

**TITLE: ROAD MAINTENANCE**

Approved by Council

Date: March 22, 2016

Revised by Council

Date:

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**1.0 LEGISLATION**

*Municipal Government Act, M-26, RSA 2000*

*Highways Development and Protection Act, H-8.5, RSA 2004*

**2.0 PURPOSE**

The Municipal District of Pincher Creek No.9 (MD) is the only agency responsible for the overall management of the municipality's road system. This responsibility must be carried out to ensure the safety of the public is achieved and that effective maintenance and management practices are strictly adhered to at all times.

Maintenance activities includes the smoothing of the road surface, arranging for spot road repair (gravel) and redistribution of gravel, the control of encroaching vegetation, bridges and drainage systems and signage. Essentially, ensuring the road surfaces are safe to travel on.

The Policy will be reviewed annually with the intent of Council and Public Works bringing forward comments on:

- policy revisions;
- road classifications, requirements for upgrades or downgrades in a roads classification;
- repairs or concerns that require maintenance;
- projects to be considered in the capital program; and
- a review of completed projects.

The annual review will include a road tour with Council.

The Road Maintenance Policy will provide Public Works with clear direction from Council on the level of maintenance effort as it relates to the Municipalities roads.

**3.0 ROAD CLASSIFICATION**

The MD has adopted a road classification system that is fully described in the Municipalities Development and Engineering Standards, Section 8. The roads in the municipality are grouped into 6 classifications:

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3.1 Arterial Roads

Arterial roads serve the purpose in collecting local traffic and funneling the traffic to the primary and secondary highways, equivalent to secondary highways or communities

3.2 Collector Roads

Collector roads are generally used for local traffic to access other local roads, arterial roads or provincial highways.

3.3 Local Roads

Local roads are typically used to access no more than 4 residences and not used for flow through traffic.

3.4 Unimproved Roads

Unimproved roads do not provide access to a residence. These roads are normally not utilized by other traffic and may or may not see any regular maintenance

3.5 Private Roads

Private roads are not on a statutory road allowance or road plan. It may be indicated as an easement on title or in renderings in a plan of subdivision. No maintenance is scheduled.

3.6 Urban Roads

Urban roads are streets and lanes within the municipality's hamlets.

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**4.0 MAINTENANCE LEVELS OF SERVICE**

**4.1 Hard Surface Maintenance**

Hard surfaces include asphalt, chip seal and cold mix asphalt surfaces. These surfaces will be inspected for cracks and defects that allow water under the surface. These defects will be repaired on a priority basis to minimize the damage that may occur. Cold mix roads requiring repair will be programmed for upgrade in the annual operating budget. Additional segments of road recommended for hard surface will be brought forward to Council by Public Works with traffic counts to substantiate the upgrade.

**4.2 Grading**

Gravel surface maintenance is required to provide a reasonably smooth and safe roadway for the motoring public, taking into consideration weather and traffic conditions.

Regularly scheduled road inspections should be carried out to ensure that the required level of service is maintained. Due to changing traffic volumes or excessively wet conditions it may be necessary to schedule more frequent inspections.

Roadway surfaces should be bladed to remove all potholes, washboards and ruts. When these defects continually reappear quickly following grading, Public Works should add the locations to areas to recommend to Council for ongoing dust suppression or surface stabilization treatments.

The roadway should be maintained to have a uniform crown of 3-5% and all curves must be bladed in such a manner as to maintain the designed super elevation. The crown of the main roadway should be maintained through the intersection, while the crown on the intersecting roadway should be feathered back. The road surface should be kept free and clear of all large rocks that may appear after normal blading.

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All approaches to bridge decks and railway crossings should be bladed in such a manner as to ensure that the bridge deck and the railway crossing surface is kept clear of all excess material. All crossings should be regularly inspected to ensure that blading operations have not damaged the crossing. Any damage to the crossing should be immediately reported to the railway operator.

4.3 Shoulder Maintenance

Shoulder maintenance (pulling of shoulders) should be done on all arterial roads on an as required basis. The roadway should be inspected annually to determine whether pulling of shoulders is required.

Shoulder maintenance will be required when the shoulders of the road push out, the crown rate of the roadway becomes flatter than 1%, or the cross section is wider than designed and not properly draining. Typically, shoulder maintenance will be required prior to the commencement of re-gravelling operations.

The roadway should be inspected in the late fall of each year for the purpose of condition rating. A roadway should be considered for re-gravelling when it exhibits any of the following characteristics:

- excessive loss of surface gravel.
- numerous bald or shiny spots.
- clay balls on the shoulders after blading.
- excessive rutting.

Ultimately, the condition, width, traffic type and traffic volume of the roadway will dictate the application rate of gravel. The suggested rate of gravel application for collector roads is  $350\text{m}^3/\text{km}$  at construction, then  $150\text{m}^3/\text{km}$  or as required.

Prior to re-gravelling operations, the roadway should be reshaped to the proper crown rate and width. If required, it may be necessary to “pull shoulders”.

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4.4 Roadside Vegetation Control

Vegetation Control will be done with rotary mowers on all Arterial, Collector and local roads annually as a means of minimizing drifting snow issues. Residents who wish to cut the vegetation and bale it can get a “hay Permit” to allow them to do so on segments of road. Vegetation along Urban roads will be managed with mowers designed for that purpose.

Agricultural Services Department staff will manage weeds within road right of ways, and will coordinate with the Public Works department to ensure that their spraying efforts are maximized by the timeliness of mowing operations.

4.5 Railway Crossing Maintenance

Crossing maintenance is required to ensure a safe crossing for the motoring public and the railway operator. All crossings should be inspected weekly and also immediately following the completion of any maintenance activity that has been carried out in close proximity to the crossing.

All crossings should be kept clear of all debris, gravel, snow and ice resulting from roadway maintenance activities. When roadway maintenance affects the operation of the railway, the railway operator must be notified prior to the commencement of the work. All crossings should be signed.

The railway operator should be notified immediately of conditions that may interfere with the safe operation of the crossing. Loose planking or rail damage should be reported to the railway operator as soon as possible.

4.6 Guardrail

Guardrail is used to protect vehicles from three major hazards: roadside obstacles, permanent bodies of water, and steep slopes or high embankments.

Proper maintenance of guardrail is critical to safe operations. Improperly installed or maintained guardrail can be more of a hazard than the feature they guard.

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Guardrail should be inspected annually to ensure proper and effective operations; guardrail that is prone to damage should be inspected more frequently. If guardrail causes a snow drift hazard that is more severe than the original hazard the guardrail was intended to protect against, the installation should be re-evaluated.

Cable guardrail systems will be used for all new guardrail in the municipality as it allows for better gravel recovery, minimizes snow drifting and is more economical to install.

4.7 Brush Control

Brush, which has become established, in the right-of-way by suckering or inadvertent seed drop should be removed where necessary in order to:

- Improve sight distance at intersections and curves.
- Restore proper drainage in ditches;
- Reduce snow drifting problems.
- Allow for dissipation of dust clouds, created by traffic on a gravel road.

Brush control is best performed before the vegetation reaches 2 meters in height or before sight distance becomes impaired.

Brush control requirements should be reviewed and prioritized on an annual basis. A Brush Control Program should be developed by early fall each year. Depending on the proximity to adjacent water bodies the Agricultural and Environmental Services Department may be asked to spray out encroaching brush.

After brush control operations have been completed, all cuttings larger than 10 centimeters in diameter or longer than 50 centimeters should be removed and properly disposed of. Mechanical brushing may produce debris small enough to leave in the right-of-way.

When deemed necessary because of maintenance or safety issues, the removal of shrubs and trees within an existing right-of-way, will be considered following a discussion with the adjacent landowner. Shrubs or trees within the sight triangle at intersections will be removed.

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#### 4.8 Drainage Systems

In order to maintain the roadway in optimum condition, water must be kept from saturating the subgrade and also from eroding the roadway. Bridge and culvert installations provide relief for natural drainage channels and also prevent undue accumulation and retention of water on and adjacent to the roadway.

All bridges are inspected on a rotational frequency and inspection information is forwarded to Alberta Transportation to be included in the Bridge Inspection and Maintenance system (BIM). Bridges include major bridges, minor bridges and culverts in excess of 4' (1200mm). All culverts should be inspected regularly to ensure proper and effective operations. During rain events operators noticing standing water are to report the location to ensure that local culverts can be inspected.

Properly installed and maintained culverts will protect the roadway against storm and subsurface water damage. The capacity of culverts can be reduced dramatically when damaged or blocked by silt, debris or ice.

Culverts that are prone to freezing should be inspected in the early spring. Culverts that become plugged with ice during spring runoff should be steamed open as soon as is practical.

Maintenance of culverts will include silt removal and on occasion, spring steaming on an as required basis.

Ditches that become "silted in" or blocked can alter the natural drainage patterns thus causing flooding. Periodic maintenance of ditches may be required to ensure that drainage ditches are functional and that they are capable of carrying out their design flows.

All ditches, especially those with heavy flows and those subject to flooding or erosion, should be inspected each spring or during peak flow periods to ensure proper operation.

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4.9 Snow and Ice Control

Plowing of roadways should be commenced when snow accumulations reach 10-15 centimeters on the roadway. However, if drifting conditions prevail, plowing operations may be commenced sooner. In general, winter maintenance schedules are determined by weather conditions.

During the first snowfall, it is desirable to mix snow into the loose gravel to stabilize the surface material when it freezes. This minimizes future gravel loss from snow plowing.

Ice blading may become necessary if the roadway becomes slippery due to compacted snow or ice. Ice blading roughens the surface for improved traction. Care must be taken to minimize gravel loss.

The highest priority for snow removal and ice control activities will need to be consistent with the MD's Policy 303, Winter Maintenance of Municipally Directed, Controlled and Managed Roads and Airport Surfaces that reflects how the MD addresses its priorities. Note that the current policy states that "first priority on gravel roads will be school bus routes".

4.10 Snow Fence

Snow fence should be placed in areas where snow drifting is prevalent to reduce snow accumulation on roadways, in Hamlets and to improve visibility. The location of the snow fence and the decision to use temporary or permanent snow fence will be determined by local conditions and past experience in consultation with the land owner.

Snow fencing should be installed after farming operations have been completed and prior to winter. Snow fence should be located 25-40 meters from the centerline of the roadway. Typically, the drift formed by the snow fence will extend for a distance of approximately 10 times its height. The snow fence should be removed early in the spring to avoid conflicts with the landowner's operations. All debris must be removed and properly disposed of (wire, lath, etc.).

Public Works will consider comments from residents, school bus operators and equipment operators when determining placement of new snow fence.



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Where temporary snow fence is installed year after year, Public Works will inquire of the land owner if permanent snow fence can be installed. Permanent Snow Fence is preferred to the installation of temporary fence on an annual basis.

4.11 Traffic Signs

The municipality has the authority under both the *Municipal Government Act* and the *Highway Development and Protection Act* to erect traffic controlling devices at any location that is considered necessary for safely controlling and managing of its transportation and traffic systems. A sign management program that includes annual inspections, ongoing maintenance, reporting, repairs and maintenance is part of Public Works responsibility. This program shall ensure that proper signs are erected and are fully functional as traffic controlling devices ensuring the safety of municipal roads.

4.12 Texas Gates

The Municipal District's Policy 302 – Texas Gates, identifies the procedure for application and installation of Texas Gates in road right of ways. Once installed Public Works will ensure that the Texas Gate operates as designed, provides a surface suitable for the traffic on the road and that operators maintaining the road do not fill the well with gravel while grading.

Annual inspections will confirm the Texas Gates integrity and if any structural repairs or cleaning of the well is required.

**M.D. OF PINCHER CREEK NO. 9**

**CORPORATE POLICY**

**C-PW-004**

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**5.0 TABLE OF SERVICE FREQUENCIES**

Activities	Arterial	Collector	Local	Unimproved	Urban
<b>Hard Surfaces</b>					
Crack Sealing	Annual	Annual	N/A	N/A	Annual
Line Painting	3-5 Years	3-5 Years	N/A	N/A	3-5 Years
<b>Grading</b>					
Maintenance Grading	12-18/Year	10-12/Year	4-6/Year	1/Year	As Required
Potholes/Washboard	Within Week	Within Week	Within 2 Weeks	N/A	Within Week
<b>Re-Gravelling</b>					
Rate/Area	100-150m3/km	100-150m3/km	100-150m3/km		
Frequency	1-2 Years	1-3 Years	2-4 Years	N/A	N/A
<b>Guardrail</b>					
Inspection Frequency	Each Annually	Each Annually	Each Annually	N/A	Each Annually
<b>Brushing</b>					
Rate/Area	20-30m ROW	20-30m ROW	20m ROW	N/A	20-30m ROW
Frequency	Every 5 Years	Every 5 Years	Every 5 Years	N/A	Every 5 Years
<b>Culverts</b>					
Rate/Area	Each	Each	Each	Each	Each
Frequency	Early Spring	Early Spring	Early Spring	Early Spring	Early Spring
<b>Ditches</b>					
Rate/Area	All Ditches	All Ditches	All Ditches	All Ditches	All Ditches

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Frequency	Early Spring	Early Spring	Early Spring	Early Spring	Early Spring
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Snow Removal - Policy 303 Defines Snow Removal Priorities					
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Rate/Area	Road Surface & Side Slope	Road Surface & Side Slope	Road Surface	If Required	Road Surface
Frequency	As Required	As Required	As Required	As Required	As Required

Traffic Signs					
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Rate/Area	Each Location	Each Location	Each Location	Each Location	Each Location
Repair Frequency	As Required	As Required	As Required	As Required	As Required
Regulatory Signs (Stop, Yield)	Within a week of being reported	Within a week of being reported	Within a week of being reported	Within a week of being reported	Within a week of being reported
Information Signs	Within a month of being reported	Within a month of being reported	Within a month of being reported	Within a month of being reported	Within a month of being reported
Direction Signs	Within a month of being reported	Within a month of being reported	Within a month of being reported	Within a month of being reported	Within a month of being reported

Texas Gates - Policy 302 Identifies Specifications and Procedures for Placement					
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Rate/Area	Each Location	Each Location	Each Location	N/A	N/A
Frequency	Annually	Annually	Annually	N/A	N/A