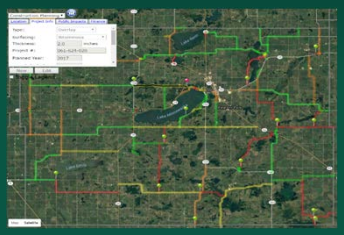
UGPTI COUNTY ASSET INVENTORY

Maximizing the Use of Your GRIT Information



Brad Wentz P.E.
Upper Great Plains Transportation Institute

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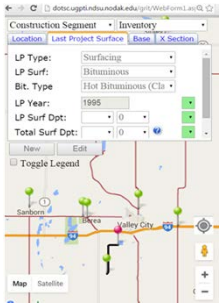
BW1

Objectives of GRIT



Developed for Legislative Needs Study

- Easy to use web based tool
- Build on Google Maps
- Compatible with DOT's
- Add other transportation assets
- Must provide with minimal cost
- **Make data easily available for Counties to make informed decisions.**

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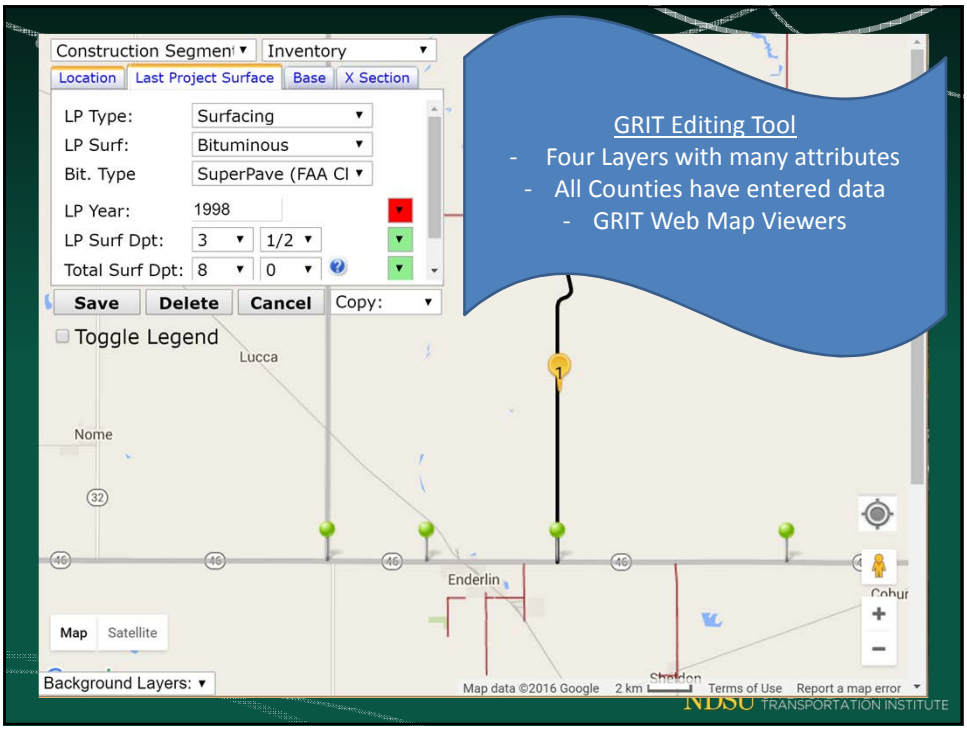
Construction Segment
Inventory
Location
Last Project Surface
Base
X Section
LP Type:
Surfacing
LP Surf:
Bituminous
Bit. Type
SuperPave (FAA Cl
LP Year:
1998
LP Surf Dpt:
3
1/2
Total Surf Dpt:
8
0
Save
Delete
Cancel
Copy:
Toggle Legend
Lucca
Nome
Enderlin
Map
Satellite
Background Layers:
Map data ©2016 Google
2 km
Terms of Use
Report a map error
GRIT Editing Tool
- Four Layers with many attributes
- All Counties have entered data
- GRIT Web Map Viewers
NDSU TRANSPORTATION INSTITUTE

https://www.ugpti.org/resources/asset-inventory/
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Event Proceedings
Staff Presentations
Other Resources (Surface Selection Tool, Grain Industry Data, etc.)
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Asset Inventory Toolkit
Development of the Asset Inventory Toolkit is a team effort, led by UGPTI. A steering committee comprised of ten county transportation leaders, NDDOT representative, and NDACo representatives are providing guidance for the UGPTI's Inventory footprint development.
Related Links
Geographic Roadway Inventory Tool (GRIT)
GRIT Map Viewers
Steering Committee
GRIT Help Videos
Overview and Navigation
Editing Locations
Construction Segment Layer
Load Restrictions Layer
Minor Structures Layer
Construction Planning Layer
Presentations
Jan. 11, 2018 Webinar: GRIT Photo Logging
Oct. 11, 2017 Webinar: GRIT Highlights and Enhancements
Aug. 8, 2016 Webinar: GRIT Construction Layer
Mar. 21, 2016 Webinar: GRIT Viewer Release
Dec. 9, 2015 Statewide Rollout Webinar: GRIT 1.0
Nov. 18, 2015 Webinar: GRIT 1.0
Aug. 26, 2015 Webinar
Aug. 12, 2015 Kickoff Webinar
pg. 4
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https://www.ugpti.org/resources/asset-inventory/map-viewers.php
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Asset Inventory Toolkit
Geographic Roadway Inventory Tool WebMap Viewers
The following webmap links were created to view various information as entered into the GRIT database. These webmap viewers will be updated and changed based on feedback from the Counties using them. Additional viewers will also be added to this list based on feedback. All data shown in these viewers is entered and maintained by the responsible County or City through the GRIT Editor Program. The Upper Great Plains Transportation Institute and North Dakota State University make no representation or warranty, expressed or implied, regarding the accuracy or reliability of the data displayed.
North Dakota
GRIT Viewer – All Layers
2016 Needs Study
Load Restrictions – All Roads
Construction Impacts
GRIT City Pavement Condition
GRIT City 2016 Needs Study
Minnesota (limited to pilot project counties)
GRIT Viewer – All Layers
Construction Impacts with Load Restrictions
South Dakota (limited to pilot project counties)
GRIT Viewer – All Layers
pg. 5
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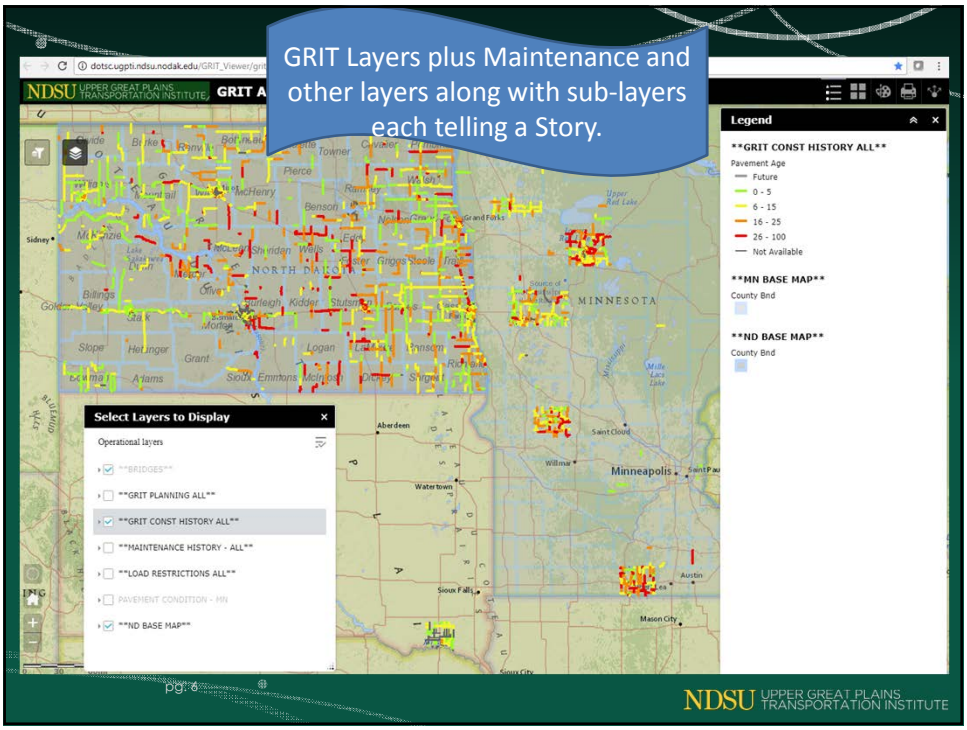
GRIT Layers plus Maintenance and other layers along with sub-layers each telling a Story.
dotsc.ugpti.ndsu.nodak.edu/GRIT_Viewer/grit
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE GRIT A
Legend
GRIT CONST HISTORY ALL
Pavement Age
Future
0 - 5
6 - 15
16 - 25
26 - 100
Not Available
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Select Layers to Display
Operational layers
BRIDGES
GRIT PLANNING ALL
GRIT CONST HISTORY ALL
MAINTENANCE HISTORY - ALL
LOAD RESTRICTIONS ALL
PAVEMENT CONDITION - MN
ND BASE MAP
NORTH DAKOTA
MINNESOTA
Minneapolis
pg. 6
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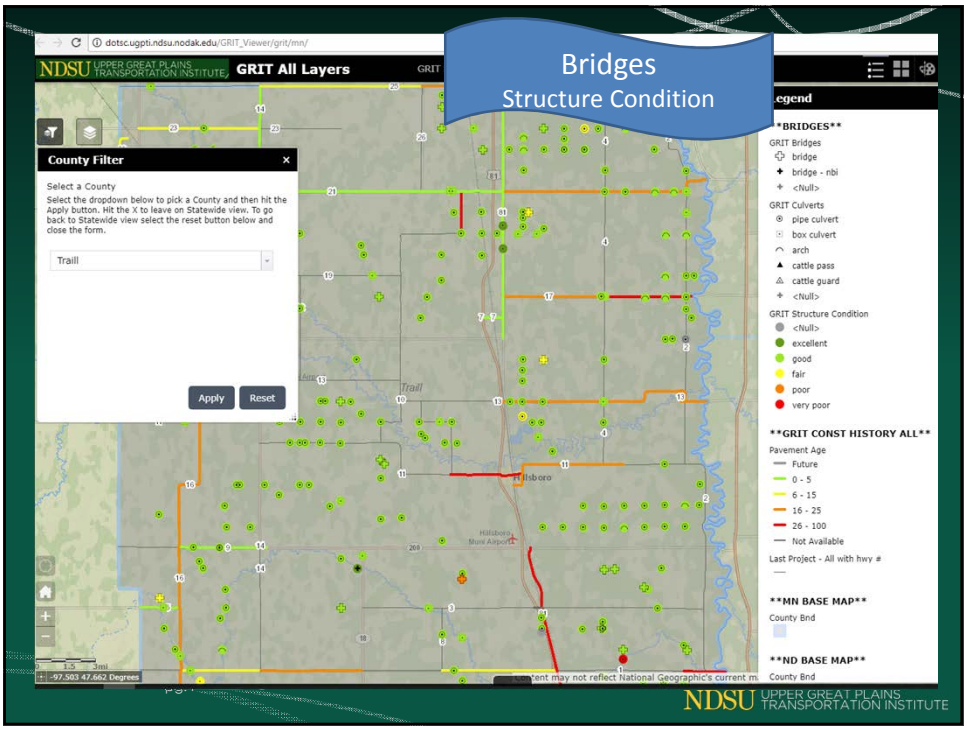
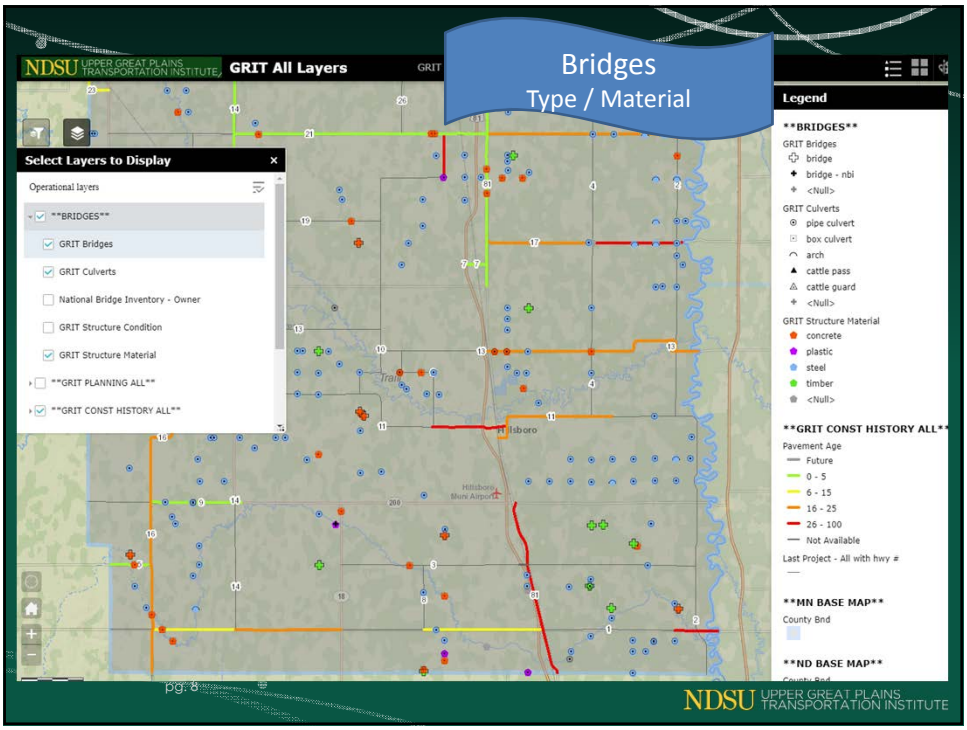
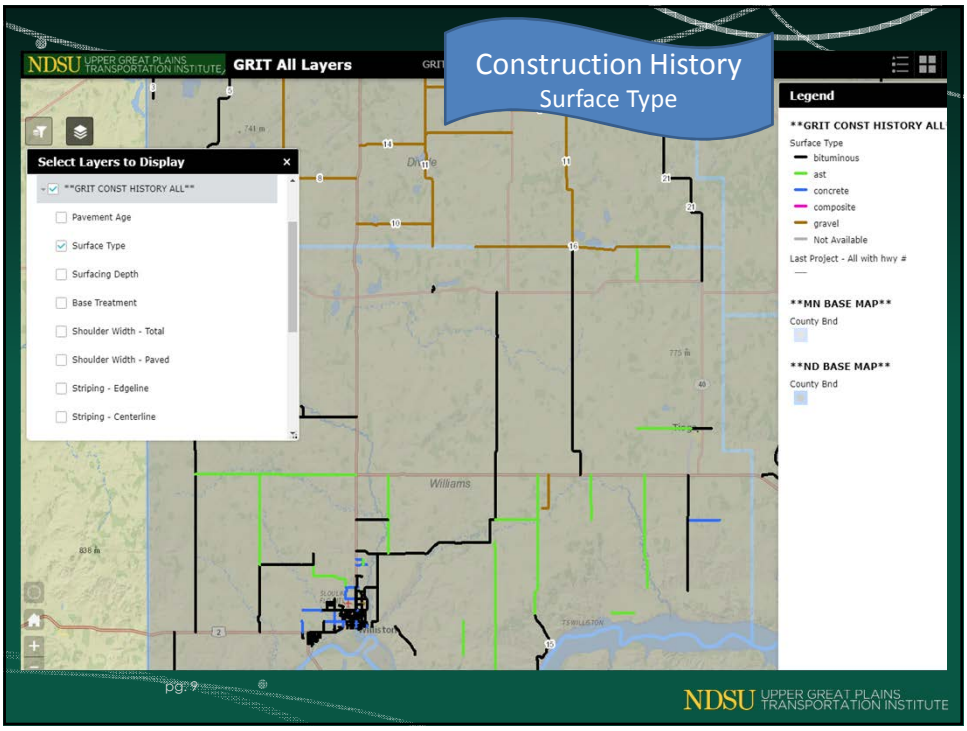
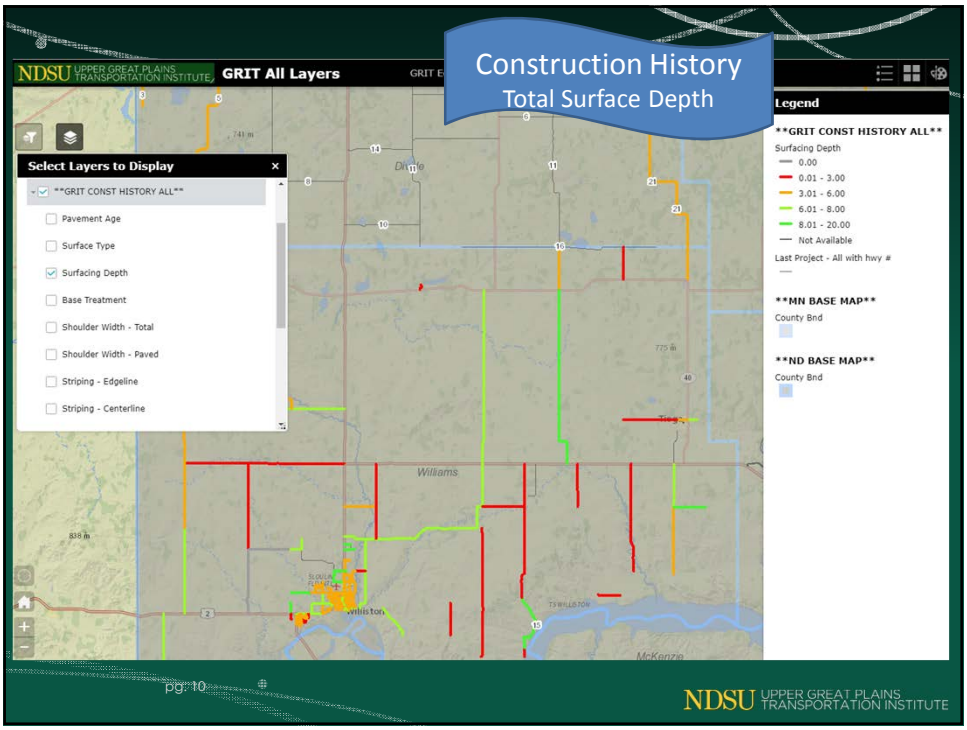
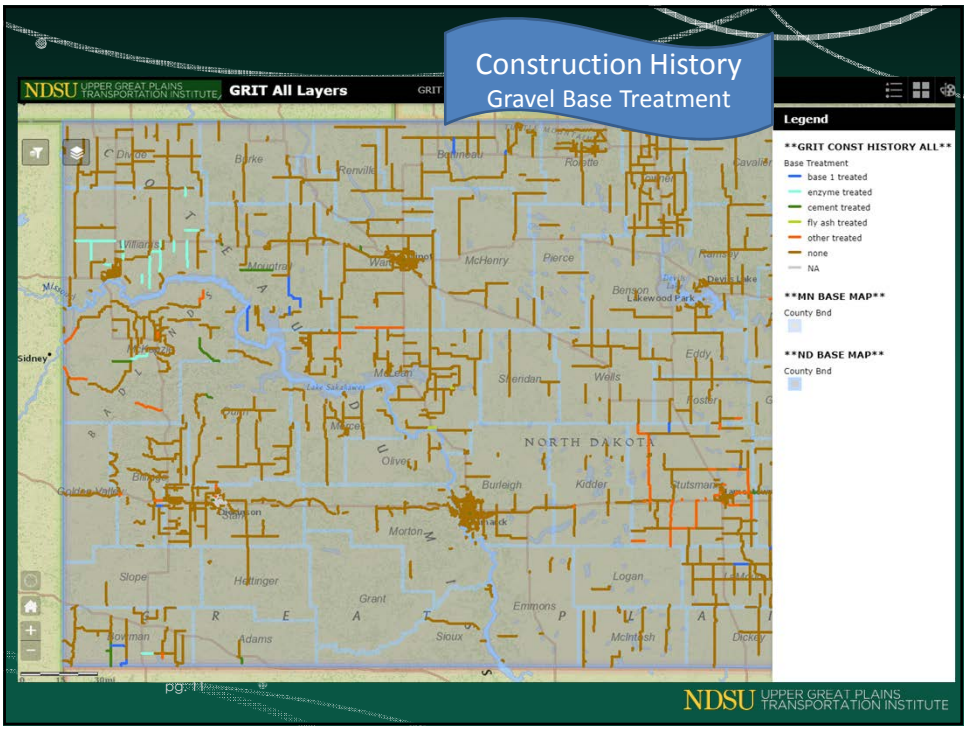
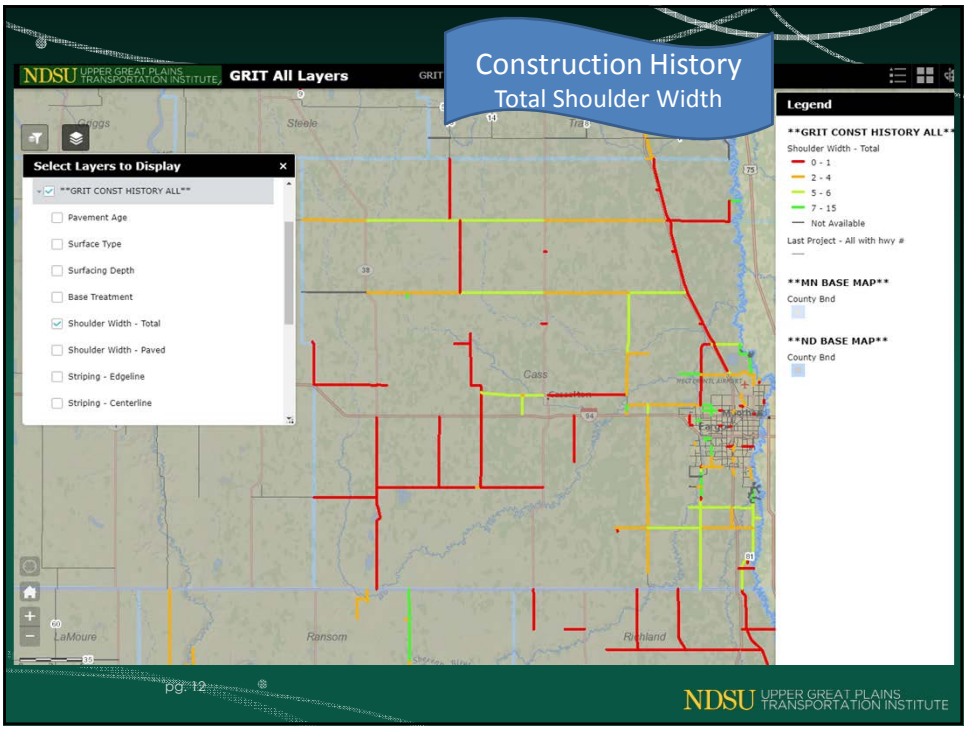

Bridges
Structure Condition
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
County Filter
Select a County
Select the dropdown below to pick a County and then hit the Apply button. Hit the X to leave on Statewide view. To go back to Statewide view select the reset button below and close the form.
Traill
Apply
Reset
Legend
BRIDGES
GRIT Bridges
bridge
bridge - nbi
<Null>
GRIT Culverts
pipe culvert
box culvert
arch
cattle pass
cattle guard
<Null>
GRIT Structure Condition
<Null>
excellent
good
fair
poor
very poor
GRIT CONST HISTORY ALL
Pavement Age
Future
0 - 5
6 - 15
16 - 25
26 - 100
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

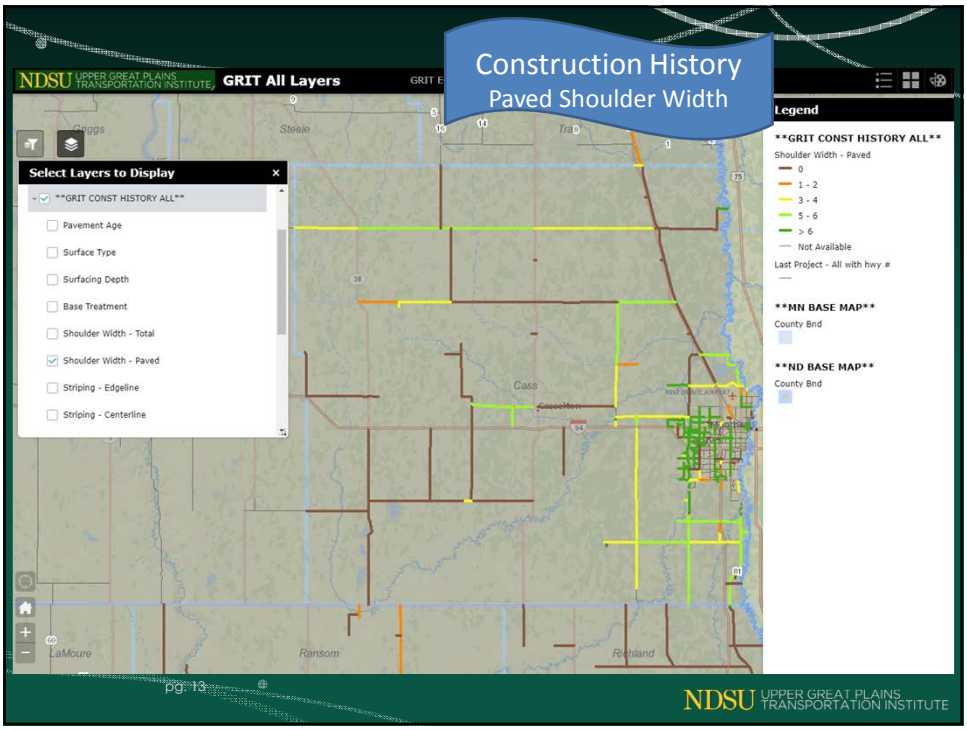

Bridges
Type / Material
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Select Layers to Display
Operational layers
BRIDGES
GRIT Bridges
GRIT Culverts
National Bridge Inventory - Owner
GRIT Structure Condition
GRIT Structure Material
GRIT PLANNING ALL
GRIT CONST HISTORY ALL
Legend
BRIDGES
GRIT Bridges
bridge
bridge - nbi
<Null>
GRIT Culverts
pipe culvert
box culvert
arch
cattle pass
cattle guard
<Null>
GRIT Structure Material
concrete
plastic
steel
timber
<Null>
GRIT CONST HISTORY ALL
Pavement Age
Future
0 - 5
6 - 15
16 - 25
26 - 100
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

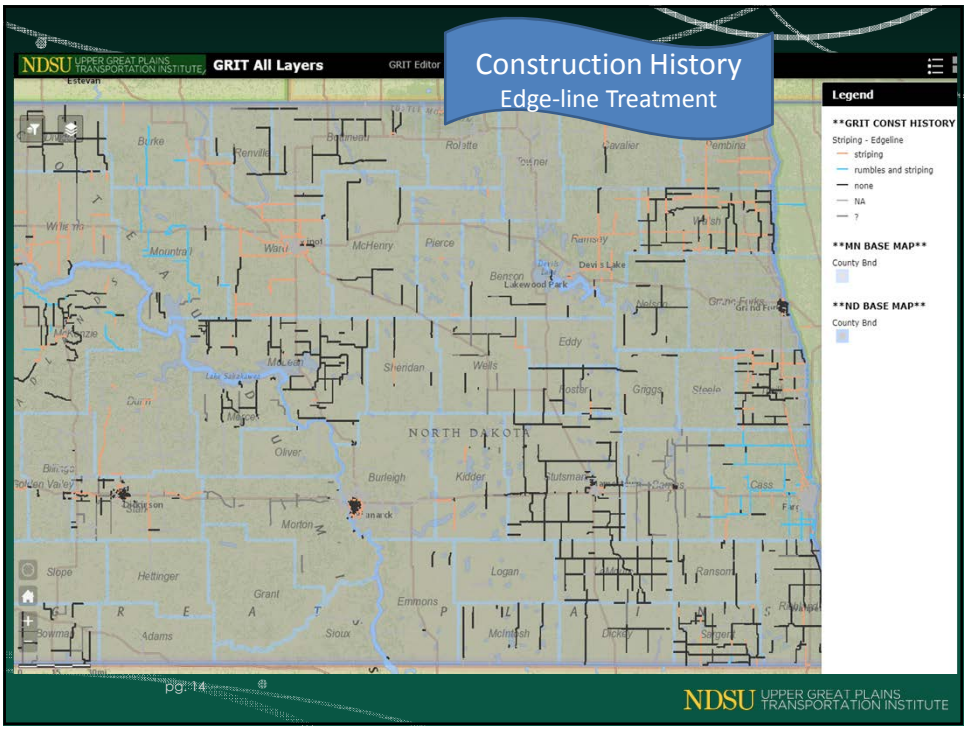

NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Construction History
Surface Type
Select Layers to Display
GRIT CONST HISTORY ALL
Pavement Age
Surface Type
Surfacing Depth
Base Treatment
Shoulder Width - Total
Shoulder Width - Paved
Striping - Edgeline
Striping - Centerline
Legend
**GRIT CONST HISTORY ALL
Surface Type
bituminous
ast
concrete
composite
gravel
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Williams
pg. 9
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Construction History
Total Surface Depth
Select Layers to Display
GRIT CONST HISTORY ALL
Pavement Age
Surface Type
Surfacing Depth
Base Treatment
Shoulder Width - Total
Shoulder Width - Paved
Striping - Edgeline
Striping - Centerline
Legend
GRIT CONST HISTORY ALL
Surfacing Depth
0.00
0.01 - 3.00
3.01 - 6.00
6.01 - 8.00
8.01 - 20.00
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Williams
pg. 10
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Construction History
Gravel Base Treatment
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Legend
GRIT CONST HISTORY ALL
Base Treatment
base 1 treated
enzyme treated
cement treated
fly ash treated
other treated
none
NA
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
NORTH DAKOTA
pg. 11
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Construction History
Total Shoulder Width
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Legend
GRIT CONST HISTORY ALL
Shoulder Width - Total
0 - 1
2 - 4
5 - 6
7 - 15
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Select Layers to Display
GRIT CONST HISTORY ALL
Pavement Age
Surface Type
Surfacing Depth
Base Treatment
Shoulder Width - Total
Shoulder Width - Paved
Striping - Edgeline
Striping - Centerline
pg. 12
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Construction History
Paved Shoulder Width
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Select Layers to Display
GRIT CONST HISTORY ALL
Pavement Age
Surface Type
Surfacing Depth
Base Treatment
Shoulder Width - Total
Shoulder Width - Paved
Striping - Edgeline
Striping - Centerline
Legend
GRIT CONST HISTORY ALL
Shoulder Width - Paved
0
1 - 2
3 - 4
5 - 6
> 6
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Griggs
Steele
Cass
LaMoure
Ransom
Richland
pg. 13
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Construction History
Edge-line Treatment
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
GRIT Editor
Legend
**GRIT CONST HISTORY
Striping - Edgeline
striping
rumbles and striping
none
NA
?
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
NORTH DAKOTA
Burke
Renville
Rolette
Cavalier
Pembina
Mountrail
McHenry
Pierce
Ramsey
Devils Lake
Eddy
Sheridan
Wells
Foster
Griggs
Steele
Oliver
Burleigh
Kidder
Cass
Morton
Slope
Hettinger
Grant
Emmons
Logan
McIntosh
Dickey
Sargent
Ransom
Adams
Sioux
pg. 14
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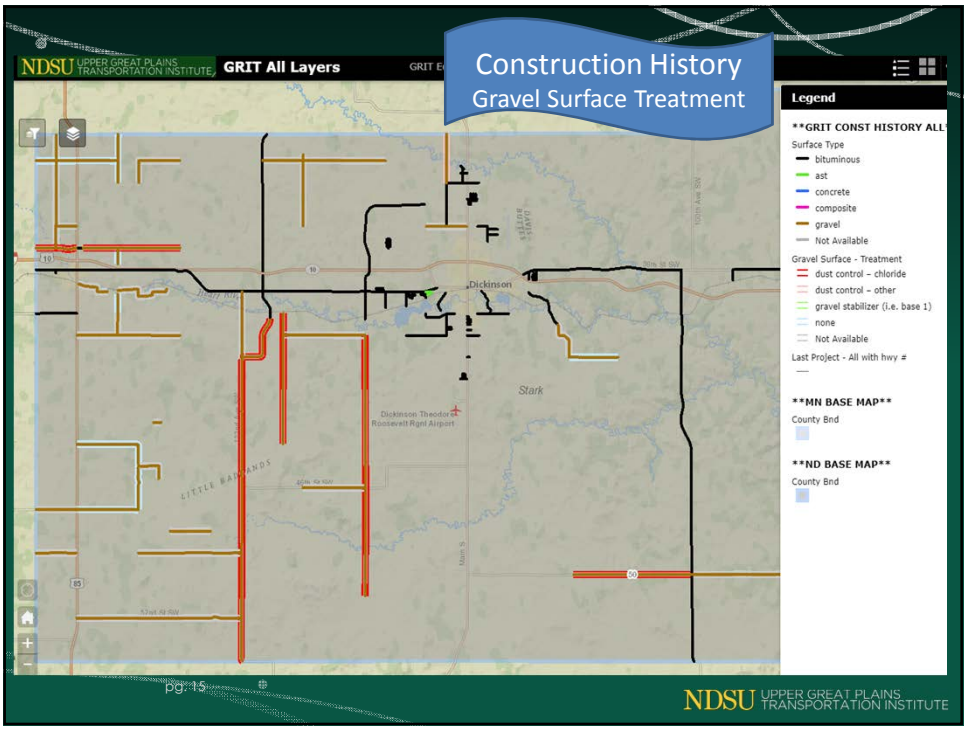
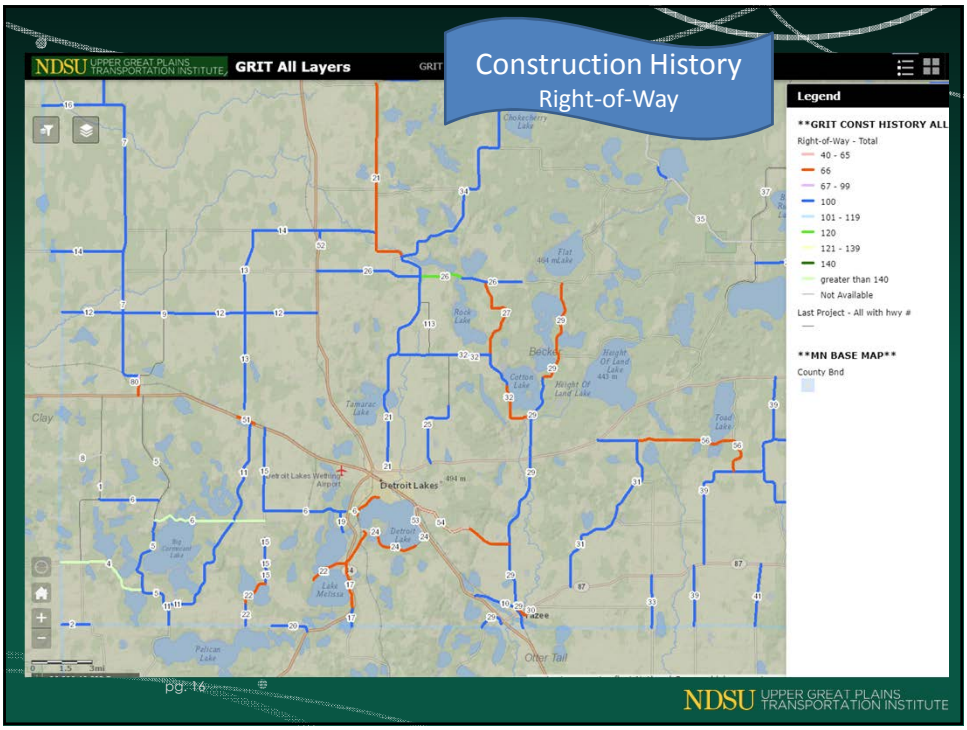
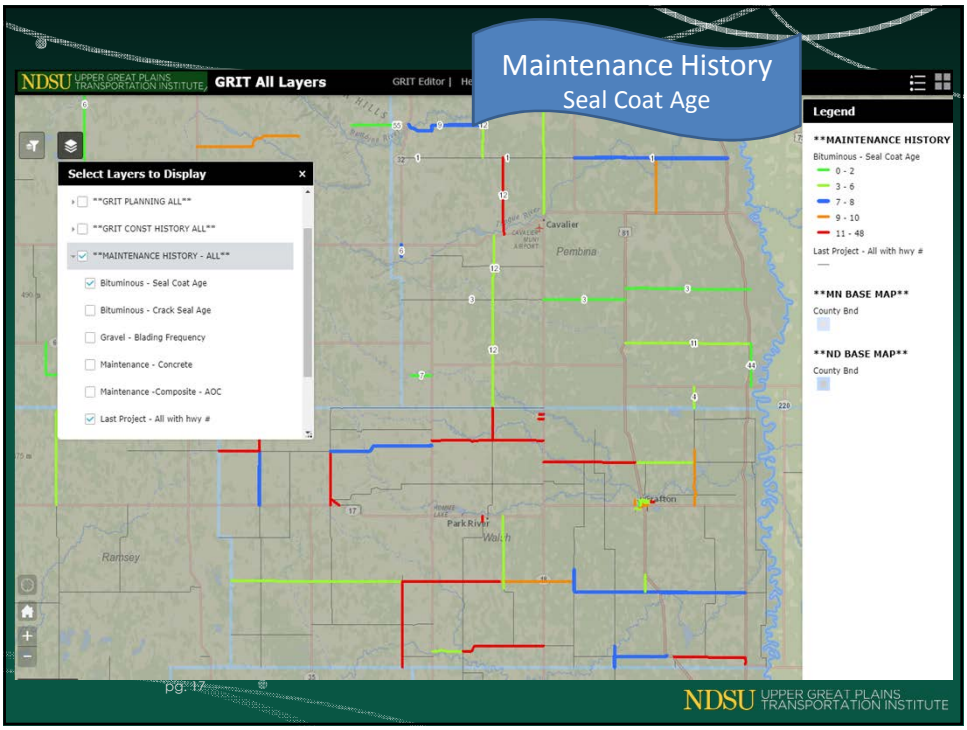

NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Construction History
Gravel Surface Treatment
Legend
**GRIT CONST HISTORY ALL
Surface Type
bituminous
ast
concrete
composite
gravel
Not Available
Gravel Surface - Treatment
dust control – chloride
dust control – other
gravel stabilizer (i.e. base 1)
none
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Dickinson
Stark
pg. 15
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
Construction History
Right-of-Way
Legend
**GRIT CONST HISTORY ALL
Right-of-Way - Total
40 - 65
66
67 - 99
100
101 - 119
120
121 - 139
140
greater than 140
Not Available
Last Project - All with hwy #
MN BASE MAP
County Bnd
Clay
Detroit Lakes
pg. 16
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Maintenance History
Seal Coat Age
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
GRIT Editor |
Select Layers to Display
""GRIT PLANNING ALL""
""GRIT CONST HISTORY ALL""
""MAINTENANCE HISTORY - ALL""
Bituminous - Seal Coat Age
Bituminous - Crack Seal Age
Gravel - Blading Frequency
Maintenance - Concrete
Maintenance -Composite - AOC
Last Project - All with hwy #
Legend
**MAINTENANCE HISTORY
Bituminous - Seal Coat Age
0 - 2
3 - 6
7 - 8
9 - 10
11 - 48
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Cavalier
Pembina
Park River
Walsh
Ramsey
pg. 17
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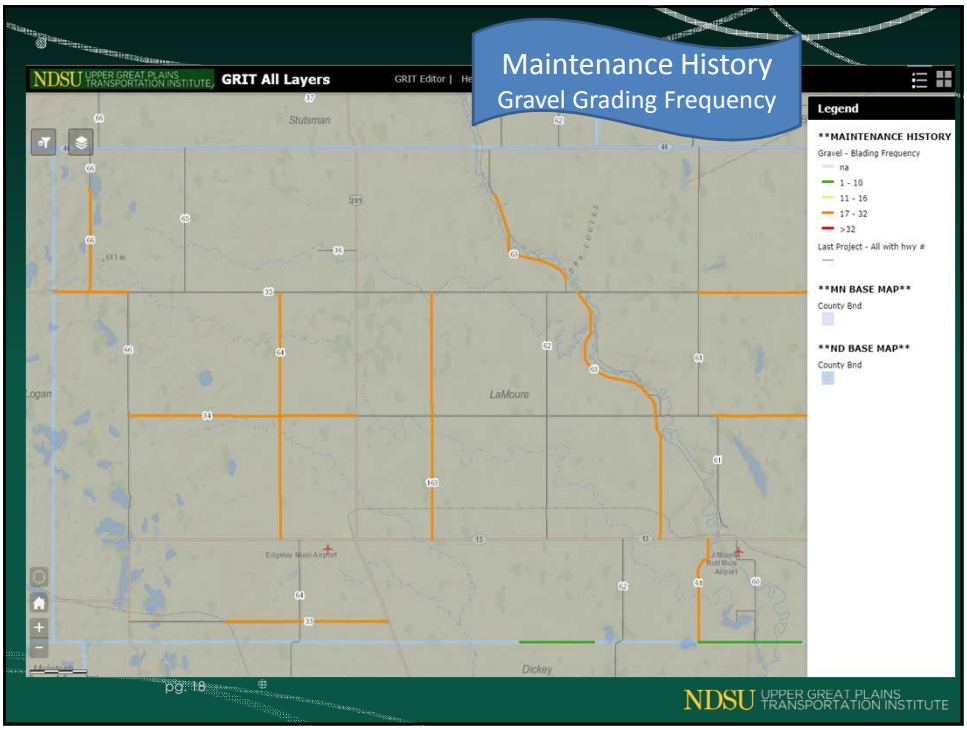
Maintenance History
Gravel Grading Frequency
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
GRIT Editor |
Legend
**MAINTENANCE HISTORY
Gravel - Blading Frequency
na
1 - 10
11 - 16
17 - 32
>32
Last Project - All with hwy #
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Stutsman
LaMoure
Logan
Dickey
pg. 18
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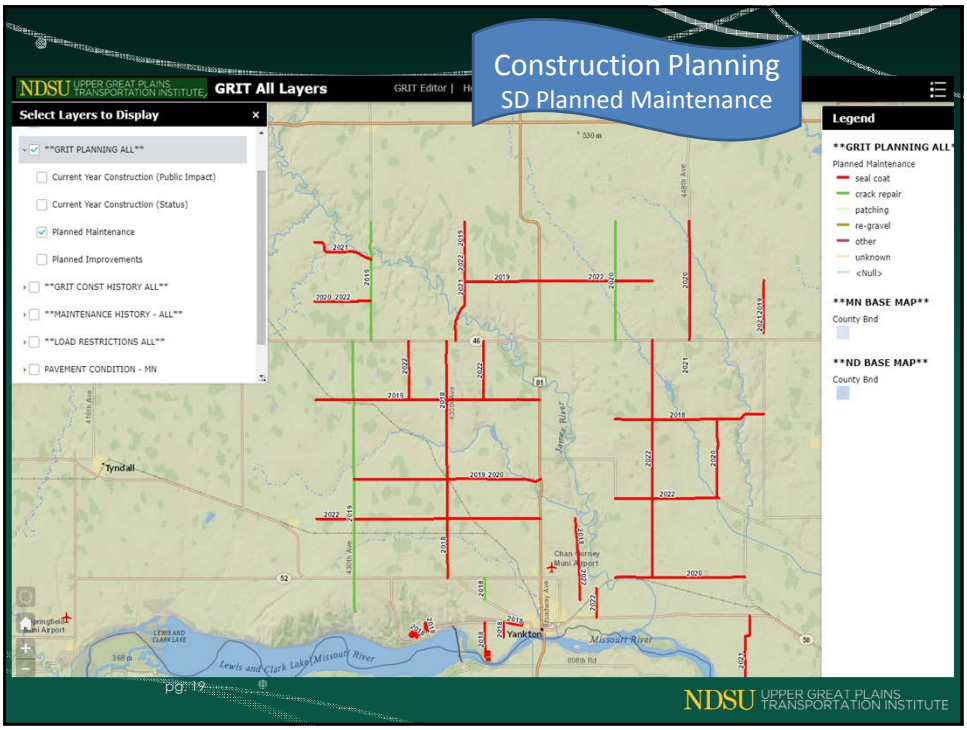
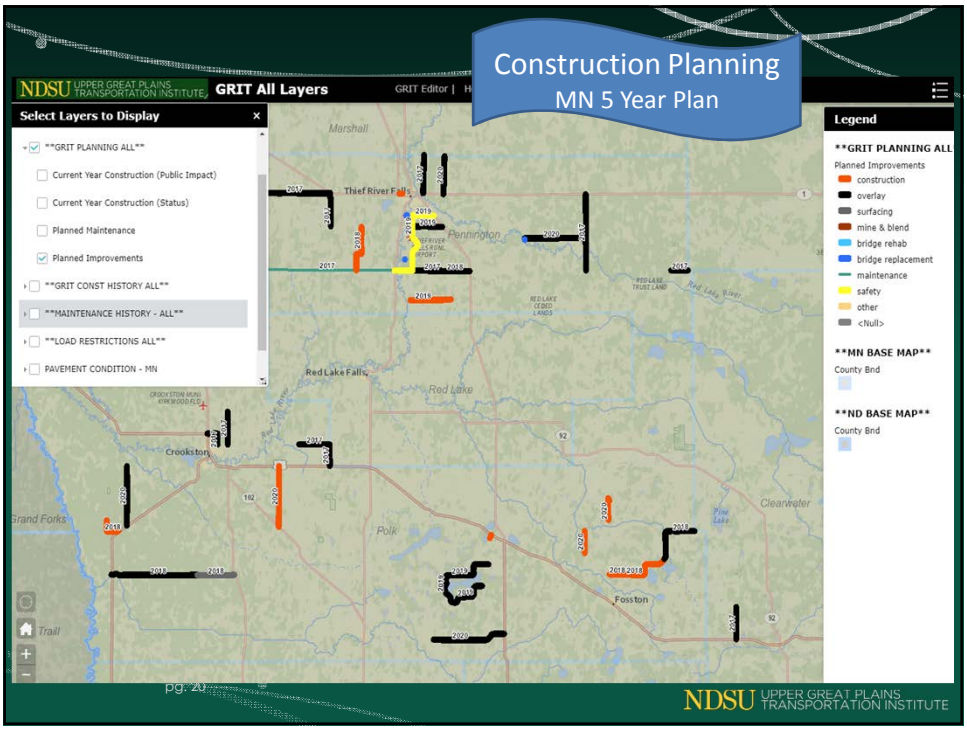

Construction Planning
SD Planned Maintenance
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
GRIT Editor |
Select Layers to Display
GRIT PLANNING ALL
Current Year Construction (Public Impact)
Current Year Construction (Status)
Planned Maintenance
Planned Improvements
GRIT CONST HISTORY ALL
MAINTENANCE HISTORY - ALL
LOAD RESTRICTIONS ALL
PAVEMENT CONDITION - MN
Legend
GRIT PLANNING ALL
Planned Maintenance
seal coat
crack repair
patching
re-gravel
other
unknown
<Null>
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Tyndall
Yankton
Missouri River
Lewis and Clark Lake
pg. 19
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Construction Planning
MN 5 Year Plan
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
GRIT All Layers
GRIT Editor |
Select Layers to Display
GRIT PLANNING ALL
Current Year Construction (Public Impact)
Current Year Construction (Status)
Planned Maintenance
Planned Improvements
GRIT CONST HISTORY ALL
MAINTENANCE HISTORY - ALL
LOAD RESTRICTIONS ALL
PAVEMENT CONDITION - MN
Legend
**GRIT PLANNING ALL
Planned Improvements
construction
overlay
surfacing
mine & blend
bridge rehab
bridge replacement
maintenance
safety
other
<Null>
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
Marshall
Thief River Falls
Pennington
Red Lake Falls
Red Lake
Crookston
Fosston
Clearwater
Polk
Grand Forks
Trail
pg. 20
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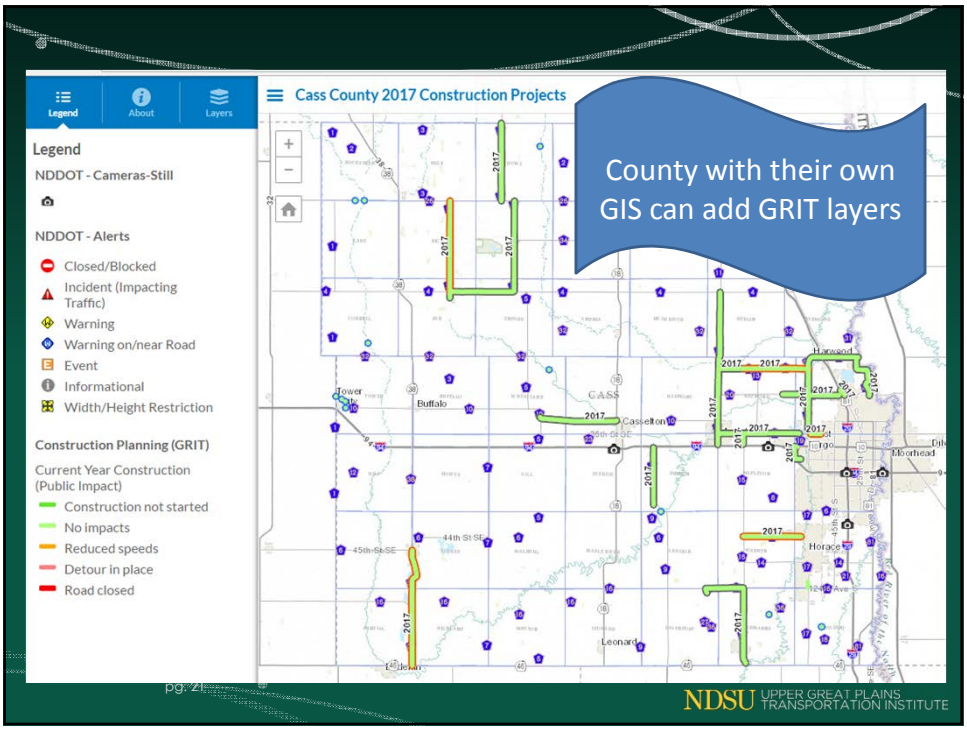
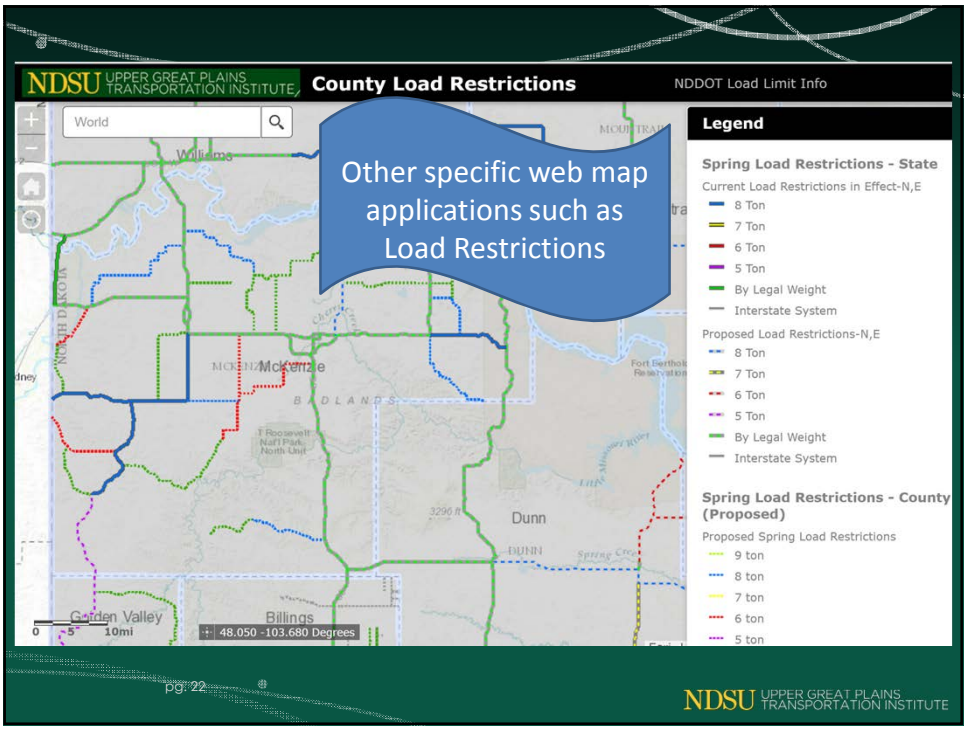
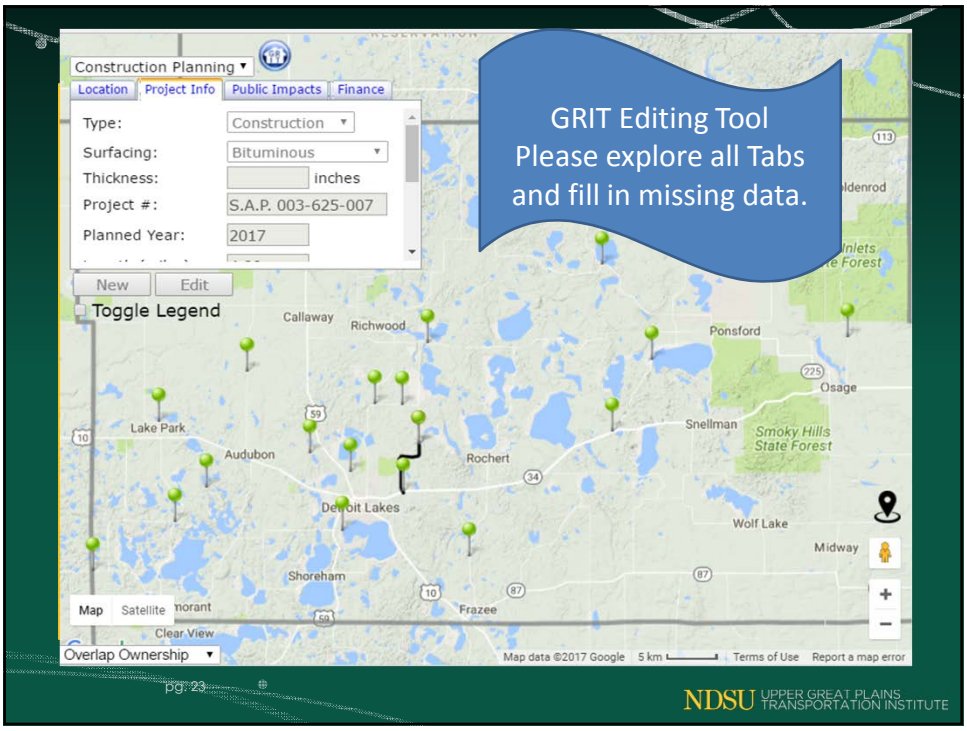

Legend
About
Layers
Legend
NDDOT - Cameras-Still
NDDOT - Alerts
Closed/Blocked
Incident (Impacting Traffic)
Warning
Warning on/near Road
Event
Informational
Width/Height Restriction
Construction Planning (GRIT)
Current Year Construction (Public Impact)
Construction not started
No impacts
Reduced speeds
Detour in place
Road closed
Cass County 2017 Construction Projects
County with their own GIS can add GRIT layers
pg. 21
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
County Load Restrictions
NDDOT Load Limit Info
World
Other specific web map applications such as Load Restrictions
Legend
Spring Load Restrictions - State
Current Load Restrictions in Effect-N,E
8 Ton
7 Ton
6 Ton
5 Ton
By Legal Weight
Interstate System
Proposed Load Restrictions-N,E
8 Ton
7 Ton
6 Ton
5 Ton
By Legal Weight
Interstate System
Spring Load Restrictions - County (Proposed)
Proposed Spring Load Restrictions
9 ton
8 ton
7 ton
6 ton
5 ton
Williams
McKenzie
Dunn
Billings
Garden Valley
48.050 -103.680 Degrees
pg. 22
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE



A Few Updates on Enhancements and Related Projects

- Addition of Pavement Condition Forecasting
- Smartphone App for Roadway Image Capture
- Smartphone App for Pavement Ride Condition Capture
- Enhance web maps and customize for County websites
- Integrate with NDDOT 511 Maps

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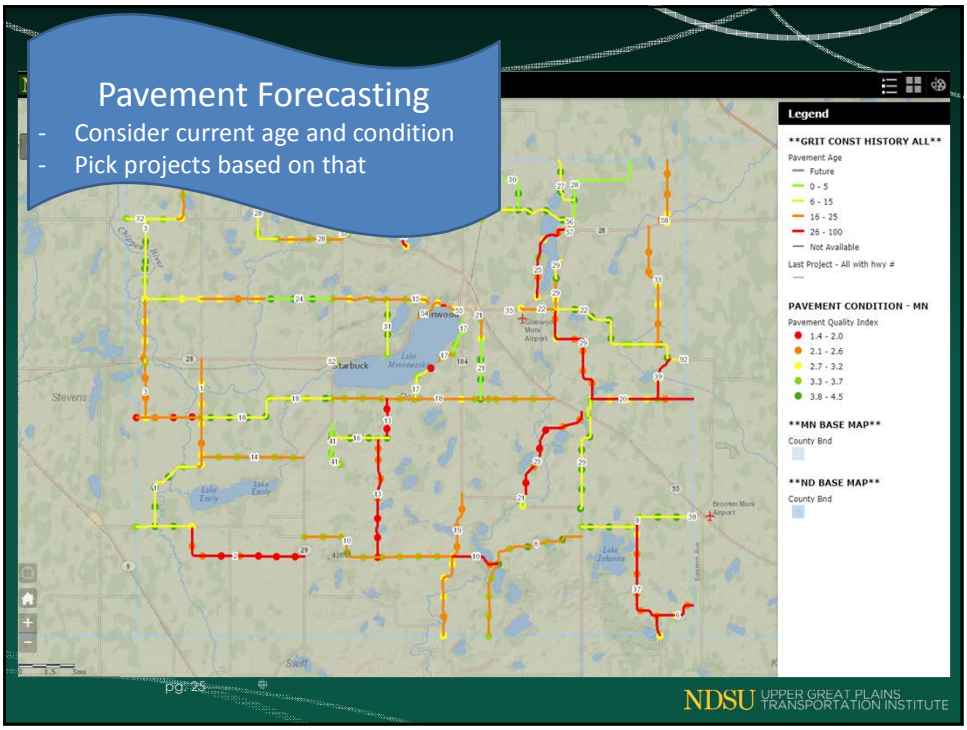
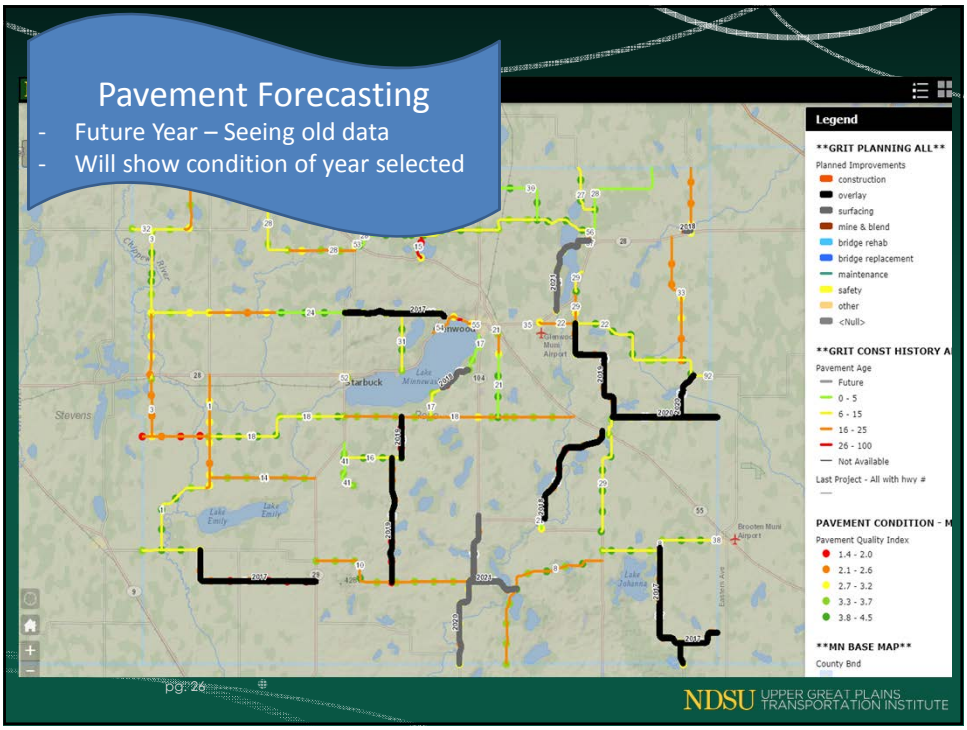

Pavement Forecasting
- Consider current age and condition
- Pick projects based on that
Legend
GRIT CONST HISTORY ALL
Pavement Age
Future
0 - 5
6 - 15
16 - 25
26 - 100
Not Available
Last Project - All with hwy #
PAVEMENT CONDITION - MN
Pavement Quality Index
1.4 - 2.0
2.1 - 2.6
2.7 - 3.2
3.3 - 3.7
3.8 - 4.5
MN BASE MAP
County Bnd
ND BASE MAP
County Bnd
pg: 25
NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE


Pavement Forecasting
- Future Year – Seeing old data
- Will show condition of year selected
Legend
GRIT PLANNING ALL
Planned Improvements
construction
overlay
surfacing
mine & blend
bridge rehab
bridge replacement
maintenance
safety
other
<Null>
**GRIT CONST HISTORY A
Pavement Age
Future
0 - 5
6 - 15
16 - 25
26 - 100
Not Available
Last Project - All with hwy #
PAVEMENT CONDITION - M
Pavement Quality Index
1.4 - 2.0
2.1 - 2.6
2.7 - 3.2
3.3 - 3.7
3.8 - 4.5
MN BASE MAP
County Bnd
pg: 26
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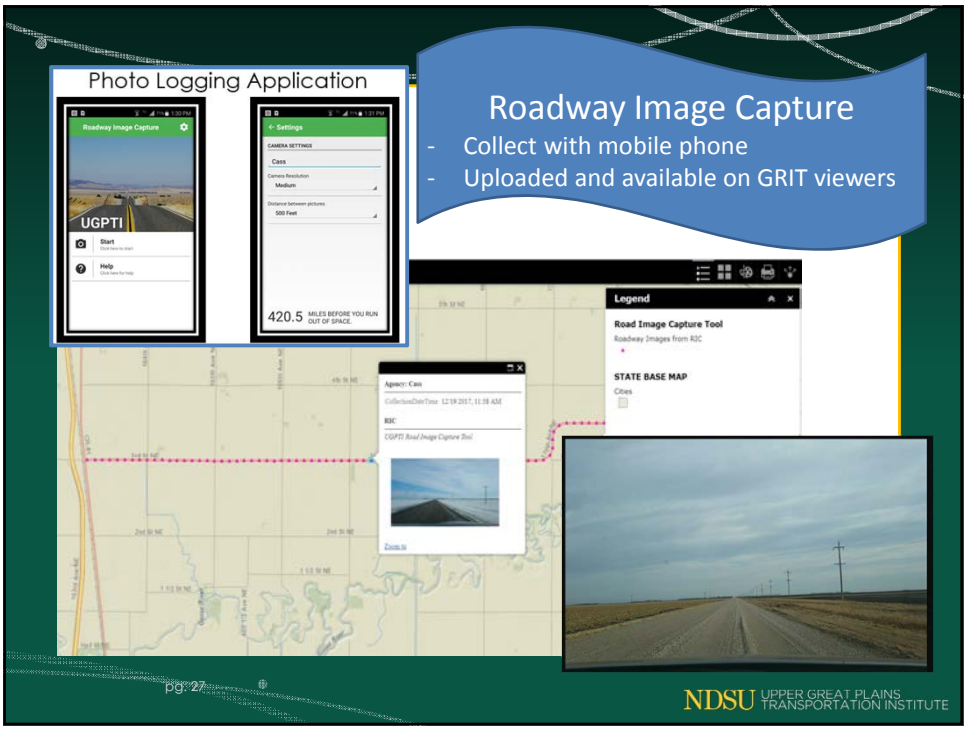

UGPTI COUNTY ASSET INVENTORY

Geographic Roadway Inventory Tool
GRIT

Brad Wentz P.E.
Upper Great Plains Transportation Institute

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