
Technical Advisory Committee

Monday, August 13, 2018

Regular Session

Item H3

Approval of MPO Targets for NHS Pavement and Bridge Condition Performance Measures

Staff Contact: Allan Zafft, MPO Program Manager

ISSUE

VOTE: MPO Targets for NHS Pavement and Bridge Condition Performance Measures

BACKGROUND

The current and previous federal transportation bills, FAST Act and MAP-21, respectively, included a series of requirements for Transportation Performance Management (TPM). Since the passage of MAP-21, USDOT has worked through the federal rulemaking process to establish a series of performance measures and corresponding target setting requirements. Generally, the performance measures relate to national goals of safety, infrastructure condition, air quality, and transportation system performance.

Final USDOT rules related to TPM established performance measures to assess the condition of pavements and bridges on the National Highway System (NHS). There are four performance measures for pavement condition and two performance measures for bridge condition (see attached TPM fact sheets). State DOTs were required to establish performance targets for these measures by May 20, 2018. MPOs have the option of supporting the statewide targets, or establishing their own regional targets within 180 days of the establishment of state targets. Therefore, all Nebraska MPOs must adopt targets for NHS Pavement and Bridge Condition performance measures by November 17, 2018. After two years there will be a mid-point review, at which point the targets could be adjusted for NDOT and MPOs based on collected data. State DOTs will establish targets every four years.

GIAMPO staff recommends the support of the NDOT NHS Pavement and Bridge Condition performance targets (see attached NDOT's Statewide Performance Measure Targets (PM2)) as the most prudent alternative. The core reasons for not establishing regional targets include the following:

- The Interstate and Non-Interstate NHS routes in the GIAMPO metropolitan planning area are State NHS routes.
- Statewide, 57% of pavements of the Interstate System are in Good condition (2017 data). After the completion of the I-80: Platte River - Phillips project, 100% of pavements of the Interstate System in the GIAMPO region should be in Good condition.
- Statewide, 45% of pavements of the Non-Interstate System are in Good condition (2017 data). After the completion of current projects (Hwy 281: In Grand Island & North and US-30: US-281 West, Grand Island) and future projects (N-2: Cairo - Grand Island), over 50% of pavements of the Non-Interstate System should be in Good condition.
- The State is the owner of the NHS bridges in the GIAMPO region.
- Statewide, 98.2% of NHS bridges by bridge area are classified as Good or Fair condition (2/21/2018 data).

- Statewide, 1.9% of NHS bridges by bridge area are classified as structurally deficient and 1.8% of NHS bridges by bridge area are classified as Poor condition (2/21/2018 data).

POLICY CONSIDERATIONS/DISCUSSION

With supporting the statewide targets, GIAMPO is agreeing to plan and program projects in a manner that contributes towards the accomplishment of the NDOT NHS Pavement and Bridge Condition performance targets. These targets will ultimately be integrated into the GIAMPO Long Range Transportation Plan and Transportation Improvement Program.

BUDGET CONSIDERATIONS

None.

COMMITTEE ACTION

None.

RECOMMENDATION

Approve to support state targets as the MPO NHS Pavement and Bridge Condition performance targets for the GIAMPO metropolitan planning area.

STAFF CONTACT

Allan Zafft

PAVEMENT

PERFORMANCE MEASURES



Final Rulemaking

The Federal Highway Administration (FHWA) published in the *Federal Register* (82 FR 5886) a [final rule](#) establishing performance measures for State Departments of Transportation (DOTs) to use in managing pavement and bridge performance on the National Highway System (NHS). The National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program Final Rule addresses requirements established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and reflects passage of the Fixing America's Surface Transportation (FAST) Act. The rule is effective **May 20, 2017**.

Performance Measures

- | | |
|---|---|
| ✓ | % of Interstate pavements in Good condition |
| ✓ | % of Interstate pavements in Poor condition |
| ✓ | % of non-Interstate NHS pavements in Good condition |
| ✓ | % of non-Interstate NHS pavements in Poor condition |

About Condition

- **Good condition:** Suggests no major investment is needed.
- **Poor condition:** Suggests major reconstruction investment is needed.

Penalty Provisions

If FHWA determines the State DOT's Interstate pavement condition falls below the minimum level for the most recent year, the State DOT must obligate a portion of National Highway Performance Program (NHPP) and transfer a portion of Surface Transportation Program (STP) funds to address Interstate pavement condition.

Target Setting

State DOTs:

- Must establish targets, regardless of ownership, for the full extent of the Interstate and non-Interstate NHS.
- Must establish statewide 2- and 4-year targets for the non-Interstate NHS and 4-year targets for the Interstate by May 20, 2018, and report by October 1, 2018.
- May adjust targets at the Mid Performance Period Progress Report (October 1, 2020).

Metropolitan Planning Organizations (MPOs):

- Support the relevant State DOT(s) 4-year target or establish their own by 180 days after the State DOT(s) target is established.



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PAVEMENT PERFORMANCE MEASURES



Key Dates

May 20, 2017	Final rule effective date.
January 1, 2018	1st 4-year performance period begins.
May 20, 2018	State DOT targets must be established.
January 1, 2018	State DOTs collect data for Interstate pavements that conform to the final rule (IRI, Rutting, Cracking %, Faulting, and Inventory).
Within 180 days of relevant State DOT(s) target establishment	MPOs must commit to support state target or establish separate quantifiable target.
October 1, 2018	Baseline Performance Period Report for 1 st Performance Period due. State DOTs report 4-year targets for Interstate and 2-year and 4-year targets for non-Interstate NHS; etc.
April 15, 2019, and each April 15 thereafter	State DOTs submit first Interstate data that conform to the final rule.
January 1, 2020	State DOTs collect data for non-Interstate NHS pavements that conform to the final rules.
October 1, 2020	Mid Performance Period Progress Report for the 1st Performance Period due. State DOTs report 2-year condition/performance; progress toward achieving 2-year targets; etc.
June 15, 2021, and each June 15 thereafter	State DOTs submit non-Interstate NHS data that conform to the final rule.
December 31, 2021	1st 4-year performance period ends.
October 1, 2022	Full Performance Period Progress Report for 1 st Performance Period due. State DOTs reports 4-year condition/performance; progress toward achieving 4-year targets, etc. Baseline Performance Period Report for 2 nd Performance Period due. State DOTs report 2-year and 4-year targets for Interstate and non-Interstate NHS; baseline condition; etc.



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Visit www.fhwa.dot.gov/tpm/ to learn about training, guidance, and other implementation-related information.

Final Rulemaking

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Performance Measures

- ✓ % of NHS bridges by deck area classified as in Good condition
- ✓ % of NHS bridges by deck area classified as in Poor condition

Condition-Based Performance Measures

- Measures are based on deck area.
- The classification is based on National Bridge Inventory (NBI) condition ratings for item 58 - Deck, 59 - Superstructure, 60 - Substructure, and 62 - Culvert.
- Condition is determined by the lowest rating of deck, superstructure, substructure, or culvert. If the lowest rating is greater than or equal to 7, the bridge is classified as good; if is less than or equal to 4, the classification is poor. (Bridges rated below 7 but above 4 will be classified as fair; there is no related performance measure.)
- Deck area is computed using NBI item 49 - Structure Length, and 52 - Deck Width or 32 - Approach Roadway Width (for some culverts).

Target Setting

State DOTs:

- Must establish targets for all bridges carrying the NHS, which includes on- and off-ramps connected to the NHS within a State, and bridges carrying the NHS that cross a State border, regardless of ownership.
- Must establish statewide 2- and 4-year targets by May 20, 2018, and report targets by October 1, 2018, in the Baseline Performance Period Report.
- May adjust 4-year targets at the Mid Performance Period Progress Report (October 1, 2020).

Metropolitan Planning Organizations (MPOs):

- Support the relevant State DOT(s) 4-year target or establish their own by 180 days after the State DOT(s) target is established.



Key Dates

May 20, 2017	Final rule effective date.
January 1, 2018	1st 4- year performance period begins.
May 20, 2018	Initial 2- and 4-year targets established.
October 1, 2018	Baseline Performance Period Report for the 1 st Performance Period due. State DOTs report 2-year and 4-year targets; etc.
Within 180 days of relevant State DOT(s) target establishment	MPOs must commit to support State target or establish separate quantifiable target.
October 1, 2020	Mid Performance Period Progress Report for the 1 st Performance Period due. State DOTs report 2-year condition/performance; progress toward achieving 2-year targets; etc.
December 31, 2021	1st 4-year performance period ends.
October 1, 2022	Full Performance Period Progress Report for 1 st performance period due. State DOTs report 4-year condition/performance; progress toward achieving 4-year targets; etc. Baseline report due for 2 nd performance period due. State DOTs report 2- and 4-year targets; baseline condition, etc.

Other Specifics

- State DOT targets should be determined from asset management analyses and procedures and reflect investment strategies that work toward achieving a state of good repair over the life cycle of assets at minimum practicable cost. State DOTs may establish additional measures and targets that reflect asset management objectives.
- The rule applies to bridges carrying the NHS, including bridges on on- and off-ramps connected to the NHS.
- If for 3 consecutive years more than 10.0% of a State DOT's NHS bridges' total deck area is classified as Structurally Deficient, the State DOT must obligate and set aside National Highway Performance Program (NHPP) funds for eligible projects on bridges on the NHS.
- Deck area of all border bridges counts toward both States DOTs' totals.

Visit www.fhwa.dot.gov/tpm/ to learn about training, guidance, and other implementation-related information.



NDOT's Statewide Performance Measure Targets (PM2)

The Nebraska Department of Transportation (NDOT) recommends the following pavement and bridge condition targets for the state. Pavement and bridge condition performance measures are defined in accordance with the final USDOT rule on Pavement and Bridge Condition Performance Measures, authorized by 23 CFR Part 490.

- At least 50% of pavements of the Interstate System in Good condition.
- No more than 5% of pavements of the Interstate System in Poor condition.
- At least 40% of the Non-Interstate National Highway System (NHS) in Good condition.
- No more than 10% of the Non-Interstate National Highway System in Poor condition.
- No more than 10% of the total deck area of bridges in the state on the National Highway System is located on bridges that have been classified as structurally deficient.
- At least 95% of bridges on the State system and NHS in Good or Fair condition.

This document is exempt under discovery or admission under 23 USC § 409. Data provided by Nebraska Department of Transportation. Information relating to the GIAMPO metropolitan planning area (MPA) was determined by GIAMPO staff.

Nebraska & GIAMPO National Highway System (NHS) Inventory and Condition

2017 Data

National Rating System Standards		
Metric	Range/Rating	
	Good	Poor
International Roughness Index (IRI) (in/mi)	<95	>170
Cracking Percentage (%) * (Asphalt and Jointed Concrete)	<5	>15
Rutting (in)	<0.20	>0.40
Faulting (in)	<0.10	>0.15

*Note - Cracking is calculated in accordance with NDOT standards. This will be updated to the Federal standards for 2018 data.

National Rating System for Statewide NHS			
System	Total (Lane-Miles)	% Good	% Poor
Interstate	2101.1	57%	0%
Non-Interstate NHS	7478.9	45%	6%
Local NHS	487.4	0%	16%
Total	10067.4	45%	5%

National Rating System for GIAMPO NHS			
System	Total (Lane-Miles)	% Good	% Poor
State Jurisdiction	120.72	26%	1%
Local Jurisdiction	0	0%	0%
Total	120.72	26%	1%

Nebraska's National Performance Measure Targets (Pavement)		
Performance Measure	Target	
	≥ 50 %	
Pavements on the Interstate System in Good Condition	≤ 5 %	
Pavements on the non-Interstate NHS in Good Condition	≥ 40 %	
Pavements on the non-Interstate NHS in Poor Condition	≤ 10%	

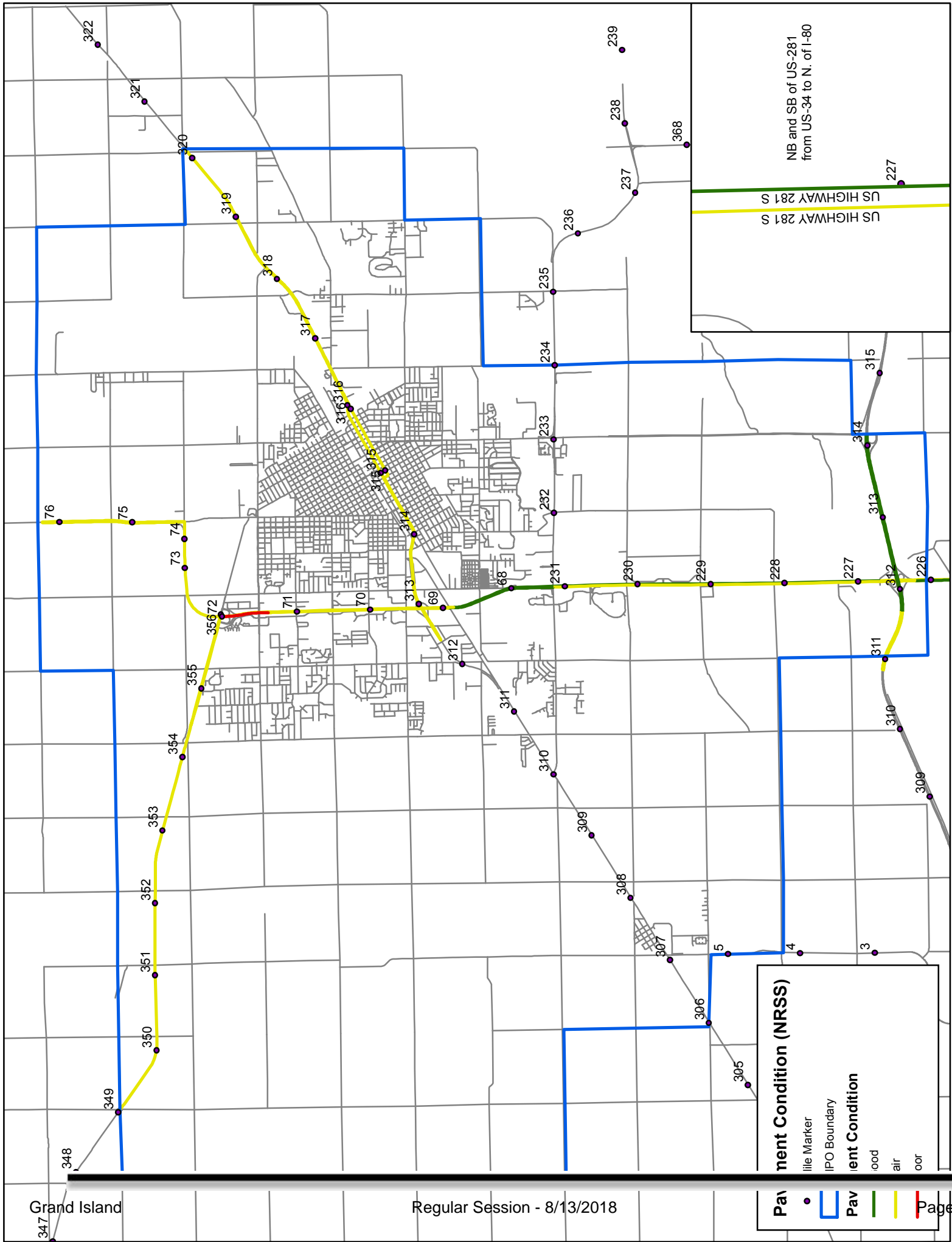
Nebraska's "NSI" Rating for Statewide NHS					
System	Total (Lane-Miles)	Very Good	Good	Poor	Very Poor
Interstate	2101.1	46%	49%	4%	0%
Non-Interstate NHS	7478.9	38%	46%	13%	0%
Local NHS	487.4	73%	9%	5%	7%
Total	10067.4	44%	42%	11%	1%

Nebraska's "NSI" Rating for GIAMPO NHS					
System	Total (Lane-Miles)	Very Good	Good	Poor	Very Poor
State Jurisdiction	120.72	20%	49%	22%	9%
Local Jurisdiction	0	0%	0%	0%	0%
Total	120.72	20%	49%	22%	9%

Note: The 9% Very Poor is due to Hwy. 281 (RP 71.98-78.47) being under construction and/or not rateable

7.27.2018

NHS Type	Highway/Route Number	Begin Reference Post	End Reference Post	Length	Thru Lanes	Lane Miles	Location	Direction	Surface Type	NSI	IRI Amt (in/mi)	Cracking (%)	Rut Depth (in)	Fault Height (in)	MAP-21 Pavement Condition
State Highway NHS	002	349.07	354.74	5.67	2	11.34	CAIRO-GRAND ISLAND	B	CONC	62.51	136	27.5	0.00	0.09	Fair
State Highway NHS	002	354.74	356.06	1.35	4	2.7	JCT US281 NORTHWEST	A	CONC	59.09	172	10	0.00	0.13	Fair
State Highway NHS	002	354.74	356.06	1.35	4	2.7	JCT US281 NORTHWEST	D	CONC	62.7	169	10	0.00	0.08	Fair
State Highway NHS	030	312.47	314.09	1.6	4	3.2	GRAND ISLAND	A	CONC	70.85	118	0	0.00	0.00	Fair
State Highway NHS	030	312.47	314.09	1.6	4	3.2	GRAND ISLAND	D	CONC	71.84	137	0	0.00	0.00	Fair
State Highway NHS	030	314.09	314.85	0.77	4	1.54	GRAND ISLAND	A	CONC	94.58	126	0	0.00	0.00	Fair
State Highway NHS	030	314.09	314.85	0.77	4	1.54	GRAND ISLAND	D	CONC	99.72	148	0	0.00	0.00	Fair
State Highway NHS	030	314.85	316.07	1.24	2	1.24	GRAND ISLAND ONE WAY	A	COMP	88	193	0	0.15	0.00	Fair
State Highway NHS	030	316.07	319.02	2.92	4	5.84	GRAND ISLAND	A	CONC	89.07	94	12.5	0.00	0.00	Fair
State Highway NHS	030	316.07	319.02	2.92	4	5.84	GRAND ISLAND	D	CONC	96	175	6	0.00	0.00	Fair
State Highway NHS	030	316.07	320.23	1.21	2	2.42	CHAPMAN WEST	B	COMP	84.76	69	6.6	0.10	0.04	Fair
State Highway NHS	030R	314.85	316.07	1.22	3	3.66	GRAND ISLAND ONE WAY	D	COMP	83.2	158	10.6	0.09	0.00	Fair
State Highway NHS	034	222.77	226.23	3.39	4	6.78	180 SOUTH	A	COMP	88	97	1.5	0.19	0.00	Fair
State Highway NHS	034	222.77	226.23	3.39	4	6.78	180 SOUTH	D	COMP	88	87	3.4	0.14	0.00	Good
State Highway NHS	034	226.23	226.74	0.51	4	1.02	180 INTERCHANGE GRAND ISLAND	A	CONC	87.48	73	10	0.00	0.03	Fair
State Highway NHS	034	226.23	226.74	0.51	4	1.02	180 INTERCHANGE GRAND ISLAND	D	CONC	96.65	84	10	0.00	0.00	Fair
State Highway NHS	034	226.74	231.16	4.39	4	8.78	N JCT US281 SOUTH	A	COMP	92	75	1.5	0.09	0.00	Good
State Highway NHS	034	226.74	231.16	4.39	4	8.78	N JCT US281 SOUTH	D	COMP	83.34	54	10.9	0.10	0.06	Fair
State Highway NHS	281	67.45	68.86	1.4	4	2.8	JCT US34 NORTH	A	COMP	92	87	1	0.12	0.05	Good
State Highway NHS	281	67.45	68.86	1.4	4	2.8	JCT US34 NORTH	D	COMP	88	94	2.6	0.12	0.03	Good
State Highway NHS	281	68.86	69.61	0.75	4	1.5	JCT US30 NORTH	A	COMP	98.6	196	0	0.12	0.02	Fair
State Highway NHS	281	68.94	69.55	0.61	4	1.22	JCT US30 NORTH	D	COMP	99	184	0	0.08	0.00	Fair
State Highway NHS	281	69.55	71.40	1.85	4	3.7	OLD POTASH HWY-CAPITAL AVE GR	D	CONC	57.82	154	25	0.00	0.00	Fair
State Highway NHS	281	69.61	71.40	1.79	4	3.58	OLD POTASH HWY-CAPITAL AVE GR	A	CONC	69.82	109	0	0.00	0.00	Fair
State Highway NHS	281	71.40	71.98	0.6	4	1.2	IN GRAND ISLAND & NORTH	A	CONC	65.74	172	0	0.00	0.01	Fair
State Highway NHS	281	71.40	71.98	0.6	4	1.2	IN GRAND ISLAND & NORTH	D	CONC	57.31	200	20	0.00	0.00	Poor
State Highway NHS	281	71.98	74.21	1.61	2	3.22	GRAND ISLAND NORTH	B	COMP	0	196	0	0.09	0.00	Fair
State Highway NHS	281	74.21	76.23	2.02	4	4.04	GRAND ISLAND NORTH	A	COMP	0	134	0	0.06	0.00	Fair
State Highway NHS	281	74.21	76.23	2.02	4	4.04	GRAND ISLAND NORTH	D	COMP	0	124	0	0.06	0.00	Fair
Interstate	080	310.88	311.69	0.81	4	1.62	PLATTE RIVER-GRAND ISLAND	A	COMP	75.7	146	0	0.09	0.00	Fair
Interstate	080	310.88	311.69	0.81	4	1.62	PLATTE RIVER-GRAND ISLAND	D	COMP	87.78	123	3.3	0.09	0.00	Fair
Interstate	080	311.69	314.10	2.41	4	4.82	GRAND ISLAND-PHILLIPS	A	COMP	79.8	70	0	0.07	0.00	Good
Interstate	080	311.69	314.10	2.41	4	4.82	GRAND ISLAND-PHILLIPS	D	COMP	85.46	56	0	0.05	0.01	Good



Summary of Nebraska Bridges by Area								
Owners	Bridges count total	Bridge area (sf)	Closed count	Closed % by area per System	Structurally Deficient % by area per System	Good % by area per System	Fair % by area per System	Poor % by area per System
County System	11,070	17,204,997	144	0.9%	12.0%	55.2%	37.4%	7.4%
First Class Cities	445	3,539,220	2	0.8%	5.3%	71.5%	23.2%	5.3%
State System	3,525	25,116,730	1	0.0%	3.4%	60.4%	36.2%	3.4%
NHS State System	1,437	15,678,711	0	0.0%	2.0%	59.5%	38.6%	1.9%
NHS Local System	62	1,108,201	0	0.0%	0.4%	63.8%	35.8%	0.4%
NHS System	1,499	16,786,912	0	0.0%	1.9%	59.8%	38.4%	1.8%
Nebraska	15,040	45,860,947	147	0.4%	6.8%	59.3%	35.6%	5.0%
All bridges in Nebraska are safety inspected every two years by certified bridge inspectors. Good Bridges – when the major bridge components are all in good condition or better. Poor Bridges – when one or more of the major bridge components are in poor condition or worse. Fair Bridges – all other bridges Major Bridge Components – Bridge Deck, Superstructure, Substructure data date 2/21/2018								