

Gravel Road Paving

FACT: The primary reasons a soft surface road remains unpaved is due to limited road funding, neighborhood preference, and/or having lower traffic volumes.

Paving could alleviate many gravel road problems, but a lack of road funding frequently prevents your road commission from pursuing this option. The 2008 estimated costs to convert just **one (1) mile** of gravel road into a paved road is **\$1 million**.

Additionally, while paving roads would seem a practical solution, the long-term costs for upkeep of a paved road versus a gravel or limestone road could be an even greater financial burden. In fact, due to the shortage of road funding, many road commissions throughout the state have begun to convert their paved roads into soft surface roads, in an effort to conserve their precious maintenance dollars.

Another reason many gravel roads in Washtenaw County remain unpaved is because the residents who live on or near them want to preserve a “**rural atmosphere**” in their community.

Lastly, although more and more citizens are moving to rural, gravel road areas, (increasing traffic and maintenance needs), those roads still serve fewer people than most paved roadways. Without more funding, pothole patching, winter maintenance and safety improvements on higher-volume paved roads must remain the road commission’s priority. This means that many soft surface roads will remain unpaved indefinitely.

This situation frustrates some who want to live in “**the country**,” but would rather not deal with the dust, ruts, and/or having to wait for their road to be plowed of snow. On the other hand, others oppose paving because they think it will generate more traffic, increase speeds, or cause a loss of trees or impact the rustic setting.

While this debate continues, the Road Commission can only maintain both soft surface and paved roads with the funding they have available. Thus, it becomes a difficult challenge for your road commission to balance the need for major road improvements to address congestion, safety issues, and/or to pave gravel roads, versus maintaining the existing roads as efficiently and as cost-effectively as possible, so as to prolong the life of the overall road system in Washtenaw County.

About the WCRC...

The WCRC maintains 1,633 miles of county roads, 112 bridges, and more than 2,000 culverts. In addition, the WCRC is contracted by the Michigan Department of Transportation (MDOT) to maintain approximately 576 lane miles of State Trunkline. All primary (588 miles) and local (1,045 miles) public roads in Washtenaw County that are outside the cities and villages are maintained by WCRC crews.

The agency’s general funding is received through the Michigan Transportation Fund (MTF), which is administered by MDOT and is generated from gas and diesel fuel taxes and vehicle registration fees. The WCRC receives about \$17 million in MTF annually.

The agency is governed by a three-member Board of County Road Commissioners: Fred J. Veigel, Chair; David E. Rutledge, Vice-Chair; and Wesley Prater, Member. The day-to-day operations are overseen by Managing Director Steven M. Puuri, and the agency has 140 full time employees.

SOFT SURFACE ROADS

Maintenance

Equipment

Materials

Paving Options

For more information
about these and other services
provided by the
Washtenaw County Road Commission,
call (734) 761-1500
or visit the WCRC website at
www.wcroads.org

May ♦ 2008

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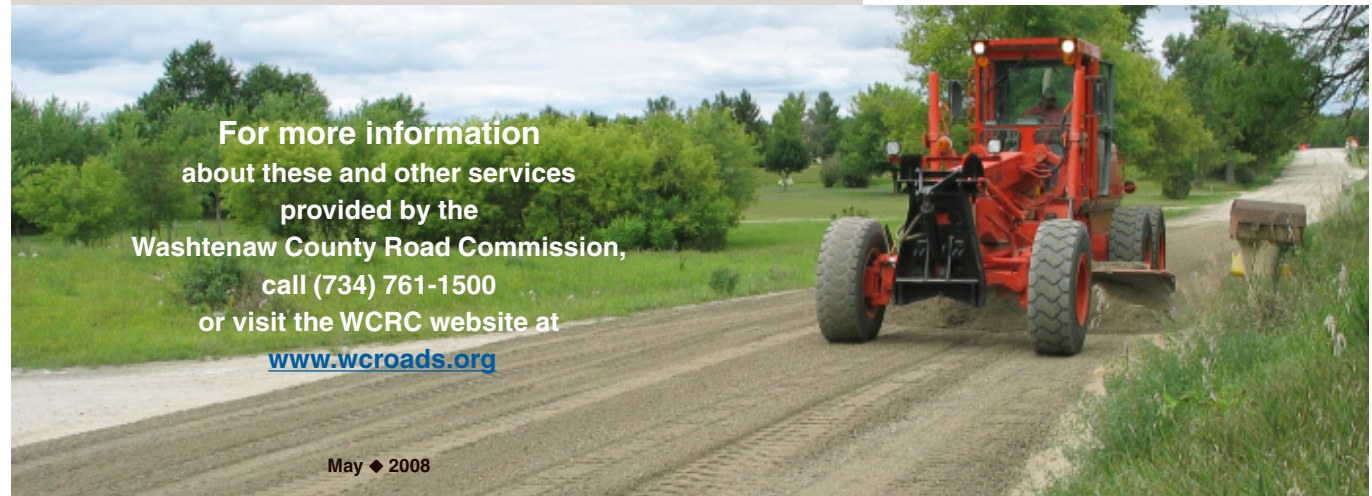
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Limestone application being performed by the WCRC Operations Department



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Soft Surface Roads, Materials, and Equipment

FACT: Nearly one-half of the roads maintained by the Washtenaw County Road Commission are soft surface roads.

Approximately **771 miles** of the **1,633 miles** of county roads maintained by the Washtenaw County Road Commission (WCRC) are “**soft surface**” (gravel or limestone) roads.

Although gravel or limestone roads are often referred to as “**dirt**,” this term is rarely used by road maintenance experts, and only to describe an unimproved road with no surface material added. If a soft surface road is well designed, constructed, and maintained, it should be durable enough to withstand heavy loads and can even be designated an “all-season” road.

However, compared to a dirt road, all-season soft surface roads are quite expensive to build, as they require front loaders, dump trucks, graders, and rollers to provide a base course of hard-packed earth or other material, (*sometimes macadam-ised**), covered with one or more different layers of gravel. The gravel used consists of irregular stones mixed with a varying amount of sand, silt, and clay, which can act as a binder. Graders are also used to produce an increased crown (compared to a paved



Limestone Application

road), to aid drainage, as well as construct drainage ditches and embankments in low-lying areas.

(*Macadam is a type of road construction consisting of three layers of stones laid on a crowned subgrade with side ditches for drainage, compacted with a heavy roller, causing the angular stones to lock together.)



Road Roller

Soft Surface Road Maintenance

FACT: Soft surface roads are fragile, require intensive maintenance, need constant attention, and can become highly problematic for the road commission that maintains them if left unchecked.

Soft surface roads require more frequent maintenance than paved roads, especially after wet periods and when subjected to increased traffic volumes. The motion of a vehicle’s wheels will naturally push material to the outside (as well as in-between travelled lanes), which leads to such problems as **rutting, reduced water-runoff, and eventual road destruction**, if left unchecked. As long as the problem is addressed by road crews early enough, simple regrading can be sufficient, as material is pushed back onto the road bed and into shape.

Another problem with soft surface roads is **washboarding**, which is the formation of corrugations across the road surface at right angles to the direction of travel. This affect can become severe enough to cause excessive vibrations in vehicles. Grading removes the corrugations, and resurfacing, with careful choice of good quality gravel or limestone, can help prevent them from reforming.

Drainage problems are also common for soft surface roads because historically, many roads evolved from a crude trail or a farm access lane, and were not properly designed and constructed by engineers and experienced road workers.

Summer Maintenance

FACT: Grading soft surface roads is ideally done prior to a pre-scheduled dust control (well brine or calcium chloride) application, or an anticipated rainfall. This is done to minimize dry, dusty road conditions and extend the interval between application.

During the summer, WCRC road crews perform various maintenance operations on soft surface roads, such as **applying extra gravel or limestone, mowing, ditching, cutting trees, and cleaning culverts**. **Dust control** is also applied in an effort to minimize dry road conditions.

For less dust and a better road surface, Operations crews spray liquid calcium chloride or well brine (essentially salt water) throughout the summer. Applications on primary roads (82 miles) occur about every four to six weeks. Local roads (691 miles) typically receive between one and three dust control applications per season, depending upon the

agreement with each township. Lower cost brine, from the Road Commission’s own well, has made dust control more affordable for townships who wish to pay for additional applications. To find out if your community pays for dust control (many do), call your local municipality. If a local resident, and/or a non-participating community, wishes to pay for additional dust control, they can contact the staff in Operations to inquire about “**Private Order Dust Control**.” This information is also available on the WCRC website at www.wcroads.org/services/operations.htm.

In addition to the above work, **grading** is also completed throughout the dry summer months to smooth soft surface roads. However, grading also breaks up the road surface and creates dust, so it is typically performed just prior to a scheduled dust control application, and/or before a predicted rainfall.

Below are the 2008 estimated costs to maintain one (1) mile of gravel road:

- **Gravel Application:** \$32,000 to \$40,000 per mile for a 4” to 6” lift; incidental work included.
- **Limestone Application:** \$36,000 to \$44,000 per mile for a 4” to 6” lift; incidental work included.
- **Grading:** \$100 to \$150 per mile
- **Dust Control:** Brine - \$410 per mile
Chloride - \$970 per mile

Winter Maintenance

FACT: Salt cannot be used on soft surface roads during winter months.



Soft surface roads can be troublesome in winter. Frozen gravel surfaces cannot be graded, and snow and ice removal is difficult. More sand or gravel can be applied for safety during the winter, and sand is spread on curves and corners to provide traction for motorists. However, salt cannot be used on gravel roads as it soaks into the road materials and will not remain on the surface to make ice-melting “brine.” Snow plowing is performed on soft surface roads after State Trunklines, primary roads, and high volume local roads are cleared. Gravel roads are then plowed on a priority basis similar to paved roads.