

City of Norman

Proposed Bridge Maintenance Bond Program

Community
Planning &
Transportation
Committee

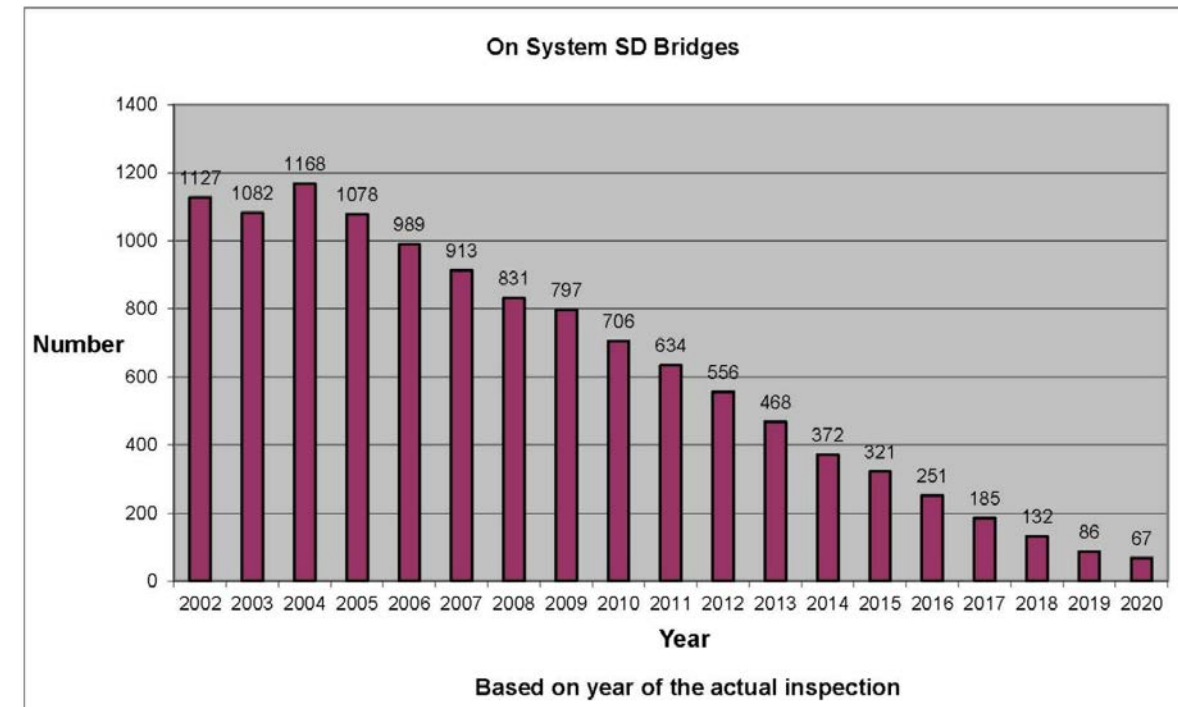
Thursday,
October 27,
2022



Oklahoma State History

- In 2004, Oklahoma was ranked 49th nationally for on-system bridge conditions
- As of April 2021, Oklahoma was ranked 7th nationally for on-system bridge conditions

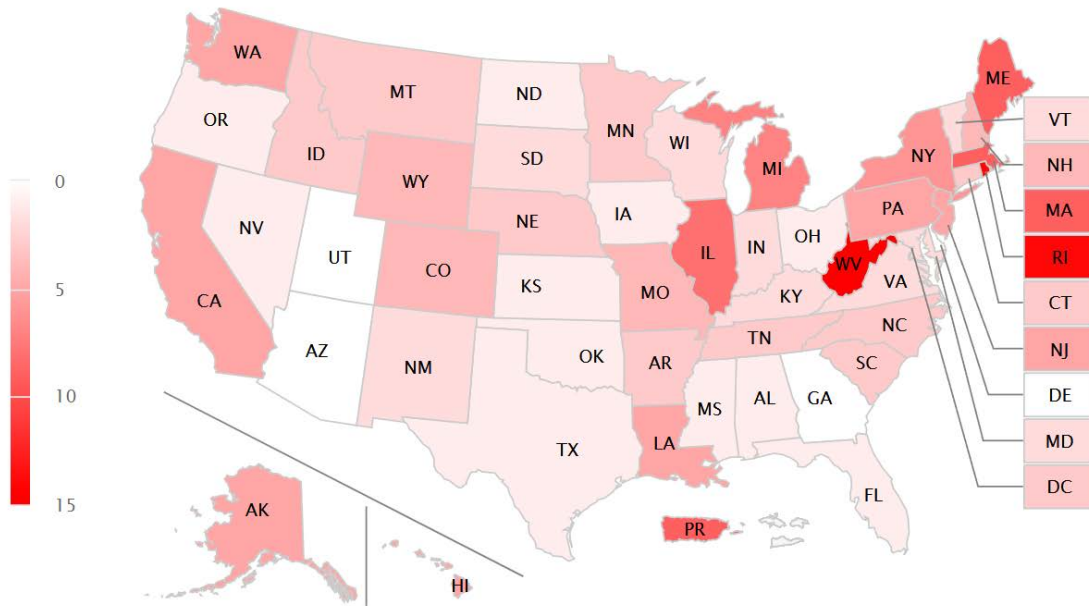
2021				
State	Total No. of Bridges	No. of Bridges Rated Poor	% of Bridges Rated Poor	State Ranking
Georgia	6808	23	0.34%	1
Arizona	4844	32	0.66%	2
Iowa	4152	30	0.72%	3
Kansas	5095	37	0.73%	4
Texas	34863	256	0.73%	5
Utah	1846	14	0.76%	6
Oklahoma	6737	67	0.99%	7
Nevada	1155	12	1.04%	8
Florida	5703	64	1.12%	9
Maryland	2554	29	1.14%	10



Oklahoma State History

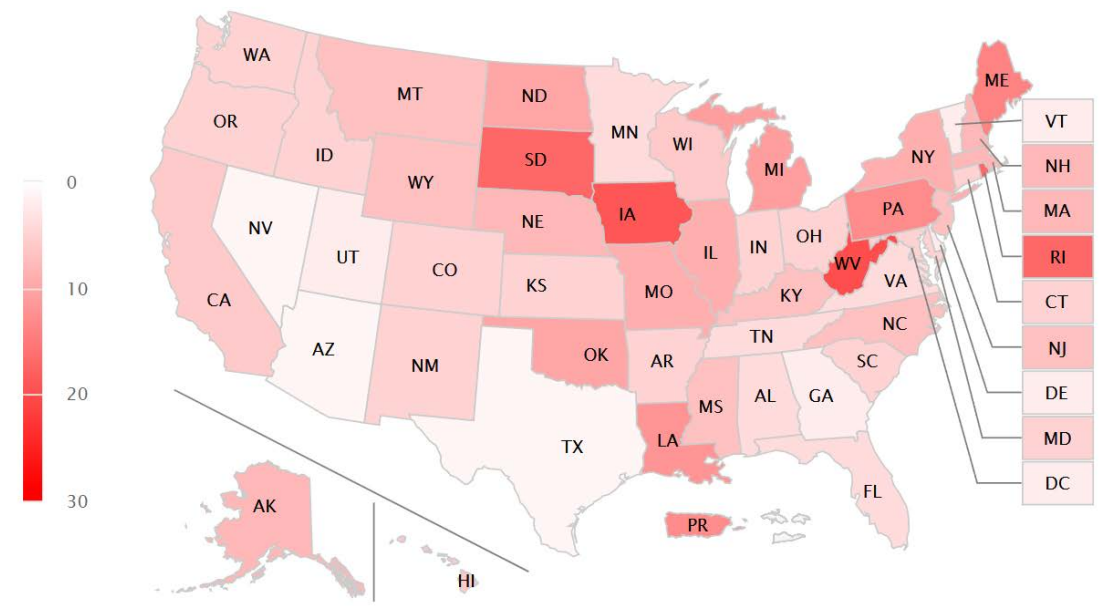
On-System Bridges

As of 2021, Oklahoma's rank for on-system bridges in "poor" condition is **7th** in the nation



Off-System Bridges

As of 2021, Oklahoma's rank for off-system bridges in "poor" condition is **40th** in the nation



History of Norman Bridge Maintenance Program

- The FHWA requires that all off-system bridges be inspected biennially
- HW Lochner has been selected to perform these inspections for the last 3 cycles
- Council adopted first dedicated annual budget for Bridge Maintenance in FYE '18
- Original allocation of \$100,000.00 annually
- Current FYE '23 adopted budget of \$750,000.00
- Total adopted since start of program \$2,050,000.00

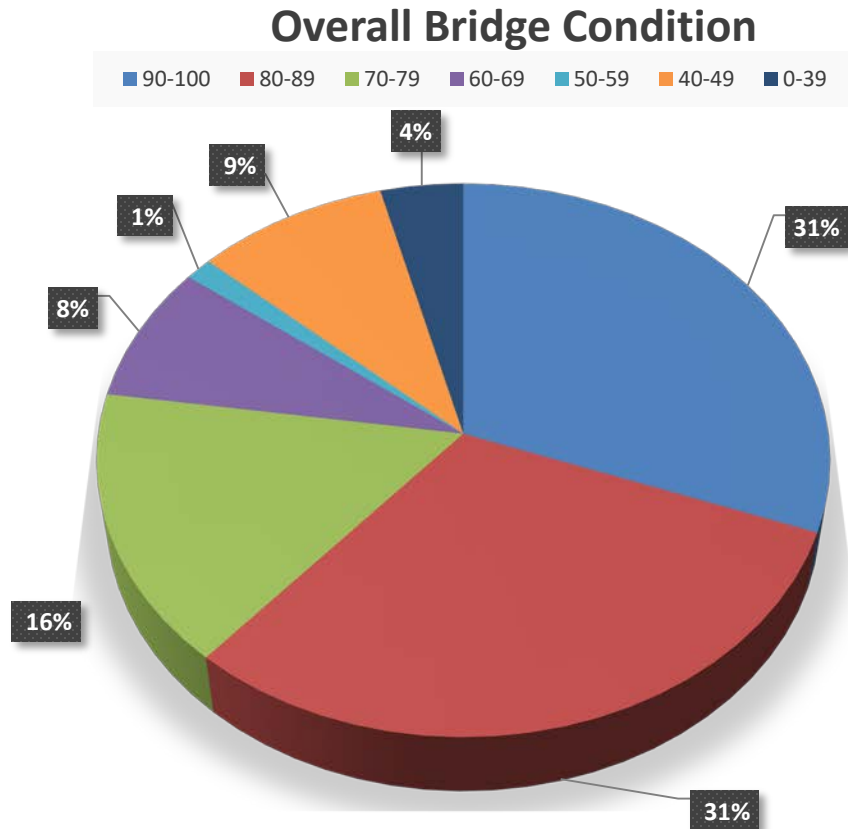


Porter Ave Bridge over Little River (located north of Tecumseh Rd).

Built in 1937.

This Bridge is rated Functionally Obsolete due to its narrow deck width.

Norman History Continued



- 80 Nationally registered bridges within the City of Norman
- 2017 inspection cycle identified 18 structurally deficient bridges (poor rating)
- 2021 inspection cycle identified 5 structurally deficient bridges with 15 bridges being at risk of becoming structurally deficient

BRIDGE LOCATION INFORMATION

LOCAL NO.	NBI NO.	DEFICIENCY STATUS	LOCAL NO.	NBI NO.	DEFICIENCY STATUS	LOCAL NO.	NBI NO.	DEFICIENCY STATUS	LOCAL NO.	NBI NO.	DEFICIENCY STATUS	LOCAL NO.	NBI NO.	DEFICIENCY STATUS
000	25114	ND	008	18911	ND	016A	20609	AR	025A	07921	ND	042	19913	FO/AR
001	25115	ND	008A	22642	ND	017	19584	ND	025B	21945	ND	043	10884	ND
001i	25220	ND	009	24966	ND	017A	05850	SD	026	30152	ND	044	26914	FO/AR
002	26906	FO	009A	19288	AR	018	20182	ND	028	09865	ND	046A	20034	FO
002A	22300	ND	010	10801	ND	018A	22039	ND	029	21494	ND	047A	33052	ND
002B	33049	ND	010A	19348	AR	019	20084	ND	030A	33050	ND	048	23373	ND
002i	25221	ND	011A	22313	ND	019A	22080	ND	030B	33051	ND	049	32952	ND
003A	31194	ND	012	12330	AR	020	19451	ND	031	10269	ND	052	18802	FO
003B	31195	ND	012A	20794	ND	020A	09930	AR	032	07546	FO/AR	053	31231	ND
004	18958	SD	013	12331	ND	021A	06106	FO/AR	036	07175	ND	054	19298	AR
004A	26488	ND	013A	9991	FO/AR	022	07896	ND	037	21455	AR	055	12549	FO/AR
005	12203	ND	014	20394	ND	022A	09189	SD	038A	07923	FO	056	28743	ND
005A	05274	FO/AR	014A	22628	ND	023	09863	ND	039	20167	ND	057	28824	ND
006	12282	FO	015	14930	SD	023A	06203	ND	039A	30396	ND	058	29596	ND
006A	19418	SD	015A	00167	ND	024A	26487	ND	040A	05645	ND	058A	24898	ND
007	08335	ND	016	31728	ND	025	20663	ND	041	20014	AR			

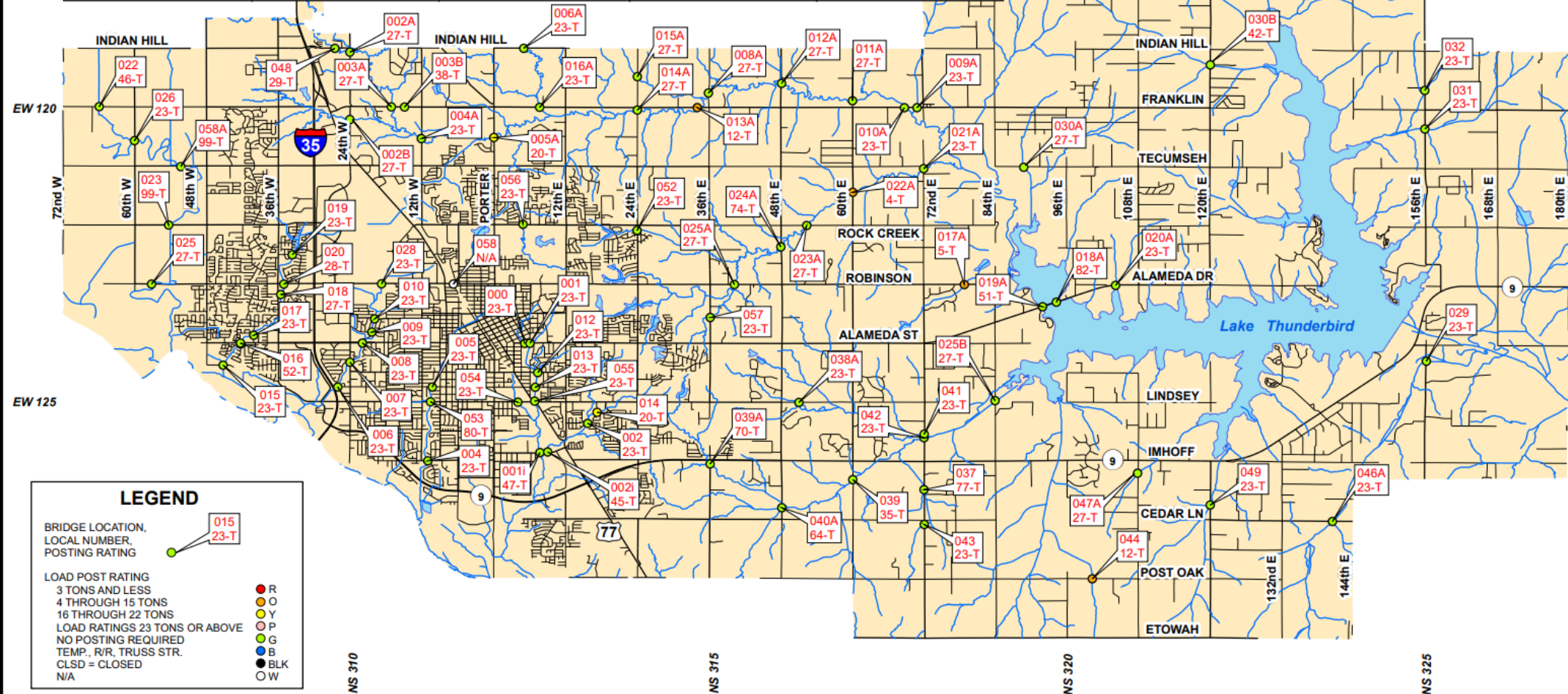
BRIDGE LOCATION INFORMATION LEGEND

ND - NON-DEFICIENT

AR - AT RISK OF BECOMING SD

FO - FUNCTIONALLY OBSOLETE

SD - STRUCTUALLY DEFICIENT



Why is this a problem now?

- 3 Bridge failures resulting in serious safety hazards and closure since 2016.
 - Havenbrook Street Bridge-September 2016 (Ward 3)
 - Main Street Bridge- August 2018 (Ward 3)
 - Imhoff Road Bridge- July 2021 (Wards 2/4)



HavenBrook Bridge Failure – September 26, 2016



Main Street Bridge over Brookhaven Creek – August 14, 2018.



Imhoff Road Bridge over Imhoff Creek – July 29, 2021



Aging Infrastructure Limits Mobility

APPROXIMATE VEHICLE WEIGHTS



AVERAGE STANDARD
CAR - 1.5 TONS



AVERAGE FIRE TRUCK
19 TONS - 30 TONS

AVERAGE STANDARD
TRUCK - 3 TONS



AVERAGE LOADED
GARBAGE TRUCK - 25 TONS



AVERAGE AMBULANCE -
5 TONS



AVERAGE LOADED
PLOW TRUCK - 28 TONS

AVERAGE DELIVERY
TRUCK - 6 TONS



AVERAGE LOADED
CEMENT TRUCK - 33 TONS



AVERAGE LOADED
SCHOOL BUS - 17 TONS



AVERAGE LOADED DUMP
TRUCK - 36 TONS

AVERAGE LOADED
CHARTER BUS - 20 TONS



AVERAGE LOADED TRACTOR
TRAILER - 40 TONS





60th Ave NE Bridge over Rock Creek (located north of Rock Creek Rd).

Built in 1940.

This Bridge is rated Structurally Deficient and Load Posted for 4 Tons.





E. Robinson Street Bridge
(located east of 72nd Ave NE).

Built in 1938.

This Bridge is rated
Structurally Deficient and
Load Posted for 5 Tons.





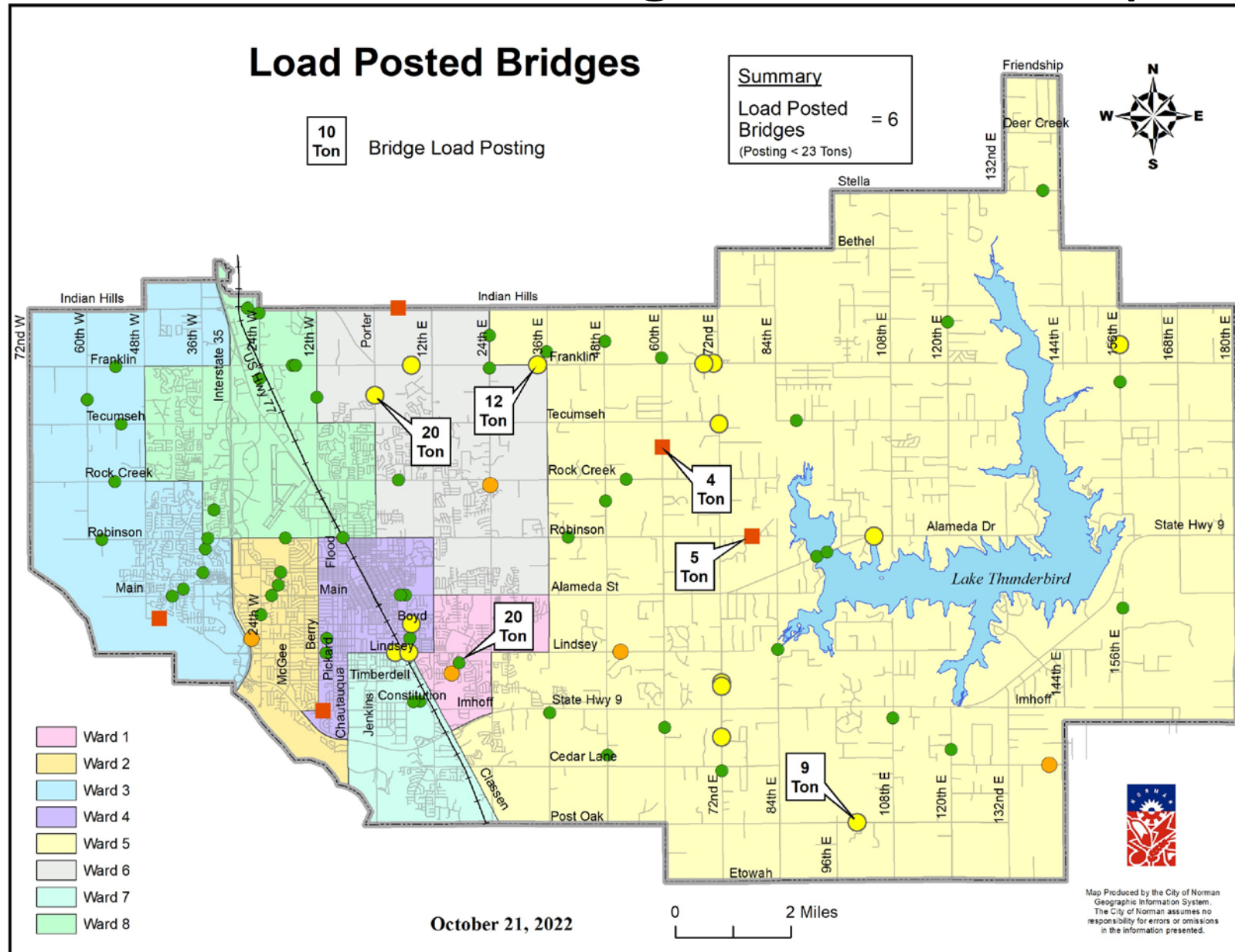
*Franklin Rd Bridge over the Little River
(located west of 36th Ave NE).*

Built in 1942.

This Bridge is Load Posted for 12 Tons.



Load Posted Bridge Location Map



Bridge Bond Discovery Report

- Staff compiled the data from the bridge inspection reports to generate a rank-ordered list consisting of the City's highest priority locations
- Staff contracted with HW Lochner to review the rank-ordered list and generate replacement and/or rehabilitation cost estimates for each location
- Using the Discovery Report, Staff began investigations related to possible funding opportunities

LOCHNER

City of Norman Bridge Bond Discovery



Submitted by: H.W. Lochner, Inc.
April 28, 2022

Proposed Bridge Maintenance Bond Program

- Bridge Replacement
 - 10 Locations Identified
- Major Bridge Rehabilitation and Maintenance
 - 9 Locations Identified



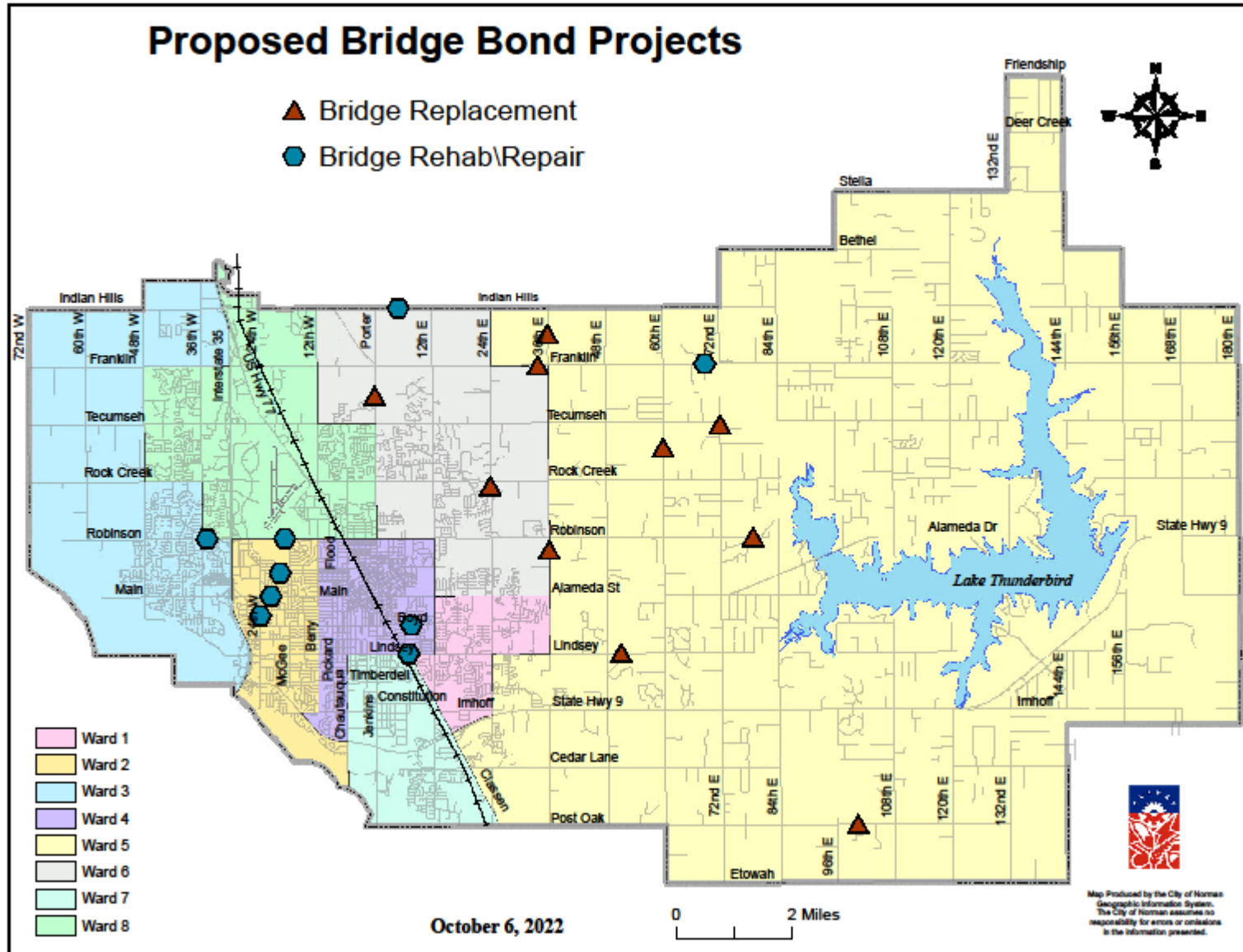
Bridge Replacement – Main Street Bridge over Brookhaven Creek – 2018.
\$4,905,000.00

10 Year, \$45 Million Program	
Home Value	Monthly Property Tax Increase
\$100,000	\$4.54
\$150,000	\$7.01
\$200,000	\$9.49



Bridge Rehabilitation– Imhoff Road Bridge emergency repairs – 2022.
\$1,945,803.59

Proposed Bridge Bond Locations



REPLACE [Ward]	MAJOR REPAIR [Ward]
60 TH Ave NE [5]	Indian Hills Rd [6]
N. Porter Ave [6]	Franklin Rd [5]
E. Robinson [5]	24 th Ave SW [2]
72 nd Ave NE [5]	W. Robinson [3/8]
Lindsey St. [5]	Lindsey St. [1/4/7]
24 th Ave NE [6]	Boyd St. [4]
36 th Ave NE [5/6]	Iowa St. [2]
E. Post Oak [5]	E. Robinson [8/2]
Franklin Rd [5/6]	Main St. [2]
36 th Ave NE [5]	

FHWA Bridge Investment Program

- Federal Highway Administration (FHWA) announced new funding opportunities June 13, 2022 through the Infrastructure Investment and Jobs Act (IIJA)
- Created 3 categories of program funding
 - Planning (up to 100% funded)
 - Bridge Projects (80/20 match)
 - Large Bridge Projects (50/50 match)
- Funding to improve safety, efficiency, and reliability of the movement of people and freight over bridges
- Provide financial assistance that leverages and encourages non-Federal contributions
- For bridges in poor condition, fair condition at risk of falling into poor condition, bridges that do not meet current geometric design standards, and bridges that cannot meet the load and traffic requirements of the regional transportation network



72nd Ave NE Bridge over Rock Creek (located south of Tecumseh Rd).

Built in 1938.

This Bridge is rated Functionally Obsolete due to its narrow deck width.

FHWA Bridge Investment Program



Porter Ave Bridge over Little River (located north of Tecumseh Rd).

Built in 1937.

This Bridge is rated Functionally Obsolete due to its narrow deck width.

- The Federal Bridge Investment Program is funded for 5 years
- \$2.4 Billion nationwide annually
- Staff contracted with Garver, LLC to build an application package for a Bridge Investment Program Planning Grant for \$400,000.00
- The Planning Grant application submitted in July '22 was unsuccessful. One Planning Grant was awarded in Oklahoma to ODOT for an on-system bridge over Lake Texoma.
- Nationwide pool of both local and state entities creates very competitive environment

Key Take-Aways

- Norman has 80 bridges and over 300 culvert crossings
- Norman's bridges are safe but some are in need of replacement/major repair
- 23 City of Norman bridges were constructed prior to 1950
- Possible 10-year Bridge Maintenance Bond Election to replace/repair 19 bridges
- No current steady, predictable funding source for bridge replacement/major repair



Next Steps

- On October 11, 2022 Council approved contract K-2223-49 for engineering design for the 60th Ave NE Bridge and Phase 1 Hydraulic analysis and 30% plans for Porter Ave
- Bridges on 60th Ave NE and Porter Ave may qualify for federal grants when engineering design is complete
- Continue pursuit of grant funding opportunities



60th Ave NE Bridge over Rock Creek (located north of Rock Creek Rd).

Built in 1940.

This Bridge is rated Structurally Deficient and Load Posted for 4 Tons.

COUNCIL DIRECTION?

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