

Safety Issues in “Depaving”

2011 Region Local Roads Conference

Rapid City, SD

By

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Primary Concerns:

- **Safety in Maintenance Operations**
- **Keeping Good Roadway Shape**
- **Surface Gravel Quality**

Maintenance Operations

Biggest Problems:

- Failure to provide warning
 - Warning lights
 - Warning signs when needed
- Collisions between motorgraders and vehicles
- “Excess” windrows



Routine blade maintenance is commonly done in much of the US without warning signs.

Always have a flashing amber warning light!



Careful with excess windrows without warning signs during routine maintenance operations.

Acceptable in the 1950s – not today



Put signs up when anything more than routine maintenance work is planned!!





Roadway Shape

Primary Concerns:

- **Roadway crown**
 - Lack of crown
 - Excessive crown
- **Rough surface or unsafe driving condition**
 - Corrugation (washboard), potholes, high shoulders
- **Superelevation in curves**

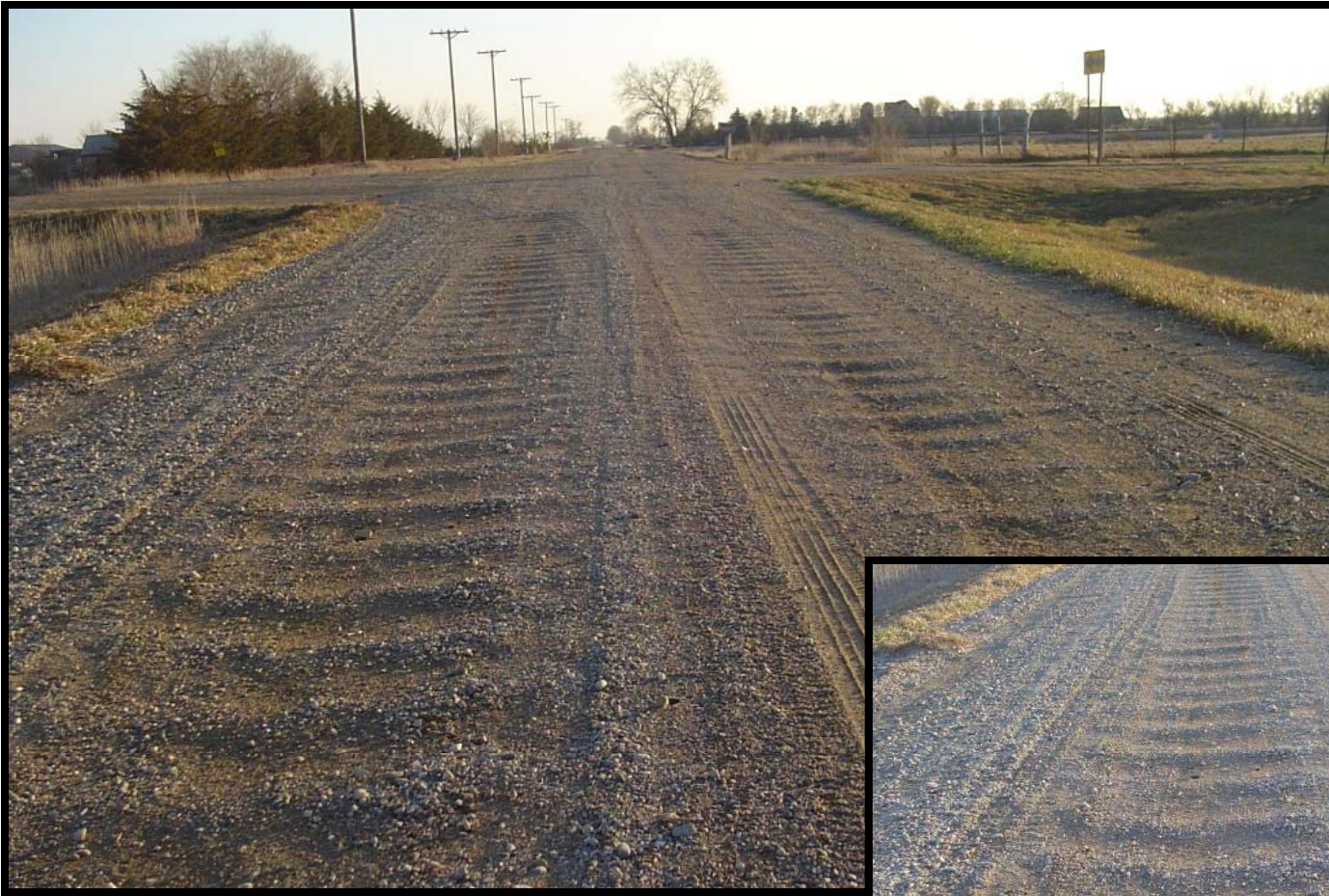
No Crown



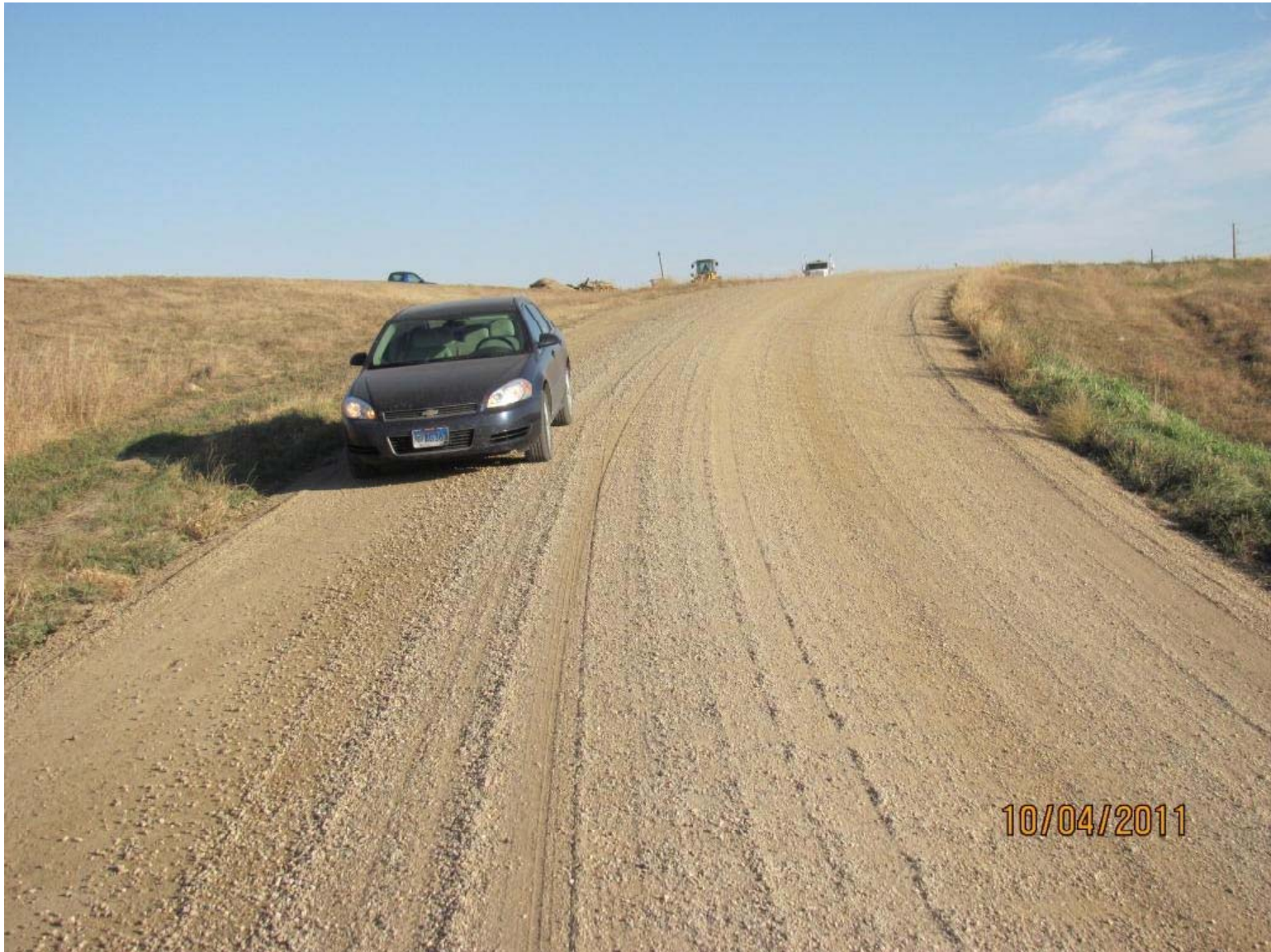
Excessive Crown



Corrugation



Bad geometry in curves - superelevation



Excellent expample:



Substandard Surface Gravel

Generally two problems will be defined:

- Does not meet state or “standard” specification
or
- Simple allegation that gravel was not of proper type to provide a safe driving surface

Know your gravel quality



Hard to defend!



Aggregates for granular bases and surfacing shall conform to the requirements of Table 1.

TABLE 1

REQUIREMENT	Subbase	Gravel Cushion	Aggregate Base Course	Limestone Ledge Rock		Gravel Surfacing
				Base Course	Gravel Cushion	
SIEVE	PERCENT PASSING					
2" (50 mm)	100					
1" (25.0 mm)	70-100		100	100		
3/4" (19.0 mm)		100	80-100	80-100	100	100
½" (12.5 mm)			68-91	68-90		
No. 4 (4.75 mm)	30-70	50-75	46-70	42-70	46-70	50-78
No. 8 (2.36 mm)	22-62	38-64	34-58	29-53	29-53	37-67
No. 40 (425 μm)	10-35	15-35	13-35	10-28	10-28	13-35
No. 200 (75 μm)	0.0-15.0	3.0-12.0	3.0-12.0	3.0-12.0	3.0-12.0	4.0-15.0
Liquid Limit Max		25	25	25	25	
Plasticity Index	0-6	0-6	0-6	0-3	0-3	4-12
L.A. Abra. Loss, max.	50	40	40	40	40	40
Foot Notes		2	1,2			
Processing Required	crushed	crushed	crushed	crushed	crushed	crushed

Know and understand your state's specification for surface gravel

Some Final Thoughts:

- Risk is always present on public roads
- You must manage it
- Are all pavements safe?
- Are all unpaved roads dangerous?

Is this a safe road?



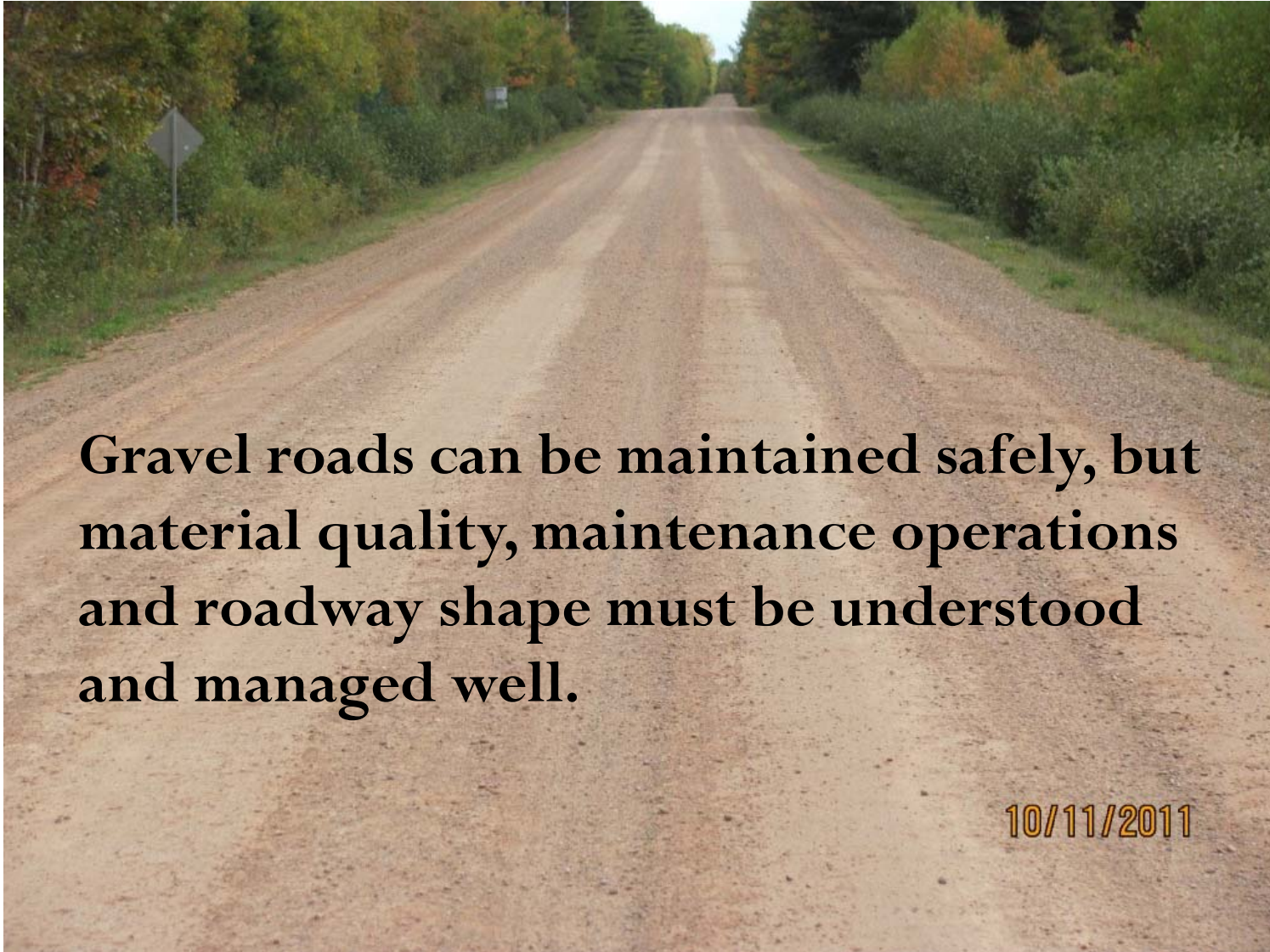
Is this a safe road?



Which is worse? This paved surface or
--(see next slide)



The unpaved surface?



Gravel roads can be maintained safely, but material quality, maintenance operations and roadway shape must be understood and managed well.

10/11/2011

Good luck!

Stay safe!