

Rural Access Infrastructure Funding/Inventory Process

PROCESS IMPLEMENTATION/GUIDANCE FOR SDCL § 31-34

AUGUST 2021

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SD2021-03 Technical Panel Members

| | | | |
|------------------|-----------------------------|------------------|-------------------------------|
| Brad Bowers | Harding County Hwy. Dept. | Karen Layher | Grant County Auditor |
| Thad Bauer | SDDOT Research | Dustin Leiseth | SD Assn. of Towns & Townships |
| Sen. Mary Duvall | SD Senate | Brace Prouty | SDDOT Project Development |
| Rep. Caleb Finck | SD House of Representatives | Stacy Steffensen | Brookings County Commission |
| Merle Hanson | Beadle County Hwy. Dept. | Terry Sletten | SD Assn. of Towns & Townships |
| Dave Huft | SDDOT Research | Greg Vavra | SDLTAP |
| Steve Johnson | SDDOT Bridge Design | Kris Jacobsen | SD County Commissioners Assn. |
| Chris Keil | SD Department of Revenue | Tammy Williams | SDDOT Planning/Eng. Admin. |

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SD2021-03 Objectives

- Develop a method for distributing funding to plan and complete small structure inventories in a manner that best addresses the collective needs of counties and townships.
- Develop a practical process for conducting and maintaining consistent and objective small structure inventories that fulfill the stated and implied requirements of SDCL § 31-34
- Develop guidance, including a plan template and background technical information, for developing small structure improvement plans that meet the requirements of SDCL § 31-34 and support sound allocation of Rural Access Infrastructure Funds.

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Funding Distribution

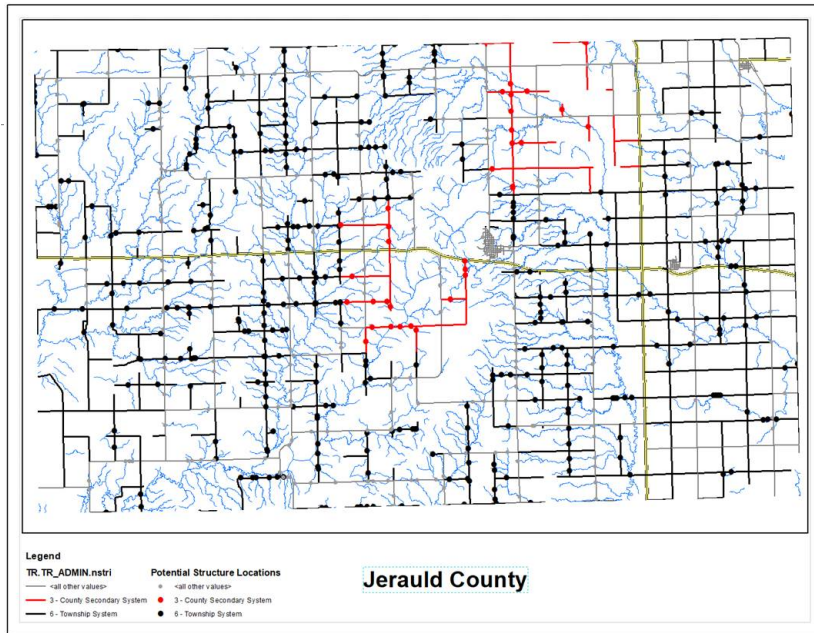
SDCL § 31-34-2
and § 31-34-3

- By August 1, 2021, DOR shall distribute the sum of \$3 million on a pro rata basis to each county for the purpose of planning and completing an inventory of small structures
- *Pro rata* based on:
 - miles of county secondary and township road
 - estimated number of small structures to inventory
 - a baseline amount to conduct inventory
- Each county will establish a rural access infrastructure fund for the deposit of funds
- Distribution of funds was made by SDDOR in mid-July 2021

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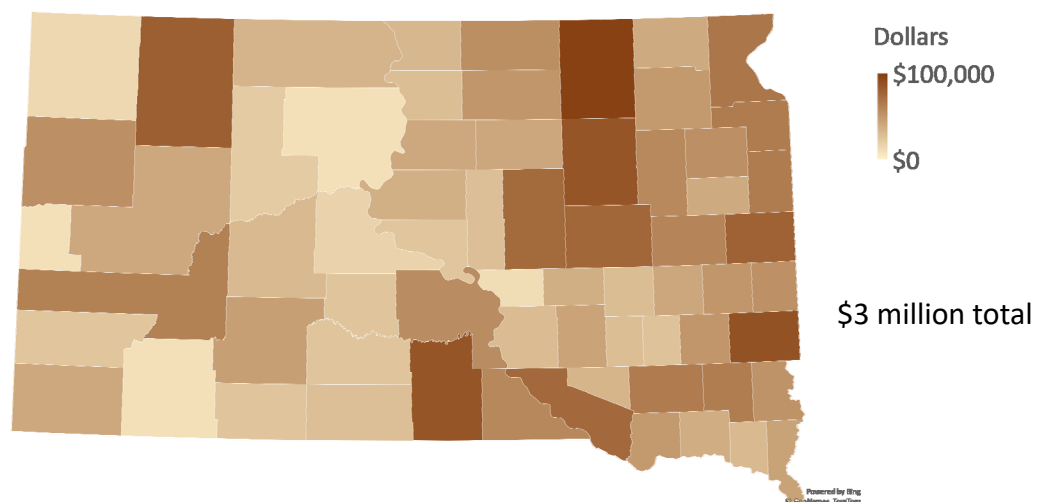
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County
Secondary
& Township
Roads and
Stream
Crossings



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Distribution: In Proportion to Road
Miles and Stream Crossings, \$10K Minimum



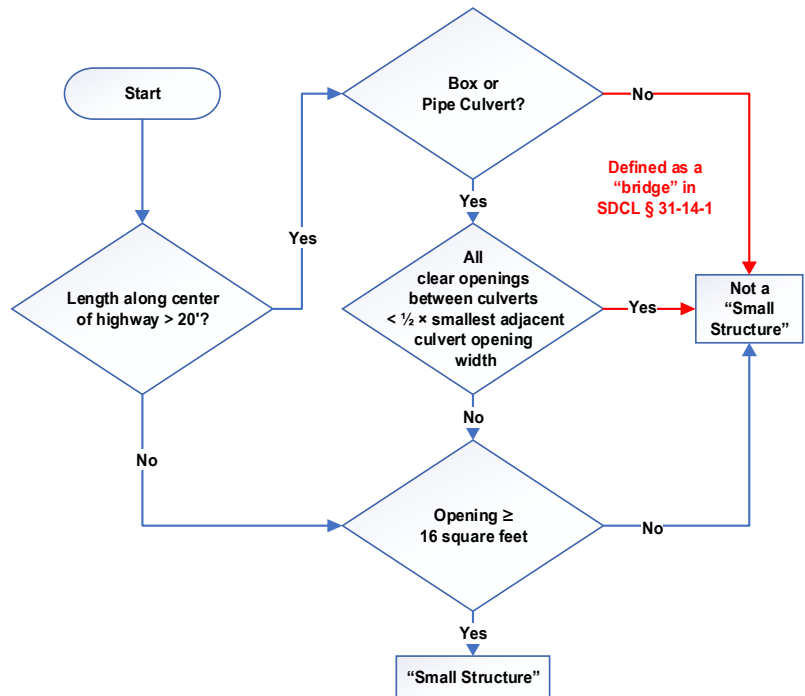
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What is a Small Structure?

SDCL § 31-34-1 defines a small structure as “any small bridge or culvert with an opening of **sixteen square feet or more** located on a township road or county secondary road, **excluding bridges as defined in § 31-14-1**”.

SDCL § 31-14-1 defines a bridge as “a structure, including supports, erected over a depression or an obstruction, as water, highway, or railway, the structure having a **length measured along the center of the roadway of more than twenty feet** between undercopings of abutments or extreme ends of openings for multiple boxes and pipes where **the clear distance between openings is less than half of the smaller contiguous opening**”.



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What is a Small Structure?

- Allow local agencies to combine culverts in the same immediate drainage to meet the 16ft² threshold for small structures
- Also allow the option to treat individual culverts larger than 16ft² as separate small structures

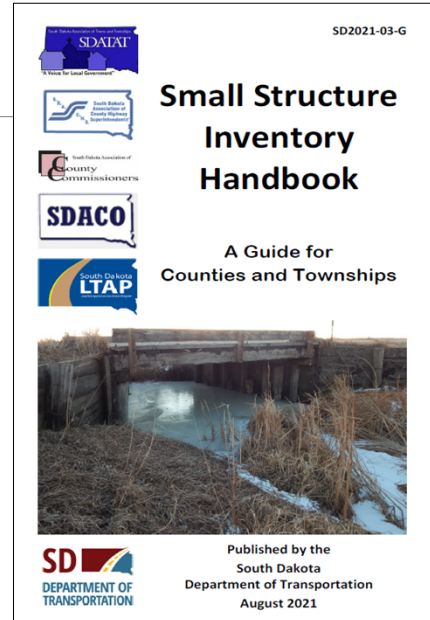
| Small Structure | Not Small Structure |
|-----------------|---|
| | <div>Area < 16 ft²</div> |
| | <div>Length > 20 ft, Spacing < 1/2 of opening width</div> |
| | <div>Length > 20 ft</div> |
| | <div>Length > 20 ft</div> |

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Inventory Handbook

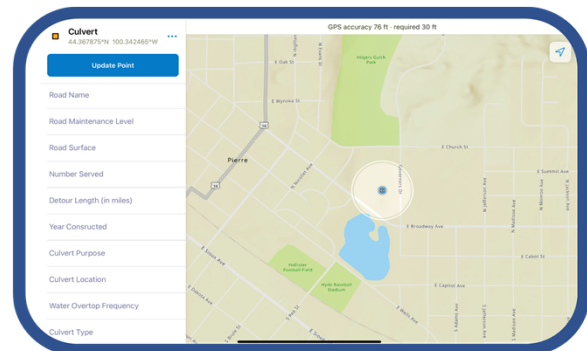
- Hard copy and electronic
- 8½" x 5½" for convenient carry
- Item-by-item description
- Lists all allowable responses
- Graphics and photographs guide selection



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Inventory Collection Requirements

- Simple, practical, inexpensive
- Usable by townships, counties, consultants, planning districts, others
- Includes instructions
- Inventory may be recorded by:
 - Excel Spreadsheet
 - Mobile App (phone or tablet)
 - Paper Forms



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Small Structure Inventory Spreadsheet

- Tracks Inventory Handbook exactly
- Culvert and Small Bridge Protocols
- Embeds photograph images
- Can be imported into Statewide Small Structure Database

South Dakota Small Structure Inventory - Culvert

Start Over Submit Form

Instructions: Enter a response in each highlighted field.

LOCATION

Item 1 County Name*

Item 2 Township*

Item 3 Owner*

Item 4 Temporary Small Structure Identifier*

Item 5 Culvert Sequence Number*

Item 6 Permanent Identifier

Item 7 Invenioried By*

Item 8 Inventory Date (mm/dd/yyyy)*

Item 9 Latitude*

Item 10 Longitude*

ROAD ATTRIBUTES

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Small Structure Inventory Mobile App

- ESRI Collector app
- Tracks Inventory Handbook exactly
- Culvert and Small Bridge Protocols
- Embeds photograph images
- Feeds directly into Statewide Small Structure Database

Culvert
44.367875°N 100.342465°W

Update Point

Road Name

Road Maintenance Level

Road Surface

Number Served

Detour Length (in miles)

Year Constructed

Culvert Purpose

Culvert Location

Water Overtop Frequency

Culvert Type

GPS accuracy 76 ft - required 30 ft

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Small Structure Inventory Paper Forms

- Tracks Inventory Handbook exactly
- Culvert and Small Bridge Protocols
- Identifies image filenames
- Information must be entered into the Spreadsheet tool for submission to the Statewide Small Structure Database

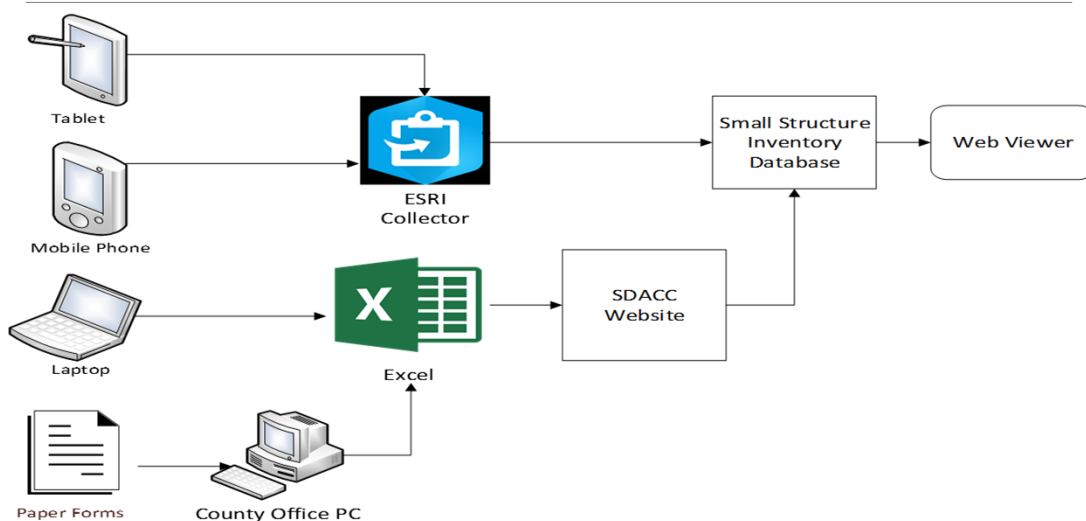
| COMMON INVENTORY ITEMS | |
|-------------------------|--|
| Item 1 | County Name Oz |
| Item 2 | Town or Township Name Emerald City |
| Item 3 | Owner <input checked="" type="checkbox"/> County <input type="checkbox"/> Town or Township <input type="checkbox"/> Other |
| Item 4 | Temporary Small Structure Identifier Toto Crossing |
| Item 5 | Sequence Number 1 |
| Item 6 | Inventoried By Tin Mann |
| Item 7 | Inventory Date 07 / 19 / 20 21 |
| Item 8 | Latitude 44.123456 degrees |
| Item 9 | Longitude -100.123456 degrees |
| Item 10 | Small Structure Number - - - - - (to be assigned later) |
| Road Attributes | |
| Item 11 | Road Name Yellow Brick Road |
| Item 12 | Road Maintenance Level <input checked="" type="checkbox"/> Full Maintenance <input type="checkbox"/> No Maintenance <input type="checkbox"/> Minimum Maintenance |
| Item 13 | Road Surface <input type="checkbox"/> Dirt <input checked="" type="checkbox"/> Asphalt Mat <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Blotter <input type="checkbox"/> Other |
| Item 14 | Number Served <input checked="" type="checkbox"/> Not a Dead End <input type="checkbox"/> No homes, farms, ranches <input type="checkbox"/> 1 home, farm, or ranch <input type="checkbox"/> More than 1 home, farm, or ranch |
| Item 15 | Detour Length 6 miles |
| CULVERT INVENTORY ITEMS | |
| Culvert Attributes | |
| Item 16 | Year Constructed 1975 |
| Item 17 | Culvert Purpose <input checked="" type="checkbox"/> Drainage <input type="checkbox"/> Livestock Passage <input type="checkbox"/> Drainage & Livestock Passage <input type="checkbox"/> Pedestrian or Bicycle Trail <input type="checkbox"/> Other |
| Item 18 | Culvert Location <input checked="" type="checkbox"/> Culvert lies under mainline <input type="checkbox"/> Culvert lies under approach <input type="checkbox"/> Other |

| Box and Pipe Culvert Inventory Form | |
|-------------------------------------|---|
| Item 19 | Water Overlap Frequency <input type="checkbox"/> Unknown <input type="checkbox"/> Every five years <input type="checkbox"/> Multiple times per year <input type="checkbox"/> Every ten years <input checked="" type="checkbox"/> Yearly <input checked="" type="checkbox"/> Every 20 years <input type="checkbox"/> Every two years <input type="checkbox"/> Rarely or never |
| Item 20 | Culvert Type <input type="checkbox"/> Box Culvert <input type="checkbox"/> Arch <input checked="" type="checkbox"/> Pipe <input type="checkbox"/> Other <input type="checkbox"/> Multi-Plate |
| Item 21 | Number of Cells 3 cells |
| Item 22 | Material <input type="checkbox"/> Precast concrete <input type="checkbox"/> PP <input type="checkbox"/> Cast-in-place concrete <input type="checkbox"/> PVC <input checked="" type="checkbox"/> Galvanized steel <input type="checkbox"/> Wood <input type="checkbox"/> Aluminum steel <input type="checkbox"/> Masonry <input type="checkbox"/> Steel <input type="checkbox"/> Other <input type="checkbox"/> HDPE |
| Item 23 | Lining <input type="checkbox"/> Lining Present <input checked="" type="checkbox"/> No Lining |
| Culvert Dimensions | |
| Item 24 | Shape <input checked="" type="checkbox"/> Round <input type="checkbox"/> Rectangle <input type="checkbox"/> Pipe Arch <input type="checkbox"/> Cattle Pass <input type="checkbox"/> Arch <input type="checkbox"/> Open Bottom <input type="checkbox"/> Elliptical <input type="checkbox"/> Other |
| Item 25 | Span 48 inches |
| Item 26 | Rise 48 inches |
| Item 27 | Barrel Length 40 feet |
| Item 28 | Length Along Roadway 19 feet |
| Item 29 | Skew Angle 10 degrees |
| Item 30 | Cover Height 4 feet |
| Culvert Condition | |
| Item 31 | Crushing <input type="checkbox"/> None <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Mild <input type="checkbox"/> Severe |
| Item 32 | Joint Separation <input type="checkbox"/> None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Mild <input type="checkbox"/> Severe |
| Item 33 | Infiltration <input type="checkbox"/> None <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Mild <input type="checkbox"/> Severe |
| Item 34 | Material Deterioration <input type="checkbox"/> None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Mild <input type="checkbox"/> Severe |
| Item 35 | Damage <input type="checkbox"/> None <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Mild <input type="checkbox"/> Severe |
| Item 36 | Plugging <input type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Mild <input checked="" type="checkbox"/> Severe |

Instructions: Use this form with the Small Structure Inventory Handbook. Use a separate form for each Small Structure inventoried. For small bridges, use the "Small Bridge Inventory Form" instead. Information on this form must be entered into the Small Structure Inventory Spreadsheet for submission to the Statewide Small Structure Database. For questions, contact _____ at (605) _____ or _____ at (605) _____.
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Inventory Submission



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Small Structure Inventory Resources

- Handbook, spreadsheet, paper forms, mobile app instructions
 - SDACC and SDATAT Association Websites
 - SDLTAP Website
- Who will provide training? LTAP (primarily),
SDDOT (if requested or LTAP has conflicts)
- Who will provide technical assistance? LTAP
- Who will maintain Statewide Inventory Database? SDDOT

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Statewide Inventory Success



- Collaborative, cooperative, respectful effort between counties and townships
- County Highway Superintendent and Township Supervisors working closely together to accomplish the inventory by whatever method is determined
- Consistent data for all small structures
- Fall 2021 inventory, if possible. Spring 2022 inventory may encounter unfavorable weather conditions, making data collection difficult
- All data must be submitted through the app or spreadsheet to SDDOT by May 31, 2022 to determine county distribution of second \$3 million by August 1, 2022 in accordance with SDCL § 31-34

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Work That Can Be Funded by RAIF

WORK TYPES

- Engineering, hydrological studies, planning, materials, and other costs as necessary to plan for and complete the projects
- Construction, rehabilitation, or replacement of small structures
- On Township and County Secondary Roads

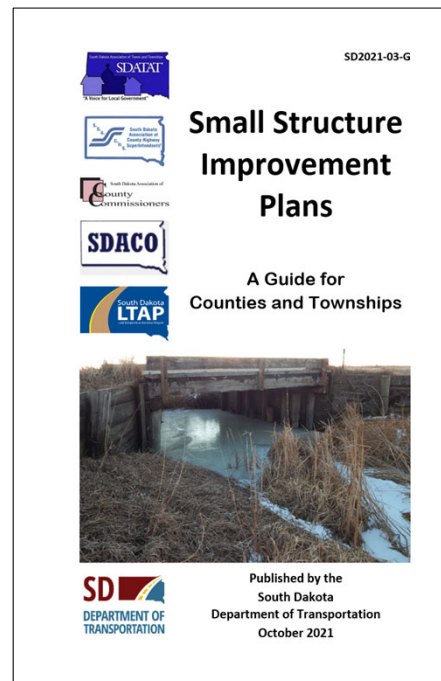
REQUIREMENTS

- No “Minimum Maintenance” Roads
- No “No Maintenance” Roads
- Townships must:
 - Impose an annual property tax levy of fifty cents per thousand, or
 - Impose a tax levy opt

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Improvement Plan Guidance

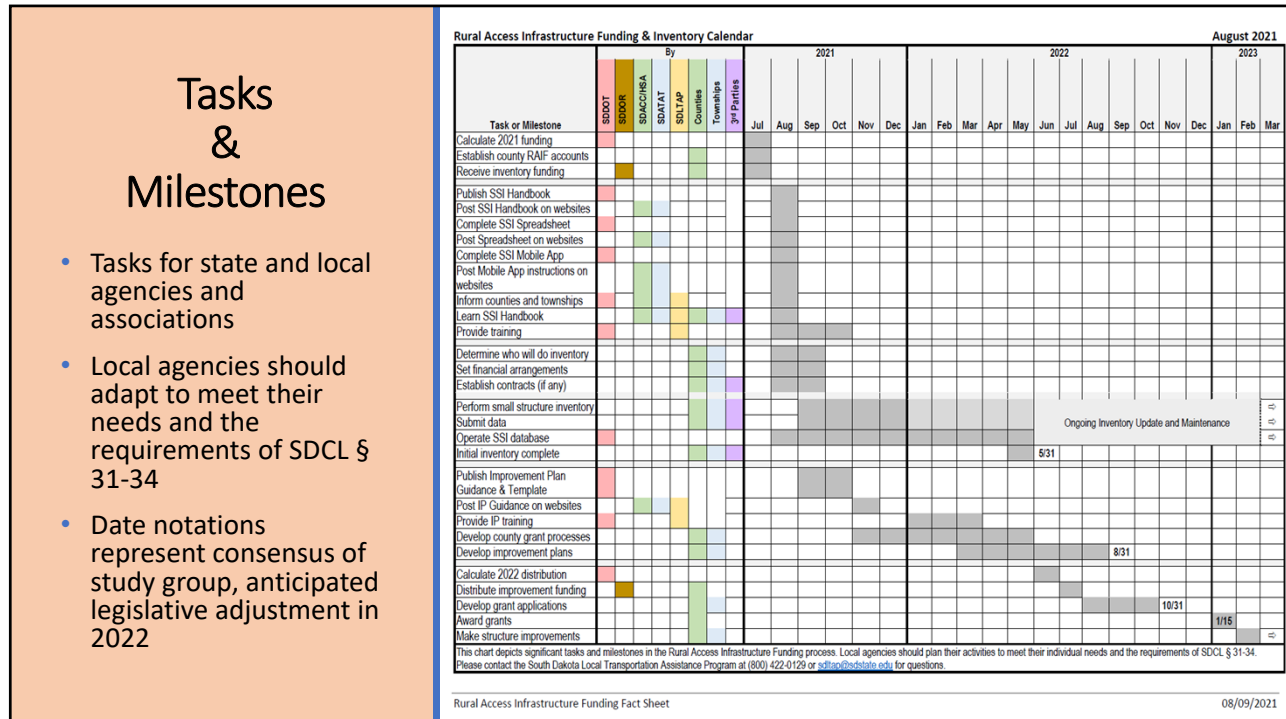
- Research to develop guidance and template for small structure improvement plans
- Address:
 - SDCL 31-34 requirements
 - Sound management practices
 - Maintenance and rehab techniques and costs
- Plan to publish by end of October 2021



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Counties and Townships Should Consider

- Who will do the inventory?
County, townships, consultant, planning district, combination?
- If someone other than county, how will they be compensated?
- Who in the county will enter data into spreadsheet and submit to SDDOT if township completes inventory on paper forms?

- What is the goal date for completing the inventory?
- What form of grant application process will the county establish to use Rural Access Infrastructure Funds?
- Which counties already have grant application processes? What do they look like?

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Questions?

Contacts:

Greg Vavra, SDLTAP Program
Manager

Andrew Peterson, SDLTAP Field
Services Manager

sdltap@sdstate.edu

(800) 422-0129