

DATE: November 18, 2022

TO: MAYOR AND COUNCIL

NAME AND TITLE: BLAKE MCINTOSH, DIRECTOR OF CIVIC OPERATIONS

SUBJECT: 2022 Road & Sidewalk Capital Projects Review

ATTACHMENT(S): 2022 Road & Sidewalk Renewal Project Photos

RECOMMENDATION(S):

That Council RECEIVES FOR INFORMATION the report dated November 18, 2022 from the Director of Civic Operations titled “2022 Road and Sidewalk Capital Projects Review.”

PURPOSE:

This report is presented to provide Council with information regarding the 2022 Road and Sidewalk Capital Rehabilitation.

STRATEGIC PRIORITIES:

Road and Sidewalk rehabilitation is a Council priority identified in the sustainable infrastructure category of Council’s Priorities.

FINANCIAL CONSIDERATIONS:

In its 2022 Capital Budget, City Council approved a road rehabilitation budget of \$5,500,000, which is the amount, calculated by Administration, required annually to provide financial sustainability of the City’s road infrastructure. In addition, a budget of \$1,250,000 was allocated to sidewalk rehabilitation and \$400,000 to new sidewalks. This sidewalk rehabilitation budget is enough to complete approximately 2% of the current road path pedestrian network. The most recent pedestrian network study identifies 44% of the current road path network to be in fair to poor condition.

BACKGROUND:

The City of Prince George performs condition assessments on three categories of roadways within the municipal transportation network: arterial, collector and local. These assessments are completed every 3 years to monitor the condition of the City’s paved network. Road segments are inspected and assigned a score based on their current condition. These scores assist in prioritizing road renewal and creation of the annual paving rehabilitation program. Once finalized for the upcoming season, various methods of renewal are employed to improve the City’s paved road network.

The 2022 Road and Sidewalk Rehabilitation Program was completed using the following rehabilitation methods:

Thin Lift Overlay (TLO)

The majority of the City's rehabilitation program consists of the placement of a 40mm – 50mm layer of asphalt overtop of the existing asphalt with limited remedial work done prior to the new layer being placed. The overlay does add structural strength to the roadway, but reflective cracking will appear through the new lift in a short time period. This method is used in situations where the existing roadway has good structure and only minor surface deficiencies as this application does not address sub-base problems.

Mill and Overlay (M & O)

This method removes 50mm of existing asphalt which is then replaced with new asphalt. This method allows for the replacement of asphalt without increasing the elevation of the roadway. Milling removes surface deficiencies and is used predominantly in urban situations where curb and gutter are present and road elevation is critical for drainage considerations. The milled material is used for backfill in utility service digs in winter conditions and is used for general fill for other projects that may need a more durable temporary surface. This method does not address sub-base problems and is dependent upon milling contractor availability. A variation of this method involves the milling of the area immediately adjacent to the curb and gutter, but not milling the asphalt from the majority of the roadway. This allows for the overlay to meet the curb elevation, but does not incur the cost of a full milling operation. The addition of asphalt over the existing asphalt in these instances adds structural strength to the roadway but reflective cracking will occur.

Pulverize and Pave (P & P)

Although not required in the 2022 Road Rehabilitation Program, in this process, the existing asphalt and granular base is pulverized in a similar way to milling and removes all the asphalt distresses. However, with this method, the pulverized product is then graded and reshaped, a 50mm lift of crush is added and a 75mm lift of asphalt is placed. This method is used where the existing road surface has major deficiencies and there is a need to increase the structural strength of the road over repeated applications. This method is considerably less expensive than a complete reconstruction of the roadway. This method is not desirable for roadways with underground utilities as manholes and valve boxes create issues for the pulverizing process and re-establishing grade.

Sidewalk Full Reconstruction

Full reconstruction is the removal of the existing sidewalk surface and unsuitable soils to a depth of 930mm to allow the import and placement of 750mm SGSB gravels to be used as a sub base. An additional 80mm of crushed gravel is used to prepare the sub grade for 100mm thick concrete sidewalk.

Sidewalk Reconstruction

Some of the sidewalk rehabilitation projects are completed due to surface distress and operational needs. In some cases the sub base beneath the existing sidewalk is suitable gravels. In these cases the existing hard surface of the sidewalk is removed along with enough soil to allow the placement of 80mm crushed gravels and 100mm thick concrete sidewalk.

In certain instances when completing sidewalk rehabilitation the City of Prince George takes the opportunity to check and service utility services to adjacent properties. Secondly there are times

where a fire hydrant or streetlight may need to be moved to allow for the construction of sidewalk to meet the most recent standards as determined by the City of Prince George Servicing Bylaw.

DISCUSSION:

2022 Road Rehabilitation Projects

Roads included in the 2022 road rehabilitation program are listed below by the type of surface rehabilitation methods. In 2022 the City of Prince George rehabilitated approximately 44 lane kilometers. The total lane-kilometers for each method are provided.

Thin Lift Overlays – 18.70 Lane-Kilometers

ROAD	FROM	TO	LANE-KM
Arabian Rd	Hwy 97	Chestnut Dr	1.53
Bench Dr	Rosia Rd	Riverview Rd	0.66
Boundary Rd	Sintich Rd	Milwaukee Rd	1.43
Caribou Rd	Bear Rd	Henrey Rd	1.54
Chief Lk Rd	Inglewood Rd	Pilot Mtn Rd	1.65
Chestnut Dr	Hwy 97	End	1.53
Elk Rd	Caribou Rd	Henrey Rd	0.94
Hillcrest Pl	Hillcrest Rd	End	0.25
Hillcrest Rd	LaLonde Rd	End	0.78
LaLonde Rd	Marleau Rd	End	0.71
Northwood Pulpmill Rd	4288 Northwood	Pullout	5.18
Pearl Dr	Nordic Dr	Wiesbrood Rd	1.25
Sabyam Rd	Martin Rd	Chief Lk Rd	1.25
		TOTAL	18.70

Mill and Overlay – 25.70 Lane-Kilometers

ROAD	FROM	TO	LANE-KM
5 th Ave	Tabor Blvd	Foothills Blvd	3.06
6 th Ave	Victoria St.	Brunswick St	0.19
9 th Ave	Victoria St.	Brunswick St.	0.18
10 th Ave	E. Central St	Carney St	1.52
10 th Ave	Victoria St	Brunswick St	0.18
15 th Ave/Spruce St Intersection	15 th Ave	Spruce St	0.30
19 th Ave	Kenwood St	Queensway	0.18
Ahbau St	10 th Ave	5 th Ave	1.22
Brunswick St	1 st Ave	4 th Ave	0.53
Brunswick St	7 th Ave	10 th Ave	0.56
Domano Blvd	Hwy 16	O'Grady Rd	0.86
Domano Blvd	St. Lawrence Ave	Malaspina Ave	2.47

Ferry Ave Westbound	Recplace Dr	Westwood Dr	1.00
Gillet St	5 th Ave	2 nd Ave	0.60
Harper St	5 th Ave	End	0.19
Junper St	17 th Ave	20 th Ave	0.62
Kenwood St	17 th Ave	20 th Ave	0.61
Massey Dr. Westbound	Westwood Dr	Ospika Blvd	1.02
McGowan Dr	Ospika Blvd	Stirling Dr	0.83
Ospika Blvd Southbound	Range Rd	Tyner Blvd	4.04
Pine Centre Rd	Hwy 97	Massey Dr	0.42
Quebec St	1 st Ave	4 th Ave	0.54
Reid Cres.	Rainbow Dr	Ospika Blvd	0.58
Southridge Ave	Marleau Rd	Hwy 16	0.76
Stirling Dr	Ospika Blvd	Tabor Blvd	1.00
St. Lawrence Ave	Domano Blvd	St. Patrick Ave	1.20
Summit St	Rainbow Dr	End	0.37
Upland St.	20 th Ave	Strathcona St.	0.67
		TOTAL	25.70

2022 Sidewalk Rehabilitation Projects

Sections of sidewalk included in the 2022 sidewalk rehabilitation program including the length or quantity are listed below.

ROAD	FROM	TO	LINEAL METRES
5 th Ave	Ospika Blvd	Union St	515
Kelly Rd	Austin Rd	Handlen Rd	775
10 th Ave	E. Central	Johnson St	665
Carney St/Massey Dr	Ellison Rd	Griffiths St	720
Griffiths St	Massey Dr	E. Central	420
		TOTAL	3095

2022 New Sidewalk Projects

Sections of sidewalk included in the 2022 New Sidewalk program including the length or quantity are listed below.

ROAD	FROM	TO	LINEAL METRES
Baker Rd	Foster Rd	Calhoun Cres	200
Wilson Cres	Upland St	Perry Park	98
Kerry St	5 th Ave	Rainbow Dr	335
		TOTAL	633

SUMMARY AND CONCLUSION:

The 2022 Road Rehabilitation Program consisted of the following surface rehabilitation work:

- 18.70 lane-kms of thin-lift (40-50mm) overlay;
- 25.70 lane-kms of mill and overlay;
- 3095 metres of sidewalk rehabilitation
- 633 metres of new sidewalk

A detailed list of the road projects and type of surface rehabilitation work completed in 2022 is provided. Civic Operations administered the \$5,500,000 Road Rehabilitation program, \$1,250,000 Sidewalk Rehabilitation program and \$400,000 New Sidewalk program to the specifications set out in the various contracts for each type of surface rehabilitation method to ensure that the City of Prince George received the best value for the expenditures undertaken.

RESPECTFULLY SUBMITTED:

Blake McIntosh, Director of Civic Operations

Report prepared by: Jim Litzen, ASCT., Engineering Technologist II, Roads Division

APPROVED:

Walter Babicz, City Manager

Meeting date: December 5, 2022