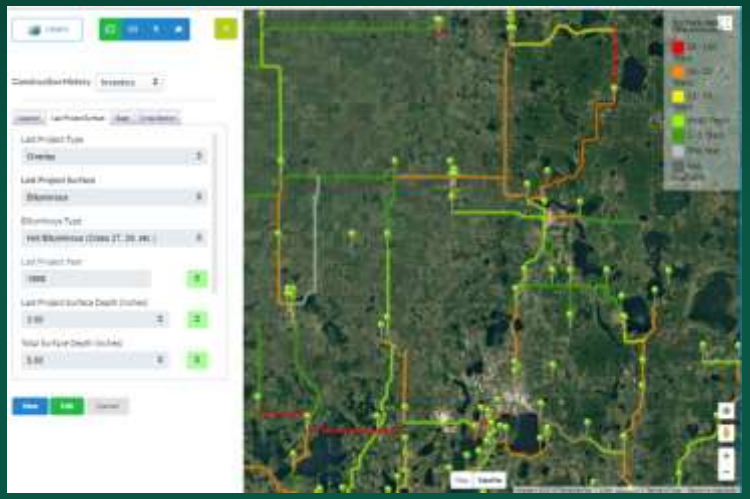
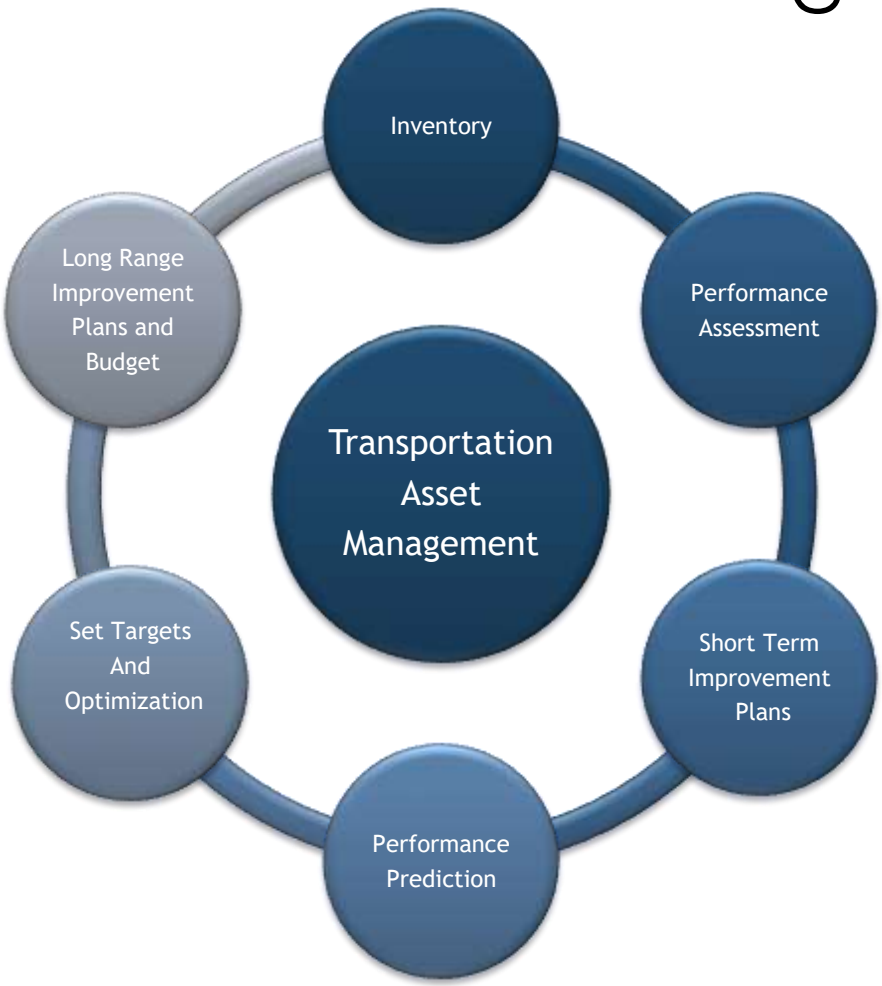
Asset Management with GRIT

2021 Great Plains Tribal Transportation Workshop



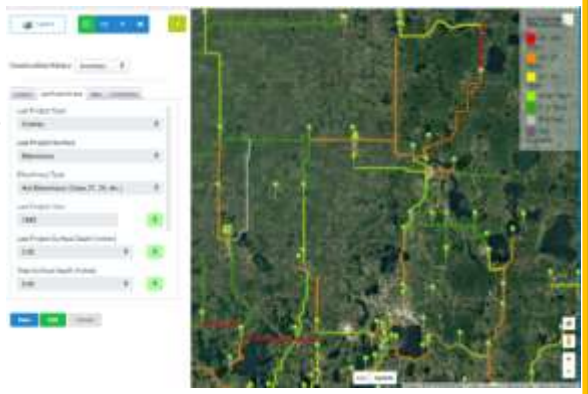
Brad Wentz P.E.
Upper Great Plains Transportation Institute

Transportation Asset Management



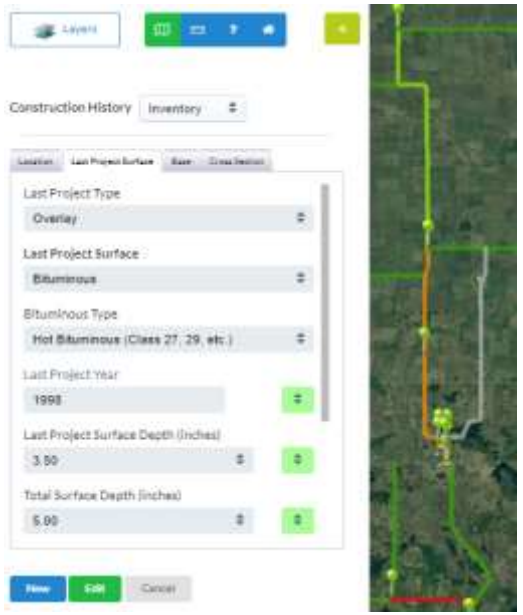
Inventory – why so important?

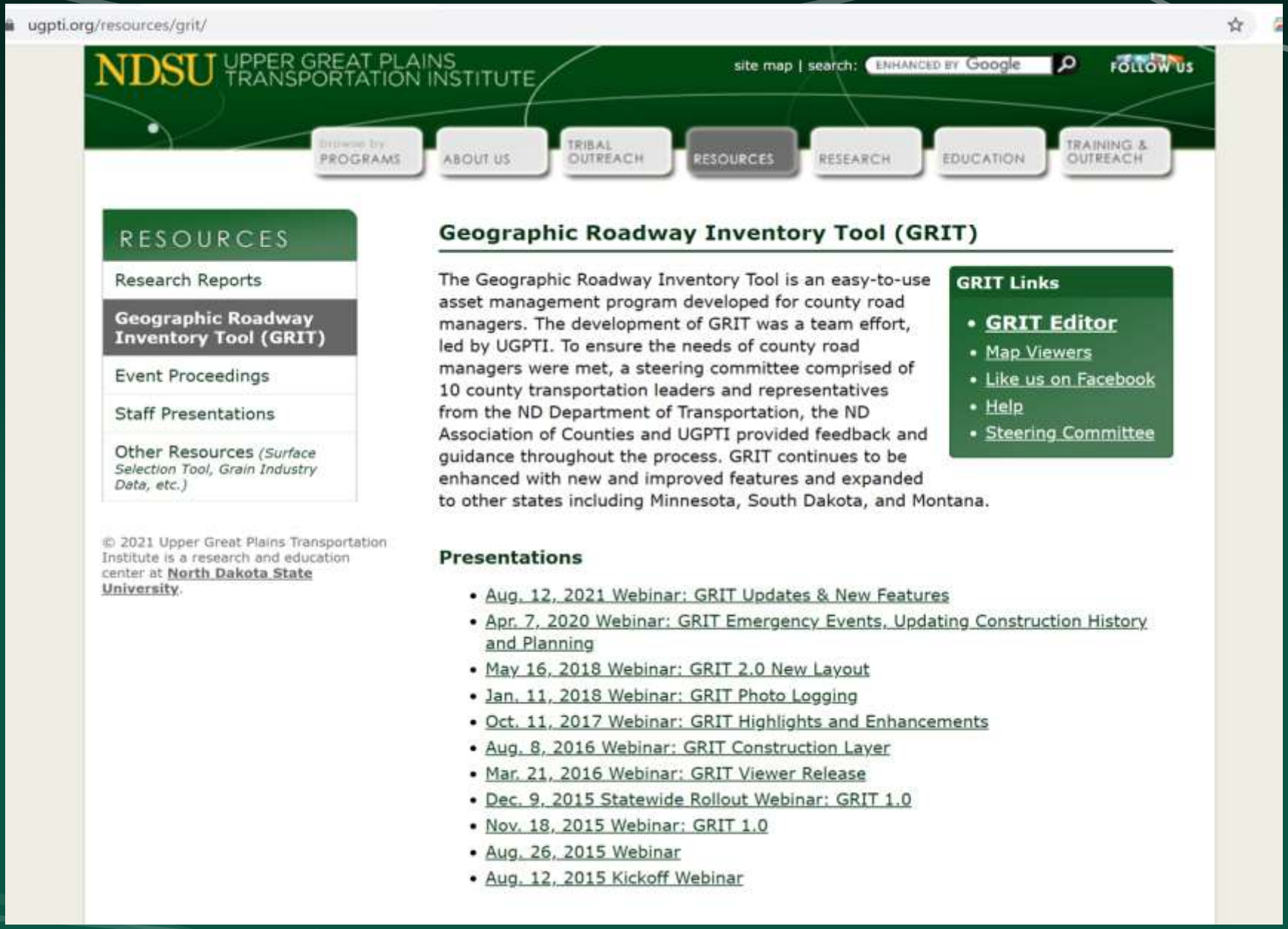
- Document the history of our assets
  - Retiring Staff
- Easy to convey what we have
  - New staff, Leaders, Public
- Develop improvement plans
- Justify improvement plans
- Answer questions quickly and reduce costs
- See what others are doing
- Research



What is GRIT?

- ND Legislative Needs Study – Local & Tribal Nations
- Developed model to estimate 20 yr needs
  - Developed Statewide Traffic Model
  - Pavement Condition Data collected
  - Inventory data not available
- Develop an Asset Inventory Tool
- DOTSC developed GRIT

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Geographic Roadway Inventory Tool (GRIT)
The Geographic Roadway Inventory Tool is an easy-to-use asset management program developed for county road managers. The development of GRIT was a team effort, led by UGPTI. To ensure the needs of county road managers were met, a steering committee comprised of 10 county transportation leaders and representatives from the ND Department of Transportation, the ND Association of Counties and UGPTI provided feedback and guidance throughout the process. GRIT continues to be enhanced with new and improved features and expanded to other states including Minnesota, South Dakota, and Montana.
GRIT Links
GRIT Editor
Map Viewers
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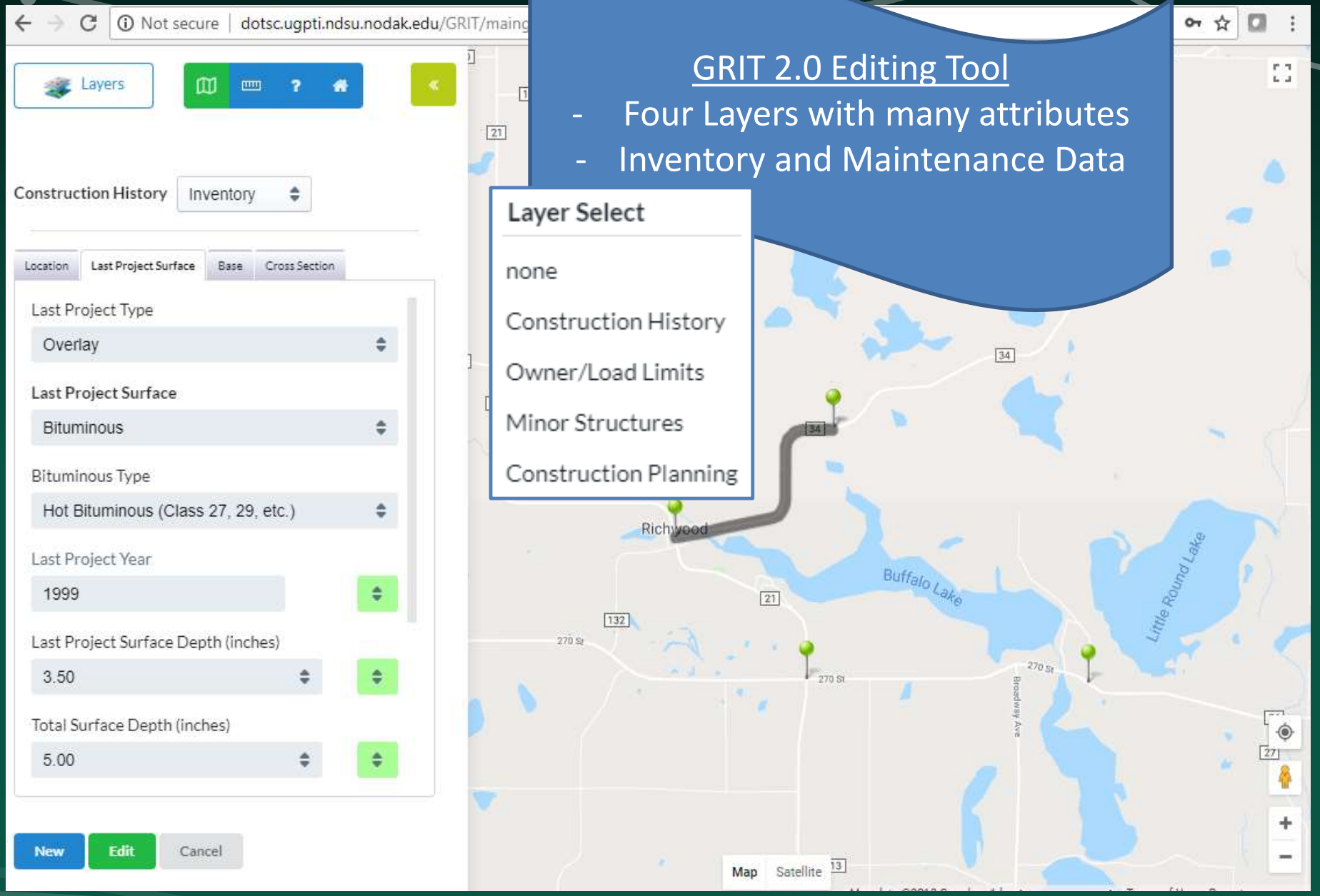
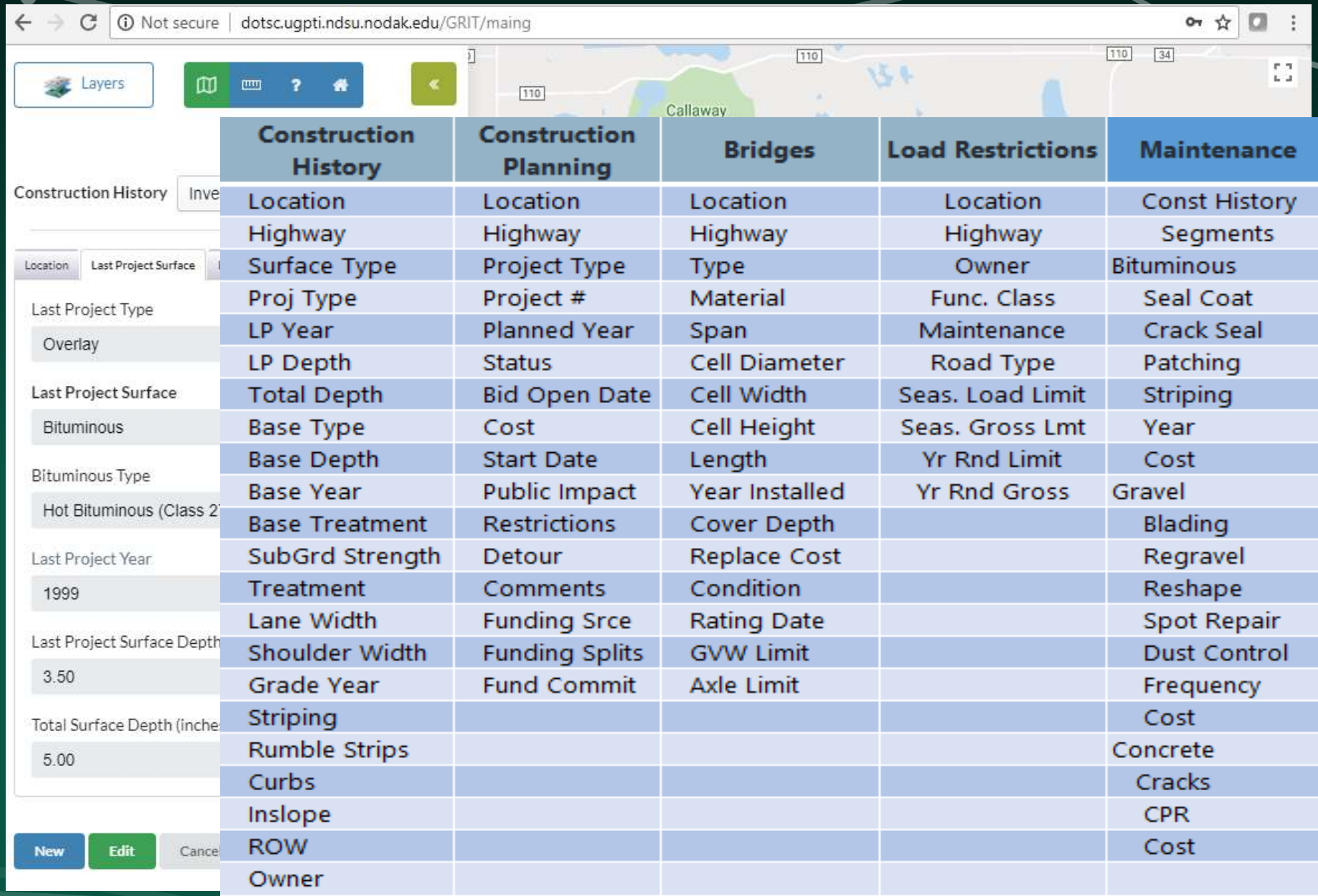
Help
Steering Committee
Presentations
Aug. 12, 2021 Webinar: GRIT Updates & New Features
Apr. 7, 2020 Webinar: GRIT Emergency Events, Updating Construction History and Planning
May 16, 2018 Webinar: GRIT 2.0 New Layout
Jan. 11, 2018 Webinar: GRIT Photo Logging
Oct. 11, 2017 Webinar: GRIT Highlights and 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



GRIT 2.0 Editing Tool

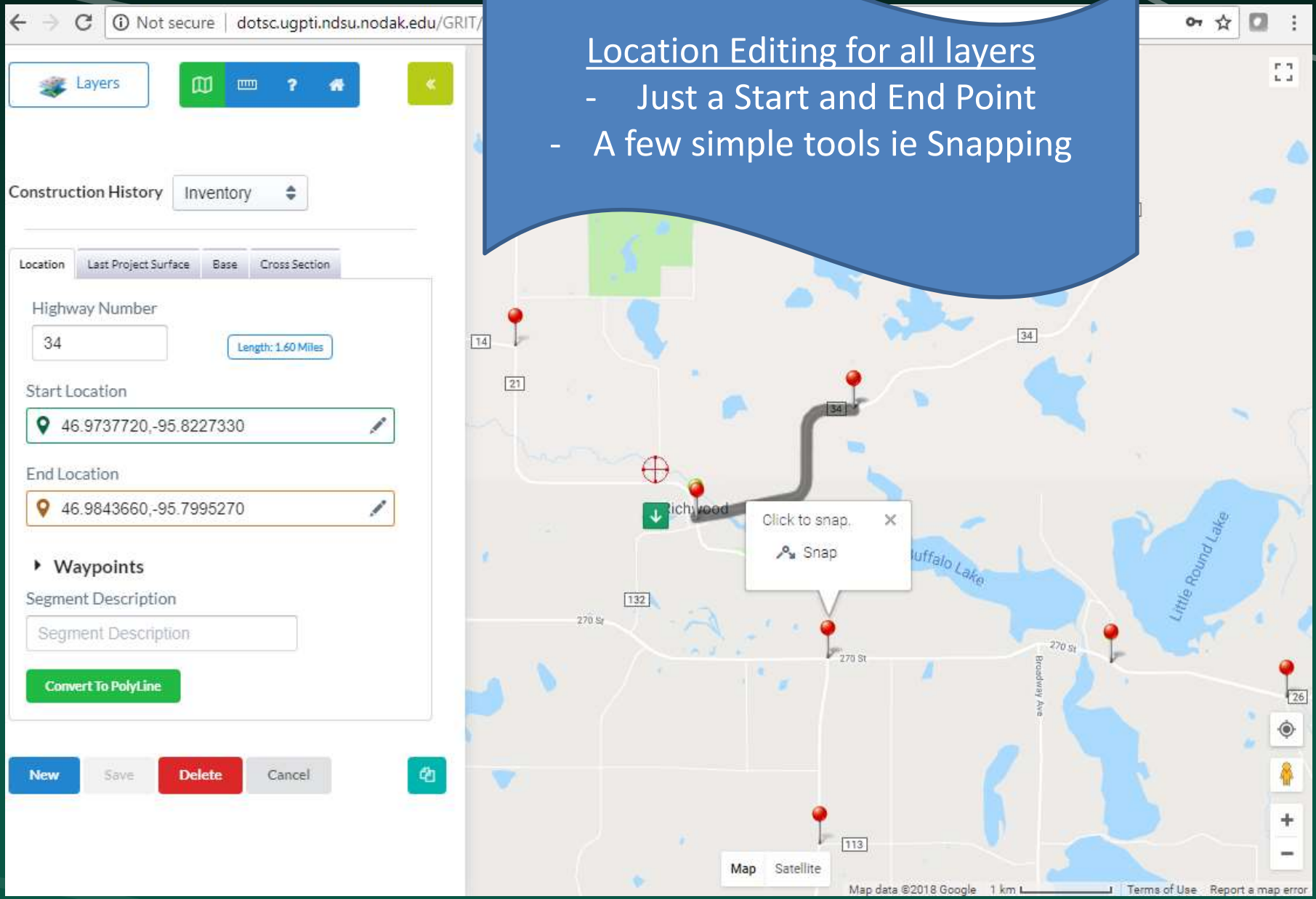
- Four Layers with many attributes
- Inventory and Maintenance Data



Construction History	Construction Planning	Bridges	Load Restrictions	Maintenance
Location	Location	Location	Location	Const History
Highway	Highway	Highway	Highway	Segments
Surface Type	Project Type	Type	Owner	Bituminous
Proj Type	Project #	Material	Func. Class	Seal Coat
LP Year	Planned Year	Span	Maintenance	Crack Seal
LP Depth	Status	Cell Diameter	Road Type	Patching
Total Depth	Bid Open Date	Cell Width	Seas. Load Limit	Striping
Base Type	Cost	Cell Height	Seas. Gross Lmt	Year
Base Depth	Start Date	Length	Yr Rnd Limit	Cost
Base Year	Public Impact	Year Installed	Yr Rnd Gross	Gravel
Base Treatment	Restrictions	Cover Depth		Blading
SubGrd Strength	Detour	Replace Cost		Regravel
Treatment	Comments	Condition		Reshape
Lane Width	Funding Srce	Rating Date		Spot Repair
Shoulder Width	Funding Splits	GVW Limit		Dust Control
Grade Year	Fund Commit	Axle Limit		Frequency
Striping				Cost
Rumble Strips				Concrete
Curbs				Cracks
Inslope				CPR
ROW				Cost
Owner				

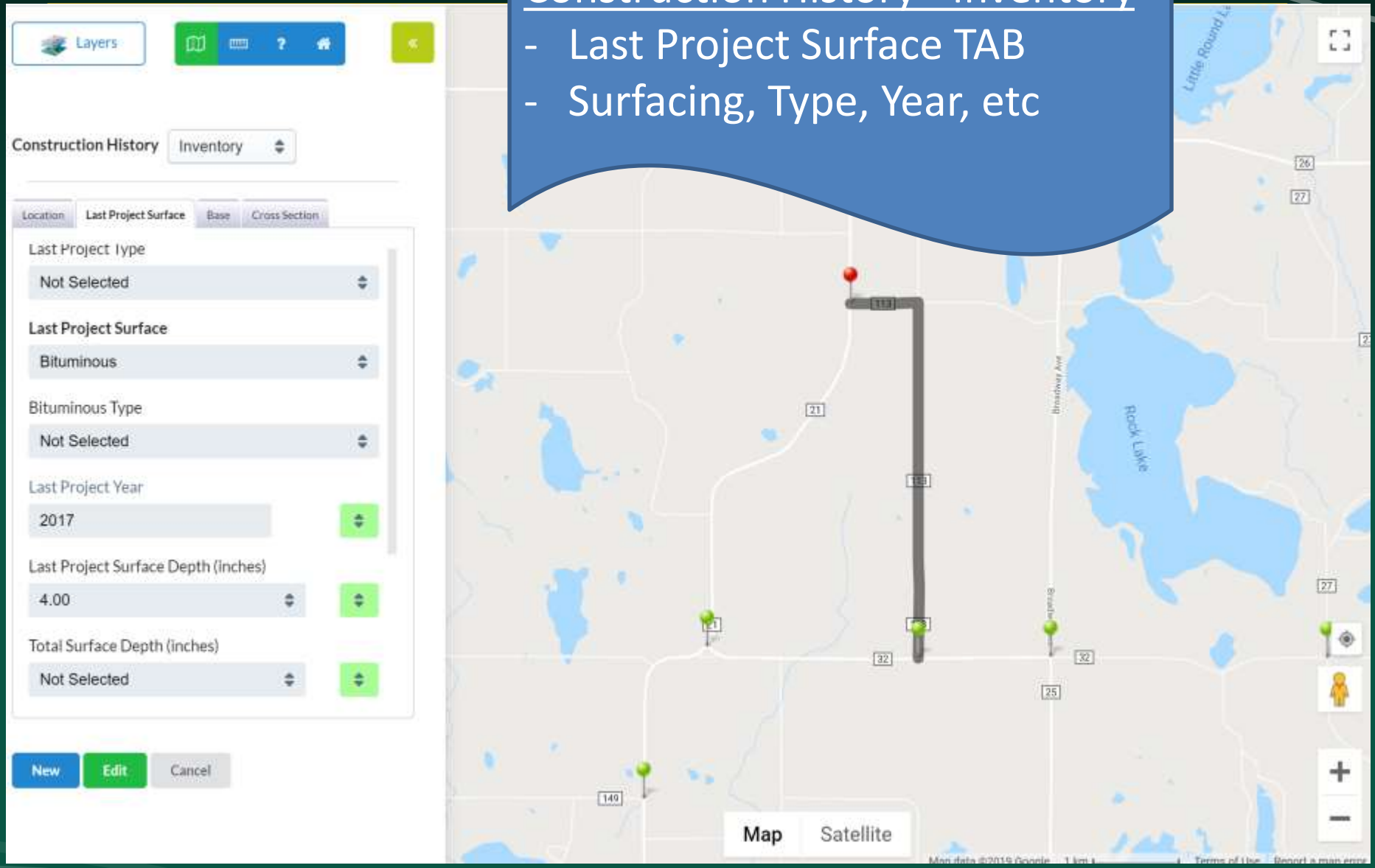
Location Editing for all layers

- Just a Start and End Point
- A few simple tools ie Snapping



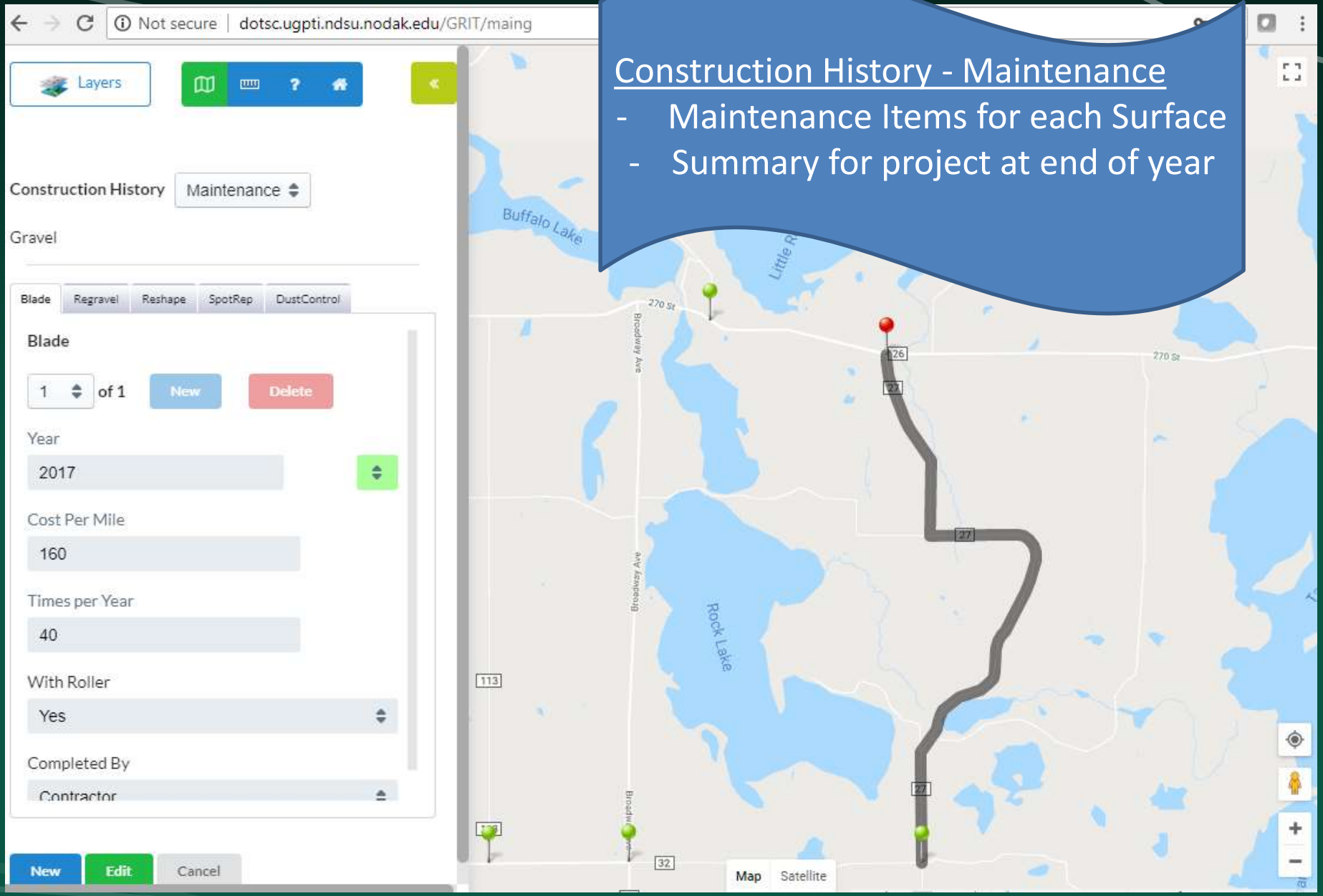
Construction History - Inventory

- Last Project Surface TAB
- Surfacing, Type, Year, etc



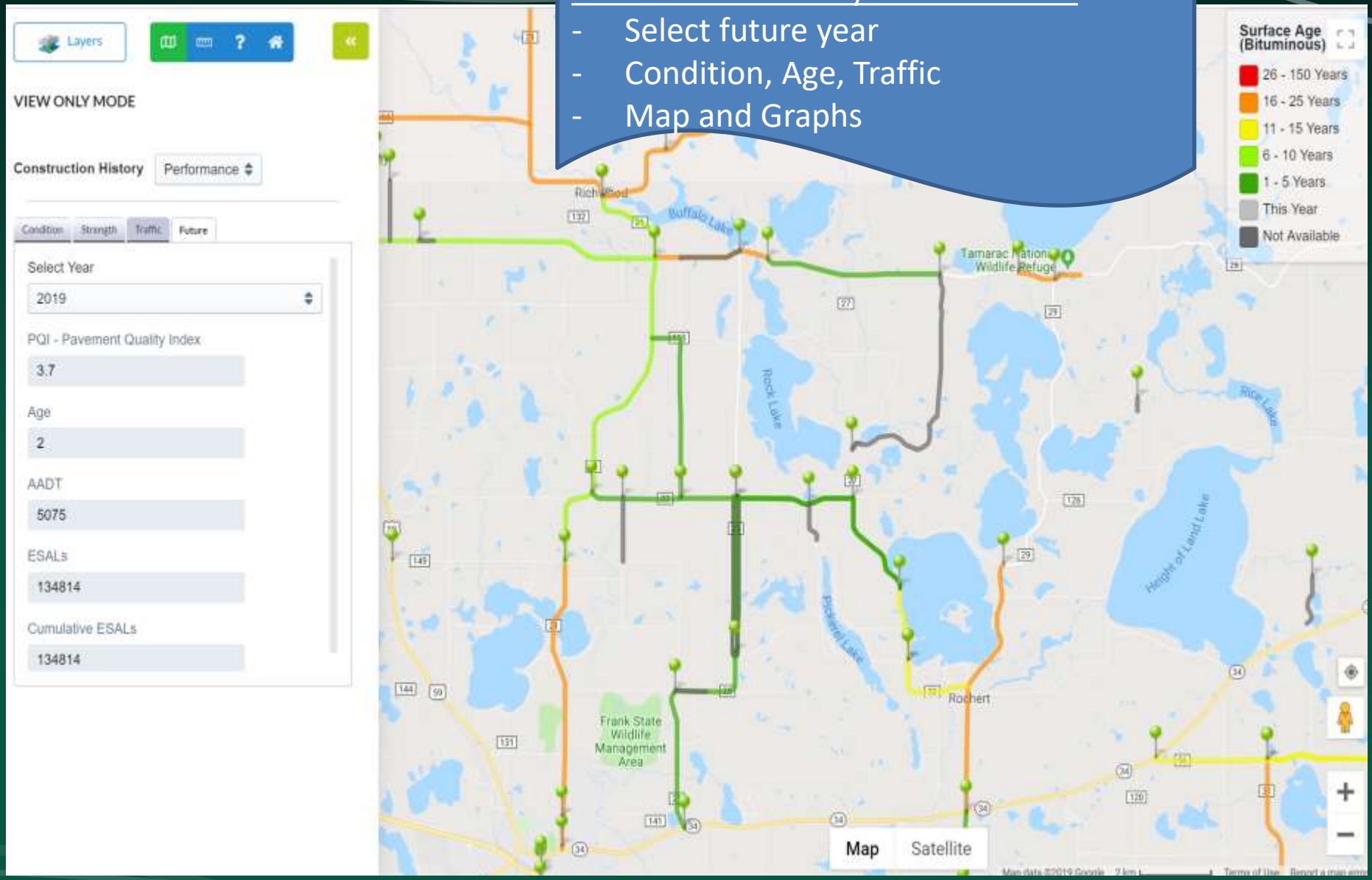
Construction History - Maintenance

- Maintenance Items for each Surface
- Summary for project at end of year



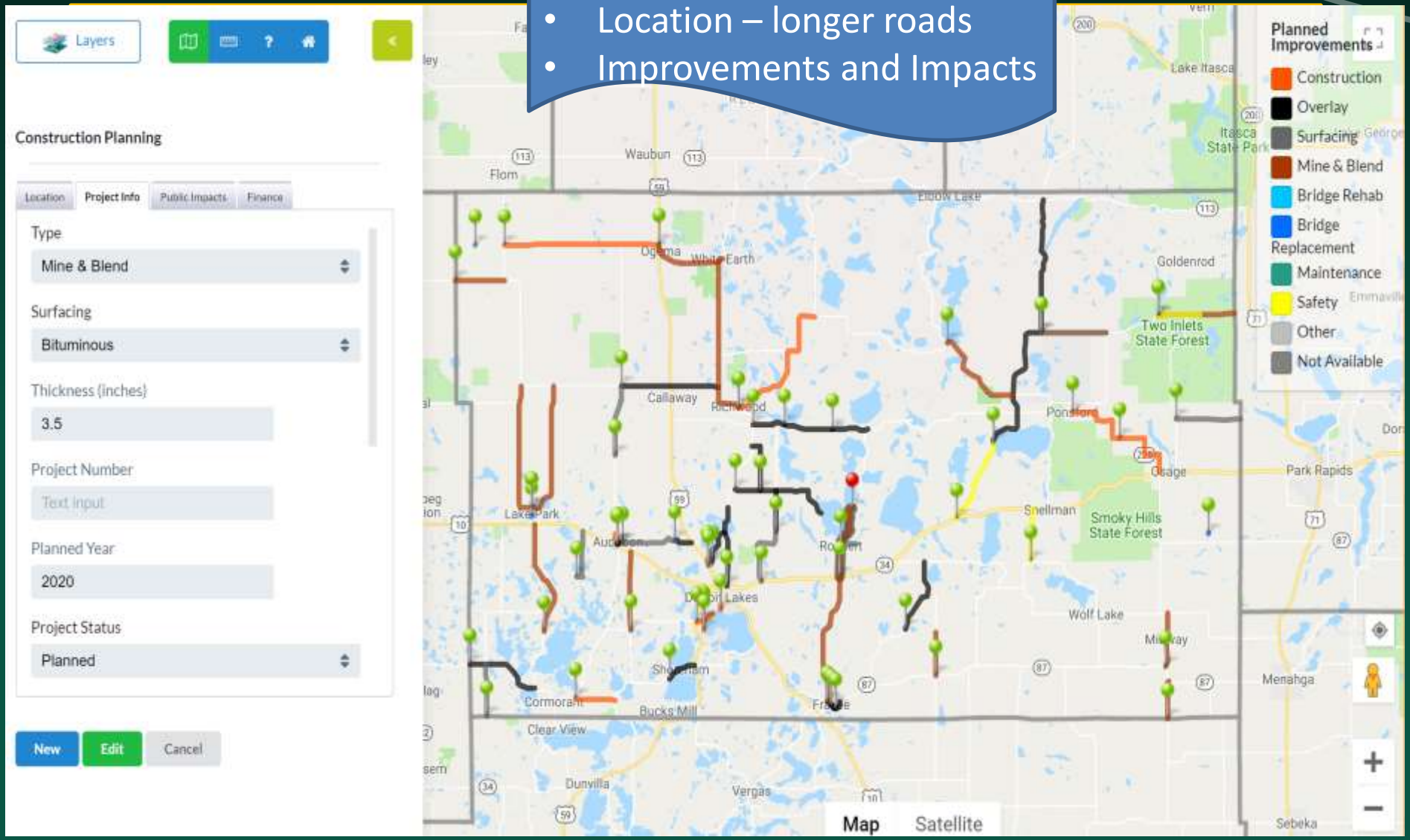
Construction History - Performance

- Select future year
- Condition, Age, Traffic
- Map and Graphs



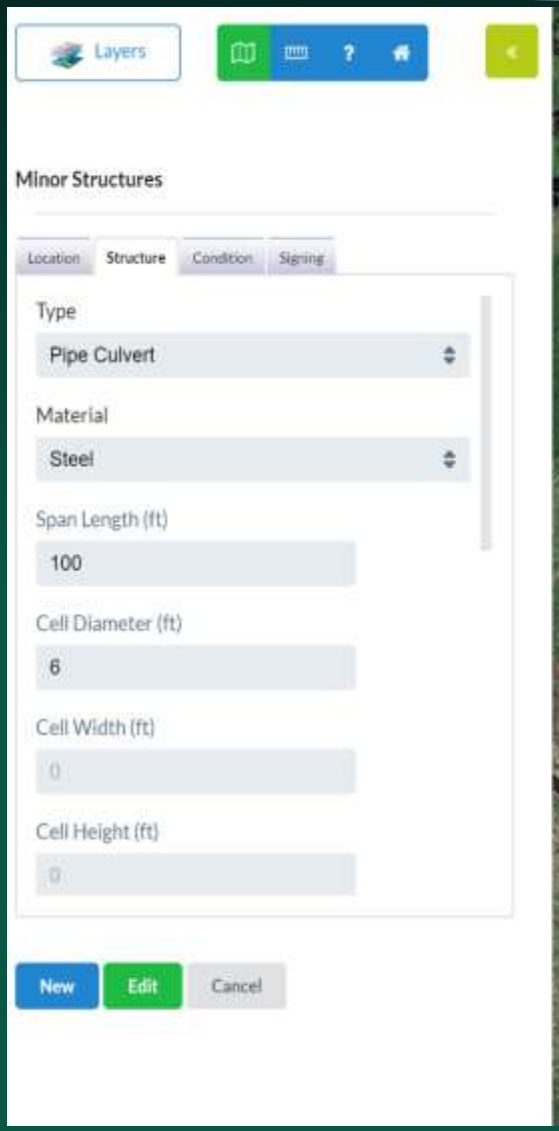
Construction Planning layer

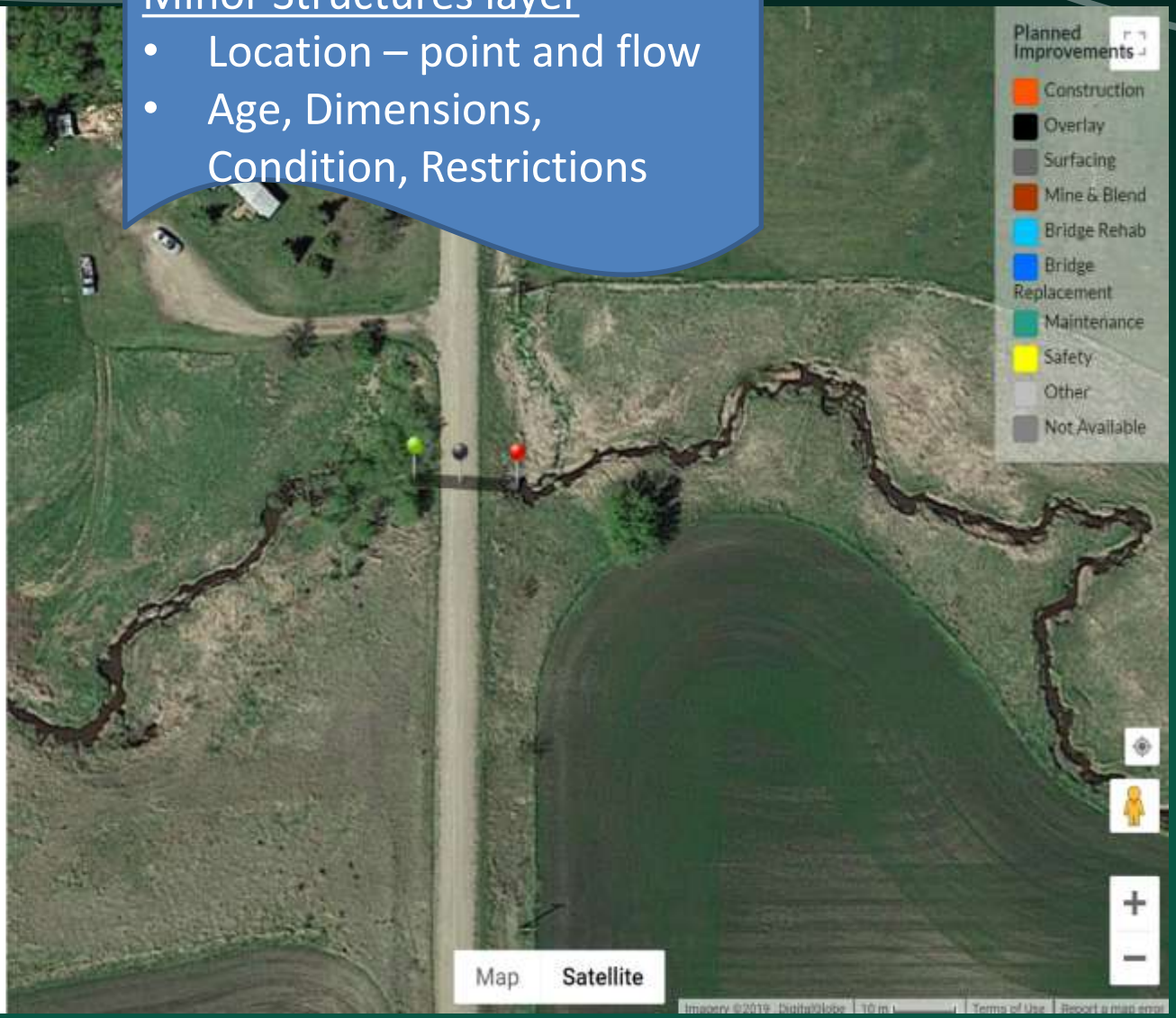
- Location – longer roads
- Improvements and Impacts



Minor Structures layer

- Location – point and flow
- Age, Dimensions, Condition, Restrictions





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- Event Proceedings
- Staff Presentations
- Other Resources *(Surface Selection Tool, Grain Industry Data, etc.)*

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Geographic Roadway Inventory Tool (GRIT)

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.

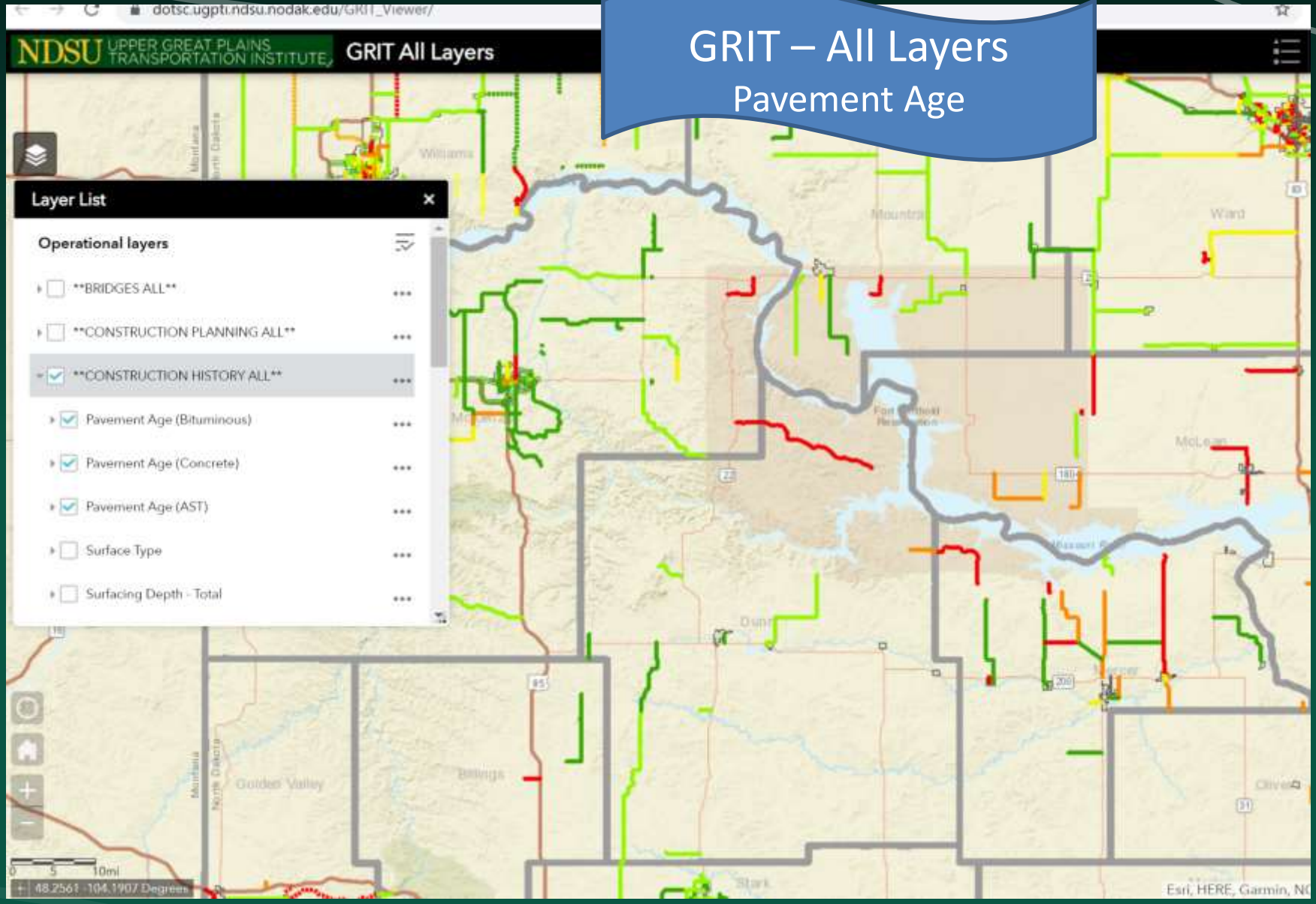
Web Maps

- GRIT Viewer – All Layers – ND
- GRIT Viewer – All Layers – MN
- Load Restrictions – All Roads
- Construction-Maintenance-Emergency Travel Impacts
- Pavement Condition Forecasting

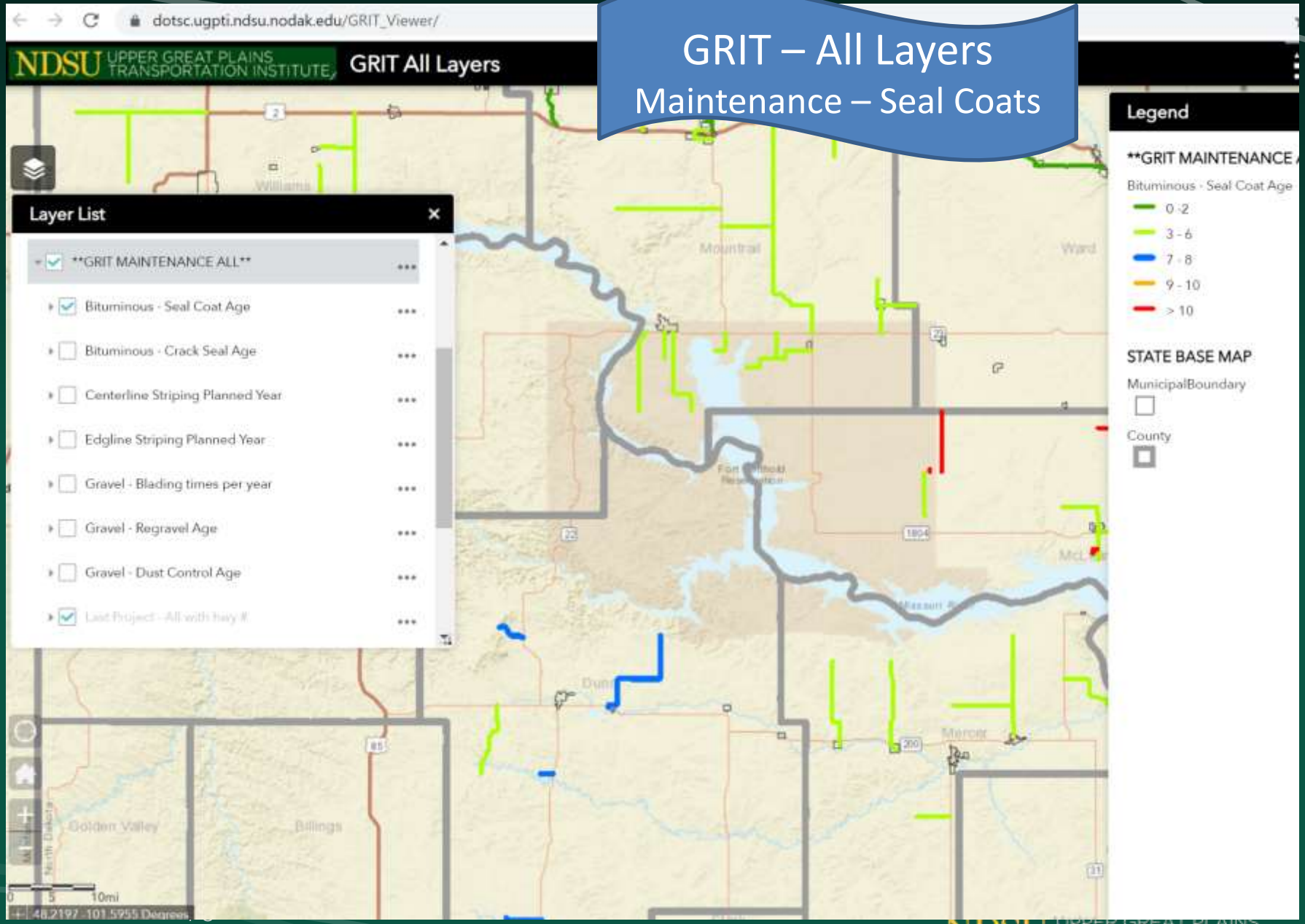
GRIT Dashboards

- ND County Crash Dashboard
- Pavement Performance Forecasting
- Minor Structures Dashboard

GRIT – All Layers
Pavement Age

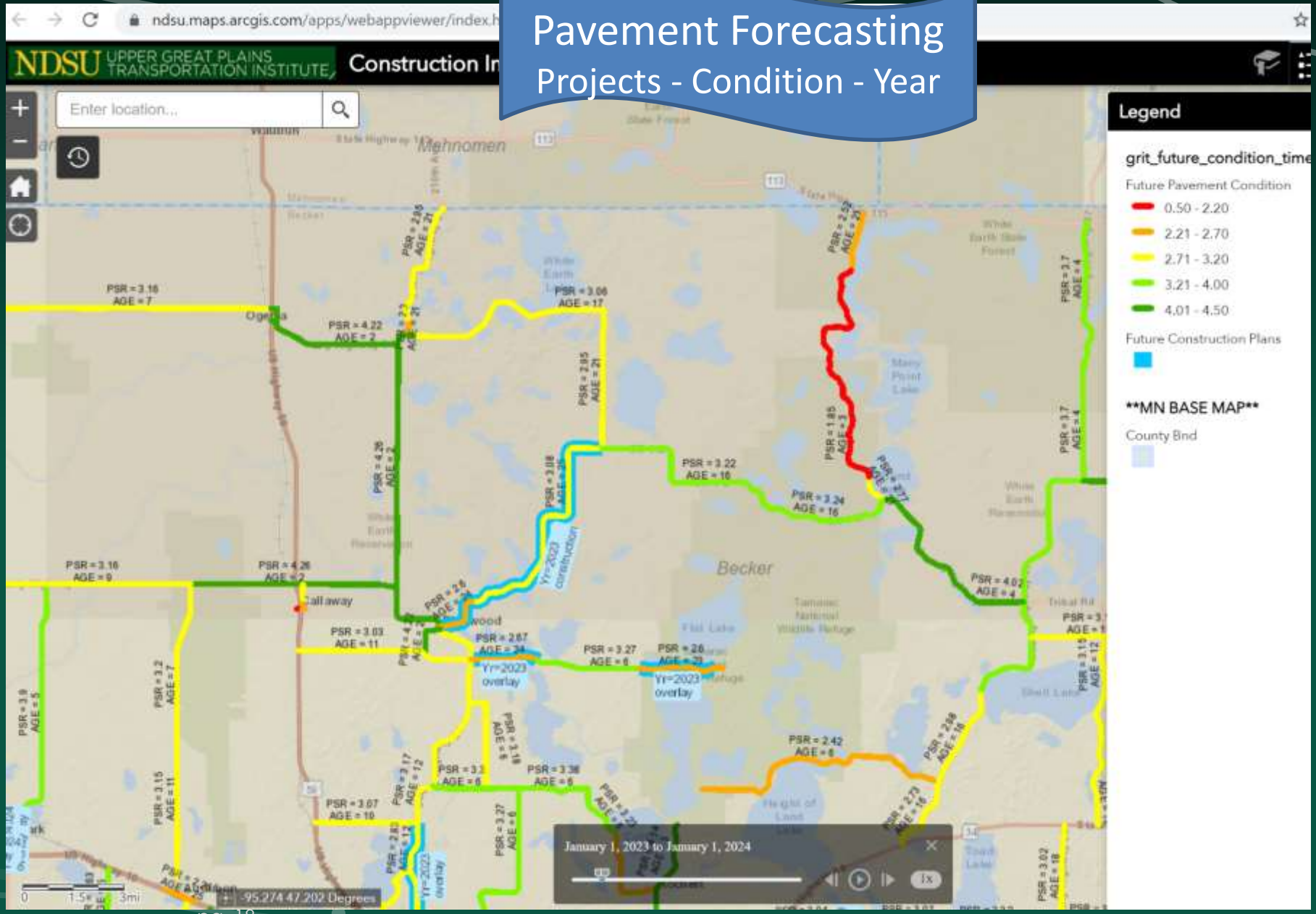


GRIT – All Layers
Maintenance – Seal Coats



Pavement Forecasting

Projects - Condition - Year



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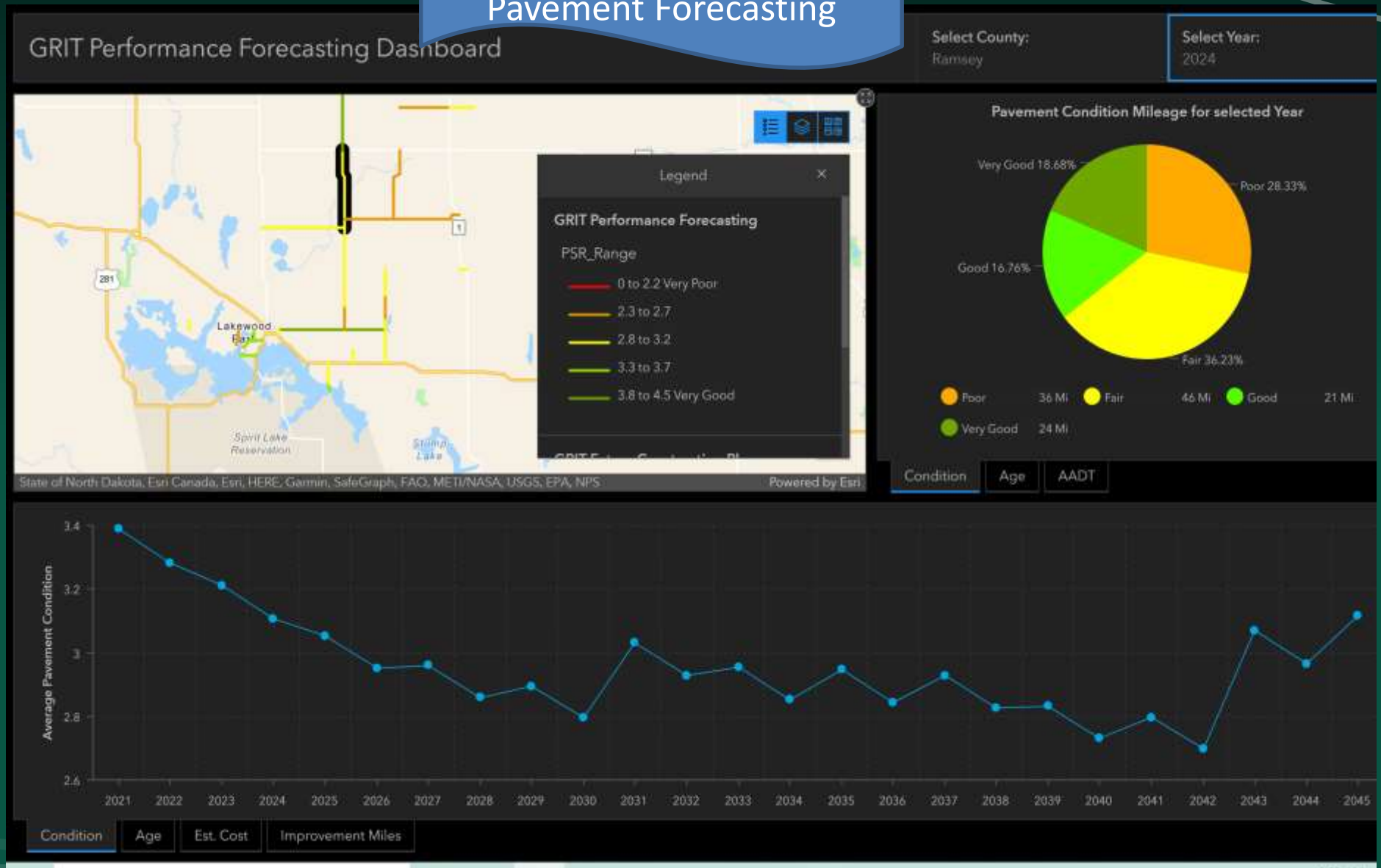
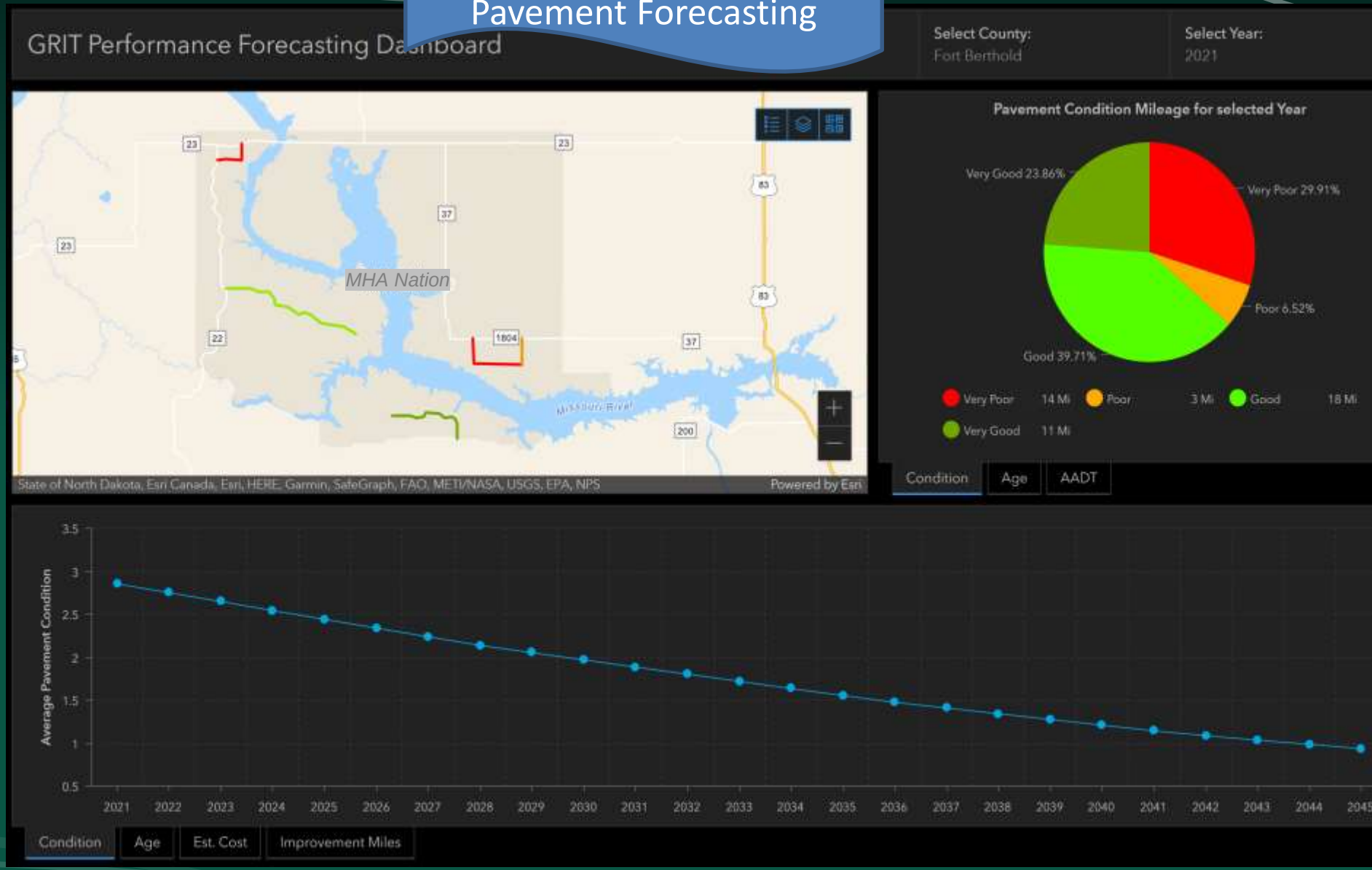
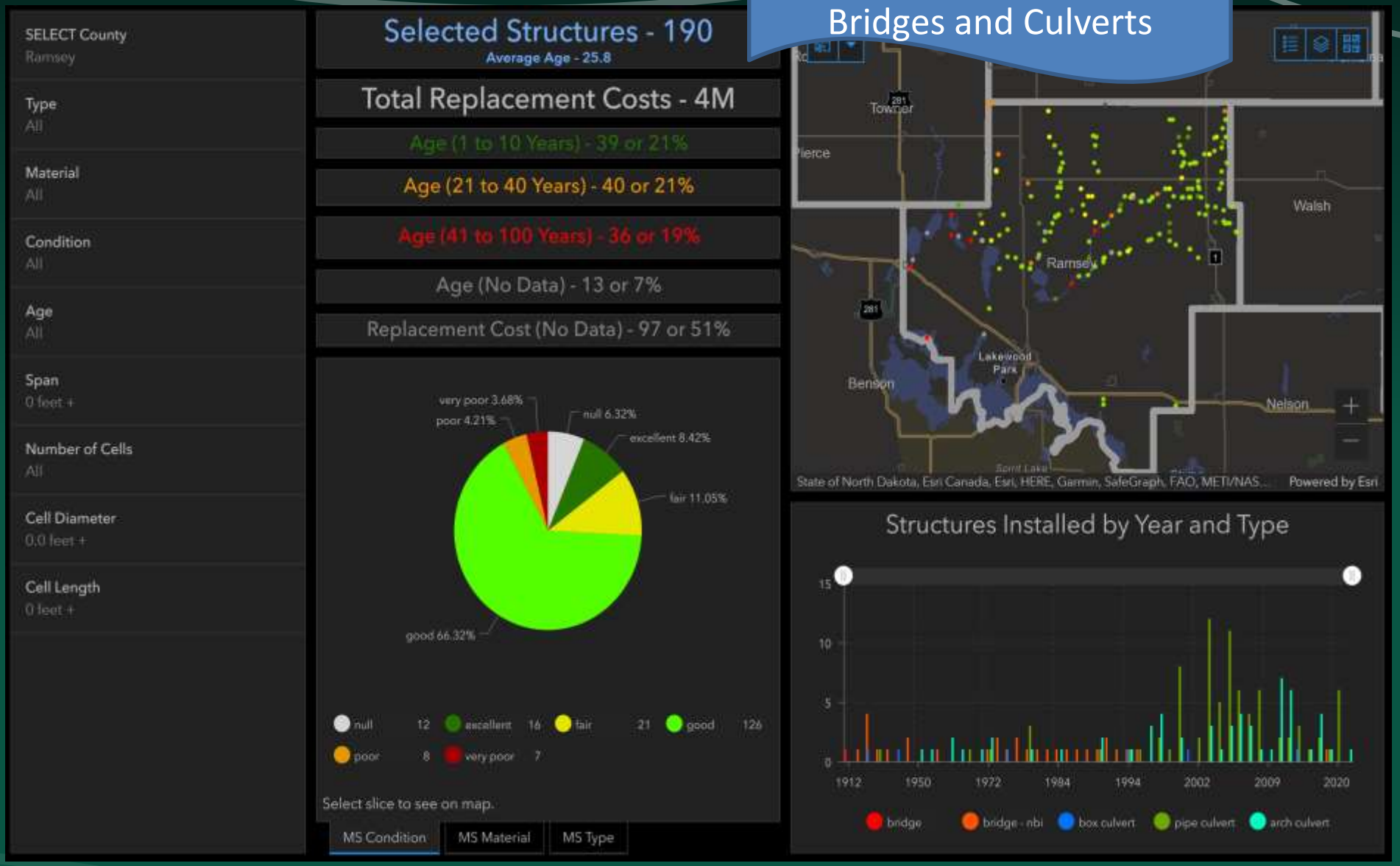
Dashboards
Pavement Forecasting



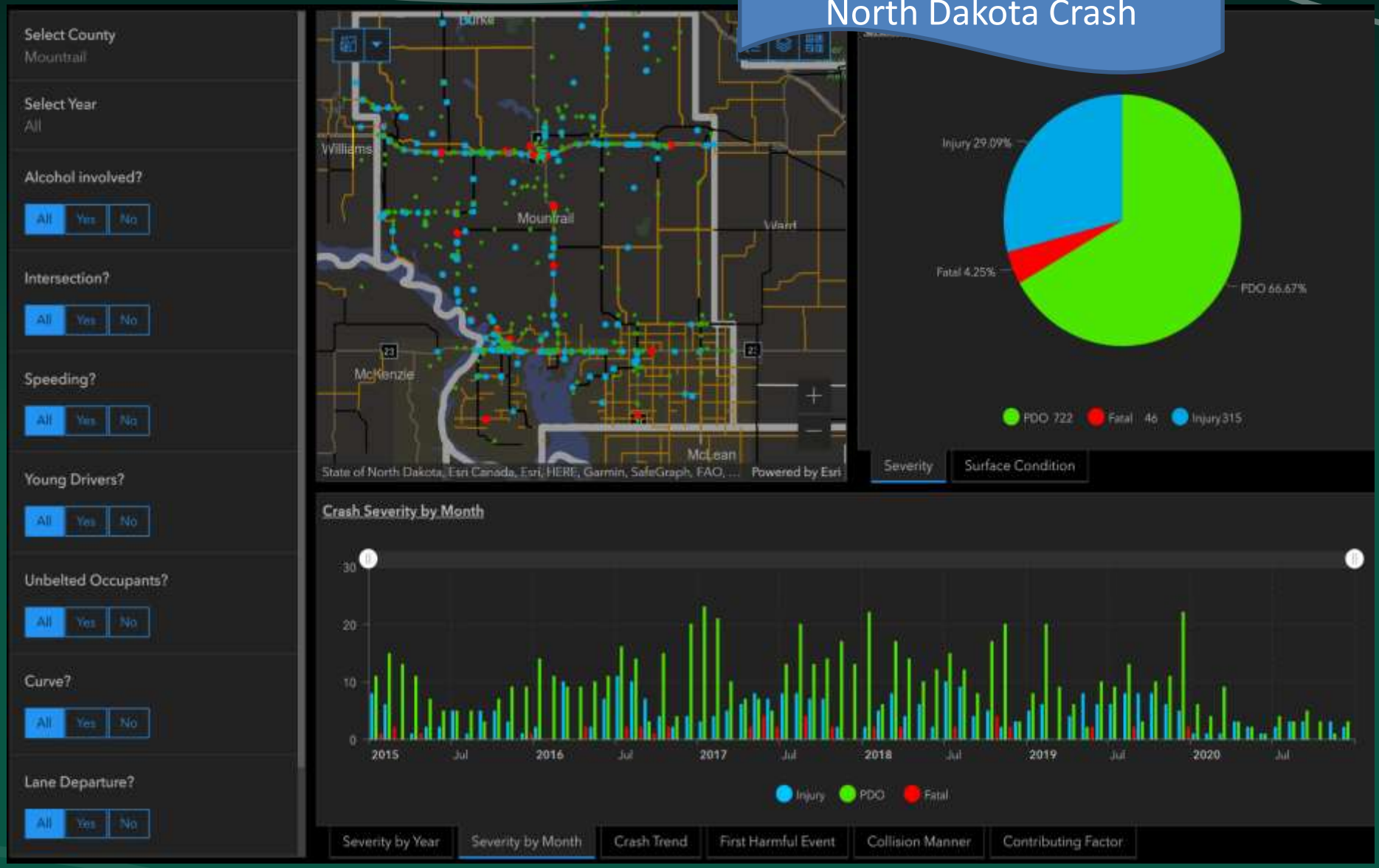
Dashboards
Pavement Forecasting



Dashboards
Bridges and Culverts

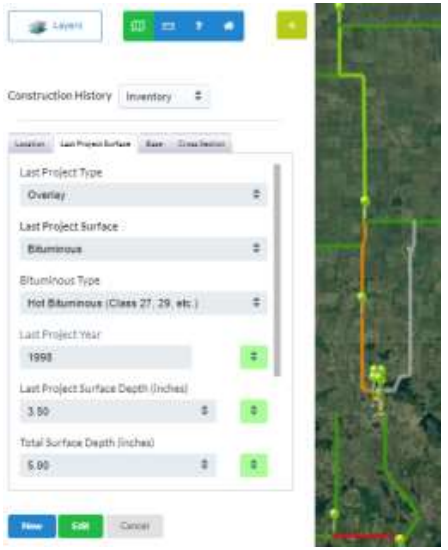


Dashboards
North Dakota Crash



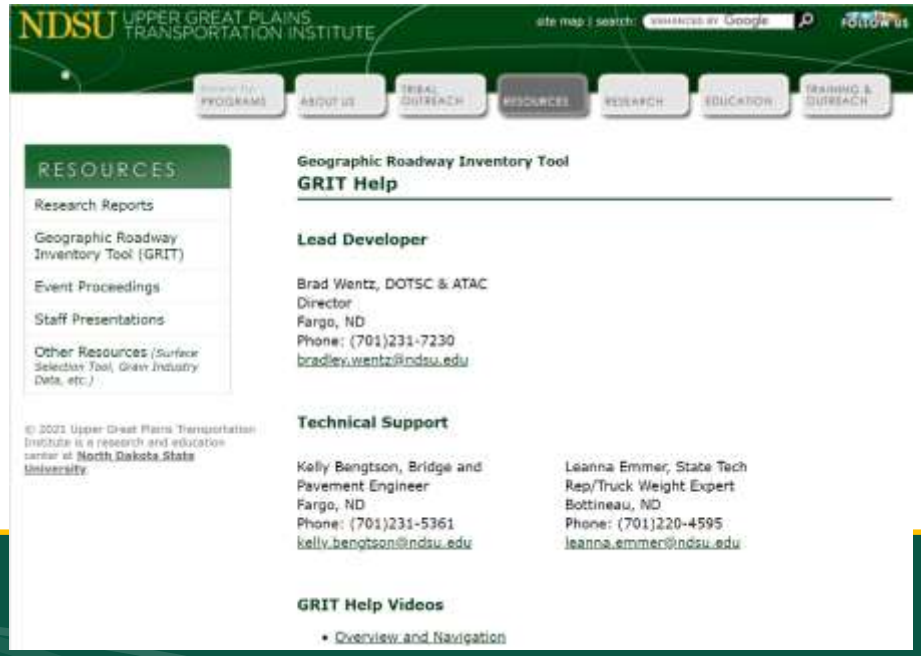
Summary of TAM with GRIT

- Anybody can do it – Easy to use
- Initial data entry fairly quick
  - Hardest part is finding data
- Updates each year are simple
- Enter Planning projects
- Automatic Forecasting
- Web Maps & Dashboards
- Easy to use tools to efficiently manage assets.



How do I get this?

- Explore it at https://www.ugpti.org/resources/asset-inventory/
- Available to all ND Counties and Tribal Nations
- Also available to MN, MT, and SD Local Governments by request
- Unlimited users and will work on any device
- Contact UGPTI if you would like to try it out



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