2017 - 2021

Five-Year County Highway and Bridge Improvement Plan Guide

South Dakota DOT

Connecting South Dakota and the Nation

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Five-Year County Highway and Bridge Improvement Plan

A. What is the Five-Year County Highway and Bridge Improvement Plan?

The Five-Year County Highway and Bridge Improvement Plan, or TRANSPORTATION PLAN, is a short-range planning document that will be developed and updated annually based on needs and identified department policies. The plan will include roadway classifications, roadway and bridge inventory, a five-year list of the projected revenue for highway and bridge improvements, a five-year list of programmed highway and bridge projects based on the projected revenue and the status of programmed projects from the previous plan. Projects that cannot be funded with current revenues can be included in the prioritized project listing and brought into the funded program if funding becomes available.

The TRANSPORTATION PLAN should be used as a tool to assist the county in budgeting, planning and incorporating the needs and concerns of the public.

Transportation planning is a cooperative process designed to foster involvement by all users of the system, such as the business community, community groups, the traveling public, freight operators and the general public through a proactive public participation process conducted by the county. The planning process also fosters communication between local governments such as townships, towns and larger cities to jointly discuss transportation needs and coordinate improvements.

B. State requirements

In 2015, the State of South Dakota established the local Bridge Improvement Grant fund by SDCL 32-11-38. To be eligible for the funding, the county must have imposed a wheel tax and have an adopted TRANSPORTATION PLAN in accordance with the rules promulgated by the Transportation Commission and Administrative Rule, Article 70:12. County Commission certification adopting the plan and a copy of the plan must be submitted to the South Dakota Department of Transportation (SDDOT) for approval by October 15 each year. The TRANSPORTATION PLAN must be updated and submitted to the SDDOT annually to maintain eligibility for the bridge grant funding.

C. Developing and updating a TRANSPORTATION PLAN

Projects are generated from many sources including elected officials, studies, inventory management systems, local knowledge, staff members and other interested individuals and groups. In many cases, tools such as pavement management systems, bridge and culvert inventories, accident data, historical data and local knowledge is used to help identify potential new projects. Potential new projects must undergo a review of scope, priority, schedule and financing concepts.

Once the programmed project list is developed, a coordination meeting with townships and a public meeting should be held to provide an opportunity for public comment. Based on the results of the township coordination meeting, public meeting and comments from the county commission, a final version of the TRANSPORTATION PLAN is developed. This final version is then adopted by the commission. Commission certification adopting the plan and final document are to be submitted to the SDDOT for approval.

The annual TRANSPORTATION PLAN update starts with the previously adopted TRANSPORTATION PLAN. Projects in the previously adopted TRANSPORTATION PLAN are reviewed and those that have been completed, or because of changing conditions, are no longer needed, are removed from the TRANSPORTATION PLAN. The remaining projects carried over from the previous TRANSPORTATION PLAN are reviewed for changes to cost estimates, project funding, schedule or scope during the update process to ensure the most current information is represented in the TRANSPORTATION PLAN.

Updated projects from the previous TRANSPORTATION PLAN and new projects can be used to create an updated project needs list (optional). A financial plan is developed to identify available funding for highways and bridges. With the optional project needs list, or other method used to identify project needs, and the list of projected revenue available for highway and bridge use, a five-year programmed project list can be developed. The phasing and funding of these projects in the five-year project list is based on input from county elected officials, studies, inventory management systems, public, staff and local and historical knowledge.

D. What is included in the TRANSPORTATION PLAN?

The TRANSPORTATION PLAN should include, but is not limited to, the following information:

1. Map(s)

Create one or multiple maps to include classification of roadways. The maps are a tool to be used in the planning and public meeting process. They are available through the SDDOT. Since the maps are provided by the SDDOT, they do not need to be a part of the final submittal to the department. However, the plan submittal to the DOT should clearly state the maps were provided at the public meeting.

In addition, maps may include, if available, Average Daily Traffic (ADT), inventory of highways and structures, and structure locations. The classification map can either be the federal function classification map (SDDOT) or a local map showing the function of the roadway.

Roadway classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network.

Examples of classification of roadways are:

Arterial – Roadways with higher traffic with a longer uninterrupted distance

Collector – Roadways that connect traffic from the local roads to the arterials

Local – Roadways that have little or no through movement and typically serve short travel distances

Design standards are tied to functional classification. Each class has a range of allowable lane widths, shoulder widths, curve radii, etc.

Map examples can be found on pages 14-16 and required GIS data files and maps are available from the SDDOT.

2. Inventory of Highways and Bridges

Create a list or map(s) that show an inventory of roads maintained by the county. The map(s) or list should identify the location and surface type (gravel, blotter, asphalt concrete, etc.). Optional items could include, if available: surface width, surface thickness, base thickness, year built, last year improved and type of improvement, shoulder type, shoulder width and culvert inventory. A highway map showing surface type can be used for the highway inventory.

Create a list or map(s) that shows an inventory of the bridges for which the county is responsible per SDCL 31-14-2. The list or map(s) will identify the location of the bridge, sufficiency rating, and whether the bridge is posted for load capacity along with the posted limit(s). Optional items include: year built, last year improved and improvement type.

SAMPLE BRIDGE INVENTORY LISTING

	McPherson									
Structure Number	Custodian Code	SD Struct Type	Structure Length	Structure Width	Year Built	Year Reconstructed	Operating Status	Percent below Legal Load	Fed Suff Rating	Location
45010047	2	X028	32	0	1940		B	2	41.1	3.5W 7.3N Eureka
45380084	2	X028	26	0	1952		A	5	88.7	0.5E 6.6N of Leola
45460197	2	X020	92	28.3	1956		A	5	88.7	2.3N Wetonka
45470175	2	X031	32	19.7	1935		B	0	34.9	4.5N 1E Wetonka

3. Project Needs List (Optional)

To help in programming five years of projects, it may be beneficial to create a list of all the highway and bridge needs in the county. This list should include a project location, project description with an improvement type (reconstruction, maintenance, surfacing, structure replacement or rehabilitation) and a project estimate. Projects contained in the project needs list are organized according to project need based on input from public leaders, staff and the general public. The needs may be ranked as high, medium or low priority, or by a numbering system. The needs list could help show the public and elected officials the needs in the county and the programmed projects will show what projects can be done with the funding available.

When developing the list of needs, consideration should be given to traffic generators such as schools, grain terminals, large dairies, ethanol plants, etc. The impacts from the traffic generators may change the classification triggering a need to improve the roadway. Some of the traffic generators may exist in neighboring counties or states and should not be ignored in the decision making process. Safety issues should also be considered. Examples of safety projects are narrow or non-existent shoulders, pavement markings, blind corners, sharp curves, steep side slopes and poor sight distance.

Some of the needs may be short-term, and some may be long-term. The long-term needs may require several projects in order to complete. Determining the timeframe of long-term and short-term needs can vary depending on the size or complexity of the project.

The needs should identify problems or deficiencies and explore possible solutions. The county may want to evaluate efficiency of the existing systems or reducing the frequency and severity of crashes in identified problem areas.

The system needs should also consider preservation of existing facilities. Preventive maintenance is typically applied to pavements in good condition having significant remaining service life. As a major component of pavement preservation, preventive maintenance is a strategy of extending the service life by applying cost-effective treatments to the surface or near-surface of structurally sound pavements. Examples of preventive treatments include asphalt crack sealing, chip sealing, slurry or micro-surfacing, thin and ultra-thin asphalt overlays, concrete joint sealing, diamond grinding, dowel-bar retrofit, and isolated, partial and/or full-depth repairs.

a. Project Types

I. Project improvements not considered routine or corrective maintenance by the county. Examples include:

<u>ROADWAY</u>
New Route Construction
Reconstruction
Pavement Replacement
Overlays
Re-graveling of segment/route
Restoration of pavement drainage system

Chip Seals
Micro-surfacing
Blotters
Slope flattening
Pipe/Culvert Linings or Rehab
Surface Type Change (Gravel → Asphalt / Asphalt → Gravel, etc.)

STRUCTURE
New Bridge Construction
Bridge Replacement
Deck Replacement
Deck/Slab Repair
Deck Overlay
Girder Repair/Painting
Column, Cap, or Abutment Repair
Scour Counter Measures
Seal Coats
Epoxy Chip Seal
Bridge Painting
Remove and Reset Box Culverts

II. The following types of projects are considered routine or corrective maintenance and it is optional to include them in the plan:

ROADWAY
Snow Removal
Pothole Patching/Repair
Gravel Blading
Crack Filling
Isolated Concrete/Asphalt Patching
Isolated Joint Replacement
Isolated / Spot Re-graveling

STRUCTURE
Bridge Deck Patching
Cleaning of Ditches and Structures
Cleaning of Debris around Structures
Pipe Cleanout

SDDOT's Local Government Assistance Office should be consulted for other activities not listed.

SAMPLE GRAVEL SURFACING SCHEDULE

Amount of Traffic	Average Daily Truck Traffic	Gravel Thickness Required	Blading Frequency
High	>50	12"	Every month
Medium	10-50	9"	Every 2 months
Low	<10	6"	every 3 months

b. Project Costs

The Total Project Cost included in the TRANSPORTATION PLAN is based on varying levels of cost estimating. As the project moves from the planning level to a more detailed level of design, cost estimates are refined based on the more detailed information. The following defines the cost estimate types in order of increasing detail and certainty:

1) **Conceptual Estimate (Project needs List)**: These conceptual estimates are used where a significant need has been identified but a detailed project scope has not been developed. These cost estimates have the potential to change significantly as the project scope becomes more defined.

2) **Planning Level Estimate (Five-year programmed project list)**: These cost estimates are based on a generally defined scope. Cost estimates are usually based on limited field-work and general cost assumptions. No actual design work has been done prior to the development of these cost estimates. The cost estimate could still change significantly as design work begins, but the estimate is more reliable than the Conceptual Estimates.

3) **Engineers Estimate (Design phase)**: These cost estimates are based on actual preliminary design work. If done for all facets of the project and there are no further additions to the project scope, these estimates should represent a fairly accurate cost for the project.

County governments will decide which type of cost estimate best fits to help them make decisions. Cost estimates should be updated as part of the TRANSPORTATION PLAN update.

The DOT has the statewide average bid prices for informational purposes on its website at http://www.sddot.com/business/contractors/docs/averageunitprices.pdf .

SAMPLE TABLE OF PROJECT NEEDS LIST

Project Location	Project Needs List Project Description	Total Project Cost	Prioritization Ranking (optional)

4. **Projected Revenue Available** (Five-year budget projection for highway and bridge program)

   The TRANSPORTATION PLAN projected revenue table identifies the amount of funds projected to be available for highway and bridge use over the next five years.

   Non-confirmed but potential revenue sources should be identified. These include, but are not limited to, grant funds applied for which confirmation has not yet been received.

   Planned expenditures for each project are summarized into funding categories. The funding categories should reflect anticipated revenue sources. If they are different than what is listed below, the applicant should change the descriptions to best match the agency's terminology. Below are examples of funding categories that may be used in the TRANSPORTATION PLAN:

   Revenue Sources – This includes the following types of funding categories (other formats are acceptable):

   a. **Local Funds -** The taxes levied portion of the revenue estimates includes a variety of funding sources including property tax, motor vehicle licenses, wheel tax, etc. Local funds also include the annual Surface Transportation Program (STP) payout funds.
   b. **Intergovernmental Revenue –** The Intergovernmental sources of revenue includes charges for services for townships and road districts.
   c. **State Funds -** These are any revenues from the state for highway purposes including Bridge Improvement Grants (BIG), Agri-Business Grants, and State Match on SIB loans and STP projects, etc.
   d. **Federal Funding -** Federal funding is available through various programs included in Federal transportation legislation. SDDOT administers most of these programs. They include Emergency Relief (ER), Federal Emergency Management Agency (FEMA), Surface Transportation Program Funds, Transportation Alternative Program (TAP), Safety funds, County-Wide Signing Projects, etc.
   e. **Other –** Miscellaneous funding sources include transfer of general funds, sale of

surplus property, and others that do not fit into the categories above.

SAMPLE REVENUE SOURCES TABLE

Account Description	2017	2018	2019	2020	2021
Local Funds					
General Funds-property tax					
Motor Vehicle Licenses					
Wheel Tax					
Annual STP Payout Funds					
Intergovernmental Funds					
Township Services					
State Funds					
BIG – PE (planning to apply for)					
BIG –PE (awarded by DOT)					
BIG – Preservation (planning to apply for)					
BIG – Preservation (awarded by DOT)					
BIG – Construction (planning to apply for)					
BIG – Construction (awarded by DOT)					
OTHER (Match on STP Projects, Pavement Marking Prj.)					
Federal Funds					
TAP					
ER/FEMA					
OTHER (STP, Bridge, Signing, Hazard Elimination, SIB Loans)					
TOTAL					

Note:

- For State and Federal Funds, only enter the applicable amount (i.e. 80% of total project cost).
- Include both BIG funds awarded and BIG funds that will be applied for but not yet receive.

5. Project List (Five-year programmed project list based on projected funding)

Create a project list either by using the project needs list or another method and the projected revenue available for highway and bridge use. The projects must be selected based on projected revenue available. Include a project location, project description with an improvement type, funding source(s) and a planning level or engineers estimate. Projects contained in the project list are organized according to programmed year and are based on needs and input from public leaders, staff and the public. If there are no capital improvement projects planned for the next five years, this section may still have a project with the improvement "Maintenance" listed. A sample spreadsheet can be found on page 19.

Portions of a project may be unfunded. A portion of the project cost planned for the five years included in the TRANSPORTATION PLAN may include grant funding which has been or will be applied for, but not yet approved.

If it is anticipated that an application for Bridge Improvement Grant funds will be submitted, this **must** show up in your project list. Bridge Improvement Grants will include Preliminary Engineering Grants, Bridge Preservation Grants and Bridge Replacement/Rehabilitation Grants. Enter the proposed project in the year you anticipate expending funds. For Preliminary Engineering, that would be the year you anticipate hiring a consultant to do the survey and structure sizing based on hydraulic analyses. For Bridge Preservation or Replacements, it is the year you plan on letting a project to bids.

Equipment is often a large portion of the Transportation budget and should also be considered when evaluating project selections.

6. Annual Update of Projects List

Include the previous year's programmed projects list and descriptions from the previous TRANSPORTATION PLAN and explain the status of the projects. Some examples would be: completed, under design, planning, in-progress, deferred to a specific year, etc. Showing the status of the projects from the previous years will give the elected officials and public an understanding of where the programmed projects stand.

SAMPLE TABLE OF PROJECT STATUS

Project Location	Annual Listing of Programmed Projects Project Description	Year	Status

E. Public Involvement and Coordination with other Agencies

Once a project list is developed, the county will coordinate with the townships on the township road bridges and conduct a public meeting to provide an opportunity for public comment. Following the public and township coordination meetings, the commission will consider all comments and develop a final version of the TRANSPORTATION PLAN. The county commission will adopt the final TRANSPORTATION PLAN and submit the TRANSPORTATION PLAN, including the cover form and certification, to the South Dakota Department of Transportation for approval.

The TRANSPORTATION PLAN shall include a copy of the affidavit of publication for the public meeting's notice, a copy of the coordination letter / letter of notice from the county to the township if a bridge on a township road is included, an attendance list from the public meeting and a summary of all public comments.

F. Amendments to the Plan

The TRANSPORTATION PLAN may be amended by the county commissions at any of their regular meetings. Amendments that impact the potential application for BIG funds should be sent to the SDDOT for their files to ensure that the BIG projects show up in the Plan prior to BIG applications being submitted.

G. Submittal of Plans and County Contact Information

The **TRANSPORTATION PLAN** shall be submitted to the Department of Transportation by October 15 each year.

The **TRANSPORTATION PLAN** shall include the Submittal and Certification form as shown on page 13.

The preferred method of submittal of the **TRANSPORTATION PLANS** is electronically in pdf format to Wade.Dahl@state.sd.us. If it is not possible to email the plan, a hard copy (1) may be mailed to:

Wade Dahl
SDDOT Local Government Assistance
700 E Broadway
Pierre, SD 57501

CHECKLIST OF REQUIREMENTS

_____Cover Form with Certification

Maps

_____Map including roadway classification and bridge locations (if DOT unaltered maps are used at public meeting and are not attached, check here _____)

_____Map showing Five-year programmed project locations from the Programmed Project listing

Inventory lists

_____Highways: include location and surface type (a map is acceptable; if DOT unaltered maps are used at public meeting and are not attached, check here _____)

_____Bridges: include location, sufficiency rating, and actual load limits if posted.

_____Projected Revenue Available per year

_____5-year Project List (Programmed Projects)

_____Annual update Project List (not required for first time plan submittal)

_____Affidavit of publication of public meeting notice (copy of the notice or article alone, is not sufficient)

_____Township coordination letters/notice (sample letter and mailing list is acceptable)

_____Attendance list from public meeting (all attendees – not just commission members)

_____Public Comments (if no comments are received, clearly indicate that in the plan submittal)

SAMPLE TRANSPORTATION PLAN MAP(S) AND FORMS

COVER FORM AND CERTIFICATION

The following text shall be included on the front cover of the County Highway and Bridge Improvement Plan:

Certification: As approved this ____ day of _____, 201__
_____ County Commission

By: _____
County Commission Chairperson

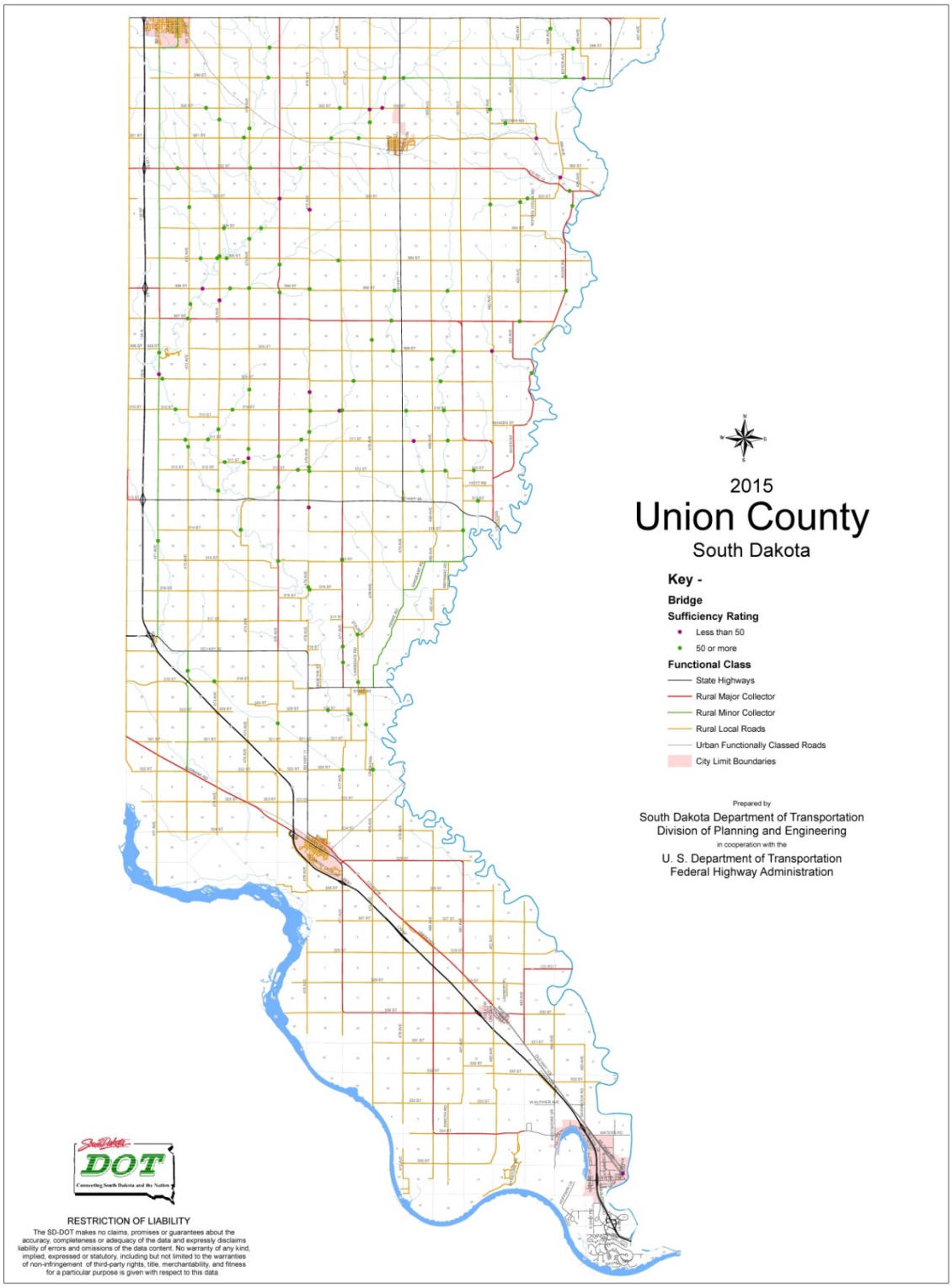
Attest:

_____
County Auditor or Clerk

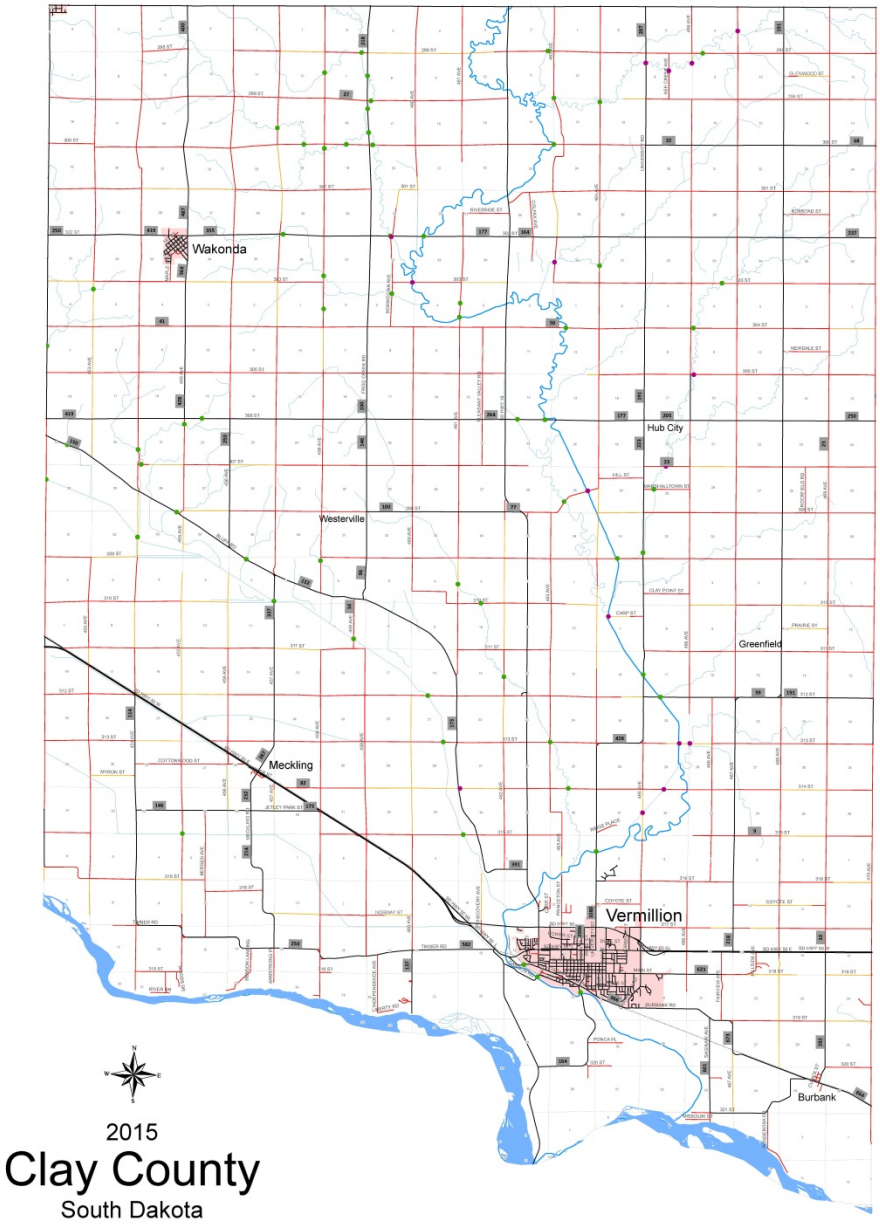
County Contact Person: _____
Phone Number: _____
Email Address: _____

Received by SDDOT on _____
Approved by SDDOT on _____

SAMPLE ROADWAY CLASSIFICATION AND BRIDGE SUFFICIENCY/LOCATION MAP



SAMPLE SURFACE TYPE AND ADT MAP



Key -

Bridge

Sufficiency Rating

- Less than 50
- 50 or more
- 55 Current ADT

Type of Surface

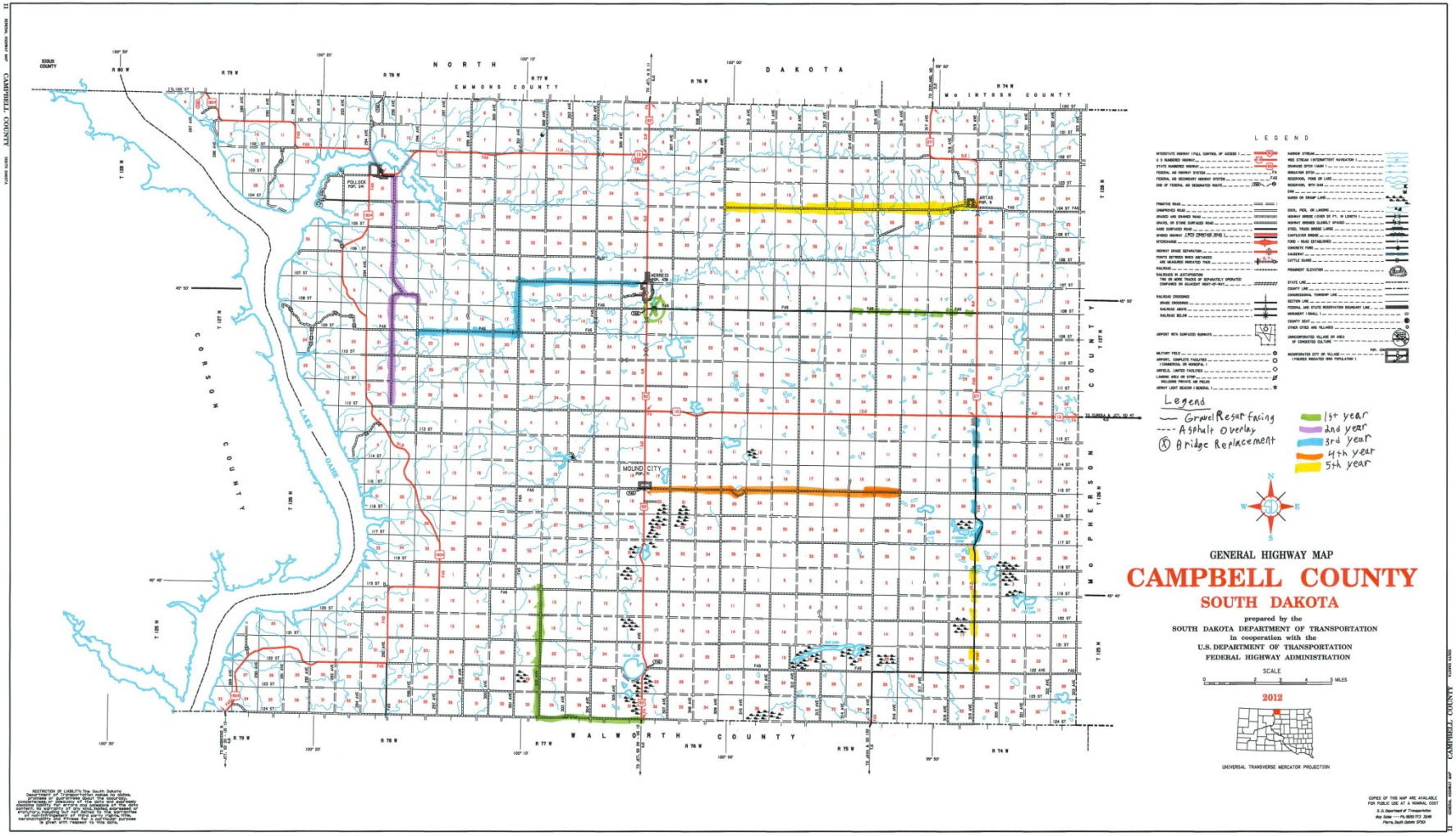
- Hard Surface Road
- Gravel Road
- Dirt Road
- City Limit Boundaries

Prepared by
South Dakota Department of Transportation
Division of Planning and Engineering
in cooperation with the
U. S. Department of Transportation
Federal Highway Administration

RESTRICTION OF LIABILITY

The SD-DOT makes no claims, promises or guarantees about the accuracy, completeness or adequacy of the data and expressly disclaims liability of errors and omissions of the data content. No warranty of any kind, implied, expressed or statutory, including but not limited to the warranties of non-infringement of third-party rights, title, merchantability, and fitness for a particular purpose is given with respect to this data.

SAMPLE PROJECTS MAP



Project Needs List			
Project Location	**Project Description**	**Total Project Cost**	**Prioritization Ranking (Optional)**

REVENUE SOURCES TABLE (Show amounts in thousands of dollars)

Account Description	2017	2018	2019	2020	2021
Local Funds					
General Funds-property tax					
Motor Vehicle Licenses					
Wheel Tax					
Annual STP Payout Funds					
Intergovernmental Funds					
Township Services					
State Funds					
BIG – PE (planning to apply for)					
BIG –PE (awarded by DOT)					
BIG – Preservation (planning to apply for)					
BIG – Preservation (awarded by DOT)					
BIG – Construction (planning to apply for)					
BIG – Construction (awarded by DOT)					
OTHER (Match on STP Projects, Pavement Marking Prj.)					
Federal Funds					
TAP					
ER/FEMA					
OTHER (STP, Bridge, Signing, Hazard Elimination, SIB Loans)					
TOTAL					

Note:

- For State and Federal Funds, only enter the applicable amount (i.e. 80% of total project cost).
- Include both BIG funds awarded and BIG funds that will be applied for but not yet received.

FIVE-YEAR PROGRAMMED PROJECT LISTING

Project Location	Project Description	Year	Proposed Five-Year Project Funding Information (in thousands of dollars)						Total Project Cost
			Local Funding	Federal Funding	State Funding	Unfunded	Anticipated Grant	Total Funding	

Local Funding Includes: Match on BIG funding, traditional BRO & BRF projects, TAP projects, etc., and some shortfalls/balances on misc. projects. Also STP Payout funds.

Federal Funding Includes: 100% of Signing & Delineation projects, and approx. 80% of STP, BRO, BRF, and TAP projects. Federal portion of ER/FEMA projects.

State Funding Includes: 80% of awarded BIG projects and approx. 20% match on STP projects.

Anticipated Grant (BIG): 80% of total

ANNUAL UPDATE OF PROJECT LIST

Project Location	Annual Listing of Programmed Projects Project Description	Year	Status

PUBLIC INVOLVEMENT DOCUMENTATION

Include copies of any invitations sent to townships or road districts.

Below is the sample of documentation that should be used for public involvement and coordination with other agencies.
A public meeting was held on (DATE) to solicit public input into the proposed 5 year plan prior to adoption by the COMMISSION. (#) attended the meeting. Notice of the meeting was printed in the (NEWSPAPER(s)) prior to the meeting, as shown by the affidavit of publication.

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
DAVISON COUNTY
NOTICE OF PUBLIC INFORMATION MEETING / OPEN HOUSE
FOR
DAVISON COUNTY MASTER TRANSPORTION PLAN

Date: December 2, 2014
Time: 5:30 p.m. to 7:00 p.m.
Place: Davison County Fairgrounds Complex, Meeting Hall
3200 West Havens, Mitchell, SD 57301

The South Dakota Department of Transportation (SDDOT) in conjunction with Davison County will hold an open house style public meeting to discuss and receive public input on the development of a Master Transportation Plan for Davison County. The open house will be informal, with one on one discussion available with SDDOT, County & Consultant staff.

Between 5:30 p.m. and 7:00 p.m., SDDOT, County, & Consultant staff will be available with displays to discuss transportation issues within Davison County and answer your questions. During this time, you will also have the opportunity to present written comments. A short presentation will be given at approximately 6:00 p.m.

Notice is further given to individuals with disabilities that this open house/public meeting is being held in a physically accessible place. Any individuals with disabilities who will require a reasonable accommodation in order to participate in the open house/public meeting should submit a request to the department's ADA Coordinator at 605-773-3540 or 1-800-877-1113 (Telecommunication Relay Services for the Deaf). Please request the accommodations no later than 2 business days prior to the meeting in order to ensure accommodations are available. For further information regarding the study, contact Steve Gramm at (605) 773-6641 or by email at steve.gramm@state.sd.us

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AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF DAVISON)

Penny Hohbach of said county, being, first duly sworn, on oath, says; that he/she is the publisher or an employee of the publisher of The Daily Republic, a daily newspaper, published in the City of Mitchell, in said County of Davison, and State of South Dakota; that he/she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper as defined in SDCL 17-2-2.1 through 17-2-2.4 inclusive; that said newspaper has been published within the said County of Davison and State of South Dakota, for at least one year next prior to the first publication of the attached public notice, and that the notice, order or advertisement, a printed copy of which, taken from the paper in which the same was published, and which is hereto attached and made a part of this affidavit, was published in said newspaper for 2 issues(s), to wit:

Saturday, November 15, 2014
Saturday, November 22, 2014

That the full amount of the fee charged for the publication of the attached public notice insures to the sole benefit of the publisher or publishers; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whomsoever, that the fees charged for the publication thereof are: $119.30

Signed: Penny Hohbach

Subscribed and sworn to before me this 25th day of November, 2014.