

1. Bridge name:	Angus L. Macdonald Bridge										
2. Location:	Halifax, Nova Scotia, Canada										
3. Year opened to traffic:	1955										
4. Design: Suspension/Cable stayed etc.	Suspension Bridge Designed by Dr. Phillip Louis Pratley										
5. Type of traffic: Road and/or railway	Road Traffic										
6. Bridge owner Contact information	Halifax-Dartmouth Bridge Commission (doing business as Halifax Harbour Bridges) P.O. Box 40, 125 Wyse Road Dartmouth, NS, B2Y 3Y2, Canada Tel: (902) 463-2800 Fax: (902) 469-6281 Email: bridges@hdbc.ns.ca										
7. Bridge operator Contact information If possible concession period	Halifax Harbour Bridges (HHB)										
8. Traffic: Average Annual Daily Traffic-AADT (Both directions) Max. recorded daily traffic: Max. recorded traffic per hour per direction: Percentage of trucks Collisions Statistics	<table border="0"> <tr> <td><u>2014</u></td> <td><u>2015</u></td> </tr> <tr> <td>38,362</td> <td>29,637</td> </tr> <tr> <td>57,526 (Apr)</td> <td>44,775 (Jan)</td> </tr> <tr> <td>3,639 (PM Peak)</td> <td>3,513 (PM Peak)</td> </tr> <tr> <td>3,355 (AM Peak)</td> <td>3,333 (AM Peak)</td> </tr> </table> <p>Note: evening and weekends closures in 2015 for re-decking project</p> <p>No Trucks 90 (Toll Plaza area =58%, Bridge Deck=29%, Approach=13%)</p>	<u>2014</u>	<u>2015</u>	38,362	29,637	57,526 (Apr)	44,775 (Jan)	3,639 (PM Peak)	3,513 (PM Peak)	3,355 (AM Peak)	3,333 (AM Peak)
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9. Number of road lanes per direction Number of rail lanes per direction Pedestrian Y/N Cyclist Y/N Emergency lane Y/N Other: _____ Road wearing surface type	<p>One per direction + One reversible lane NA</p> <p>Yes Yes No</p> <p>Suspended Spans: Epoxy Asphalt Approach Spans: Polymer Modified Asphalt Thickness: Approximately 50 mm</p>										

10. Total length of the bridge	1.35 KM
Main span	441 m Side Spans 160 m each
Approach span	Halifax Approach Spans 178 m Dartmouth Approach Spans 536 m
11. Type and height of pylon/Towers	Steel Tower 92 m
12. Type of girder Height and width	Suspension Span: Stiffening Truss H= 2515 mm B= 370 mm Approach Spans: Plate Girder Span H= 2133 mm B= 610 mm Truss Span H=7620 mm B=6096 mm
13. Type of foundation	Concrete foundation on bedrock
14. Sea depth at main span	22 m
15. Vessel navigation channel Width Clearance for vessels	110 m 51 m
16. Vessel/Ship traffic (annual traffic in 2015)	463
17. Cable structure:	
Type, dimension etc. of main cable/stay cable	Main Cable is comprised of a bundle of 61 - 40 mm diameter galvanized bridge strands in a hexagonal arrangement. Nominal diameter of the cable is 356 mm
Type, dimension etc. of hangers	Hangers are made of 54 mm diameter wire rope consists of structural stands (6 outer strands and 1 core stand, each individual wire was hot dipped galvanized) with open spelter socket at each end.
Is the cable structure dehumidified If so, established year	Main Cable Dehumidification System to be installed in 2017

<p>18. Expansion joints: Number</p> <p>Type</p> <p>Product</p>	<p>4 (two for Cable Bents and 2 for Main Towers) and 7 for Approach Spans</p> <p>Modular Joints with Sinus Plates (Main Tower and Cable Bent)</p> <p>mageba (Main Tower and Cable Bents)</p>
<p>19. Bearings: Number</p> <p>Type</p>	<p>46 vertical bearings for 16 Piers (Fixed and Moveable Bearings)</p> <p>16 Spherical Bearings for Cable Bents (Aurora GEZ064ET-2RS)</p> <p>16 Spherical Bearings for Main Towers (Aurora GEZ064ET-2RS/X)</p> <p>Steel, Bronze Sliding Plate, Elastomeric and Spherical bearings</p>
<p>20. Extent of inspection and frequency, main cable inspection frequency, and means of access</p>	<p>Every Year/Annual Bridge Inspection</p> <p>In 2010, main cable internal inspection was carried out (first time) and dehumidification system to be installed in 2017</p> <p>Two side and one central catwalk for approach span, three travelers for suspended spans</p>
<p>21. Means of funding bridge construction and ongoing costs</p>	<p>Toll Revenue</p>

Photo 1:



Description

The Angus L. Macdonald Bridge, suspension bridge, is located in the Halifax Harbour, Canada, near the Great Circle Route between the Eastern Seaboard of North America and Europe. The Macdonald Bridge connects Dartmouth on the Northeast, and Halifax on the Southwest.

The Macdonald Bridge is located at 44° 39' 47.9" N, 63° 35' 5.9" W.

Website: www.hdbc.ca

Other comments:

The Macdonald Bridge opened in 1955 as a two lane bridge with a narrow sidewalk within the roadway deck and it was converted to a three lane structure with a pedestrian walkway and bicycle lane on outer sides of the deck in 1999.

The Big Lift, suspended spans redecking, is underway to replace all of the suspended structure in segments, while keeping traffic during the daytime, but with bridge closed to traffic during evening and weekends.

<https://www.hdbc.ca/about-the-project/>

Photo 2:

