

South Dakota 2008 Local Roads Needs Study
David Huft, SDDOT Research Program Manager

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SD Department of Transportation

2009 Interim Study
Long-Term Highway Needs &
Department of Transportation Agency Review
August 20, 2009

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1

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

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2

2009 Interim Study on Long-Term Highway Needs

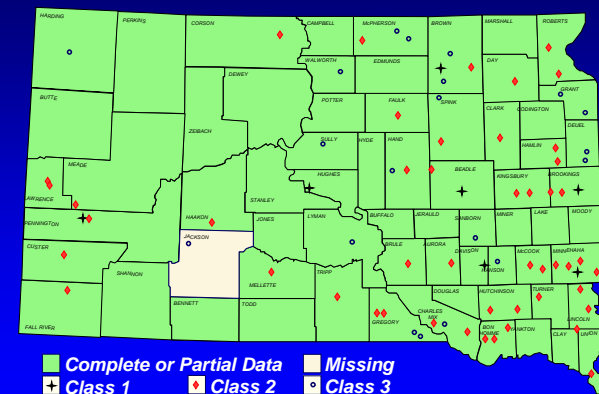
- A study of long term highway needs and the resources available to provide the financial support appropriate to meet these needs...

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3

Local Agency Survey Responses



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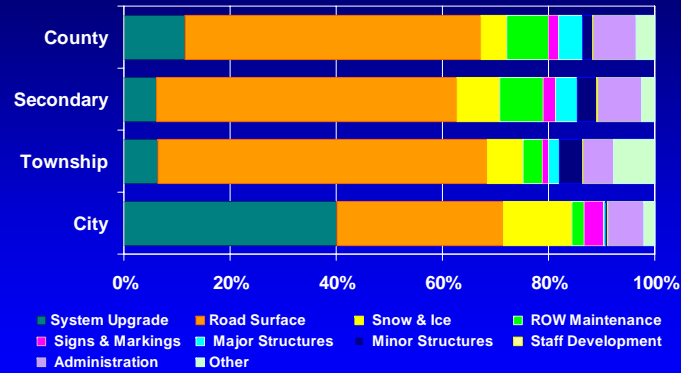


7

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Reported Distribution of Expenditures



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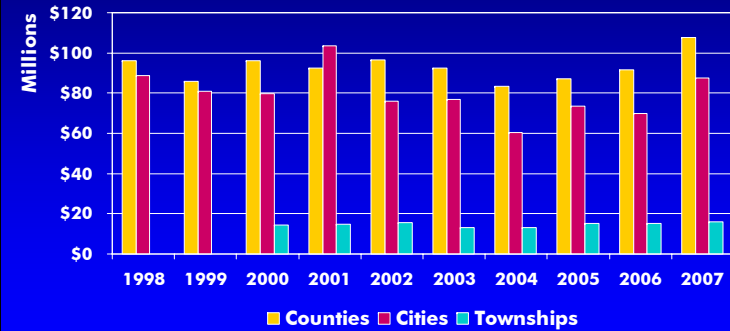


8

Local Road & Bridge Expenditures

(derived from Legislative Audit Database)

Estimated, Current Dollars

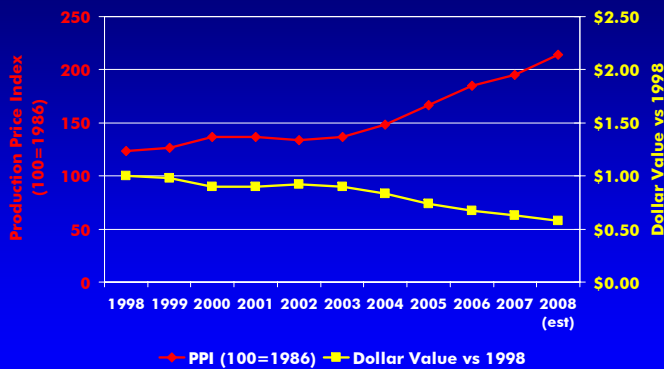


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9

Highway Construction Production Price Index (US Bureau of Labor Statistics)



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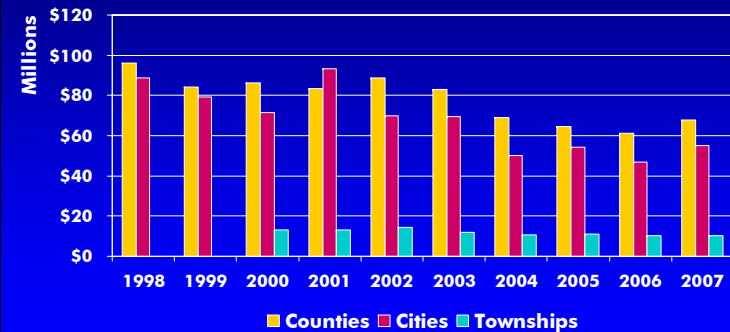


10

Local Road & Bridge Expenditures

(derived from Legislative Audit Database)

Estimated, in 1998 Dollars



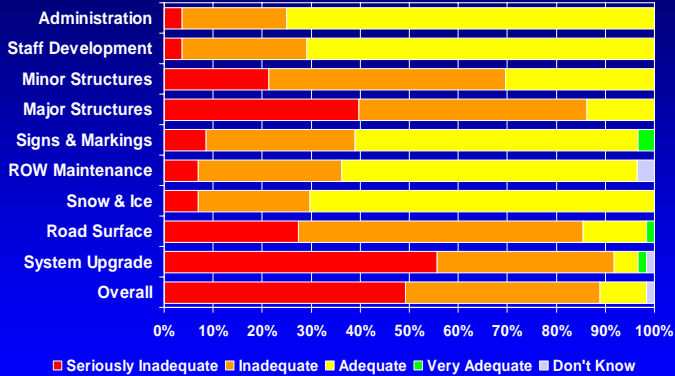
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11

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Counties: Perceived Adequacy of Revenues

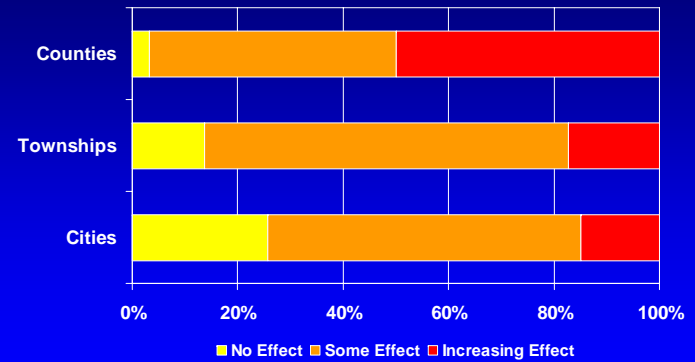


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13

Funding Level Effects on Liability Risk (striping, signing, spot improvements)

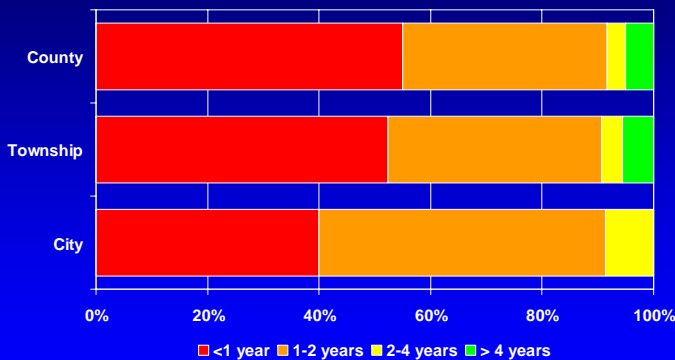


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15

Advance Knowledge of Needed System Upgrade/Expansion



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17

Rural Development Pressure Example (Deuel County, Blom Township)



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18

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Perceived Opportunities for Funding

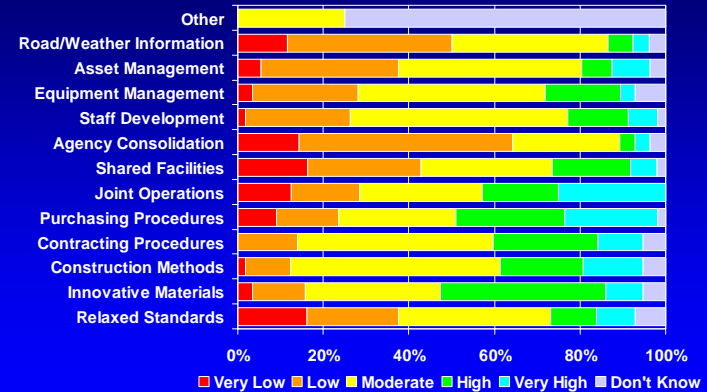
- Vehicle registration fees
- Wheel tax
 - Increase maximum charge (currently \$4/wheel)
 - Allow more wheels taxed (currently 4 per vehicle)
 - Adopt in more counties or on statewide basis
- Property tax
 - Opt out of tax freeze
 - Non-highway needs compete for limited funds
 - Some counties have large public land proportion
- Cost sharing by developers

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22

Counties: Opportunities for Efficiency



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24

Bridge Need Assessment

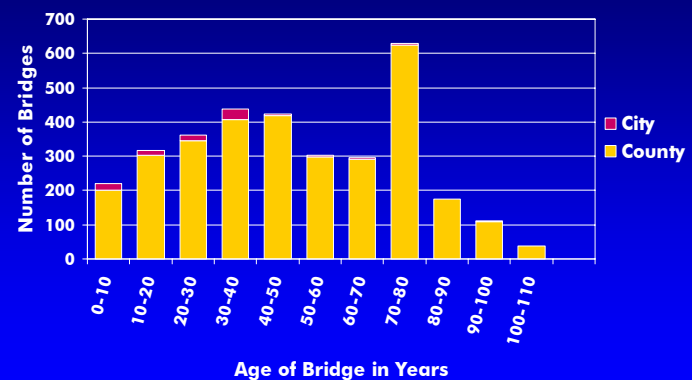
- 20-year analysis
- Numbers reflect only structural needs
- Other bridges have functional deficiencies
 - Width
 - Number of lanes
 - Inadequate clearance
- 1098 county bridges are posted for weight
- 139 are recommended to be posted
- 8 county bridges are recommended for closing

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26

Local Bridge Age Distribution (72% of all bridges, 40% of all deck area)



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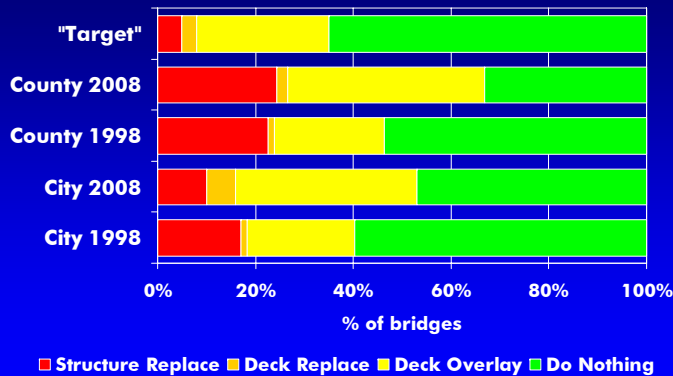


28

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Local Bridge Conditions



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29

Major Structure Needs on Local Systems

Jurisdiction	Bridges	Culverts	Total	Annual Need
County	\$475 M	\$11 M	\$486 M	\$24.3 M
City	\$14 M	\$0 M	\$14 M	\$0.7 M
Total	\$489 M	\$11 M	\$500 M	\$25.0 M

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32

Road Surface Need Assessment

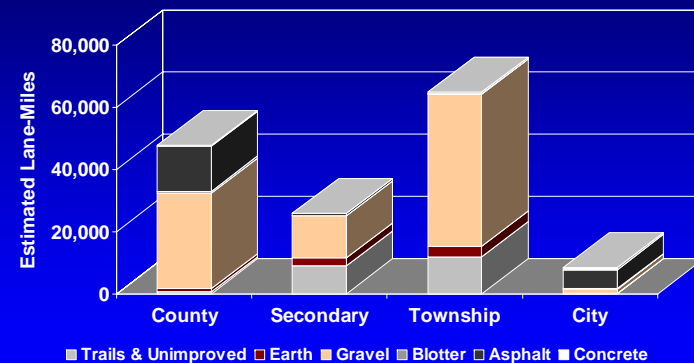
- 20-year analysis period
- Based upon
 - SDDOT local road inventory
 - » Surface type for improved roads
 - » Average daily traffic category
 - » Surface width
 - 2008 condition reported by local officials
 - SDDOT estimates of rehab treatment unit costs
 - SDLTAP estimate of unpaved surface maintenance unit costs
 - SD Secondary Road Plan

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33

Local Road Inventory (88% of all state road mileage)

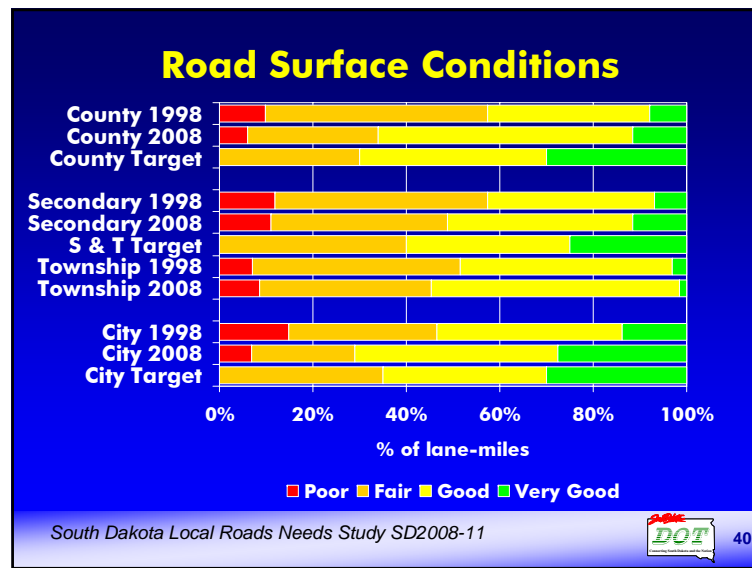
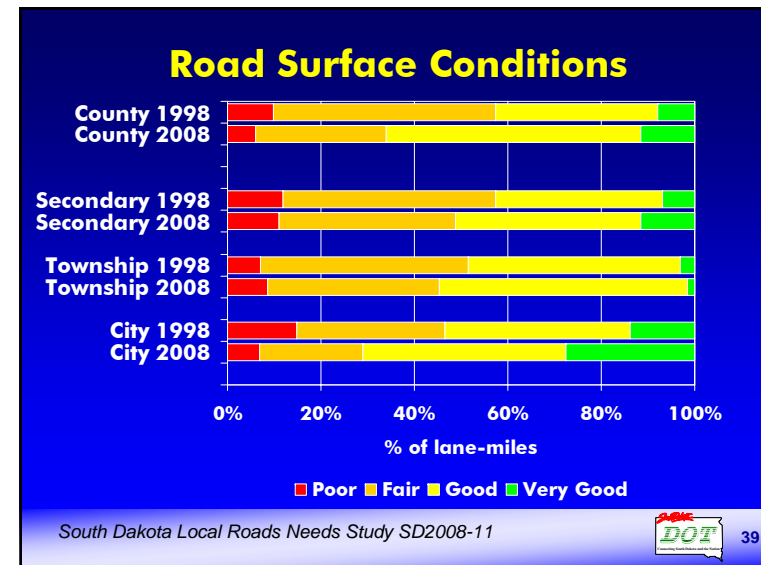
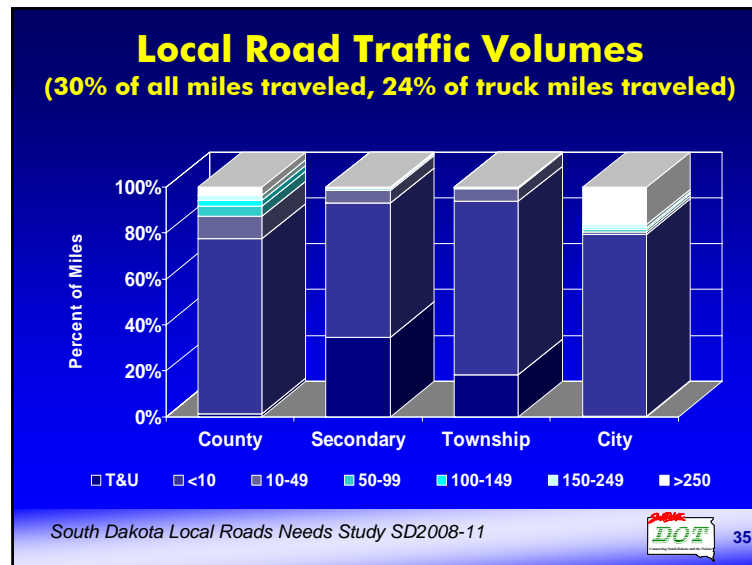


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34

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Annual Road Surface Needs (balanced investment strategy)

System	To Maintain Current Condition			To Achieve Target Condition		
	Rehabilitation	Maintenance	Total	Rehabilitation	Maintenance	Total
County	\$56 M	\$21 M	\$77 M	\$68 M	\$21 M	\$89 M
Secondary	\$4 M	\$3 M	\$8 M	\$6 M	\$3 M	\$9 M
Township	\$10 M	\$10 M	\$20 M	\$13 M	\$10 M	\$23 M
City	\$24 M	\$9 M	\$34 M	\$26 M	\$9 M	\$35 M
Total	\$94 M	\$43 M	\$137 M	\$113 M	\$43 M	\$156 M

"Balanced Investment Strategy" invests 25% of capital expenditures in rehabilitation of roads in "Good" condition, 25% in roads in "Fair" condition, and 50% in roads in "Poor" condition.

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44

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Annual Road Surface Needs
("worst-first" investment strategy)

System	To Maintain Current Condition			To Achieve Target Condition		
	Rehabilitation	Maintenance	Total	Rehabilitation	Maintenance	Total
County	\$94 M	\$21 M	\$115 M	\$116 M	\$21 M	\$137 M
Secondary	\$6 M	\$3 M	\$9 M	\$8 M	\$3 M	\$11 M
Township	\$10 M	\$10 M	\$20 M	\$15 M	\$10 M	\$25 M
City	\$29 M	\$ 9 M	\$38 M	\$32 M	\$ 9 M	\$44 M
Total	\$139 M	\$43 M	\$182 M	\$171 M	\$43 M	\$214 M

"Worst-First Investment Strategy" invests 100% of capital expenditures in rehabilitation of roads in "Poor" condition, nothing in roads in "Good" or "Fair" condition.

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Annual Road Surface & Bridge Needs
versus Current Annual Expenditures

	County & Secondary	Township	City	Total
Road Surfaces	\$97.4 M	\$23.4 M	\$34.9 M	\$155.7 M
Major Structures	\$24.3 M	N/A	\$0.7 M	\$25.0 M
Total Needs	\$121.7 M	\$23.4 M	\$35.6 M	\$180.7 M
Estimated Expenditures	\$58.7 M	\$8.8 M	\$32.2 M	\$99.7 M
Shortfall	\$63.0 M	\$14.6 M	\$3.4 M	\$81.0 M

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Conclusions: Funding

- Local officials face serious financial challenges
- Most significant challenges concern providing and maintaining road and bridge infrastructure
- Funding and expenditure levels have remained fairly constant since 1999
- Value of "road dollar" declined >40% 1998-2008
- Agricultural, residential, and commercial development places significant demands on local transportation
- A shortfall of \$80 million per year exists to achieve target condition
- A shortfall of about \$50 million per year exists just to maintain current condition

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Conclusions: Road & Bridge Needs

- Road surface condition improved 1998-2008
- More bridges need treatment in 2008 than 1998
- Bridge and road surface treatment costs have risen dramatically since 2003
- Overall road and bridge needs have increased since 1998
- Condition will deteriorate at current levels of expenditure; gains made 1999-2003 will erode
- A balanced investment strategy is far more effective than a "worst-first" strategy

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Conclusions: Opportunities for Efficiency

- | | |
|---|---|
| <ul style="list-style-type: none"> • Joint operations <ul style="list-style-type: none"> – Economy of scale – Contracts w/county • Shared equipment and facilities • Shared procurement • Innovative materials <ul style="list-style-type: none"> – Reclaimed materials – Warm asphalt – Dust suppressants | <p>But Not...</p> <ul style="list-style-type: none"> • Relaxed standards • Organizational consolidation <p>Possibly...</p> <ul style="list-style-type: none"> • Staff Development • Asset Management Techniques |
|---|---|

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49

Conclusions: Data Reporting

- Changes to highway information reporting could facilitate future need assessments
 - Road inventories lag development in growth areas, abandonment in some rural areas
 - Pending SDDOT research to improve procedures
- Financial reports are ambiguous
 - Single “highways and bridges” category
 - City capital improvements grouped with buildings
- This statewide study did not evaluate individual agencies or their funding allocations

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50

Project Technical Panel

- | | |
|--|---|
| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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. |
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51

Questions?

- | | |
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53