

Meade County Experience with Alternatives to Paving

Ken McGirr

Meade County Highway Supt

Sturgis, SD

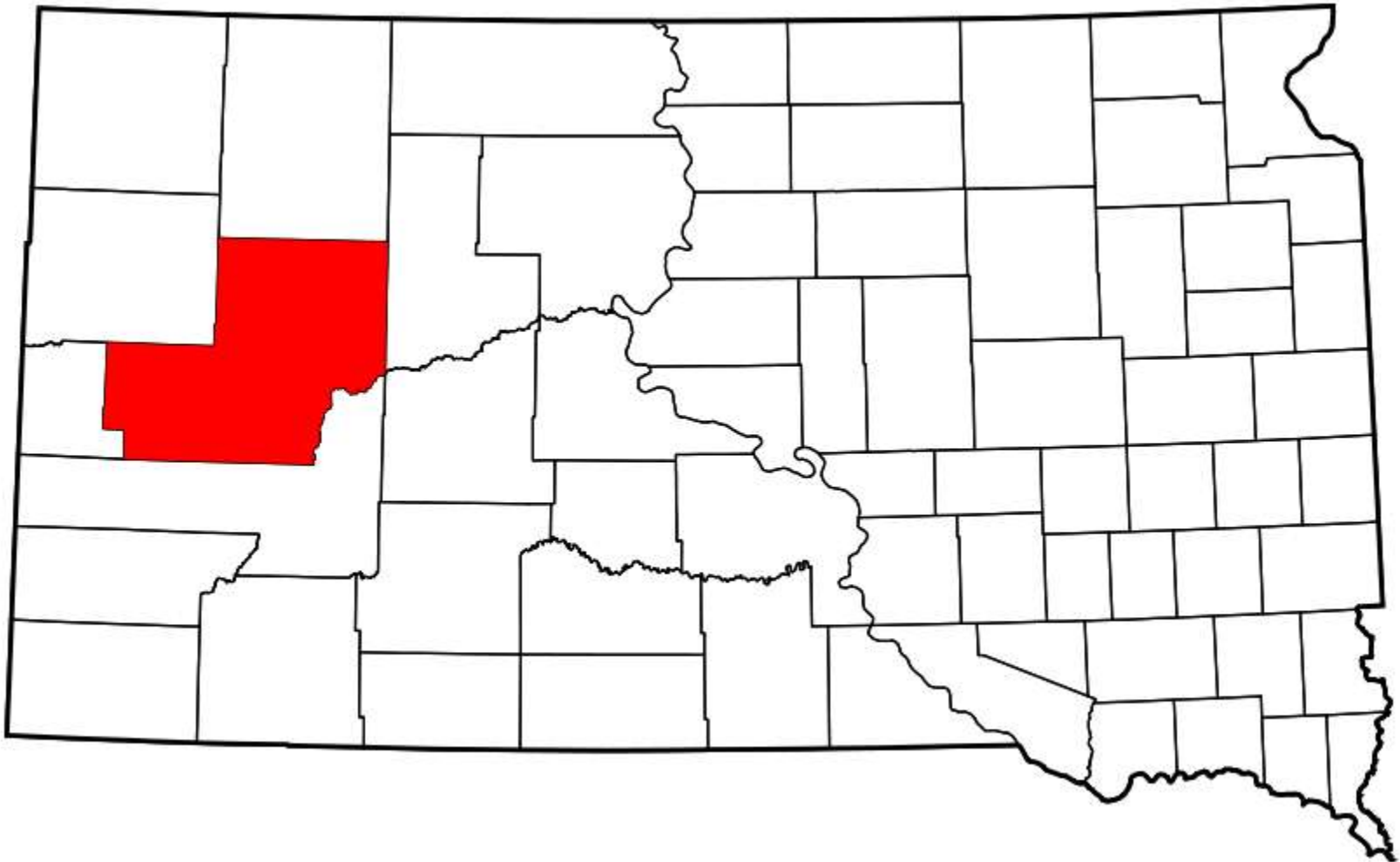
Reason for Turning to Alternatives

- 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

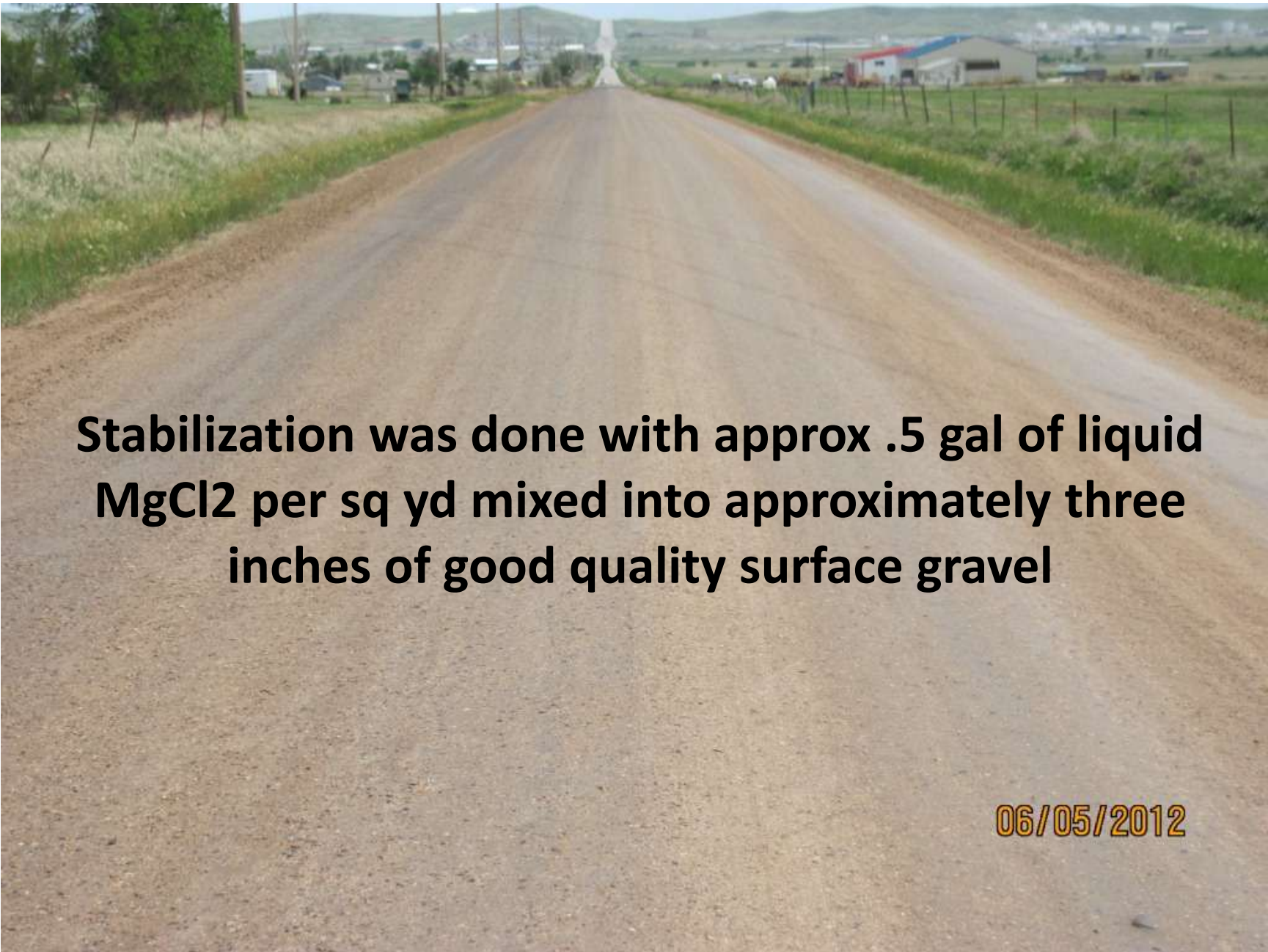


Originally constructed in May, 2011
Excellent performance after first year



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



A photograph of a long, straight dirt road stretching into the distance. The road is flanked by green fields and utility poles. The sky is blue with some clouds. The text is overlaid in the center of the image.

**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.