

*Appendix M – Guideline for Mill and Fill Pavement Rehabilitation Method, City of Winnipeg,
2010*

B1. GUIDELINE FOR MILL AND FILL PAVEMENT REHABILITATION METHOD (2010)

B1.1 Purpose of Treatment

- (a) The Mill and Fill treatment is a preventative method to extend pavement life, improve ride and drainage and correct rutting.
- (b) Applicable to existing concrete streets with asphalt overlay in fair condition.

B1.2 Scope of Mill and Fill work includes planing, minimal curb, sidewalk and pavement repairs, minor adjustments and placement of asphalt overlay in the least possible time and inconvenience to the public

B1.3 Selection Criteria

- (a) Pavement age – greater than 30 years
- (b) Pavement condition
 - (i) General Condition – Fair
 - (ii) Slight to moderate cracking (PM description = RS1-3, RN1-3, RX1-3, BS1-3, BN1-3, PS1-3, PN1-3, RM1-3, BM1-3 & PM1-2)
 - (iii) Fair pavement joints (PM description = M2 & M3)
 - (iv) Fair ride
 - (v) Fair to good drainage
 - (vi) Rutting greater than 15mm
 - (vii) Defined by Public Works asset management system and confirmed by Site inspection
- (c) Underground works
 - (i) General review of sewer and water by Water and Waste to identify problems that must be corrected and to coordinate underground rehabilitation projects if required
 - (ii) Inspection of existing catchbasin condition
 - (iii) Operation and checking mainline water valves by Water and Waste
- (d) Utilities
 - (i) Renewal of street lighting, gas, MTS and signal plant not included
- (e) Design life
 - (i) 10 to 15 Years

B1.4 Construction Method Summary

- (a) Joint and slab repairs
 - (i) Type A repairs for catchbasins and manholes where adjustments are required
 - (ii) Final Concrete Restoration of any Temporary Utility Cuts.
 - (iii) Localized joint and slab replacement (areas to be repaired must be unstable and have extensive cracking). Total replacement area less than 5% of total pavement area
 - (iv) All repairs shall be completed utilizing 24 hour Concrete for Early Opening
- (b) Joint sealing
 - (i) Not required prior to placement of asphalt overlay
 - (ii) Include Reflective Crack Sealing during Warranty Period

- (c) Planing
 - (i) Plane existing asphalt overlay 40mm to 60mm
 - (ii) Plane headers at tie-ins to existing asphalt overlays
 - (iii) Planed pavement should not be open to traffic for extended periods (2 days without concrete repairs and 5 days with concrete repairs)
 - (iv) Planing should be followed immediately with asphalt paving where possible
- (d) Adjustments
 - (i) Design should accommodate existing appurtenances to avoid adjustments
 - (ii) For existing curb and gutter inlets, only adjust if required to match design asphalt overlay elevation
 - (iii) Existing curb inlets with inlet boxes and existing gutter inlets shall be replaced with curb and gutter inlets
 - (iv) Adjust manholes and catch basins to match proposed grade and cross-fall
 - (v) Design asphalt overlay to match Hydro and MTS manholes
 - (vi) For manholes or catchbasins that require adjustment, remove and replace pavement and set 50mm below design asphalt overlay elevation
 - (vii) Replace damaged covers and lifter rings
 - (viii) Install lifter rings on manholes and catchbasins to accommodate design asphalt overlay elevation, use existing where possible
 - (ix) Adjust or Install Water Valve Extensions to accommodate design asphalt overlay elevation, use existing where possible
- (e) Curbs and sidewalk renewal
 - (i) Replace missing curbs and renew curbs that are severely deteriorated or dangerous
 - (ii) Finished curb height
 - ◆ Preferred – 100mm
 - ◆ Minimum – 75mm
 - (iii) Replace existing barrier curb at Intersections and approaches with modified barrier curb only when curb condition requires replacement.
 - (iv) For curb ramps:
 - ◆ Missing curbs
 - ◆ Severely deteriorated condition
 - ◆ Correction of orientation
 - ◆ New ramps replacing barrier curb
 - ◆ Design asphalt overlay elevation
 - (v) Localized sidewalk repairs, only when sunken or heaved locations and vertical faults or horizontal cracks or joints greater than 10mm. Locations must be approved by Public Works.
- (f) Approaches
 - (i) Place asphalt overlay as required to match design asphalt overlay elevation
- (g) Boulevard restoration
 - (i) Restore boulevard at replaced curb and sidewalk with topsoil and seed.
 - (ii) Restoration to be accepted at final inspection without formal maintenance inspection.
 - (iii) All boulevard restoration must be completed prior to placement of asphalt overlay.

- (h) Placement of asphalt overlay
 - (i) Place in one lift, 50mm thickness (\pm 5mm).
 - (ii) Scratch coat to be placed in localized areas to correct poor drainage. Where final curb height allows, place up to 75mm, in two lifts, with final lift being 50mm
 - (iii) In general, match previous design
 - (iv) New curb must be in place for a minimum of 1 day prior to placement of asphalt overlay
 - (v) Longitudinal grade:
 - ◆ Minimum – 0.3%
 - ◆ Preferred – 0.4 to 0.5%
 - (vi) Pavement cross fall:
 - ◆ Minimum – 1.5%
 - ◆ Preferred – 2.0%
- (i) Utilities
 - (i) If traffic detection loops damaged during planing, replace prior to placement of asphalt overlay.