



FAQ's Using FDR Within Urban Settings



Can FDR be used in an urban area or just in the rural area? What are the urban challenges (curb-and-gutter, underground utilities, etc.)?

Yes, many Minnesota cities are now using FDR in urban settings. All the material is reclaimed with any excess reclaimed material either incorporated on site depending on typical section in place or removed for use on other projects. Reclamation around near curb and gutter and utilities is easy with talented operators.



Is there a MnDOT Specification (or Special Provision) available that specifically applies to urban design (i.e. curb-and-gutter/underground utilities)?

MnDOT Specification 2215 Reclamation can be modified by special provisions. The City of Shoreview has shared their special provisions – See Appendix B to the Urban Full Depth Reclamation Reference Guide found at lrrb.org.



What practices or precautions are used when doing reclamation on or around underground utilities? Is any special preparation work necessary?

Castings and valve boxes may be removed and covered with metal plates at a lower elevation out of the depth zone planned for pulverization. After reclamation is completed prior to final surfacing, castings are adjusted and placed to finish grade. Many urbanized applications have found that full depth bituminous patches around structures mitigates settlement issues and compaction challenges near manholes/valve boxes. On the other hand, manholes and/or valve boxes may be left in place, marked well and squared off from the reclamation.



FDR typically results in a thicker pavement structure (higher profile); how should this be accounted for within the confines of existing curb-and-gutter, utilities, intersections, driveways?

The desired thickness is determined during the pavement and mix design procedures. The typical section that exists in the urban setting will guide the use of excess reclaimed material by either incorporating on site for utility replacement backfill as an example or removed for use on other projects.



How close can the reclaimer get to utilities/curb and gutter?

Quality operators can navigate the reclaimer within inches of the curb line. Remaining asphalt can be cleaned up with skid steer operation. When utility castings at the surface remain in place, then the reclamation operator will mill up to one to two feet away. The remaining asphalt near castings can be removed with skid steer operations and typically full depth bituminous material is placed around the structure.



Does urban FDR require any special equipment?

Urban FDR without the use of a stabilizing agent requires the following:

- Self-propelled reclaimer
- Motor grader; loaders
- Water truck with spray bar
- Pneumatic-tired, pad foot and/or double drum vibratory rollers for compaction

Optional equipment for use in an urban setting may include small mill machines to traverse around utilities in small spaces or along curb lines. Milling may be done before or after reclamation if excess material is a concern.



How does the FDR process (equipment train) work within the confines of urban settings?

Cul-de-sacs and tight radii can still be a challenge especially for stabilized full depth reclamation. Where geometrics challenge use of stabilization, material can be removed manually, stabilized in another area of the project and hauled back to the cul-de-sac for placement. Work near curb and gutter and around utilities is easily accommodated as noted above.



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