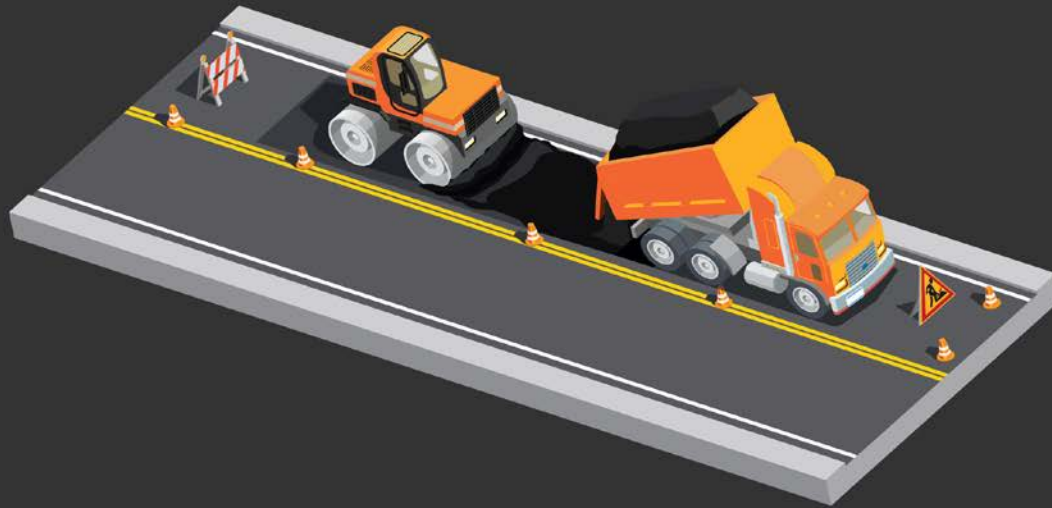


# ROADS



## VALUE PROPOSITION

*I expect roads to be well-maintained that allow me to get where I need to go in a safe and consistent timely manner.*

### KEEP IN MIND:

## Influencing Factors

Influencing factors can create variances in comparison data from year-to-year and from municipality-to-municipality.



### Economic Conditions

*Inflationary increases*



### Level of Government

*Single-tier vs. Upper-tier municipalities*



### Maintenance Standards

*Road ratings and levels of service*



### Policies

*Capitalization: operating vs. capital expenditures*

*Amortization: varies depending on type and age of infrastructure, climate, etc.*



### Traffic Volumes & Urban Form

*Affects frequency and cost of maintenance*



### Utility Cut Repairs

*Costs can vary significantly year-to-year*



### Weather Conditions

*Impact operation and maintenance costs*

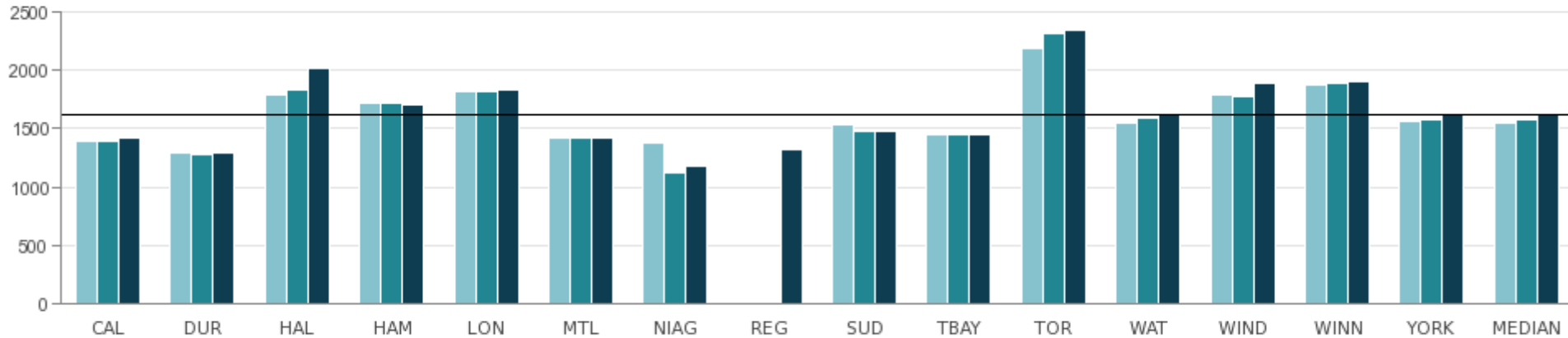
*For a full description of influencing factors, please go to: [www.mbncanada.ca](http://www.mbncanada.ca)*

## Roads

**Figure 28.1 Vehicle Km Traveled per Lane Km (Class 1, 2, and 3 Only)**

The measure indicates the number of times a vehicle travels over each lane Km of major road, demonstrating road congestion.

(In Thousands)



|      |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2016 | 1,397,240 | 1,285,501 | 1,786,814 | 1,724,731 | 1,813,929 | 1,425,839 | 1,380,678 | N/A       | 1,535,319 | 1,453,542 | 2,186,344 | 1,552,336 | 1,792,297 | 1,876,027 | 1,558,607 | 1,555,472 |
| 2017 | 1,395,810 | 1,272,686 | 1,832,114 | 1,715,118 | 1,818,149 | 1,425,839 | 1,116,535 | N/A       | 1,477,790 | 1,453,542 | 2,315,584 | 1,591,212 | 1,779,072 | 1,894,506 | 1,571,312 | 1,581,262 |
| 2018 | 1,424,442 | 1,292,914 | 2,025,856 | 1,711,937 | 1,827,419 | 1,425,839 | 1,180,539 | 1,322,422 | 1,476,657 | 1,453,542 | 2,340,421 | 1,619,524 | 1,884,365 | 1,912,330 | 1,635,417 | 1,619,524 |

Source: ROAD112 (Community Impact)

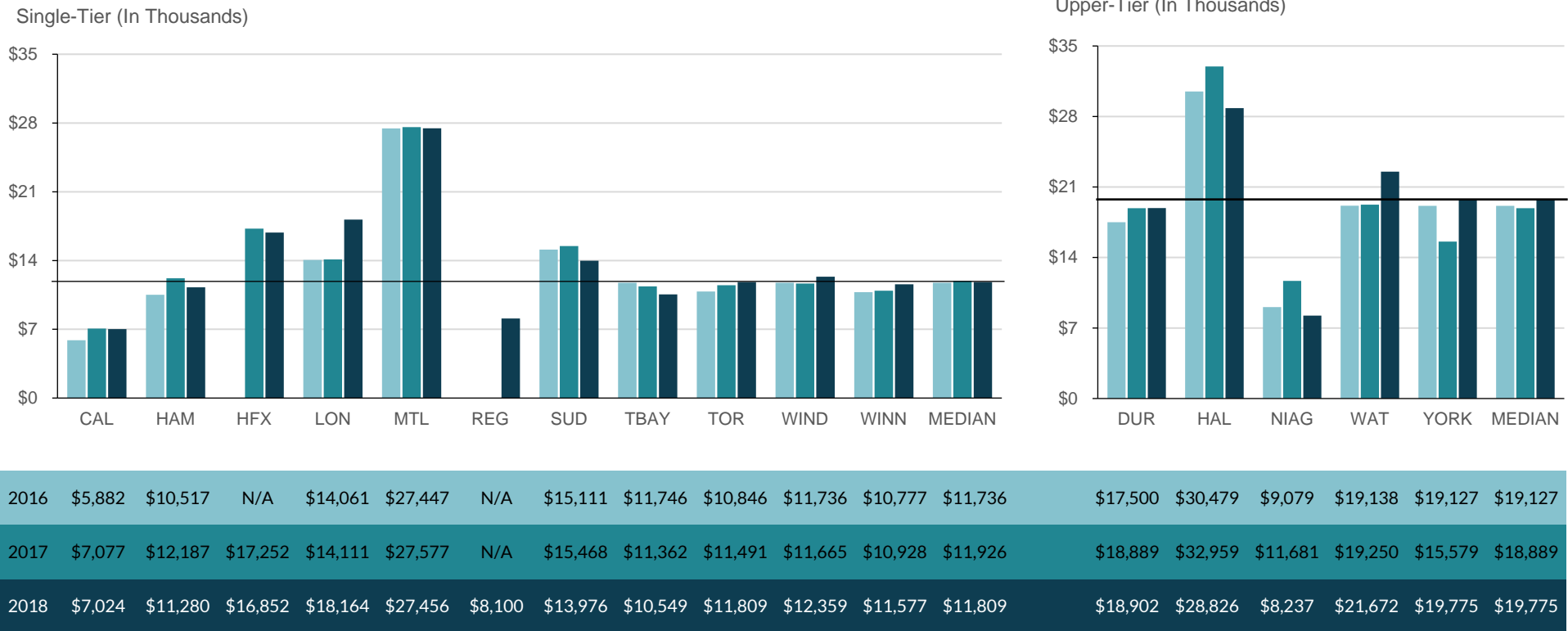
Halifax: Does not report - different road classification system.

Montreal: Does not include Class 1 km - jurisdiction of the Province.

## Roads

**Figure 28.2 Total Cost for Paved Roads per Lane Km (Hard Top)**

This measure represents the total cost to maintain hard top (paved) roads. It includes operating costs and amortization associated with capital costs for paved road maintenance. A lane km is defined as a kilometer-long segment of roadway that is a single lane in width. For example, a one km stretch of a standard two lane road represents two lane km.



Source: ROAD307T (Efficiency)

**Halton:** Some transportation services costs such as master plans; environmental assessments, feasibility studies, land costs and road resurfacing are included as operating costs as opposed to tangible capital assets.

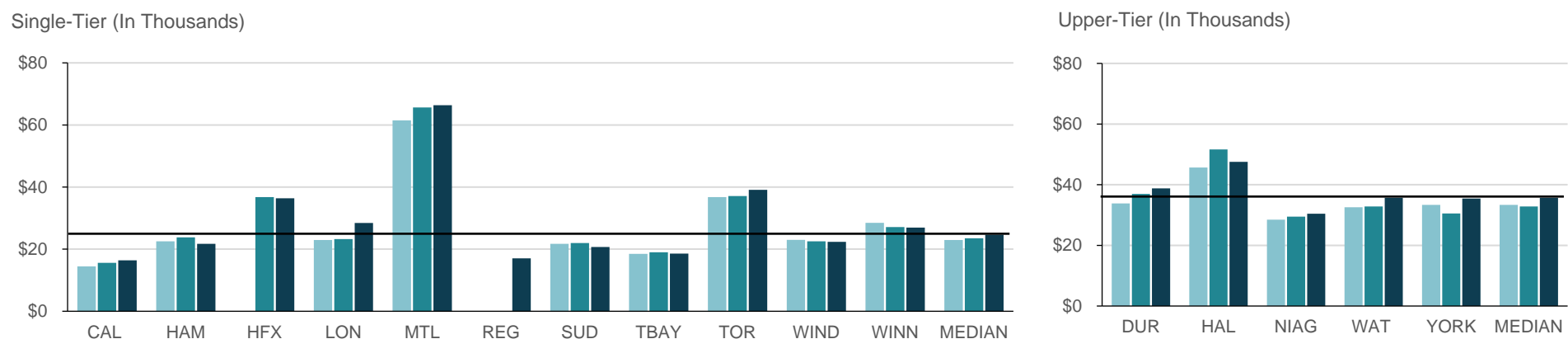
**London:** Increase in 2018 expenditures due to some project contributions related to non-city owned assets.

**Montreal:** The higher cost can be attributed to investments in infrastructure and higher amortization costs.

## Roads

**Figure 28.3 Total Cost for Roads - All Functions Per Lane Km**

This measure represents the total cost of all functions related to road maintenance. This includes operating costs and amortization associated with capital costs for paved and unpaved roads, bridges and culverts, traffic operations, roadside maintenance, and winter control for roadways, sidewalks, and parking lots.



|      |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2016 | \$14,454 | \$22,507 | N/A      | \$22,966 | \$61,492 | N/A      | \$21,698 | \$18,486 | \$36,759 | \$23,014 | \$28,459 | \$22,966 | \$33,808 | \$45,667 | \$28,472 | \$32,568 | \$33,341 | \$33,341 |
| 2017 | \$15,607 | \$23,785 | \$36,780 | \$23,250 | \$65,657 | N/A      | \$21,958 | \$18,983 | \$37,131 | \$22,506 | \$27,128 | \$23,518 | \$36,956 | \$51,644 | \$29,461 | \$32,838 | \$30,538 | \$32,838 |
| 2018 | \$16,394 | \$21,722 | \$36,402 | \$28,430 | \$66,366 | \$17,045 | \$20,704 | \$18,560 | \$39,117 | \$22,356 | \$26,953 | \$22,356 | \$38,775 | \$47,542 | \$30,425 | \$35,718 | \$35,441 | \$35,718 |

Source: ROAD308T (Efficiency)

Halton: Roads restoration costs, contracted services costs and road and bridges amortization increased due to Halton Region's continuous growth, new construction and roads rationalization.

London: Increase in 2018 expenditures due to some project contributions related to non-City owned assets.

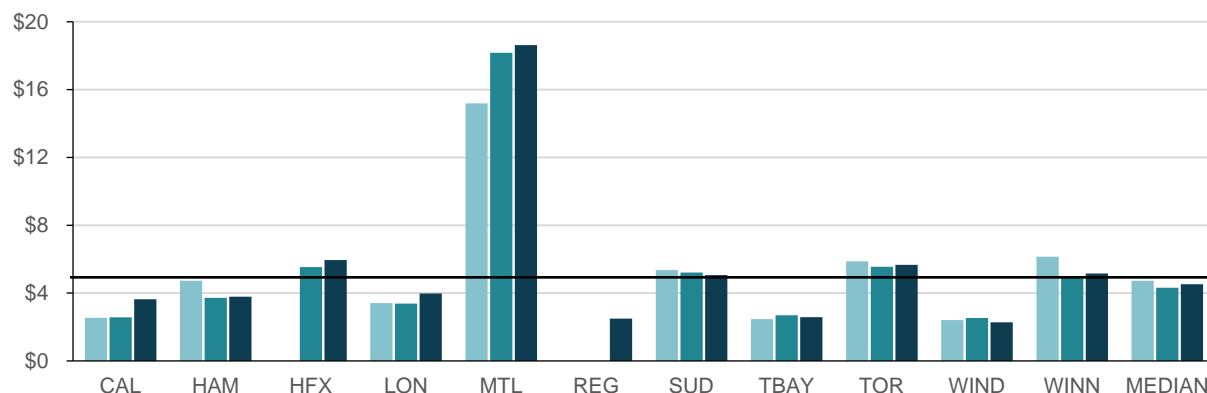
Montreal: The higher cost can be attributed to investments in infrastructure and higher amortization costs.

## Roads

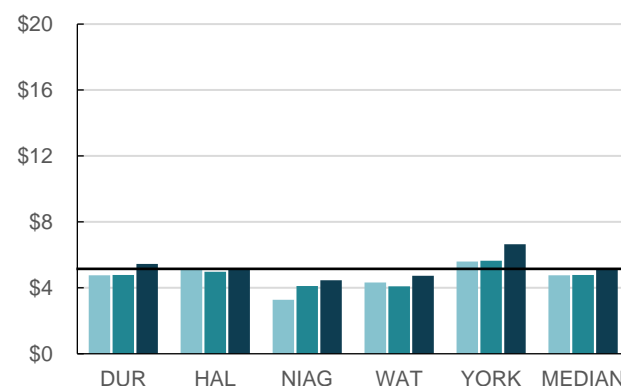
**Figure 28.4 Total Cost for Winter Maintenance of Roads per Lane Km Maintained**

This measure represents the total cost for winter maintenance of a single lane km. It includes all functions included in clearing and maintaining the roadway, and is not inclusive of sidewalk snow clearing and parking lots.

Single-Tier (In Thousands)



Upper-Tier (In Thousands)



|      |         |         |         |         |          |         |         |         |         |         |         |         |         |         |         |         |         |         |
|------|---------|---------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2016 | \$2,541 | \$4,736 | N/A     | \$3,406 | \$15,189 | N/A     | \$5,352 | \$2,464 | \$5,872 | \$2,406 | \$6,147 | \$4,736 | \$4,760 | \$5,148 | \$3,277 | \$4,322 | \$5,600 | \$4,760 |
| 2017 | \$2,566 | \$3,725 | \$5,538 | \$3,383 | \$18,167 | N/A     | \$5,215 | \$2,693 | \$5,553 | \$2,534 | \$4,905 | \$4,315 | \$4,779 | \$4,975 | \$4,108 | \$4,089 | \$5,642 | \$4,779 |
| 2018 | \$3,637 | \$3,788 | \$5,946 | \$3,974 | \$18,624 | \$2,496 | \$5,065 | \$2,580 | \$5,665 | \$2,275 | \$5,159 | \$3,974 | \$5,450 | \$5,202 | \$4,459 | \$4,729 | \$6,643 | \$5,202 |

Source: ROAD309T (Efficiency)

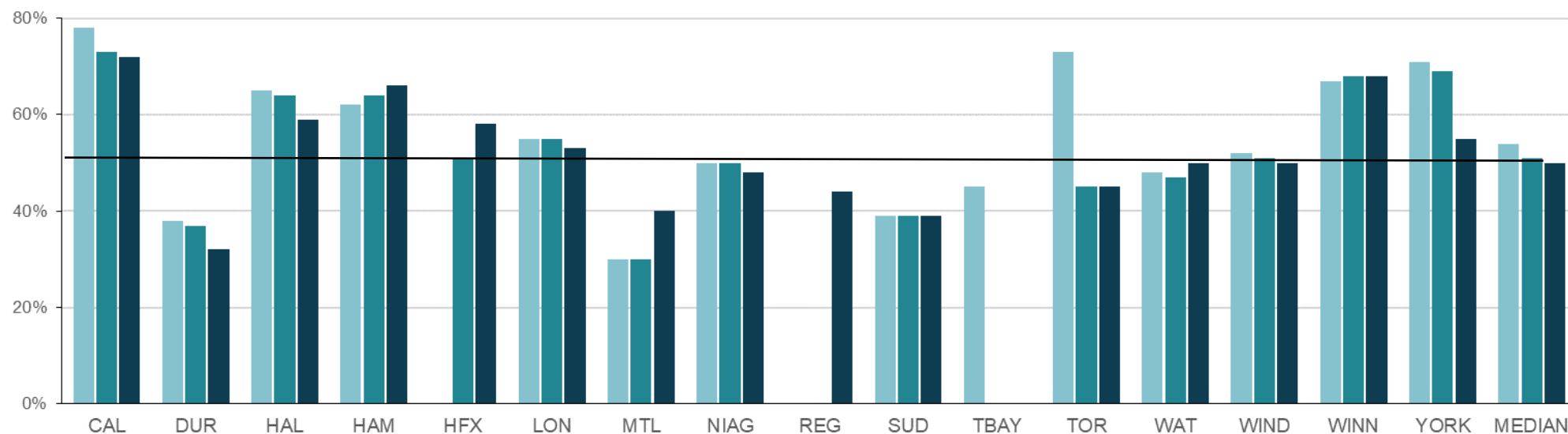
**Montreal:** The service thresholds for responding to weather incidents and the volume and type of snow removal required due to population density contribute to Montreal's higher cost.

**York:** Expenditures for the renovation of Central Maintenance Yard and additional snowplows to maintain new Rapidways.

## Roads

**Figure 28.5 Percent of Paved Lane Km where the Condition is Rated as Good to Very Good**

This measure reflects the percent of paved lane km where no maintenance or rehabilitation action is required except for minor surface maintenance. Municipalities may use different approaches to assess and rate road condition.



|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2016 | 78% | 38% | 65% | 62% | N/A | 55% | 30% | 50% | N/A | 39% | 45% | 73% | 48% | 52% | 67% | 71% | 54% |
| 2017 | 73% | 37% | 64% | 64% | 51% | 55% | 30% | 50% | N/A | 39% | N/A | 45% | 47% | 51% | 68% | 69% | 51% |
| 2018 | 72% | 32% | 59% | 66% | 58% | 53% | 40% | 48% | 44% | 39% | N/A | 45% | 50% | 50% | 68% | 55% | 50% |

Source: ROAD405 (Customer Service) Formerly ROAD405M

Halifax: Based on current practice, Halifax has removed micros that are considered for arterials and collectors above a 70 Pavement Condition Index (PCI) from the definition as this type of rehab is a preventative surface treatment that is applied to good roads.

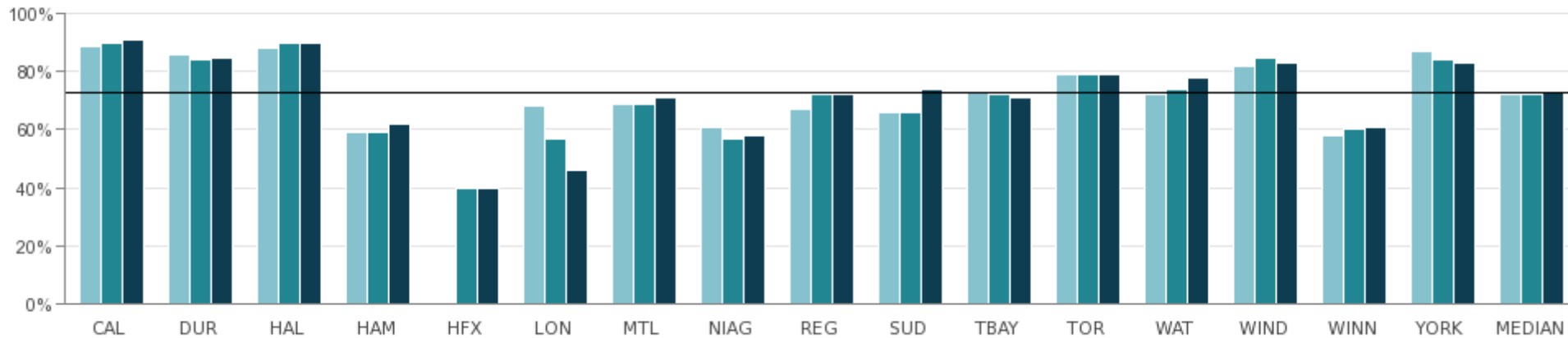
Thunder Bay: Data is not available for 2017 and 2018.

Toronto: In 2017, Toronto changed from manual data collection methods to a network wide automated pavement data collection system and reassessed its trigger values for good-fair-poor condition ranges. The 2017 and 2018 results cannot be directly compared to previous years' results.

## Roads

**Figure 28.6 Percent of Bridges, Culverts and Viaducts Where the Condition is Rated as Good to Very Good**

This measure represents the percent of bridges, culverts and viaducts where the condition of primary components is rated as good to very good, requiring maintenance only. Municipalities may use different approaches to assess and rate the condition of these assets. Ratings are not always related to structural integrity (e.g. there may be some deterioration, but it is not structurally inadequate).



|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2016 | 89% | 86% | 88% | 59% | N/A | 68% | 69% | 61% | 67% | 66% | 73% | 79% | 72% | 82% | 58% | 87% | 72% |
| 2017 | 90% | 84% | 90% | 59% | 40% | 57% | 69% | 57% | 72% | 66% | 72% | 79% | 74% | 85% | 60% | 84% | 72% |
| 2018 | 91% | 85% | 90% | 62% | 40% | 46% | 71% | 58% | 72% | 74% | 71% | 79% | 78% | 83% | 61% | 83% | 73% |

Source: ROAD415 (Customer Service) Formerly ROAD415M

