# South Dakota
# 2008 Local Roads Needs Study
# Interim Report

**David Huft**
**Research Program Manager**
**SD Department of Transportation**



## 2008 Interim Study on Highway Needs and Financing

**Scope:**

- projected long term state and **local highway needs**
- allocation and distribution of responsibility for all highway segments within the state
- future state and **local highway cost projections** compared to projected revenue
- **strategies for creating greater efficiency** in financing state and local roads
- strategies to promote the development of **innovative ideas aimed at reducing highway funding needs**

## Presentation Content

| Section | Topic | Slides |
|---|---|---|
| Introduction | Study Objectives | 1 – 4 |
| Local Agency Survey | Early (incomplete) results | 5 – 21 |
| Needs Assessment | Bridge & Road Needs | 22 – 27 |
| Conclusion | Observations, Remaining Work, Q&A | 28 – 32 |

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

3

## Project Objectives

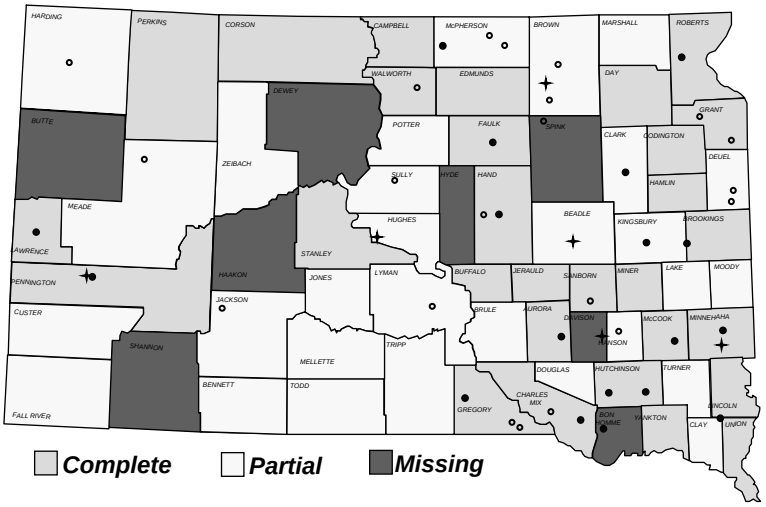
- **Assess current condition of local roads and bridges**
- **Identify major cost elements affecting changing needs**
- **Identify objective and appropriate standards for the design, construction, and maintenance of local roads and bridges for use in estimating life-cycle costs**
- **Estimate current and future funding needs for local roads and bridges**
- **Identify opportunities and strategies for reducing funding needs and achieving greater efficiency**

**Work is partially complete**

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

4

## Local Agency Survey Responses (9/23/08)




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

5

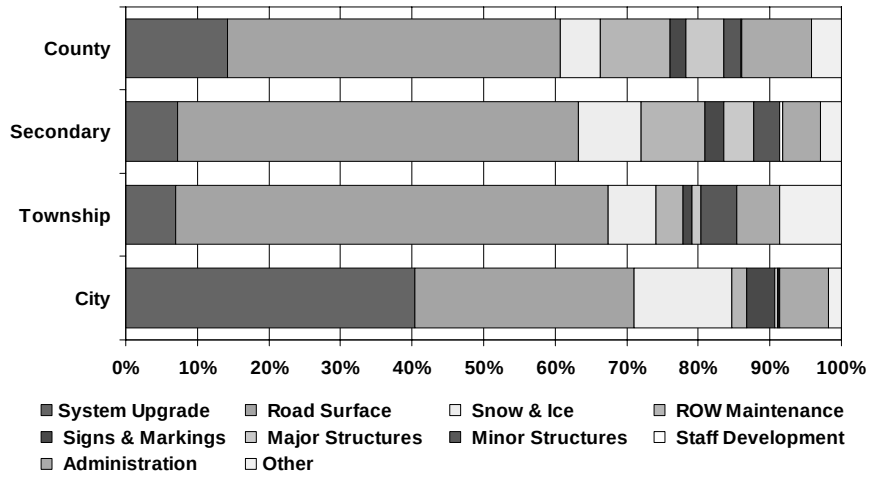
## Survey Responses (9/23/08)

| Agencies | | Responses |
|---|---|---|
| Counties | | 58 (28 complete) |
| Cities | Class 1 | 6 |
| | Class 2 | 17 |
| | Class 3 | 20 |
| Townships | | 70 |

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

6

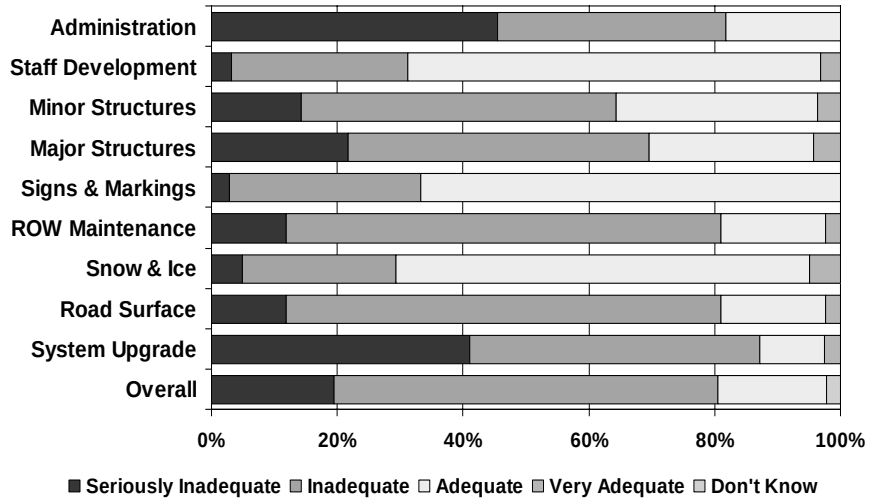
## Reported Distribution of Expenditures




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

7

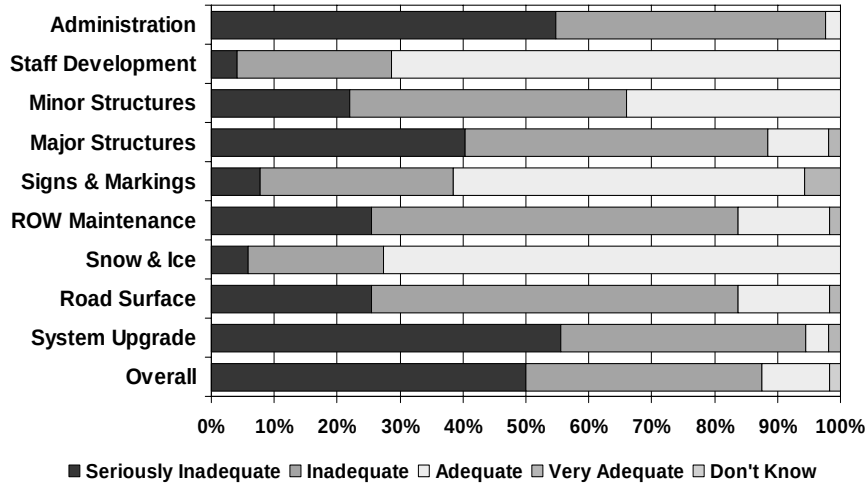
## Cities: Perceived Adequacy of Revenues




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

8

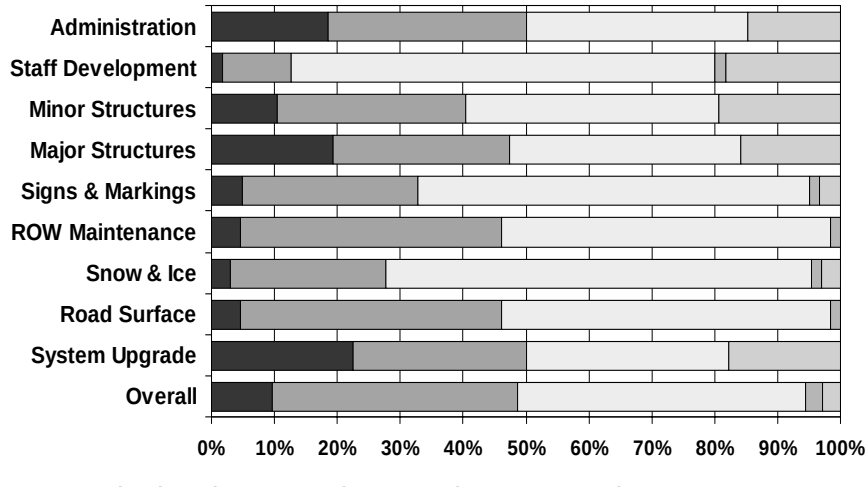
## Counties: Perceived Adequacy of Revenues




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

9

## Townships: Perceived Adequacy of Revenues




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

10

## Most Critical Items to Agencies

| Rank | Cities | Townships | Counties |
|---|---|---|---|
| 1 | Road Surface Maintenance | Road Surface Maintenance | Road Surface Maintenance |
| 2 | ROW Maintenance | ROW Maintenance | ROW Maintenance |
| 3 | System Upgrade | Snow & Ice | System Upgrade |
| 4 | Snow & Ice | System Upgrade | Administration |

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

11

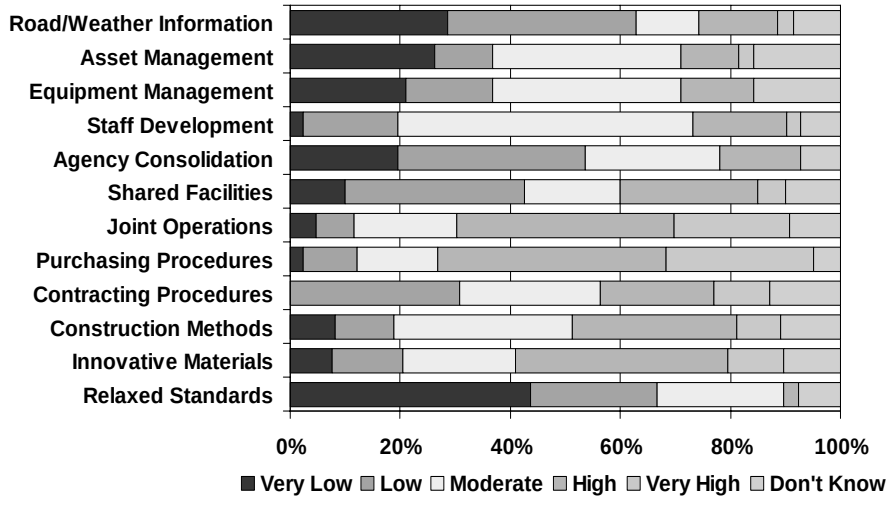
## Perceived Opportunities for Funding

- **Opt out of property tax freeze**
  - **Non-highway needs compete for limited funds**
- **Increase existing mechanisms**
  - **Vehicle registration**
  - **Wheel tax**
  - **Property tax**

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

12

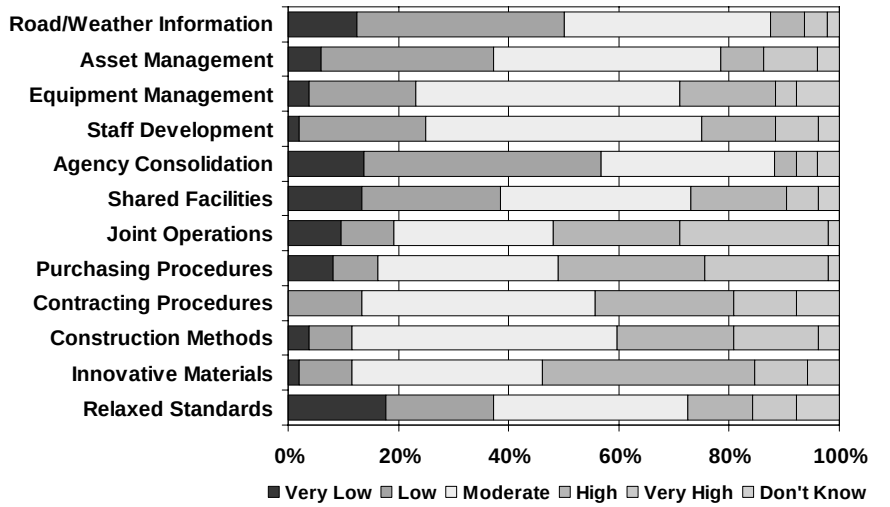
## Cities: Opportunities for Efficiency




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

13

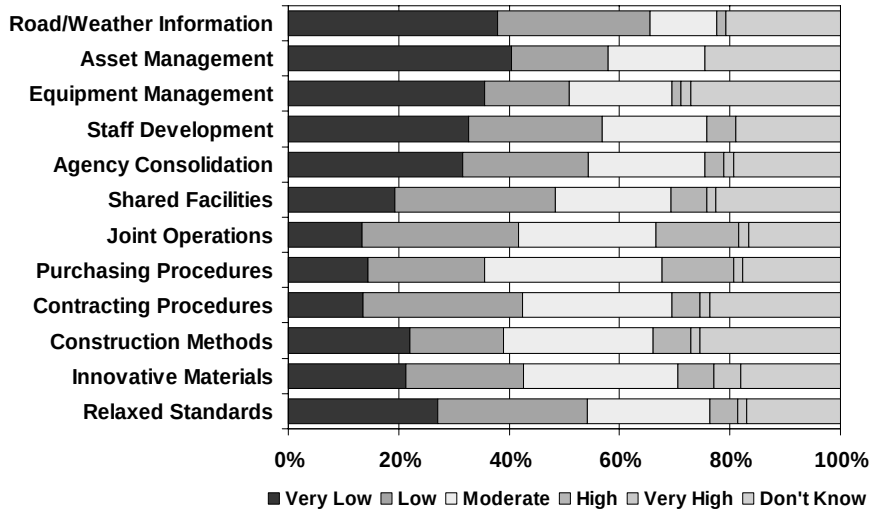
## Counties: Opportunities for Efficiency




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

14

## Townships: Opportunities for Efficiency




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

15

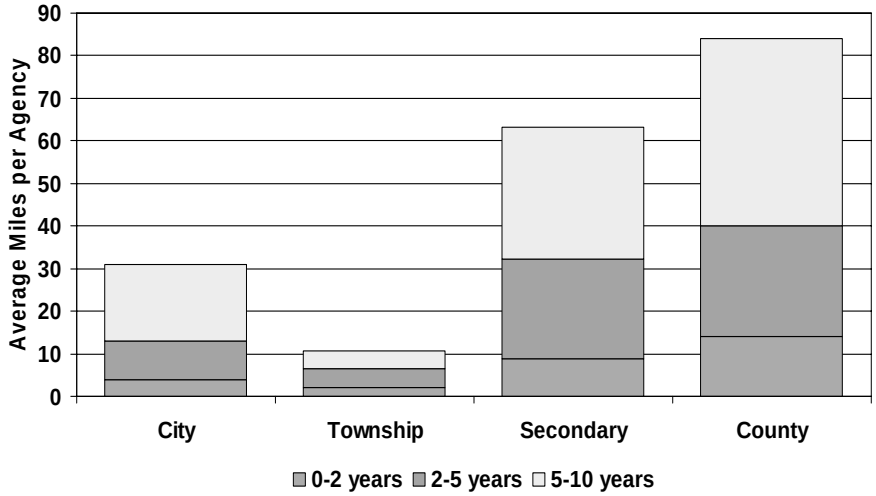
## Best Opportunities for Efficiency

- **Joint operations**
- **Shared facilities**
- **Innovative materials**
  - **Reclaimed materials**
  - **Warm asphalt**
- **Procurement and contracting methods**
- **Relaxed standards are <u>not</u> seen as an effective means toward efficiency**

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

16

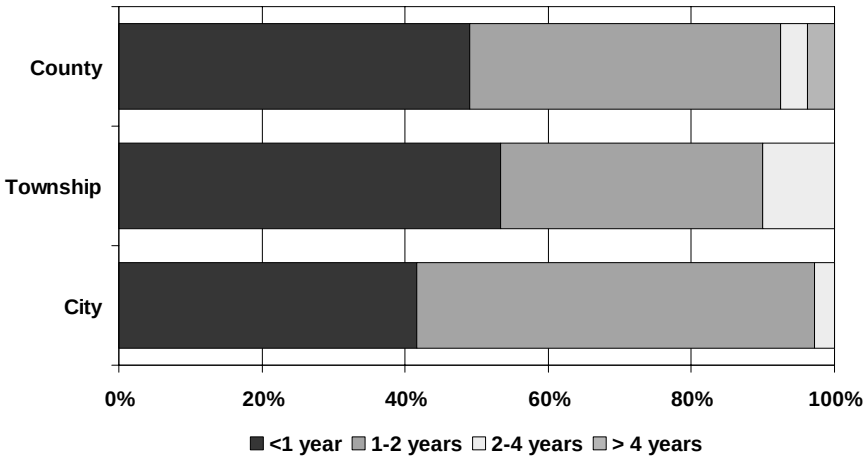
## Anticipated Upgrades for Development (preliminary, incomplete data)




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

17

## Advance Knowledge of Needed System Upgrade/Expansion




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

18

## Rural Development Pressure (Blom Township Example)

**A large dairy was constructed west of Brandt, SD. The primary access is a gravel road from the dairy to SD Hwy 15. The road had performed quite well for ~50 years with routine blade maintenance and occasionally adding gravel.**

**Condition of the road after opening of dairy – the road deteriorated further and had to be closed.**

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

19

## Rural Development Pressure (Blom Township Example)

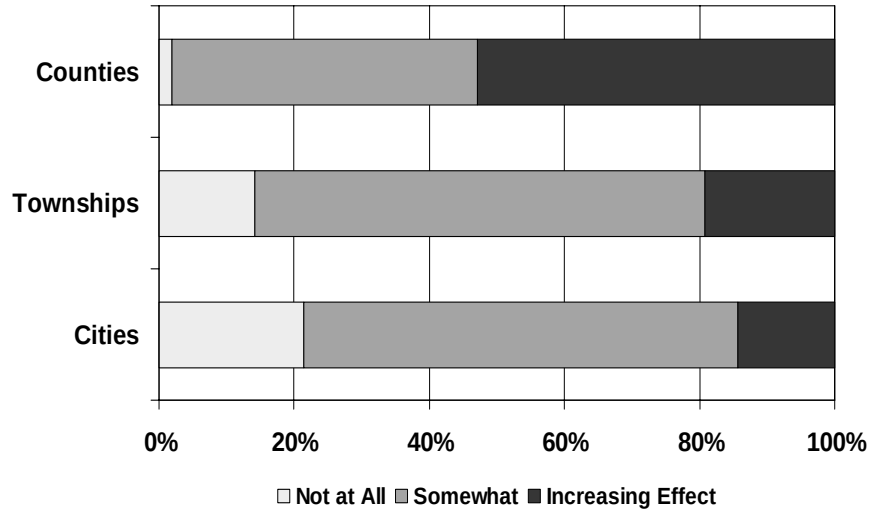
**While the primary access road was closed for repair, this alternate route began to fail.**

**Approximately $40,000 of local funds have been spent for road improvement thus far.**

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

20

## Funding Effect on Liability Risk




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

21

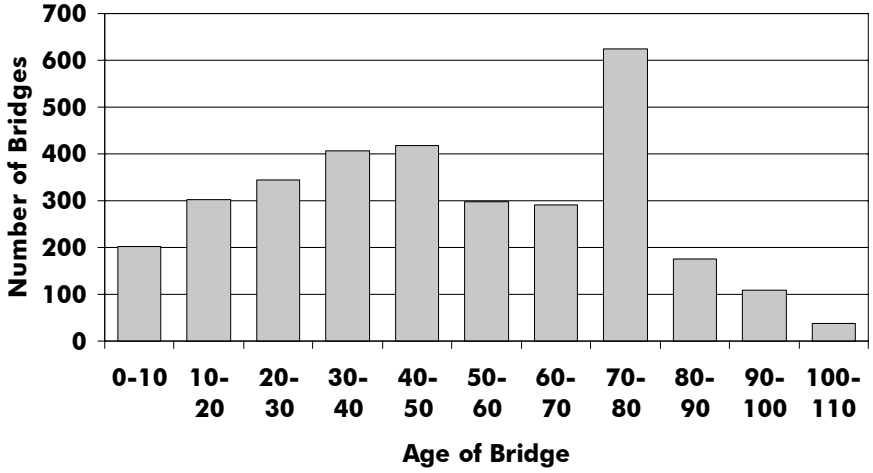
## Bridge Need Assessment

- **Numbers reflect only <u>structural</u> needs**
- **Other bridges have <u>functional</u> deficiencies**
  - **Width**
  - **Number of lanes**
  - **Inadequate clearance**
- **1098 county bridges are posted for weight**
- **139 are recommended to be posted**
- **8 county bridges are recommended for closing**

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

22

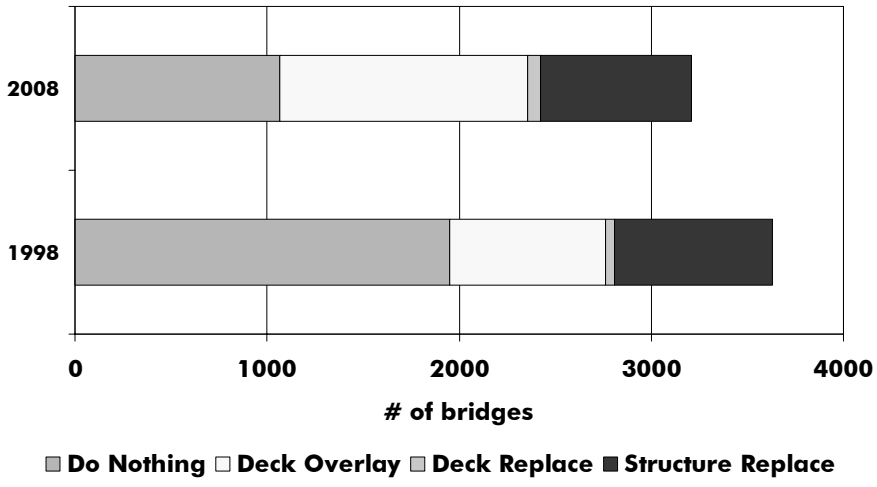
## County Bridge Age Distribution




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

23

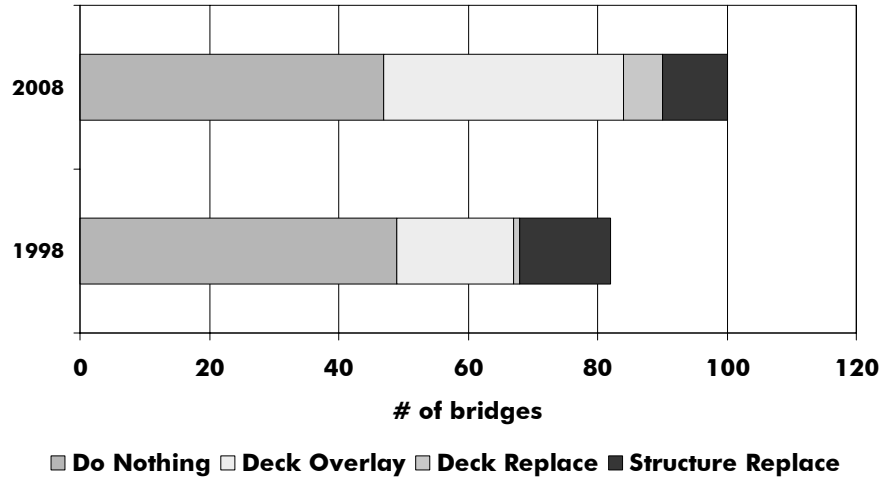
## County Bridge Conditions




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

24

## City Bridge Conditions




*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

25

## Bridge Rehabilitation Costs

| System | Year | Deck Overlay | Deck Replace | Structure Replace |
|---|---|---|---|---|
| City | 1998 | $7 | $20 | $93 |
| | 2008 | $18 | $55 | $202 |
| County | 1998 | $7 | $20 | $113 |
| | 2008 | $33 | $82 | $255 |
| (all costs per square foot) | | | | |

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

26

## Example Road Surface Costs

| Treatment | 1998 | 2008 |
|---|---|---|
| Regrade gravel surface, add 4" gravel | $1.67 | $5.80 |
| Reconstruct gravel road, 6" gravel | $13.60 | $23.23 |
| Reconstruct 6" base & blotter | $16.16 | $26.98 |
| Patch alligator-cracked areas (minor), rout and seal cracks, chip seal | $1.65 | $1.87 |
| Mill asphalt surface, patch, 2.5" overlay | $6.68 | $12.05 |
| Reconstruct 8" base, 3" asphalt mat | $23.50 | $48.05 |
| (all costs per square yard) | | |

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

27

## Observations (Not Conclusions)

- Responses to local agency survey indicate serious financial challenges
- Agricultural, residential, and industrial development places significant demands on local transportation
- Survey responses are not yet adequate to reliably predict road surface funding needs
- Bridge and road surface treatment costs have risen dramatically since 1998 assessment
- Financial needs are expected to increase significantly from 1998

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

28

## Remaining Work

- Work with local agencies and associations to improve survey response for need assessment
- Perform road surface need assessment
- Compare road and bridge needs with current funding levels
- Contact local agencies for additional detail on potential funding and efficiency opportunities
- Present findings to Interim Committee and others

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

29

## Project Technical Panel

- Richard Benda
  SD Dept. of Tourism & Economic Development
- Robin Bobzien
  American Public Works Assn.
- Gail Brock
  SD Assn. of Towns & Townships
- Toby Crow
  Associated General Contractors
- Larry Engbrecht
  American Concrete Paving Assn.
- Brenda Forman
  Ag Unity
- John Foster
  SDDOT Research
- Bruce Lindholm
  SDDOT Local Programs
- Ben Orsbon
  SDDOT Office of the Secretary
- Raymond Roggow
  SD Highway Superintendents
- Hal Rumpca
  SDDOT Research
- Ken Skorseth
  Local Transportation Assistance Program
- Ken Swedeen
  Dakota Asphalt Paving Assn.
- Yvonne Taylor
  SD Municipal League
- Todd Thompson
  SDDOT Bridge Design
- Jeff Des Lauriers
  City of Sioux Falls
- Bob Wilcox
  SD County Commissioners Assn.
- Dale Tech
  SD Street Superintendents Assn.

*South Dakota Local Roads Needs Study SD2008-11*
*(Preliminary Results 9/25/08)*

30

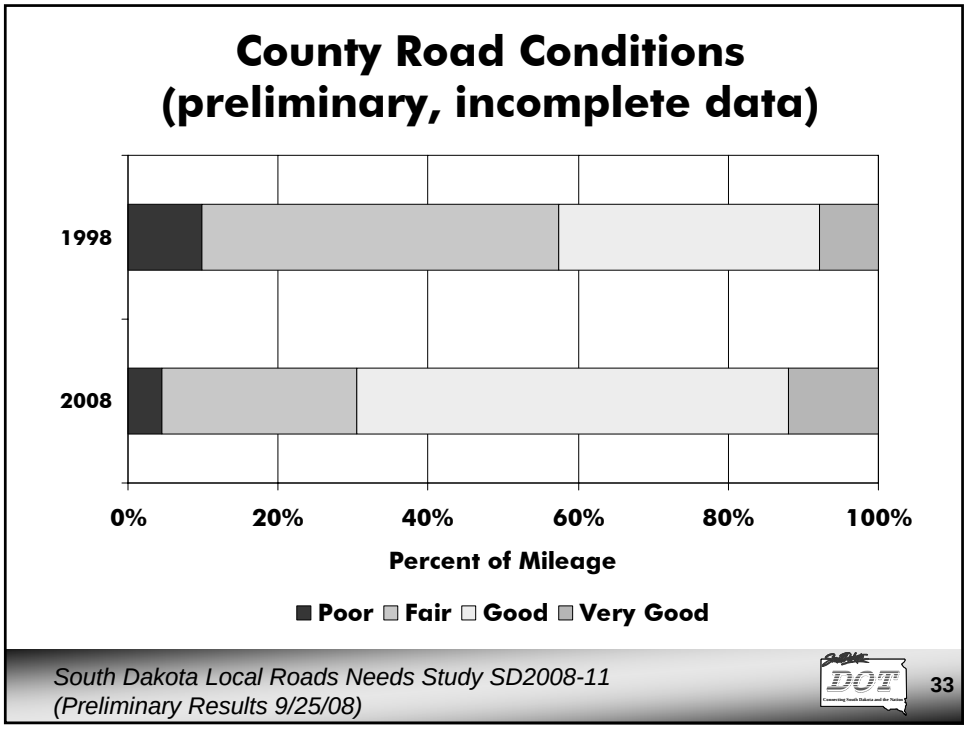
# Acknowledgements


- SD Association of Towns & Townships
- SD Association of Counties
- SD Municipal League
- SD Local Transportation Assistance Program
- SD Department of Tourism & State Development
- SDDOT Offices of Bridge Design, Project Development, Research, Local Programs
- Applied Pavement Technology




# Questions?

**David L. Huft**
**Research Program Manager**
**South Dakota Department of Transportation**
**700 East Broadway Avenue**
**Pierre, SD 57501-2586**
**605.773.3358**
**dave.huft@state.sd.us**


County Road Conditions
(preliminary, incomplete data)
1998
2008
0%
20%
40%
60%
80%
100%
Percent of Mileage
Poor
Fair
Good
Very Good
South Dakota Local Roads Needs Study SD2008-11
(Preliminary Results 9/25/08)
33