When to Pave a Gravel Road?

If more than 100 vehicles use this road each day, it's time to plan an upgrade

Paving a gravel road isn't cheap but as traffic counts increase maintaining one becomes expensive. The report *Economics of Upgrading an Aggregate Road* helps towns make policy decisions for maintaining and upgrading gravel roads. It was published by the Minnesota Department of Transportation (MN DOT) and the Minnesota Local Road Research Board. The report presents a method for comparing the cost of maintaining a gravel road with the cost of upgrading and maintaining an asphalt road.

Cumulative Cost Trends

Using annual MNDOT State Aid reports, cost estimates, and interviews, researchers found that bituminous roads have a high initial cost but gravel roads cost more for ongoing, routine annual.

Research identified the relationship between traffic level and maintenance cost. Cost analysis showed an increased spending to maintain gravel roads as the average annual daily traffic (AADT) increased. The costs of bitumnious and gravel maintenance are similar when the AADT reaches 150 to 199.

Gravel to Hot Mix

An upgrade to a lightly surfaced road (seal coat) may be justified by maintenance savings alone. Lightly surfaced roads require a smaller investment than an hot mix asphalt surface.

Other factors that cannot easily be assigned monetary value may indicate that it is time to pave a gravel road. Benefits include

- reducing dust,
- providing a smoother and safer surface, and
- improving vehicle and driver efficiency.

Researchers note that after an aggregate road is paved, maintenance activities shift to those required for maintaining a higher level of service such as:

- Increased brush and weed control,
- Traffic control devices required for a heightened -level of service
- pavement marking, and
- snow and ice removal, anecdotal evidence suggests that snow and ice removal costs for paved roads are higher.

The report advises local officials to consider developing their own cost estimates for gravel road maintenance operations and to check the cost against their own historical data. When confident of their cost calculations, they may use the estimate in place of the historical costs. Jurisdictions lacking sufficient historical data may estimate future maintenance costs, and then compare them to historical data provided in the report. Analysis must be modified to reflect individual maintenance or construction costs as well as project timing. ❖

The report (2005-09) may be downloaded at www.lrrb.org/pdf/200509.pdf.

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