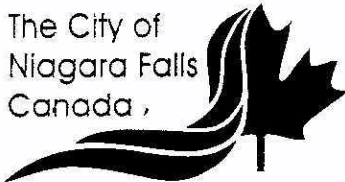


The City of  
Niagara Falls  
Canada ,



**Municipal Works**  
4310 Queen Street  
P.O. Box 1023  
Niagara Falls, ON L2E 6X5  
web site: [www.city.niagarafalls.on.ca](http://www.city.niagarafalls.on.ca)

Tel.: (905) 356-7521  
Fax: (905) 356-2354  
E-mail: [edujlovi@city.niagarafalls.on.ca](mailto:edujlovi@city.niagarafalls.on.ca)

**Ed Dujlovic**  
Director

**The recommendation(s)  
contained in this report were  
adopted by City Council**

January 31, 2005

Alderman Selina Volpatti, Chair  
and Members of the Community Services Committee  
City of Niagara Falls, Ontario

Members:

**Re: MW-2005-12 - 2004 Pavement Management Summary**

#### **RECOMMENDATION:**

It is recommended that this report be received for information.

#### **BACKGROUND:**

City Engineering Staff in conjunction with David Hein of Applied Research Associates conducted a comprehensive inspection of the City's road network this year to determine the condition of the system as a whole. City Engineering Staff were trained during the inspection process on the correct procedure for inspecting a road and assigning a condition value to it.

The attached executive summary from David Hein and his presentation to Community Services January 31<sup>st</sup> explains the detailed aspects of the inspection program. In staff's opinion the items of interest to Committee are as follows :

- The City requires approximately \$16.5M for the reconstruction of roads that have deteriorated past the point of rehabilitation.
- The report recommends spending approximately \$4 to \$5 M in per year to bring the condition of the network up to an appropriate service level.
- The average condition rating of roads within the City network is 72 out of 100 with 100 being a newly constructed road. The recommended average condition rating is between 73 and 75.
- Several recommendations regarding quality control issues with respect to construction and materials used are currently being addressed by Engineering Staff.

***Working Together to Serve Our Community***

*Municipal Works • Fire Services • Parks, Recreation & Culture • Business Development • Building & By-Law Services*

The results of the inspections and subsequent analysis were not available prior to budget deliberations and as a result roads budget figures were not adjusted accordingly. At present the City spends approximately \$2.5M per year in reconstruction and rehabilitation of roads. Staff respectfully requests that this report and associated materials be considered in the 2006 budget process.

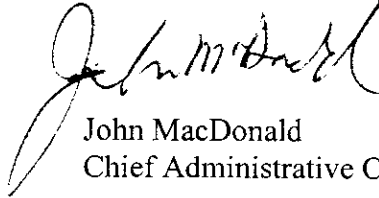
Committee's concurrence with the recommendation is requested.

Prepared by:



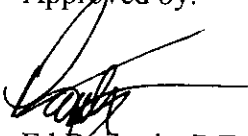
David Watt  
Manager of Infrastructure & Environment

Respectfully submitted:



John MacDonald  
Chief Administrative Officer

Approved by:



Ed Dujlovic, P.Eng.  
Director of Municipal Works

## EXECUTIVE SUMMARY

Applied Research Associates, Inc., (ARA) was retained by The City of Niagara Falls Community Services Department, Municipal Works to update the road surface condition ratings for the entire City Road network in 2004 and to provide a status of the road network report. The pavement condition rating system is consistent with the Ontario Ministry of Transportation Pavement Condition Rating Guidelines for Municipalities.

The overall average PCI for the entire network weighted by pavement area was 72 out of a maximum scale of 100. A typically well maintained roadway network like the City of Niagara Falls would have a target network PCI in the order of 73 to 75. While the overall average rating for the City's pavement sections is 72, there are a large percentage of roadways requiring major work such as reconstruction which results in a large backlog of road funding needs.

The results of the recent surveys and construction history was used to generate pavement performance prediction models for each pavement surface and construction type and to develop a draft forecast of reconstruction and rehabilitation needs for the next five year period.

The PMS program was used to generate a draft work program for the next five years based on the current condition of the roadways and the performance prediction models outlined above. A summary of the reconstruction and rehabilitation needs over the next five years is as follows:

### Summary of Reconstruction and Rehabilitation Needs

<b>Year</b>	<b>Reconstruction \$-Million</b>	<b>Rehabilitation \$-Million</b>	<b>Yearly Total</b>
2005	16.5	4.3	20.8
2006	3.1	1.6	4.7
2007	4.3	1.4	5.7
2008	3.5	2.2	5.7
2009	2.2	2.0	4.2
<b>Total</b>	<b>29.6</b>	<b>11.5</b>	<b>41.1</b>

The overall condition of the City of Niagara Falls road network is considered to be fairly good. However, there is a large backlog of reconstruction needs which will be quite costly. There is a relatively poor balance between reconstruction and rehabilitation with the current city focus on rehabilitation (resurfacing).

## EXECUTIVE SUMMARY

Applied Research Associates, Inc., (ARA) was retained by The City of Niagara Falls Community Services Department, Municipal Works to update the road surface condition ratings for the entire City Road network in 2004 and to provide a status of the road network report. The pavement condition rating system is consistent with the Ontario Ministry of Transportation Pavement Condition Rating Guidelines for Municipalities.

The overall average PCI for the entire network weighted by pavement area was 72 out of a maximum scale of 100. A typically well maintained roadway network like the City of Niagara Falls would have a target network PCI in the order of 73 to 75. While the overall average rating for the City's pavement sections is 72, there are a large percentage of roadways requiring major work such as reconstruction which results in a large backlog of road funding needs.

The results of the recent surveys and construction history was used to generate pavement performance prediction models for each pavement surface and construction type and to develop a draft forecast of reconstruction and rehabilitation needs for the next five year period.

The PMS program was used to generate a draft work program for the next five years based on the current condition of the roadways and the performance prediction models outlined above. A summary of the reconstruction and rehabilitation needs over the next five years is as follows:

### Summary of Reconstruction and Rehabilitation Needs

<b>Year</b>	<b>Reconstruction \$-Million</b>	<b>Rehabilitation \$-Million</b>	<b>Yearly Total</b>
2005	16.5	4.3	20.8
2006	3.1	1.6	4.7
2007	4.3	1.4	5.7
2008	3.5	2.2	5.7
2009	2.2	2.0	4.2
<b>Total</b>	<b>29.6</b>	<b>11.5</b>	<b>41.1</b>

The overall condition of the City of Niagara Falls road network is considered to be fairly good. However, there is a large backlog of reconstruction needs which will be quite costly. There is a relatively poor balance between reconstruction and rehabilitation with the current city focus on rehabilitation (resurfacing).