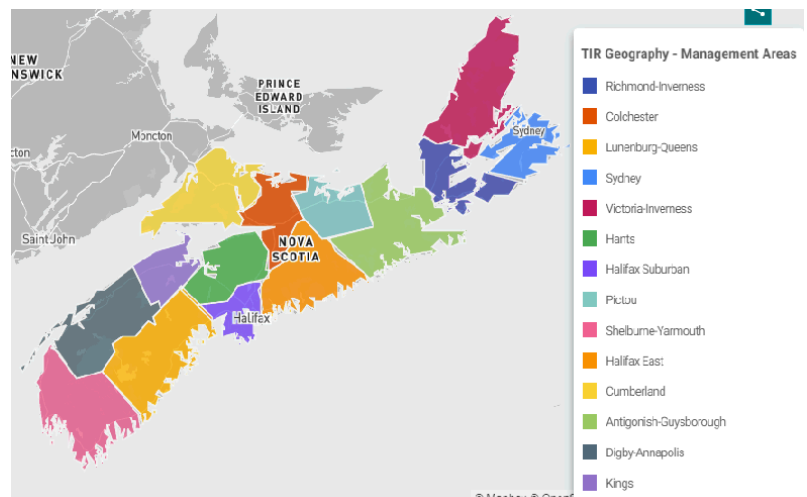
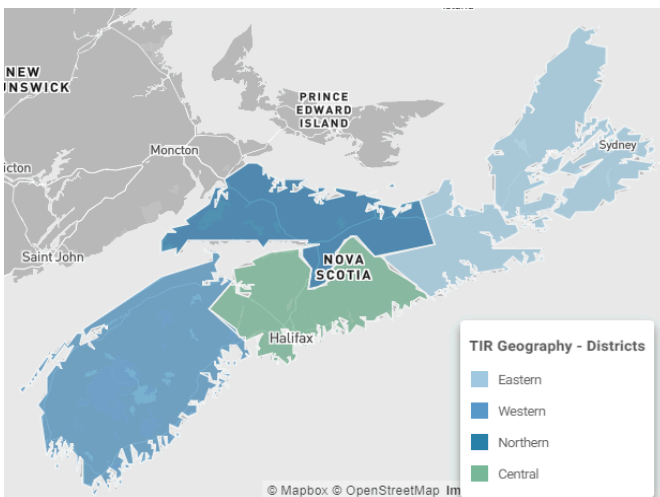
Background

Nova Scotia is responsible for maintaining a provincial road network of over 23,000 kilometres

1. Paved roads are a key component of the Province's infrastructure that support mobility, economic activity, community connectivity, and access to services and employment. According to Statistics Canada, 81.7% of Nova Scotia commuters travelled to work by car, truck, or van between May 2023 and May 2024. This level of reliance on road transportation indicates the importance of ongoing investment and effective management to ensure the provincial road network remains safe, reliable, and cost-effective.
2. The Department of Public Works (the Department) is responsible for maintaining approximately 90% of Nova Scotia's public road network, representing about 23,000 kilometres. This includes approximately 14,000 kilometres of paved roads and 8,400 kilometres of gravel roads. The Department does not maintain municipally owned roads, including those in incorporated towns and cities, or roads within federal parks, such as Cape Breton Highlands National Park.
3. The Department is organized into four districts, each of which is subdivided into three to four areas, for a total of 14 areas across the province.

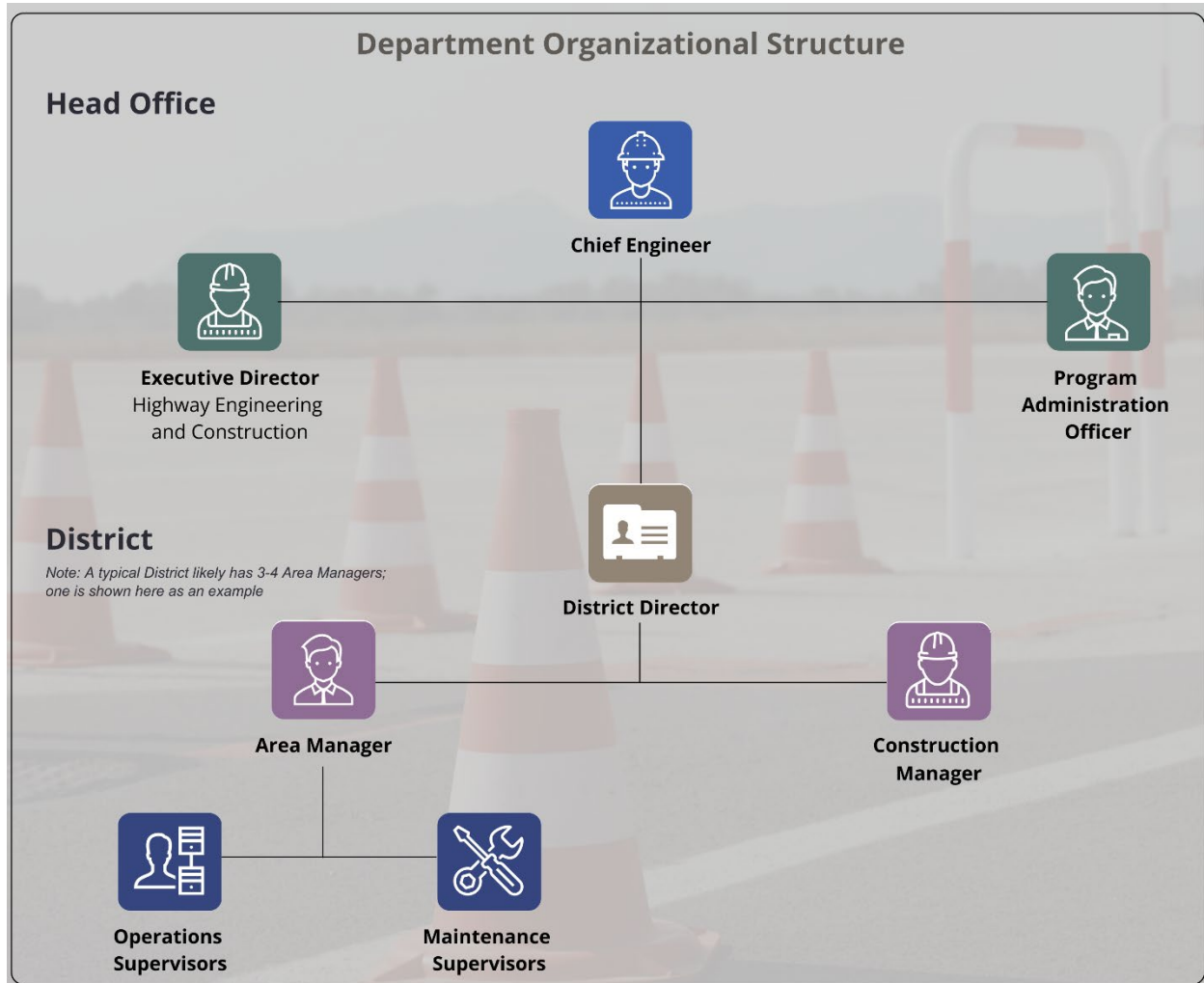


Highway 104, August 2025 – Repaving 100-Series Highways (Office of the Auditor General photo)



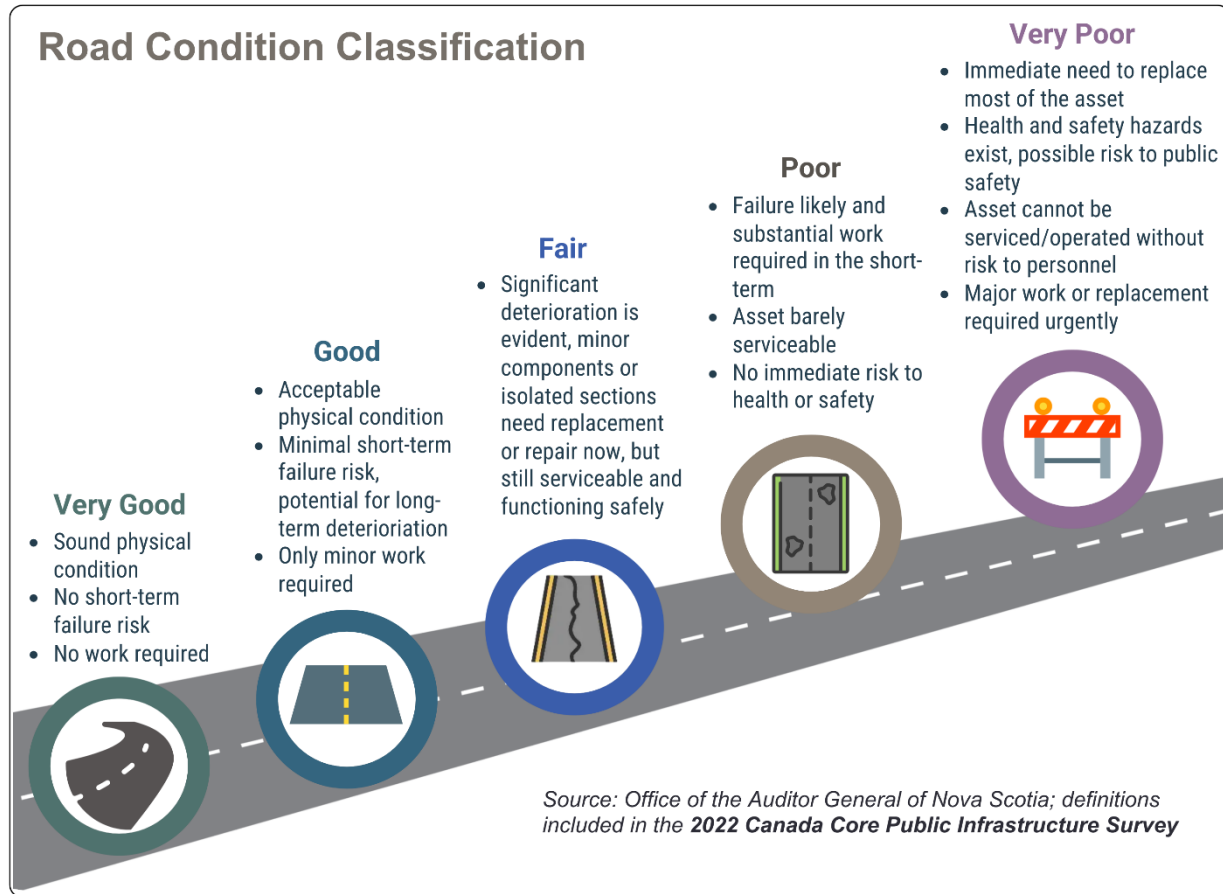
Source: Department of Public Works

4. The following diagram shows the Department's organizational structure and reporting relationship between the four districts and head office.



Source: Office of the Auditor General of Nova Scotia; data provided by the Department of Public Works; unaudited

5. For the past 10 years, Statistics Canada has conducted a biennial survey on public infrastructure to provide a comprehensive overview of the stock, condition and performance of core assets across the country. According to the most recent Core Public Infrastructure Survey, 28.5% of Nova Scotia provincial roads were rated “good” or better condition, and 71.5% of Nova Scotia provincial roads rated “fair” or worse. The survey uses a five-point scale to assess road condition:

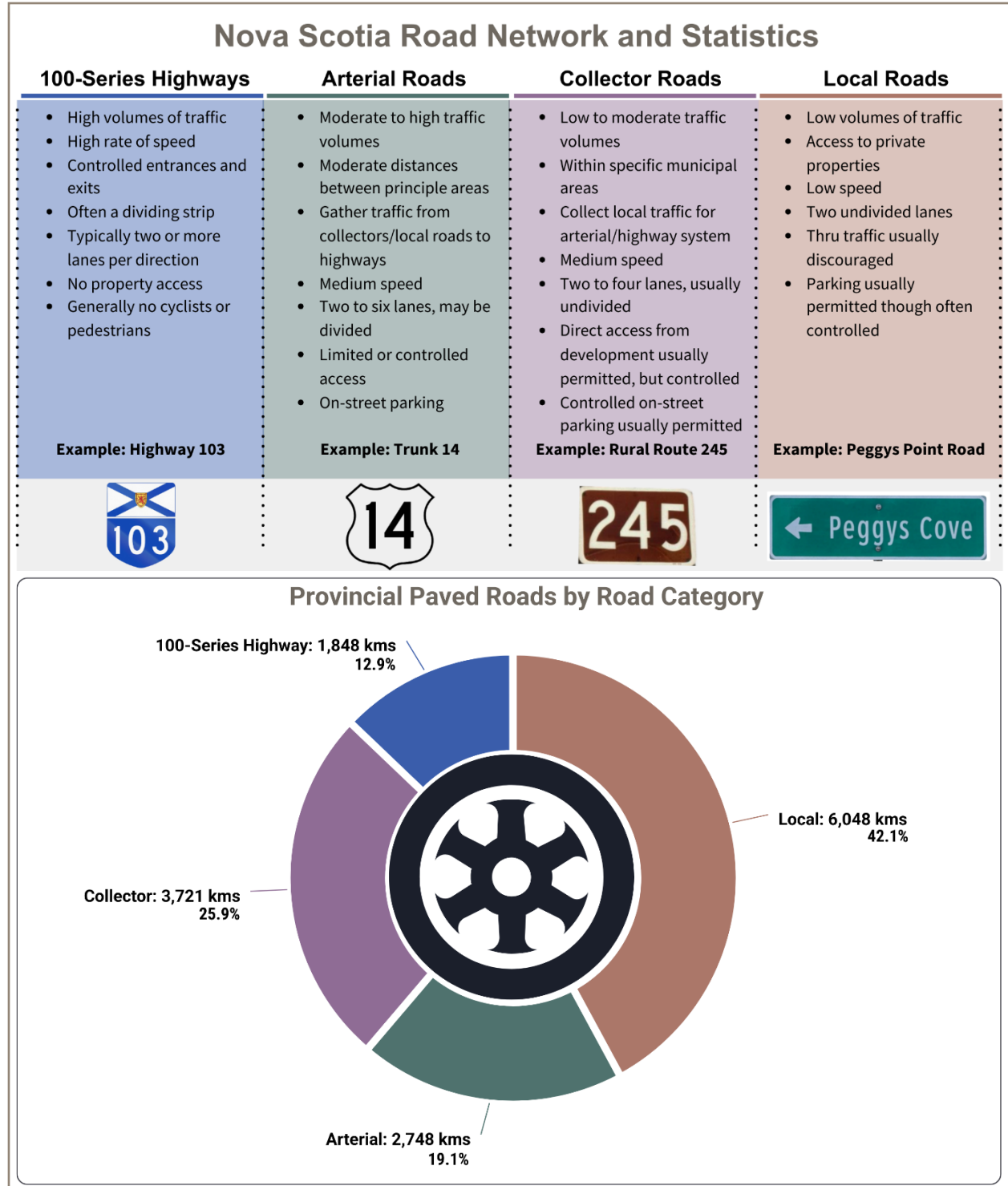


6. Roads in “poor” or “very poor” condition can pose risks to public safety, damage vehicles, and increase costs. A recent media report indicated Nova Scotia drivers made 2,707 claims for compensation related to pothole damage between 2022 and April 2026, of which 366 were paid by the Province.

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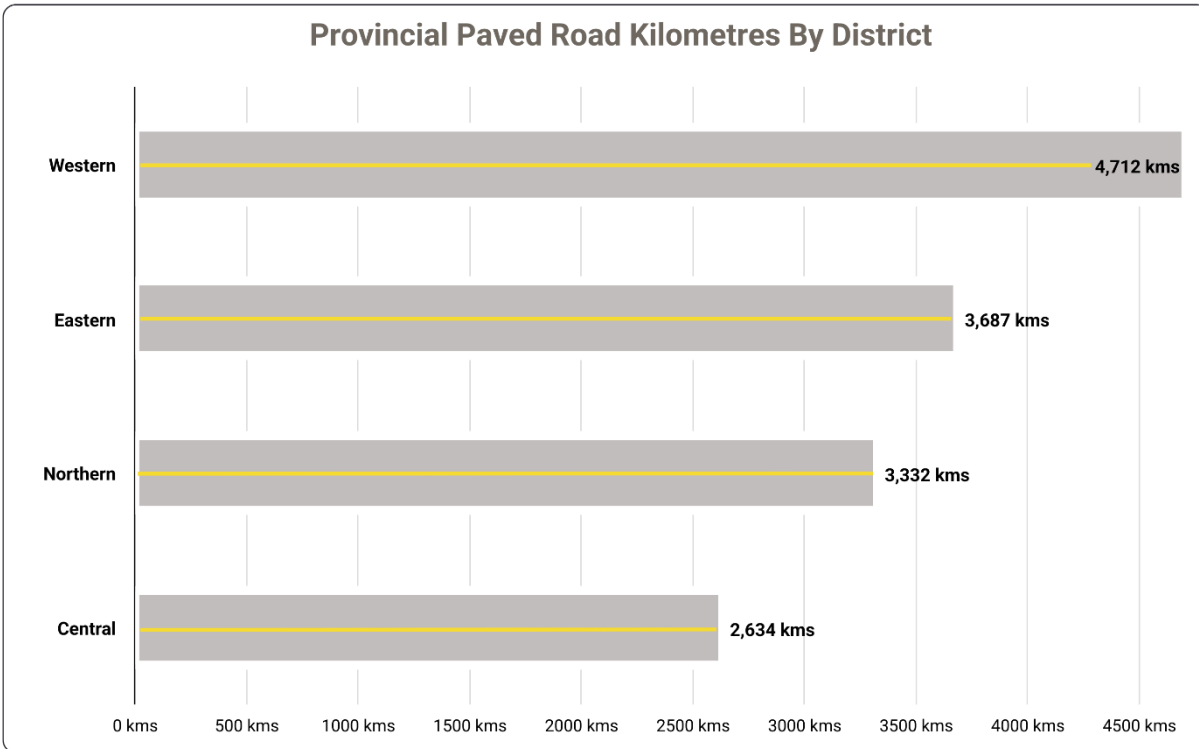
Nova Scotia's road network is comprised of four main road categories

7. Nova Scotia's approximately 14,000 kilometres of paved roads include highways, arterial roads, collector roads, and local roads.



Source: Office of the Auditor General of Nova Scotia; data provided by the Department of Public Works; unaudited

8. The Western District has the greatest number of kilometres of Department-managed paved roads. The Central District has the fewest, while having the largest population. As of July 2025, Halifax County accounted for 47.3% of the provincial population (approximately 517,000 residents). As a result, roads in Halifax County experience higher traffic volumes.

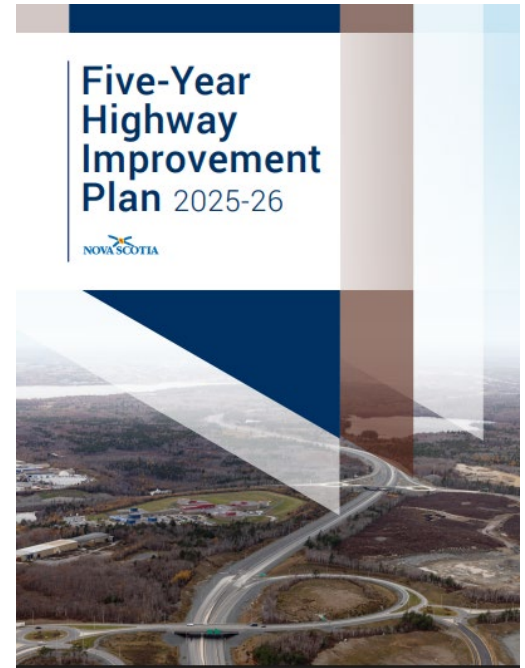


Source: Office of the Auditor General of Nova Scotia; data provided by the Department of Public Works; unaudited

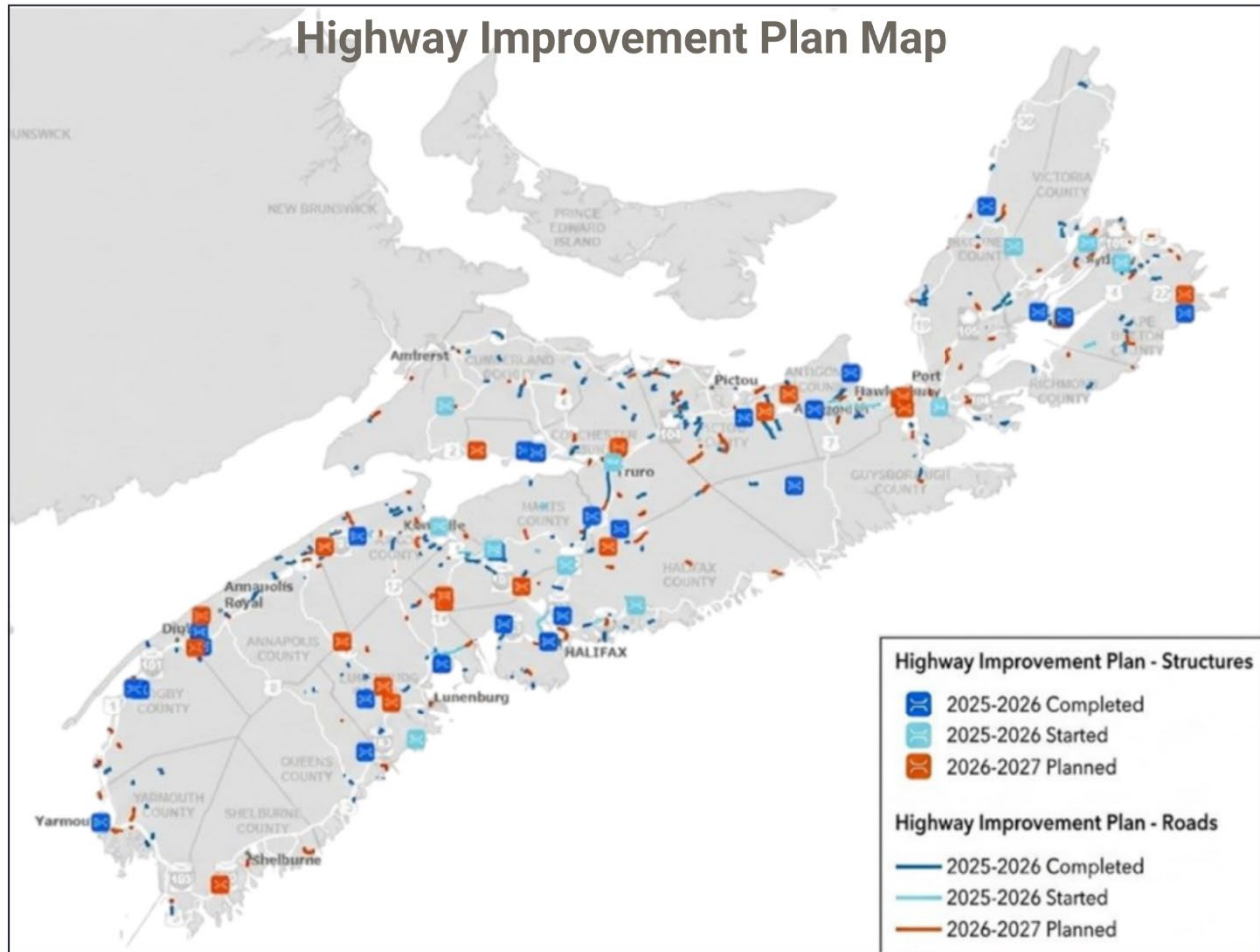
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The Five-Year Highway Improvement Plan outlines planned and completed road work

9. The Department publishes a Five-Year Highway Improvement Plan annually. The Plan outlines the Province's approach to building, maintaining, and renewing Nova Scotia's transportation network. The plan identifies major construction projects, repaving programs, bridge replacements, capital maintenance, and other improvements planned over the next five years, and reports on the status of projects included in previous plans. The Department began publishing this Plan around 2010.
10. In addition to the Five-Year Highway Improvement Plan, the Department publishes an interactive map. The map shows the locations of planned road and structure projects for the upcoming year, as well as projects started and completed in the previous year.



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Source: Department of Public Works

(<https://www.arcgis.com/apps/webappviewer/index.html?id=6970b3cdcd354e57bc50b52cff624b41>)

Asset management for road infrastructure should support long-term decision-making

11. In addition to planning documents, such as the Five-Year Highway Improvement Plan, long-term road infrastructure management should require structured condition monitoring and prioritized preservation work. Roads are expected to remain in service for decades; therefore, effective asset management should support planning horizons of at least 20 years to guide investment and maintenance decisions.
12. The objective should be to maintain roads in good condition for as long as possible, spend public funds efficiently and minimize disruptions for users. Effective planning includes processes and systems to assess asset condition, prioritize repairs and upgrades, and allocate resources to balance cost, performance, and long-term sustainability. For example, Alberta has implemented the Transportation Infrastructure Management System (TIMS), which integrates asset inventory, condition monitoring, and performance modeling.

13. In Nova Scotia, the Department uses the digital Structure Asset Management System (SAMS) to manage bridge assets. This system houses bridge information, including recommended repairs, inspection and maintenance history, and related documentation to support asset management decision-making. However, a similar asset management system is not used to preserve and maintain roads.

14. The Department monitors paved road conditions through physical inspections and automated assessments using the Automatic Road Analyzer (ARAN). The ARAN collects detailed surface condition data annually for 100-series highways and every two years for arterial and collector roads. Data collected from 100-series highways is uploaded to the Highway Pavement Management Application (HPMA), which is discussed further later in this report.



Automatic Road Analyzer (ARAN) (Office of the Auditor General of Nova Scotia photo)

The Department received 63,000 road related inquiries through the Operations Contact Centre over two years

15. The Department also maintains the Operations Contact Centre (the Centre), which handles phone and email inquiries from Nova Scotians including highway and road maintenance, potholes, road signage, wildlife, and driveway permits. During the two-year audit period (April 1, 2023-March 31, 2025), the Centre received over 125,000 calls and emails. The Centre categorizes inquiries by subject, including roads, vehicles, signs, ditches, and lighting. Of the total inquiries received, more than half (63,000) related to roads.

Timely pavement preservation maximizes road service life and ensures best use of public funds

16. While a significant portion of the Department's funding is directed toward rehabilitating roads in poor condition, some funding is allocated to preserving paved roads before they require major rehabilitation or replacement. This work, referred to as pavement preservation, includes treatments that extend pavement service life, improve ride quality, and reduce issues such as potholes, rutting, and cracking. Pavement preservation helps maintain roads in a safe and serviceable condition at a lower cost before they deteriorate and require more extensive repairs.

17. Timely preservation is key to maximizing the service life of roads and ensuring efficient use of public funds. Completing preservation work at appropriate points in the pavement

lifecycle, when these treatments are most effective, helps extend road service and reduce the need for more costly interventions.

18. Common types of pavement distress include alligator cracking (a pattern of small, interconnected cracks resembling reptile scales), rutting (depressions in wheel paths), and longitudinal cracking (cracks that run along the direction of travel). These conditions typically result from a combination of factors, including temperature fluctuations, traffic volume, and weaknesses in the underlying road structure.

Example of rutting



Office of the Auditor General photo

Example of longitudinal cracking



Office of the Auditor General photo

Example of alligator cracking

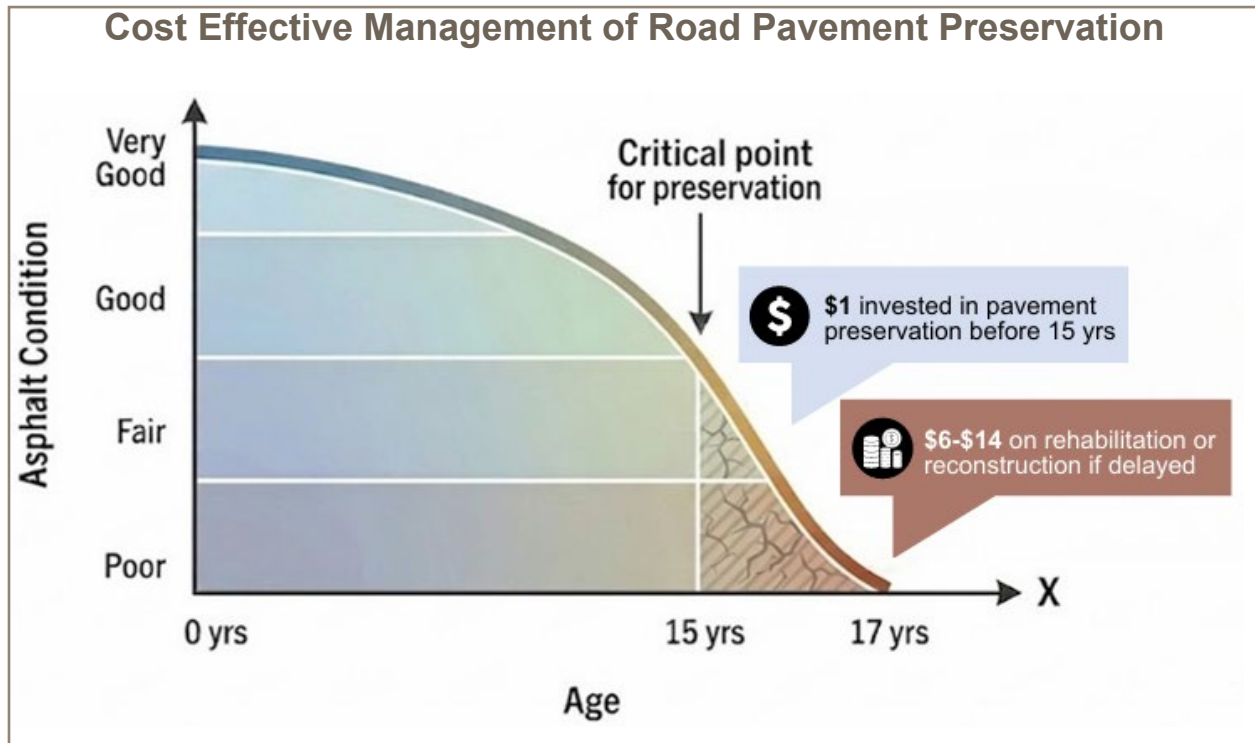


Office of the Auditor General photo

19. As roads age, their condition declines at an increasing rate, leading to higher maintenance and rehabilitation costs. Therefore, delaying preservation treatment accelerates deterioration and results in significantly higher total lifecycle costs. The Department has indicated a timeline for optimal pavement preservation to maximize investment, with 15 years flagged as the critical point for preservation.

The Department estimated 700 kilometres of paving are required annually but completes an average of 391 kilometres per year

20. The cost of preserving and maintaining paved roads in Nova Scotia has increased over the past 25 years. The Department last reported that the Province's highway infrastructure deficit, representing deferred maintenance, grew from approximately \$3.4 billion in 2001 to over \$4 billion by 2009. Adjusted for inflation using the Canadian Consumer Price Index, this amount would be approximately \$5.94 billion in current (2026) dollars. This increase demonstrates delaying timely maintenance leads to higher long-term costs and reinforces the importance of investing in pavement preservation alongside rehabilitation.



Source: Office of the Auditor General of Nova Scotia; information from the Department of Public Works websites; unaudited

21. In its 2019 Needs Assessment for Bridges, Highways & Fleet in Nova Scotia, the Department estimated approximately 700 kilometres of paving would be required annually over 25 years to address the Province's highway infrastructure deficit. Over the past five fiscal years, the Department completed an average of approximately 391 kilometres of pavement preservation and rehabilitation work annually, about 56% of the level identified in the assessment.

Information on infrastructure needs has not been regularly updated

22. The Department has not updated its estimate of the Province's highway infrastructure deficit estimate since 2009 and has not updated its Needs Assessment for Bridges, Highways & Fleet in Nova Scotia since 2019. As a result, the Department does not have current information on the extent of the infrastructure deficit or the level of pavement preservation and rehabilitation activity required to address it.
23. As construction costs increase, the amount of pavement preservation and rehabilitation work that can be completed for the same amount of funding is reduced. Government decision-makers should regularly receive information and options to address the infrastructure deficit, and the implications of those options. For example, changes to funding levels, changes to service and maintenance standards for selected roads, changes to the approach to pavement preservation and rehabilitation, or reductions to the number of roads under provincial responsibility.

24. Without regular updates, government decision-makers may not have information on the current condition of the provincial road network, future infrastructure needs, and the long-term funding and decisions required to maintain the Province's roads in a cost-effective manner.

Recommendation 1

We recommend the Department of Public Works update the highway infrastructure deficit estimate and Needs Assessment for Bridges, Highways & Fleet in Nova Scotia, and require a comprehensive review and update every five years.

Department Response to Recommendation 1



Department agrees

Target Date for Implementation:

Fall 2027

Revisit and update existing Needs Assessment and deficit estimate and create a 5-year cycle for updating current infrastructure needs.

Recommendation 2

We recommend the Department of Public Works annually provide government decision-makers with information on the infrastructure deficit, including:

- regular updates to the estimated infrastructure deficit using appropriate cost escalation assumptions; and
- the options and recommendations to address the current and long-term infrastructure deficit.

Department Response to Recommendation 2



Department agrees

Target Date for Implementation:

Fall 2027

Provide the Public Works Minister with an annual update, in conjunction with the 5-year plan.

Pavement preservation and rehabilitation work is carried out across several categories

25. We were informed decisions on pavement project prioritization are made by Department management based on road patrols, supervisor input, and available funding. Paved roads are a key component of the Province's infrastructure supporting mobility, economic activity, community connectivity, and access to services and employment; therefore, the Department should strategically target spending on pavement preservation and rehabilitation to best meet provincial needs.
26. Pavement preservation and rehabilitation work in the Province is divided into six categories. Some categories are further classified as capital or non-capital projects based on total project cost, as follows:
- a. 100-series highway repaving
 - b. Arterial and collector repaving
 - c. Local road repaving
 - d. Pavement preservation – pavement strengthening/surface treatment
 - e. Pavement preservation – single lift overlay
 - f. Pavement preservation – maintenance paving

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\$850 million in pavement work has been delivered through the highway funding envelope over five years

27. Over the last five years, the Department spent almost \$850 million on pavement preservation and rehabilitation. The Department routinely spends more than budgeted on this work; of which \$215 million was over-budget spending. The table below compares the Department's budget to actual spending across pavement categories over the past five fiscal years:

Highway Funding Envelope - Budget to Actual 2021-22 to 2025-26 (\$ Millions)						
	2021-22	2022-23	2023-24	2024-25	2025-26	Total
100-Series Highway Repaving						
Budget	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 88.5
Actual	\$ 19.9	\$ 20.9	\$ 28.4	\$ 24.3	\$ 79.2	\$ 172.7
Over/(Under) Budget	\$ 2.2	\$ 3.2	\$ 10.7	\$ 6.6	\$ 61.5	\$ 84.2
Arterial and Collector Repaving						
Budget	\$ 28.1	\$ 28.1	\$ 57.2	\$ 57.2	\$ 57.2	\$ 227.8
Actual	\$ 29.1	\$ 38.7	\$ 75.2	\$ 66.8	\$ 58.5	\$ 268.3
Over/(Under) Budget	\$ 1.0	\$ 10.6	\$ 18.0	\$ 9.6	\$ 1.3	\$ 40.5
Local Road Repaving						
Budget	\$ 27.5	\$ 27.5	\$ 57.6	\$ 57.6	\$ 57.6	\$ 227.7
Actual	\$ 36.8	\$ 51.6	\$ 49.7	\$ 69.7	\$ 67.5	\$ 275.2
Over/(Under) Budget	\$ 9.3	\$ 24.1	(\$ 7.9)	\$ 12.1	\$ 10.0	\$ 47.6
Pavement Preservation (Pavement Strengthening/Surface Treatment)						
Budget	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 7.3
Actual	\$ 3.3	\$ 1.5	\$ 2.4	\$ 4.2	\$ 2.9	\$ 14.2
Over/(Under) Budget	\$ 1.8	\$ 0.0	\$ 0.9	\$ 2.7	\$ 1.5	\$ 7.0
Pavement Preservation (Single Lift Overlay)						
Budget	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 7.5
Actual	\$ 2.4	\$ 1.9	\$ 3.1	\$ 2.7	\$ 2.6	\$ 12.7
Over/(Under) Budget	\$ 0.9	\$ 0.4	\$ 1.6	\$ 1.2	\$ 1.1	\$ 5.2
Pavement Preservation (Maintenance Paving)						
Budget	\$ 15.0	\$ 15.0	\$ 15.0	\$ 15.0	\$ 15.0	\$ 75.0
Actual	\$ 17.4	\$ 26.2	\$ 18.3	\$ 23.2	\$ 20.4	\$ 105.5
Over/(Under) Budget	\$ 2.4	\$ 11.2	\$ 3.3	\$ 8.2	\$ 5.4	\$ 30.5
Total - All Categories						
Budget	\$ 91.3	\$ 91.3	\$ 150.4	\$ 150.4	\$ 150.4	\$ 633.7
Actual	\$ 109.0	\$ 140.7	\$ 177.0	\$ 190.9	\$ 231.1	\$ 848.6
Over/(Under) Budget	\$ 17.7	\$ 49.4	\$ 26.6	\$ 40.5	\$ 80.7	\$ 214.9

Source: Compiled by the Office of the Auditor General of Nova Scotia using data provided by the Department of Public Works; unaudited

28. The Department completed the following kilometres of pavement preservation and rehabilitation work over the past five fiscal years:

Pavement Preservation and Rehabilitation Work By Category (kms)		2021-22 354 (TOTAL KM)	2022-23 381 (TOTAL KM)	2023-24 452 (TOTAL KM)	2024-25 365 (TOTAL KM)	2025-26 404 (TOTAL KM)	AVERAGE 391 (TOTAL KM)
Road Work Category		2021-22	2022-23	2023-24	2024-25	2025-26	Total
100-Series Highway Repaving		30	30	47	24	92	223
Arterial and Collector Repaving		70	69	162	88	84	473
Local Road Repaving		100	135	128	132	125	620
Pavement Preservation (Pavement Strengthening/Surface Treatment)		12	5	12	16	8	53
Pavement Preservation (Single Lift Overlay)		10	8	15	9	12	54
Pavement Preservation (Maintenance Paving)		132	134	88	96	83	533

Source: Office of the Auditor General of Nova Scotia; data provided by the Department of Public Works; unaudited

Audit Scope: Oversight and management of pavement preservation and rehabilitation activities

29. This audit focused on the Department's oversight and management of pavement preservation and rehabilitation activities. We did not examine major construction projects, such as new road construction or highway twinning, or routine maintenance activities, such as pothole patching, brush cutting, line painting, and ditching.

The Department Does Not Have Accurate and Up to Date Information on the Condition of Nova Scotia's Paved Roads

The Department does not record or track pavement condition observations from staff road patrols

30. The Department's Highway Maintenance Standards require staff to perform road patrols at frequencies based on the type of road. For example, staff patrol 100-series highways twice per week and local roads monthly.

31. The Department does not have a system to record and track pavement condition observations from these patrols. As a result, staff use their own approaches to collect and store this information, including relying on personal notes, spreadsheets, and written notebooks.

32. Without a consistent process to document these observations and evaluate the information gathered, the Department could fail to consider all information when identifying and prioritizing pavement rehabilitation and preservation decisions.

Detailed pavement condition data is collected for some roads, but not used by districts to identify road pavement preservation and rehabilitation projects

33. The Department uses ARAN to collect detailed pavement condition data at one of two intervals depending on the type of road, as illustrated below:



Source: Office of the Auditor General of Nova Scotia; information from the Department of Public Works websites; unaudited

34. Once collected, road surface data for the 100-series highways is uploaded into the Highway Pavement Management Application (HPMA).
35. The HPMA can assess pavement conditions and support pavement rehabilitation and preservation project planning using current and historical condition data, completed work, and available funding. The system combines this information with ARAN road surface data to identify and prioritize projects and generate an optimized list of road work within budget and other constraints identified by the Department.
36. The HPMA can be run annually to produce a list of optimized projects for the 100-series highways. The optimized project list identifies the appropriate pavement treatment based on the available funding to maximize the life of the existing pavement. Despite HPMA's capability to continually update an optimized project list, at the time of our audit in 2025, the Department had continued to use the 2019 optimized list to select 100-series highway projects. The Department told us, due to escalating project costs during and after COVID-19, projects from the 2019 list were not completed as planned and needed to be postponed to future years. As a result, the Department continued to work from the 2019 listing and planned to do so until those projects were completed.
37. The Department does not currently load pavement condition data from ARAN for arterial and collector roads into the HPMA, as the system has not been expanded to optimize

these road types. Districts may use ARAN's road surface data for arterial and collector road decision-making, but only if they request the information.

38. During testing, we selected a sample of roads to verify ARAN data collection frequency and confirmed the Department is regularly scanning 100-series highways, and arterial and collector roads to collect detailed road surface information.
39. There is no requirement to consider the ARAN road surface data when districts identify road pavement preservation and rehabilitation projects. Only three Department employees working in highway construction services can access the ARAN road surface information. As a result, the use of ARAN data in planning and prioritizing projects varied across the four districts. While some districts considered this information on a limited basis, others did not use the information for decision-making at all.

Road condition information is not integrated and does not support decision-making

40. The Department has access to road condition data across multiple systems and processes, including staff road patrols, ARAN road surface data, and the HPMA. Currently, these systems are not integrated, and information is often maintained separately across different areas of the Department. As a result, the Department does not have complete, consistent, and up-to-date information on pavement conditions across the provincial road network.

Recommendation 3

We recommend the Department of Public Works centralize the collection, maintenance, and use of pavement condition information from staff road patrols, ARAN road surface data, and other relevant sources to support long-term, evidence-based cost-effective decision-making.

Department Response to Recommendation 3



Department agrees

Target Date for Implementation:

Fall 2027

Create a tracking system that will be housed at Highway Construction Services and will be populated in conjunction with maintenance staff, Highway Construction Services. To inform the annual plan, roads will be assessed based on the criteria identified in the tracking system.

Weaknesses in complaint tracking processes limit data reliability and analysis

41. Another source of road condition information is from road users. Nova Scotians can report road conditions to the Department's Operations Contact Centre by phone and email. Staff record complaints by creating tickets that capture information such as category, contact details, service area, and a brief description. The system then assigns tickets to district staff for resolution.



42. The Department has no policies or guidance to support consistent complaint recording and reporting. As a result, contact centre staff may record similar complaints under different categories.

Local Road – Pothole and Alligator Cracking, September 2025 (Office of the Auditor General photo)

43. There are no predefined road segments to ensure consistent data entry. As a result, staff must manually enter road names and location details in text fields. In reviewing the complaint information, we noted multiple instances of misspelled road names. These data entry errors increase the risk that complaint records are not complete or accurate. Without reliable complaint information, the Department does not have a full understanding of issues affecting specific roads, limiting its ability to make informed decisions.

Public complaint reporting does not support effective planning and decision-making

44. Area Managers receive monthly summary reports showing the number of complaints by category (for example, Potholes: 43). However, staff told us these reports do not provide sufficient detail to support planning decisions because the reports do not list the location of the complaint.
45. The manual nature of the complaint system makes it difficult to perform trend analysis and identify specific sections of roads with repeated complaints. For example, the spelling variations we witnessed in road names could result in incomplete reports and trend analysis.
46. Although area managers receive monthly summary reports, district staff must contact the Operations Contact Centre for detailed complaint data. The reporting generating process is manual, and therefore time-consuming. As a result, complaint data is not consistently used for decision-making by district staff.
47. We were told complaint information cannot be used to proactively inform pavement rehabilitation and preservation decisions. Therefore, it may be used to decide between two potential road pavement projects once they have been identified, or to support a road selection decision once it has been made.

Recommendation 4

We recommend the Department of Public Works:

- standardize its centralized complaint database using consistent complaint categories and defined road segments; and
- enhance complaint reporting to district staff by including road-specific location information and summaries of recurring complaints and trends.

Department Response to Recommendation 4



Department agrees

Target Date for Implementation:

Fall 2027

We will work to standardize database for consistent complaint tracking across the province. This will include developing specific criteria for input into the system.

There is No Consistent Evidence-Based Approach to Road Pavement Preservation and Rehabilitation Decisions

No defined criteria to identify and rank pavement rehabilitation and preservation projects

48. There were no policies or common criteria to identify and rank pavement preservation and rehabilitation projects. As a result, we consulted Department staff involved in the process to understand the annual planning process at the districts and head office.

49. District staff meet to identify their potential pavement rehabilitation and preservation projects. There are no meeting minutes detailing what was discussed at these district level meetings.

50. While each district develops its own ranking of proposed projects, there is no consistent set of criteria to identify and rank projects. As a result, project rankings may vary across the province, depending on the factors considered by district staff.

51. We observed inconsistencies in how staff assess and rank projects within and across the four districts. Some districts had area managers identify projects, while others used a centralized, district-level approach for selecting projects.



Highway 105 – September 2025, Repaving 100-Series Highways (Office of the Auditor General photo)

52. Department staff also use different considerations to identify and rank projects. For example, some staff indicated there is no clear way to rank roads of similar condition, while others relied on considerations such as traffic volume, road use or stakeholder input such as elected officials to differentiate between projects. In some cases, staff described the process as a qualitative assessment without defined metrics or systems to support decision-making.
53. After identifying their projects, each district finalizes its priority list and submits it to head office. Each list identifies proposed projects in each pavement category for the next five years and includes additional projects for future consideration.

Submissions to head office lack supporting rationale and documentation

54. Once districts submit their priority lists, head office staff and districts meet to discuss the submissions. The Department does not keep minutes for these meetings and does not document the rationale for decisions or changes made during this stage of the process. Following these discussions, the Department will update the provincial planning list and the public Five-Year Highway Improvement Plan.
55. The Department does not document the rationale for project inclusion or prioritization. Our review found district priority lists included constituency, project requestor, and comment fields. However, while districts consistently complete the constituency field, they do not consistently complete the project requestor and comments fields.
56. Head office relies on information provided by districts but does not receive sufficient detail to assess or challenge whether the selected projects represent the highest priority needs. If questioned, the Department would be unable to clearly explain why a certain road was selected over another.
57. The project selection process is informal and subjective. Without standardized criteria and a consistent method to identify and rank projects, the Department cannot demonstrate pavement rehabilitation and preservation projects are assessed and prioritized consistently across the province.

Department continues to rely on a “worst-first” approach rather than proactive maintenance or a cost-effective strategy

58. Staff indicated project selection relies heavily on a “worst-first” approach, prioritizing heavily deteriorated roads rather than a proactive maintenance or cost-effective strategy.
59. The limitations of resorting to a “worst-first” approach were first flagged 15 years ago. In its 2011 Five-Year Highway Improvement Plan, the Department noted focusing on its most severely deteriorated roads results in more costly repairs, reduces the total number of kilometres improved each year, and contributes to a decline in the overall condition of the road network. The 2011 Plan noted a more balanced approach, including pavement preservation activities, would improve road conditions, increase the number of kilometres repaired, and make more effective use of available funding.

60. However, this audit found road improvement decisions continue to be driven largely by a worst-first approach.

Recommendation 5

We recommend the Department of Public Works establish and apply criteria to identify, assess, and prioritize pavement preservation and rehabilitation projects across the province.

Department Response to Recommendation 5

✓ Department agrees

Target Date for Implementation:

Fall 2027

Creation of best practices document to establish and apply consistent criteria to identify, assess, and prioritize pavement preservation and rehabilitation projects across the province.

Recommendation 6

We recommend the Department of Public Works establish policies and guidance to:

- define roles and responsibilities for district and head office staff;
- establish a consistent process to identify, assess, and submit pavement preservation and rehabilitation projects;
- document the rationale for project selection decisions and changes made throughout the planning process; and
- define the information districts must provide to support project submissions.

Department Response to Recommendation 6

✓ Department agrees

Target Date for Implementation:

Summer 2027

Creation of guidelines to establish roles and responsibilities for the different staff across the department. We will ensure this is consistent province-wide and identify why/how decisions have been made throughout the process.

Once a pavement project is selected, an evidence-based process is used to determine appropriate treatment

61. Once projects have been included in the Five-year Highway Improvement Plan, the Department follows a defined peer reviewed process to determine the most appropriate

pavement preservation and rehabilitation treatment. This documented, evidence-based process includes data collection and analysis by the Department.

62. The analysis identifies both a recommended treatment and an alternative option that are considered appropriate, based on the road's current condition. The Department evaluates treatment options alongside available budget constraints to determine the appropriate treatment. Depending on the condition of the road, potential treatments include:
- repairing isolated areas of pavement damage and applying one or two new layers of asphalt;
 - removing and replacing the upper asphalt layers with one or two new layers of asphalt; or
 - more extensive rehabilitation involving the removal of a larger portion of the existing pavement structure and replacement with one or two new layers of asphalt.
63. We selected a sample of roads and reviewed the treatment selection process. Based on our testing, the Department followed the pavement preservation and rehabilitation treatment selection process, with no issues noted.

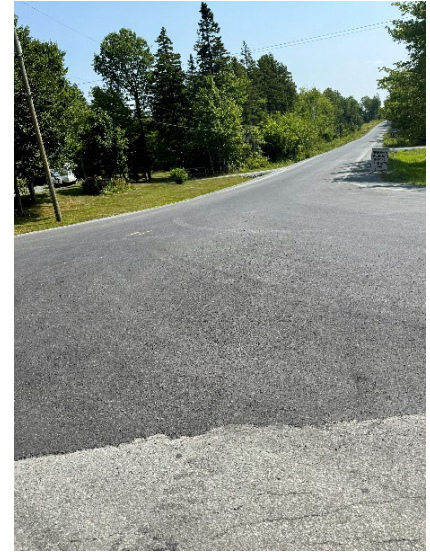
Funding and Project Prioritization Decisions Do Not Support Timely Pavement Preservation and Rehabilitation

Maintenance pave is not being used as intended to preserve pavement condition

64. Projects included in the Five-Year Highway Improvement Plan are assigned to specific categories based on the type of pavement preservation or rehabilitation work the Department would like to complete. For example, a local road could be included in either the "local road" repaving category or the "maintenance pave" category, depending on the condition of the road and the level of intervention required.
65. The Department indicated maintenance pave is intended to function as a pavement preservation strategy. Maintenance pave typically involves applying one or two new layers of asphalt to extend pavement life and delay deterioration. Preservation treatments are generally applied earlier in a road's lifecycle to maintain pavement condition and delay deterioration.
66. In 2025-26, the Department budgeted approximately \$18 million for pavement preservation activities. This included \$15 million for maintenance pave, making it the Department's primary pavement preservation investment.
67. Unlike projects included in other repaving categories, maintenance pave projects do not undergo a formal engineering assessment and peer review to determine the most

appropriate treatment. As a result, the Department cannot demonstrate maintenance pave is the most appropriate treatment for roads included in this category.

68. Based on discussions with Department staff, maintenance pave is most often used as a short-term measure for roads in poor condition until more substantial rehabilitation work can be completed. Staff described maintenance pave as a means of addressing deteriorated roads when funding is not available for more significant rehabilitation work.
69. As a result, the maintenance pave category may be used for roads that have already progressed beyond the point at which pavement preservation treatments would typically be applied.
70. The Department has not established guidance or criteria defining when maintenance pave treatments are appropriate. As a result, districts may use maintenance pave inconsistently and select maintenance pave when another treatment may be more appropriate.



Greenhill Road - Maintenance Pave, July 2025 (Office of the Auditor General photo)

Failure to preserve roads at the optimal time results in hundreds of millions of dollars in avoidable rehabilitation costs

71. The Department's annual \$15 million maintenance paving budget represents an opportunity to reduce future costs. According to Department information, every dollar spent on pavement preservation before a road reaches 15 years of age can avoid between \$6 and \$14 in future rehabilitation costs once the surface has failed. If the annual maintenance paving budget was consistently invested at the optimal time for preservation, it could potentially avoid between \$90 million and \$210 million in future costs, while also extending the useful life of existing road surfaces.
72. Without guidance defining the appropriate use of maintenance pave, the Department cannot ensure preservation funding is used to maximum effect. This could limit the effectiveness of preservation activities and reduce the value achieved from these investments.
73. Applying preservation treatments after the pavement condition has significantly deteriorated reduces the opportunity to extend pavement life and maximize cost avoidance. As maintenance pave represents the Department's largest pavement preservation investment, ineffective targeting of these treatments could result in substantial avoidable rehabilitation costs in the future.

Recommendation 7

We recommend the Department of Public Works establish a pavement preservation strategy to:

- define the purpose of preservation funding;
- establish eligibility criteria for preservation treatments;
- identify the optimal point in a pavement's lifecycle for preservation activities; and
- prioritize preservation funding to maximize pavement life and reduce future rehabilitation costs.

Department Response to Recommendation 7



Department agrees

Target Date for Implementation:

Fall 2027

Creation of a procedure document to establish criteria for 100-series highways to identify optimal lifecycle road pavement infrastructure preservation and inform decision-making for what sections of road preservation work should be prioritized.

Provincial funding is allocated based primarily on road kilometres rather than pavement condition or lifecycle needs

74. The Department allocates provincial funding across pavement categories included in the Five-Year Highway Improvement Plan, including 100-series highway repaving, local road repaving, and maintenance paving. Provincial funding within each category is distributed across the four districts either equally or proportionally. Proportional distribution uses road centerline kilometres (the length of road regardless of the number of lanes), allocating funds at a fixed per-kilometre rate. For example, Provincial funding for the 100-series highway repaving is allocated evenly among the four districts, which typically allows each district to complete one project per year, regardless of differences in pavement condition or lifecycle needs.

Districts allocate funding across areas within their districts without guidance

75. For funding categories other than 100-series highways, districts allocate their budgets among areas within their jurisdiction differently. Districts either distribute funding evenly between each area, or proportionally, based on centerline kilometres, instead of where it would extend the pavement life at the lowest cost.

Current funding model has remained unchanged for almost a decade

76. Based on discussions with Department staff, the Department has not changed its funding allocation approach for at least nine years, despite changes in infrastructure condition, usage, and demand.

77. Without periodic reviews of the approach to funding, the Department risks using a model that does not support timely and cost-effective investment in the province's road network. Allocating road funding evenly between each district or area or using an approach allocating funding based on centerline kilometres, could result in projects not being completed at the optimal time to minimize overall costs or maximize the life of the provincial road network.

Recommendation 8

We recommend the Department of Public Works review, identify and implement necessary updates to the funding allocation model for pavement rehabilitation and preservation to support evidence-based project selection by incorporating appropriate factors, like lane kilometres, pavement condition, traffic volume, and/or lifecycle requirements.

Department Response to Recommendation 8



Department agrees

Target Date for Implementation:

Fall 2027

The Department commits to review the funding model.

Public Reporting on Paved Road Projects Lacks Key Information

Public reporting includes status updates on prior year projects

78. In its annual Five-Year Highway Improvement Plan, the Department includes status updates for projects identified in previous years along with lists of projects to be completed over the next five years. While this should allow users to track progress against previously planned work, the information provided in these plans is limited to status ("started," "section completed," "carried forward") and does not include additional context on decision-making or outcomes.

Limited transparency regarding project delays and deferrals

79. The public reporting does not provide explanations for delays, deferrals, or incompletes from originally planned projects. In addition, the plans do not include information on how projects are prioritized or ranked, nor do they describe the purpose or rationale for the work undertaken for individual projects. Without this information, users cannot understand decisions or changes to planned work.

Jurisdictional comparisons show variation in reporting practices

80. Our review of reporting practices in other Canadian jurisdictions found variation in the level and scope of publicly disclosed information. Nova Scotia's Five-Year Highway Improvement Plan provides a longer planning horizon than several provinces and includes status updates on projects from previous years. We noted some jurisdictions do not

publicly report multi-year project plans or provide less detailed information on planned and ongoing projects.

81. We identified reporting practices in other jurisdictions that may improve transparency for users in Nova Scotia. For example, we noted reporting on reasons for schedule delays and scope changes (New Brunswick), project ranking and prioritization methodologies (Newfoundland and Labrador), project purpose and economic or safety objectives (Alberta), and project classifications and intended outcomes (Manitoba).
82. Nova Scotia's Five-Year Highway Improvement Plan provides comprehensive public reporting. However, additional information on project prioritization, reasons for changes to planned work, project purpose, and intended outcomes would provide greater transparency and help users better understand decisions and results.

Recommendation 9

We recommend the Department of Public Works review public reporting practices in other jurisdictions, identify opportunities to improve information provided in the Five-Year Highway Improvement Plan, and implement those improvements.

Department Response to Recommendation 9



Department agrees

Target Date for Implementation:

Spring 2027

The Department commits to review public reporting practices in other jurisdictions and adjust information if there is room for improvement.

Appendix I

Reasonable Assurance Engagement Description and Conclusions

We completed an independent assurance report to evaluate how effectively the Department of Public Works is Preserving and Restoring Paved Roads. The purpose of this performance audit was to determine whether the Department of Public Works is making evidence-based decisions when prioritizing road pavement preservation and rehabilitation projects.

It is our role to independently express a conclusion whether the Preserving and Restoring Paved Roads complies in all significant respects with the applicable criteria. Management at the Department of Public Works has acknowledged its responsibility for preserving and restoring paved roads.

This audit was performed to a reasonable level of assurance in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3001—Direct Engagements set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook - Assurance; and sections 18 and 21 of the *Auditor General Act*.

We apply the Canadian Standard on Quality Management 1 (CSQM 1), and we have complied with the independence and other ethical requirements of the Code of Professional Conduct of the Chartered Professional Accountants of Nova Scotia.

The objectives and criteria used in the audit are below:

Objective: To determine whether the Department of Public Works is making evidence-based decisions when prioritizing road pavement preservation and rehabilitation projects.

Criteria:

1. The Department of Public Works should have accurate and up to date information on the condition of Nova Scotia's paved roads.
2. Districts should have a consistent approach for making road pavement preservation and rehabilitation decisions.
3. Projects should be submitted by the Districts to the Department of Public Works in a consistent format and be supported by evidence.
4. The Department of Public Works should complete road pavement preservation and rehabilitation projects at the optimal time to minimize cost and maximize the life of the pavement.
5. The Department should annually report information on completed and in-process road pavement preservation and rehabilitation projects.

Generally accepted criteria consistent with the objectives of the audit did not exist. Audit criteria were developed specifically for this engagement. Criteria were accepted as appropriate by senior management at the Department of Public Works.

Our audit approach included interviews with management and staff, and review of legislation, policies, and procedures. We also examined reports and data received by the Department of Public Works to determine if the information provided matched the data requested. Our audit period was from April 1, 2023, to March 31, 2025. We examined information outside of that period as necessary.

We believe the evidence we have obtained is sufficient and appropriate to provide the basis for our conclusions. Our report is dated October 15, 2026 in Halifax, Nova Scotia.

Based on the reasonable assurance procedures performed and evidence obtained we have formed the following conclusions:

The Department of Public Works is not making evidence-based decisions when selecting and prioritizing road pavement preservation and rehabilitation projects.

- The Department of Public Works does not have accurate and up to date information on the condition of Nova Scotia's paved roads.
- Districts do not have a consistent approach for making road pavement preservation and rehabilitation decisions.
- The Department is not completing road pavement preservation and rehabilitation projects at the optimal time to minimize cost and maximize the life of its pavement.
- Annual reporting on completed and in-process road pavement preservation and rehabilitation projects lacks key information.

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