

Bridge Inspection Program



2020 County Roads Conference
Bryon Fuchs, PE
NDDOT

History

- ▶ NDDOT
 - ▶ Completing inspections on state and local bridges (>20.0' in length) since the NBIS program began
 - ▶ Original agreements with the counties signed back in 1980
 - ▶ NDDOT internal staff
 - ▶ Engineering, Construction, and Maintenance staff
 - ▶ All had the proper training, met inspection requirements, and had oversight
 - ▶ NDDOT used Consultants for the underwater inspections that are required on certain bridges – under a state contract (to continue)
 - ▶ NDDOT used Federal funds and billed the LPA's for the local match

Why now, what changed?

- ▶ Ensure the continued SAFETY of Bridges on the LPA system!!
- ▶ Federal requirements
 - ▶ 23 Metrics
 - ▶ Inspection timing/frequency
 - ▶ Inspection documentation
 - ▶ Load rating of all bridges
- ▶ NDDOT staffing



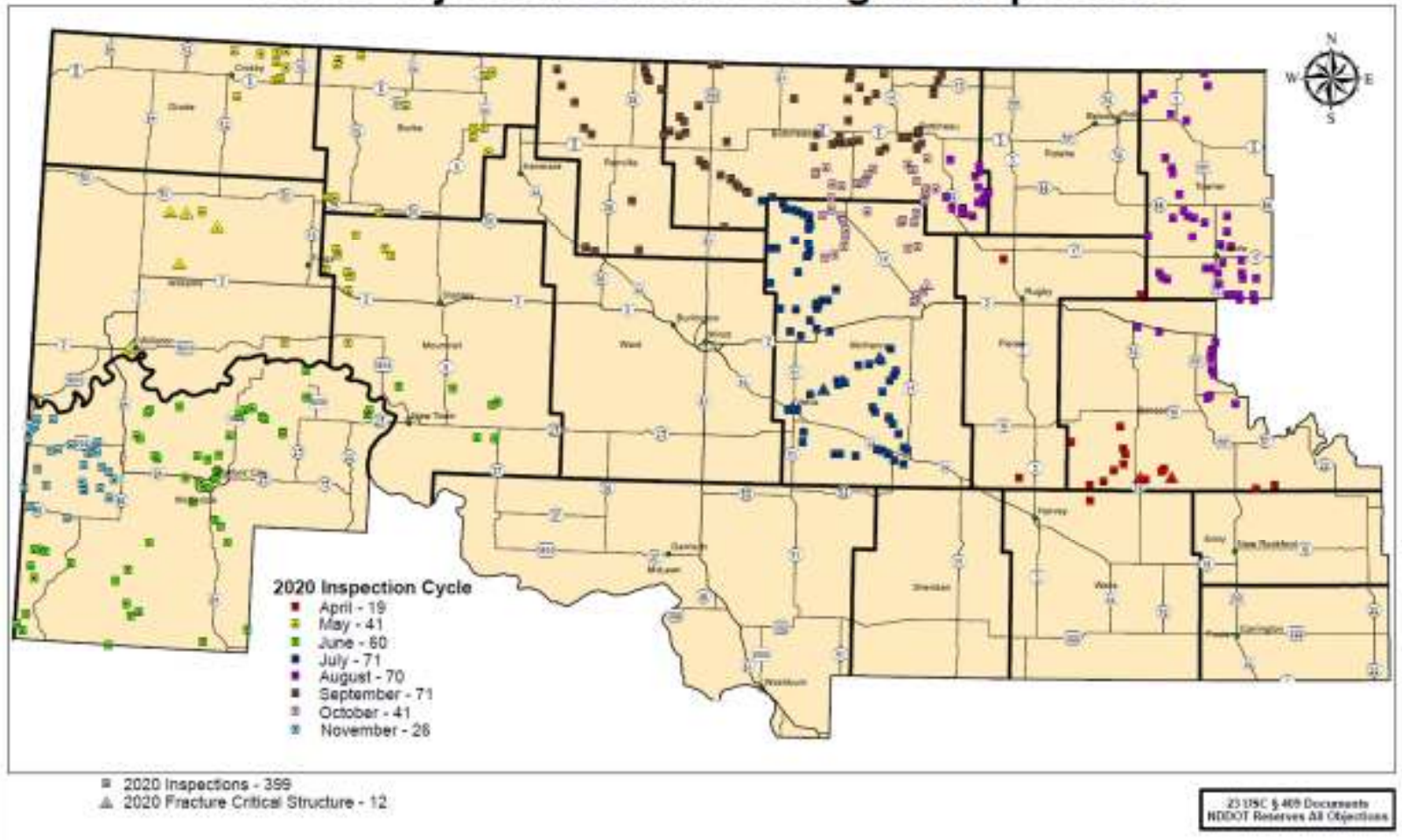
Where are we at?

- ▶ New agreements were sent out to Counties, Cities, and other State Agencies
- ▶ RFP closed on January 27, 2020
 - ▶ 9 Proposals received
- ▶ Interview prospective consultants the week of February 3, 2020
 - ▶ Negotiate scope and fees
- ▶ Hope to have contracts signed by March 1, 2020
- ▶ Inspections to start April 2020

RFP

- ▶ Inspect bridges in 2020/2021 – approximately 3,600
 - ▶ 170 fracture critical
- ▶ Load rate approximately 3,200 bridges
 - ▶ 170 fracture critical
- ▶ Inspection from April 1 to November 30 each year
- ▶ Also includes approximately 50 bridges per year for repaired, rehabbed, replaced, etc.
- ▶ Bridges split into 4 regions
- ▶ Anticipate hiring 4 consultants

2020 Projected Northwest Region Inspections



Scope and Fee Structure

- ▶ Inspection – Lump Sum per Bridge
 - ▶ Inspection cost for the bridge
 - ▶ Add-ons
 - ▶ Fracture Critical
 - ▶ Traffic control needed if more than some cones and signs. Such as a complete lane closure, flagging, etc.
 - ▶ Special access required – such as a snooper or lift truck
 - ▶ Stream crossing – to complete scour/channel profiles, plotting the information and prior information, boats may be needed or other equipment
 - ▶ RR crossing – insurance, permits, agreements, and flagging



Scope and Fee Structure

- ▶ Closed bridge Inspection Cost
- ▶ Routine load rating of the structure
- ▶ Fracture critical load rating of a structure

- ▶ Additional Investigation Service needs as a result of routine inspection
 - ▶ Special non-destructive testing needed
 - ▶ Consultant will need to discuss with Bridge Division first for a recommendation and justification prior to completing any work.

- ▶ Additional load rating service needs
 - ▶ Looking for plans, shop drawings, or other bridge information required in order to perform the load rating on the structure

Costs

- ▶ Going to be higher
 - ▶ More thorough documentation required
 - ▶ Load rating portion (one time), NDDOT hopes to be able to do the “maintenance” load rating in the future
 - ▶ Don't have plans or shop drawings, need to do field measurements, look for data
 - ▶ Etc.



Costs

- ▶ Items to consider to lower costs - examples
 - ▶ Have plans/shop drawings/other data readily available
 - ▶ Remove poor or un-traveled bridges
 - ▶ 71 (2.3%) – currently closed bridges on the LPA system
 - ▶ 68 (2.2%) – bridges that are Alert Code 3
 - ▶ 710 (22.7%) – bridges that are posted for load
 - ▶ 430 (13.8%) – bridges that are less than 25 tons
 - ▶ 74 (2.4%) – bridges that are less than 10 tons
 - ▶ 49 (1.6%) – bridges that are less than 5 tons
 - ▶ 419 (13.4%) – bridges that are Structurally Deficient



Funding

- Inspections
 - Federal – 80.93% (Allocations to LPA's)
 - Local match – 19.07%
- Load Rating
 - Federal – 80.93% (NDDOT federal funds)
 - Local match – 19.07%
- Billing Local Match (monthly)
 - Billed after accepted/approved inspection report
 - Billed after accepted/approved load rating



Funding

- ▶ Additional funding to the state – Bridge Replacement and Rehabilitation Program (poor bridges)
 - ▶ Load rating – coming from additional funds
 - ▶ Bridge replacement – coming from additional funds (offset \$ from County bridge program)



Additional Info related to Bridge Inspections/Load Rating

- ▶ State is going to “4” dedicated bridge inspectors
- ▶ State will need to hire for a certain number of bridges to be inspected and load rated as well – (number of and which bridges are uncertain at this time)

New items moving Forward

- ▶ All new bridges will require the following from this point forward:
 - ▶ Scour analysis (design phase and reviewed after piles have been driven)
 - ▶ Turned into NDDOT
 - ▶ Load Rated (must use BrR – AASHTOWare software) and the model needs to be turned over to NDDOT
 - ▶ Includes Bridges, box culverts, pre-fab structures, 3-sided boxes, etc. – anything that requires a bridge inspection according to the federal regulations that is 20.0' or greater in span length

Questions?

