

Meade County Experience with Alternatives to Paving

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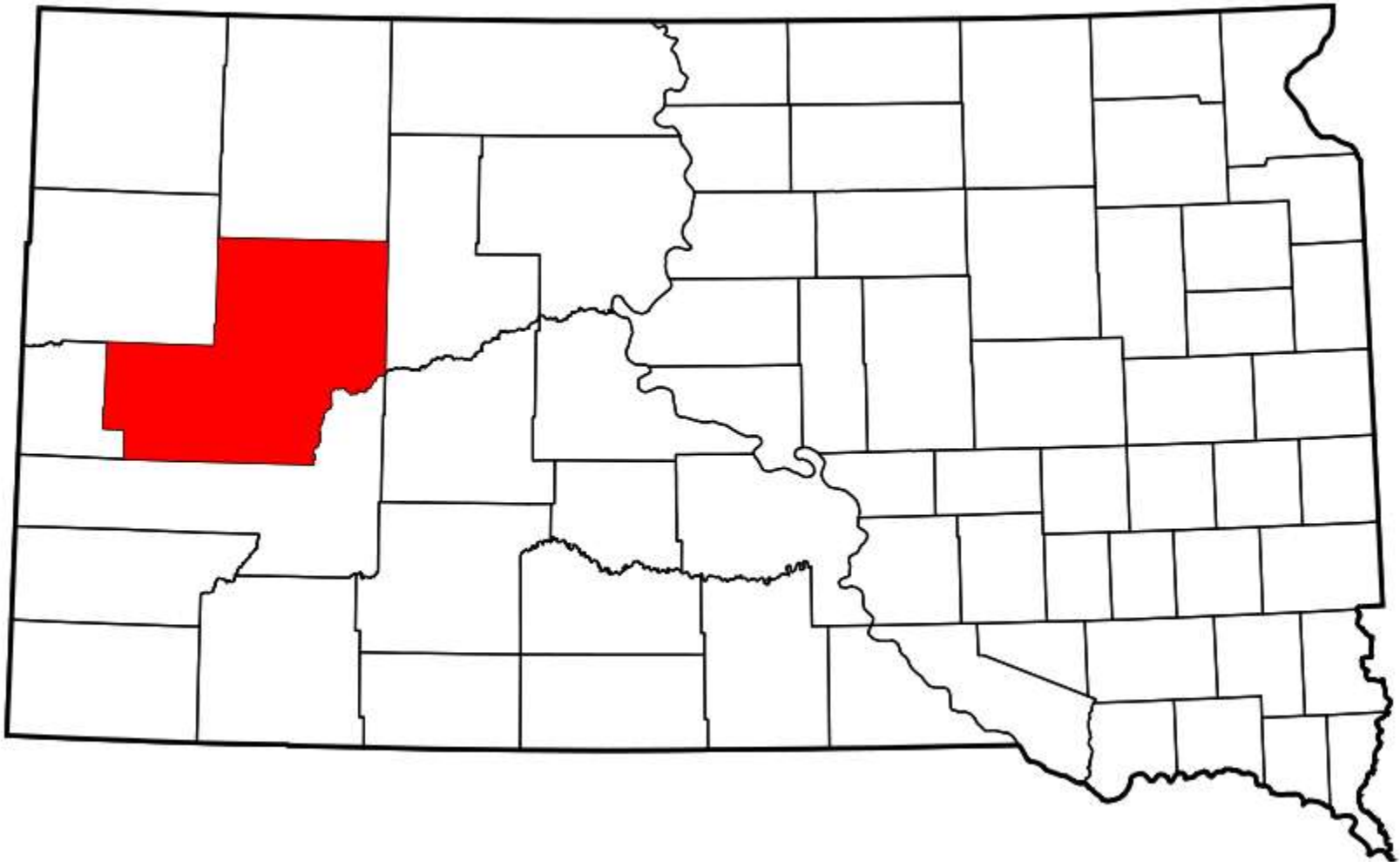
Reason for Turning to Alternatives

- Part of the County is experiencing significant growth.
- Most of the roads in the county do not have good subgrade and base strength – therefore are not suitable for adding paved surface.
- Budget will not support reconstruction.

Meade County Road System:

Total miles maintained by county – 1,040

Total currently Unpaved – 961.3 Paved 78.7



One Example of Paving Alternative

- Elk Vale Road
 - Located directly east and north of Rapid City
 - Serves a growing area near an interstate highway exit
 - Classification: Rural Major Collector
 - Last Meade Co traffic count is 645
 - Became impossible to maintain as gravel surface

South end of road is located 2.5 miles from I-90
Exit 61 near Flying J Truck stop



Elk Vale Rd transitions from pavement in Pennington County to unpaved in Meade County

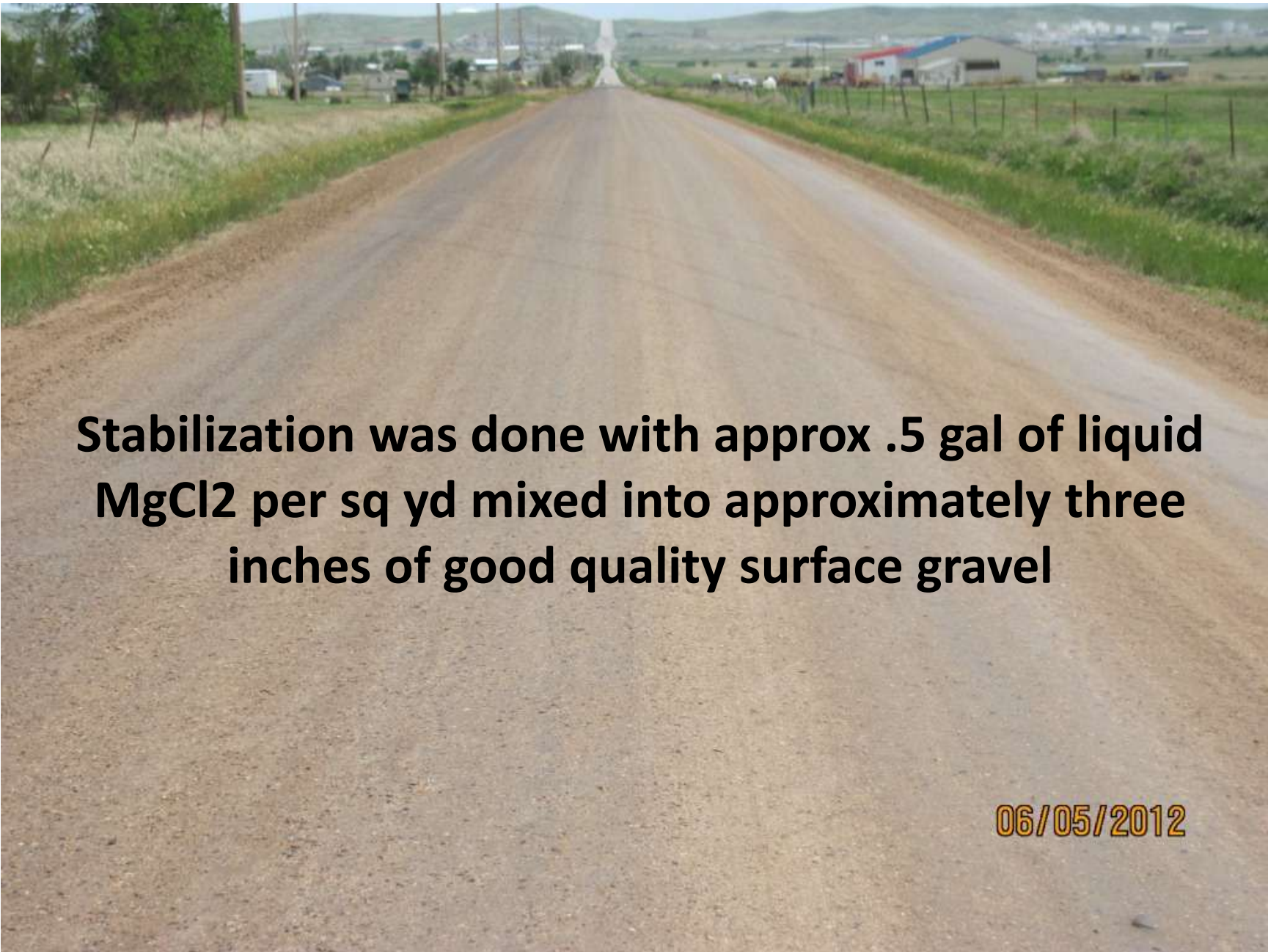


Originally constructed in May, 2011
Excellent performance after first year



Close-up view of stabilized surface





**Stabilization was done with approx .5 gal of liquid
MgCl₂ per sq yd mixed into approximately three
inches of good quality surface gravel**

06/05/2012

No significant loss of aggregate to shoulder



Truck volume is somewhat uneven: grader operator counted 18 trucks in one hour in summer 2011





**No blade maintenance was done
between construction in summer
of 2011 and surface retreatment
in summer of 2012!**

06/05/2012

Phone call from citizen – “If you had enough money to pave this road, why didn’t you save enough to put striping on it”



2012 Performance

- Excellent performance through June, 2012.
- Late summer was one of driest on record.
- Retreatment was done in June, 2012.
- Performance was good thereafter until a state road closure forced additional traffic on the road in early Oct (ADT at 700 on one count)
- Have had to do recent reshape and a lean treatment of chloride this fall @ .25 gal sq yd.

Recent distress on portions of the section



When crust breaks, the gravel erodes from surface quickly



Some displacement of aggregate out of wheel paths



A positive point: the surface is reasonably easy to rehabilitate – work done last week



Final Shaping



Application
immediately after
final shaping to get
good, even
penetration



Untreated road in same area with less than half the traffic volume – loose aggregate is a big problem. Stabilized surface is far superior.



Conclusions at this time

- Total reconstruction of the road and paving would cost approximately \$800,000 per mile.
- Meade County had to find an alternative.
- Total cost of new gravel and initial treatment was \$25,000 per mile.
- In the immediate future, annual surface reshape and retreatment is planned.
- Annual treatment cost is estimated at \$7,000 to \$8,000 per mile.