


**Road Advisory Meeting
July 21, 2020**

Cass County Highway Department

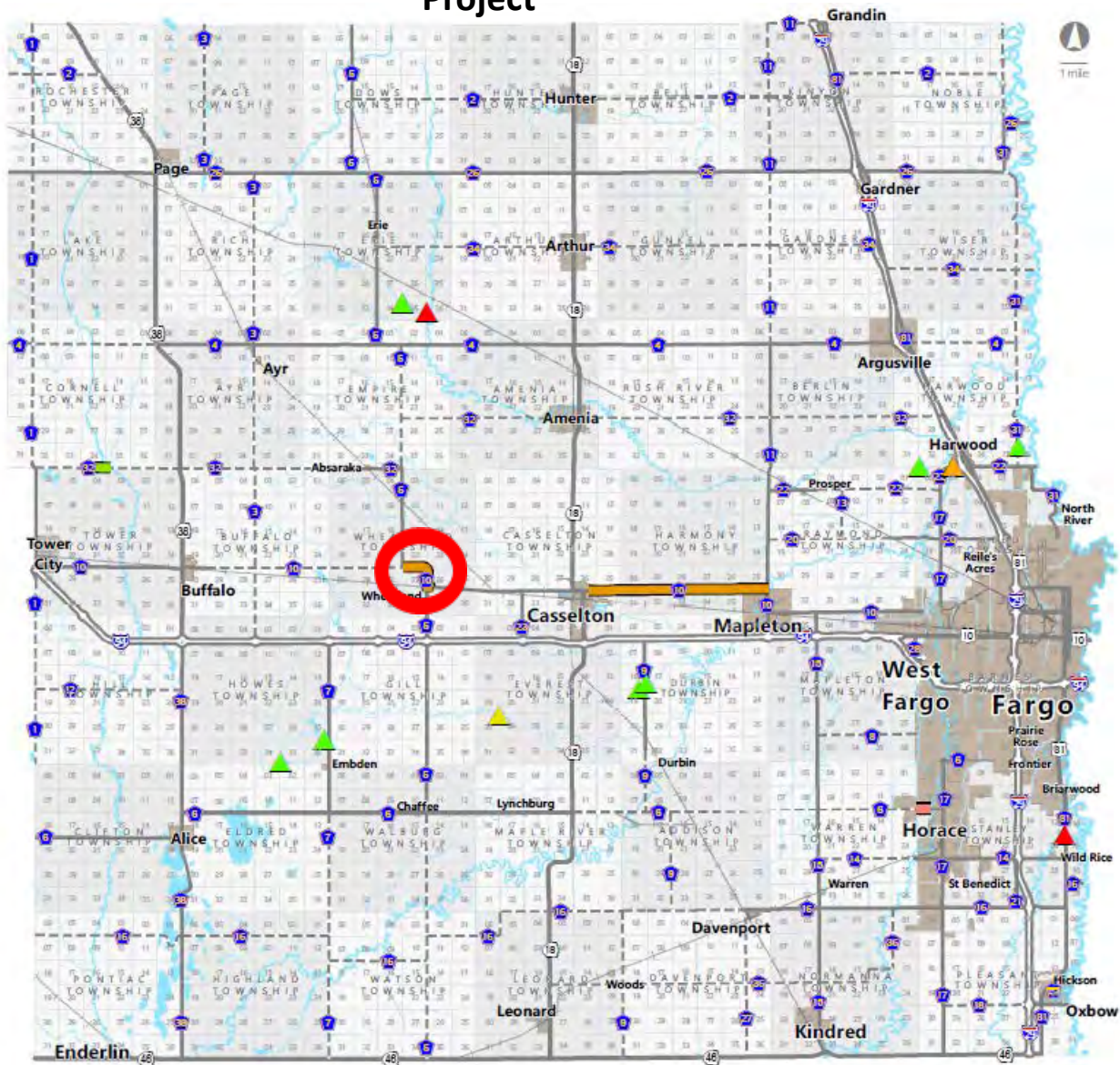


**Road Advisory Meeting
July 21, 2020**

**Update on 2020 Construction
Projects**

Cass County Highway Department

Wheatland – Safety Improvement Project



- C5 & C10 Radial Tee – Grading & Paving
 - Safety Improvements
 - HSIP Grant \$1.2 M
 - Total Est. Cost \$3.2 M
 - Final Est. Cost \$2.0 M
 - ROW & Drainage Issues
 - NDDOT Oct 16th Bid Letting
 - Construct in 2021
 - House Buyout - 2020
 - \$75K
 - Wetland Mitigation Acres

- ▲ Deck Rehabilitation
- ▲ Deck Replacement
- ▲ Structure Replacement
- ▲ Structure Removal
- Bituminous Surfacing
- Ditch Grading
- Grading & Bituminous Surfacing



Wheatland – Safety Improvement Project



- C5 & C10 Radial Tee – Grading & Paving
 - Safety Improvements
 - HSIP Grant \$1.3 M
 - Total Est. Cost \$3.6 M
 - Final Est. Cost \$2.3 M
 - ROW & Drainage Issues
 - Fall NDDOT bid Letting
 - Construct in 2021
 - House Buyout
 - Foundation Issues
 - \$55K Plus Demo
 - Wetland Mitigation Acres

- ▲ Deck Rehabilitation
- Deck Replacement
- ▲ Structure Replacement
- ▲ Structure Removal
- Bituminous Surfacing
- Ditch Grading
- Grading & Bituminous Surfacing



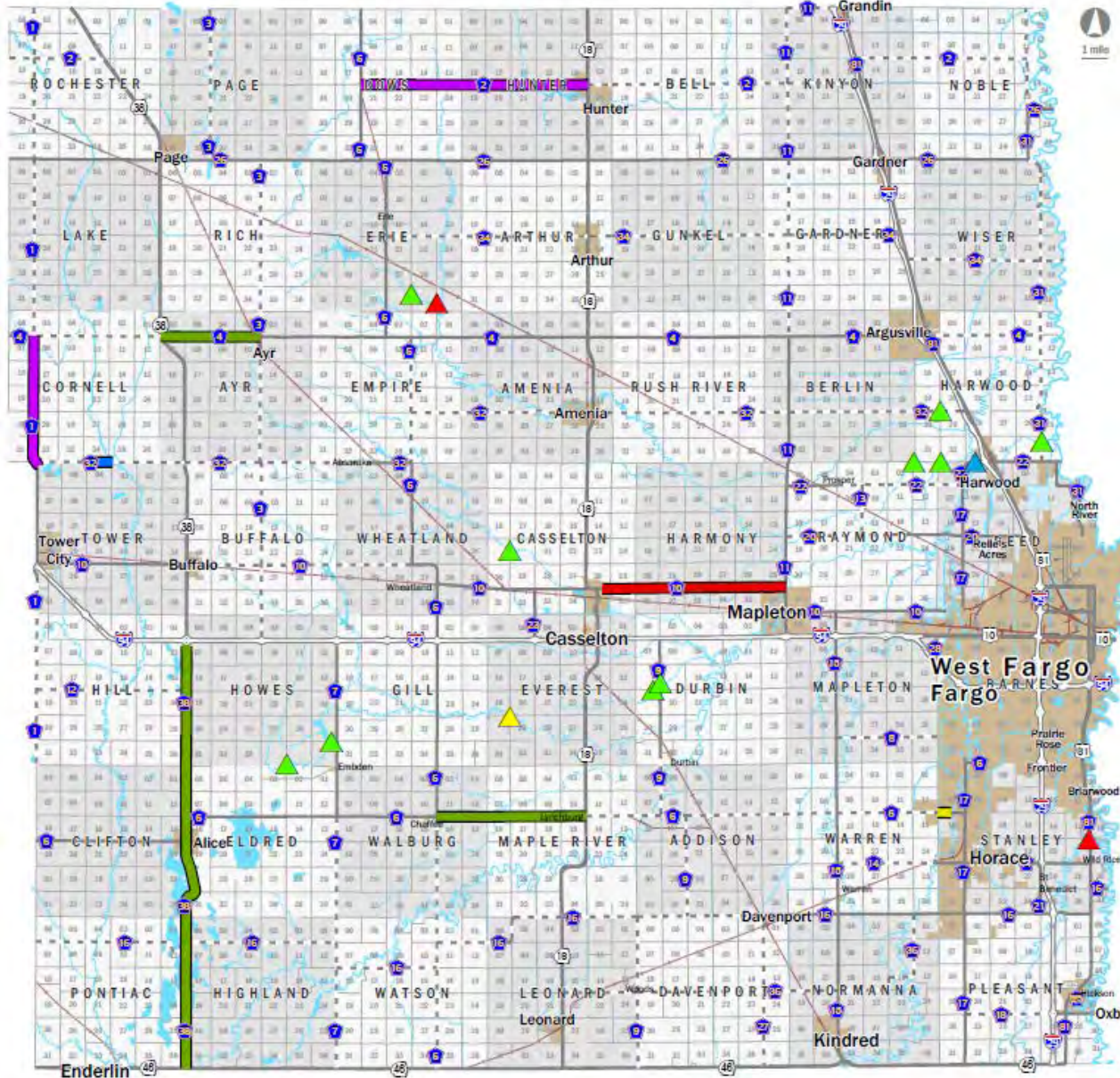
Wheatland – Safety Improvement Project



- C5 & C10 Radial Tee – Grading & Paving
 - Safety Improvements
 - HSIP Grant \$1.3 M
 - Total Est. Cost \$3.6 M
 - Final Est. Cost \$2.3 M
 - ROW & Drainage Issues
 - Fall NDDOT bid Letting
 - Construct in 2021
 - House Buyout
 - Foundation Issues
 - \$55K Plus Demo
 - Wetland Mitigation Acres

- ▲ Deck Rehabilitation
- ▲ Deck Replacement
- ▲ Structure Replacement
- ▲ Structure Removal
- Bituminous Surfacing
- Ditch Grading
- Grading & Bituminous Surfacing

2020 Approved Projects

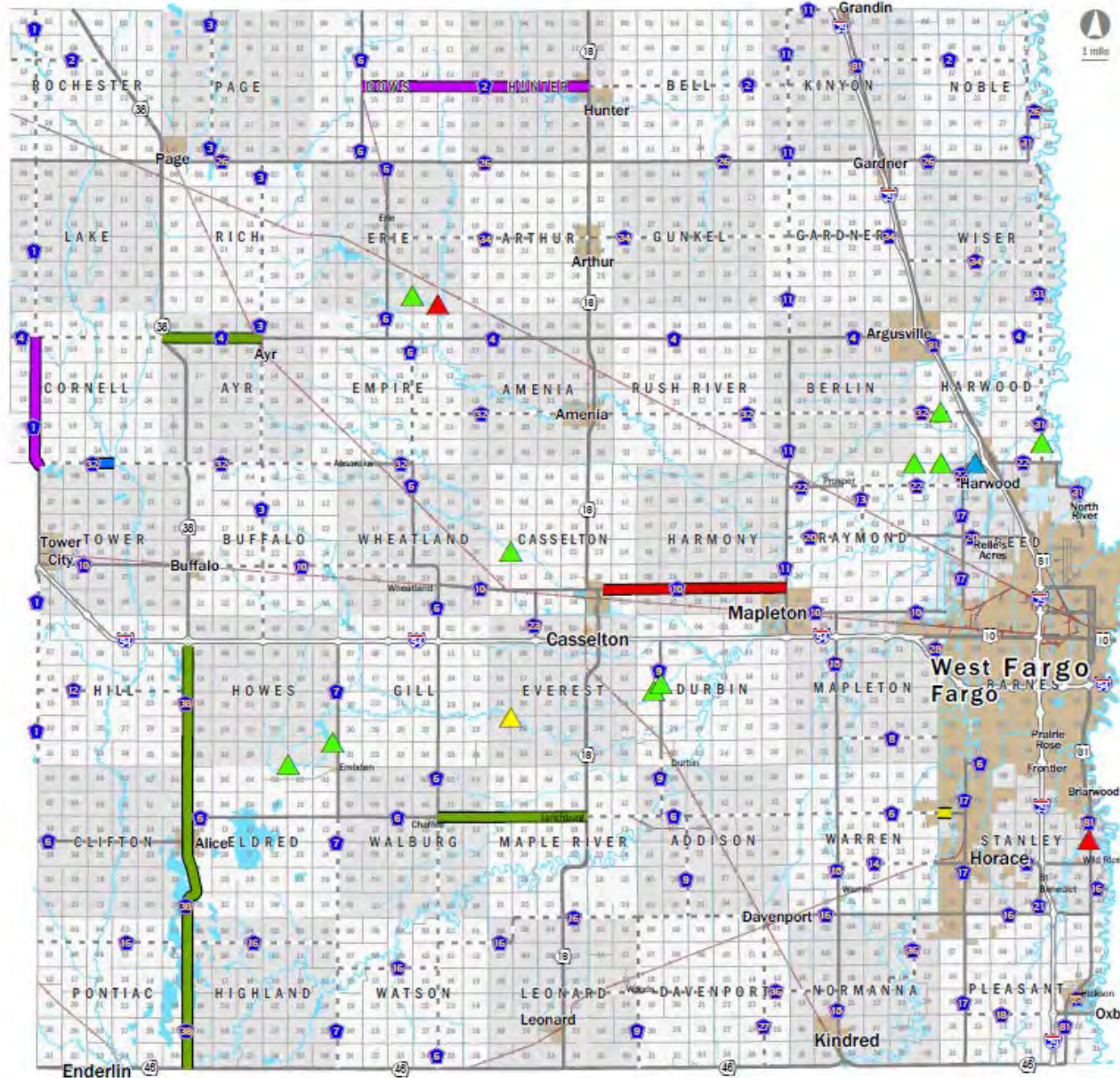


- **Removed Projects**
- Wheatland – Radial Tee – Safety Improvements - \$2.0 M
- **Added Projects**
- Chip Seal – Green
 - C4, C6 & C38 - \$800K
- Subgrade Repair – Purple
 - C1 & C2 - \$2.75M
- 19/20 Casselton Twp & 2 Howes Twp - Box Culverts - \$410K
- C17 Milling at 19th Ave N
 - \$40K

- Bituminous Surfacing
- Grading & Bituminous Surfacing
- Chip Seal
- Ditch Grading
- Subgrade Repair
- ▲ Deck Rehabilitation
- ▲ Deck Replacement
- ▲ Structure Replacement
- ▲ Structure Removal




2020 Approved Projects



Planned 2020 Projects

- C10 – Casselton to C11
 - \$7.4 M Budget
- C6 – Bit. Surf.
 - \$425K
- C32 – Ditch Grading
 - \$150K
- Structures
 - \$1.365M

- Bituminous Surfacing
- Grading & Bituminous Surfacing
- Chip Seal
- Ditch Grading
- Subgrade Repair
- Deck Rehabilitation
- Deck Replacement
- Structure Replacement
- Structure Removal

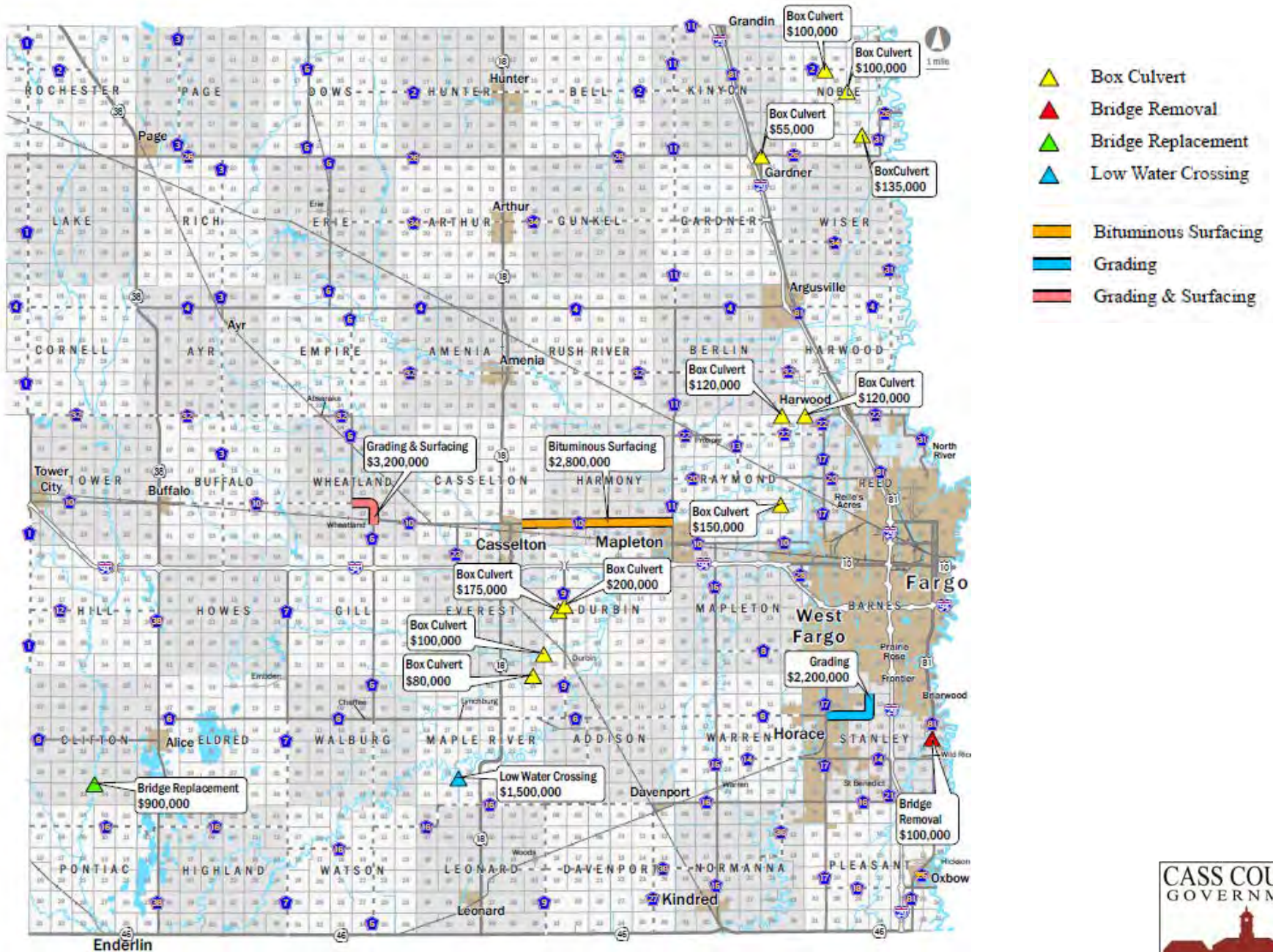


**Road Advisory Meeting
July 21, 2020**

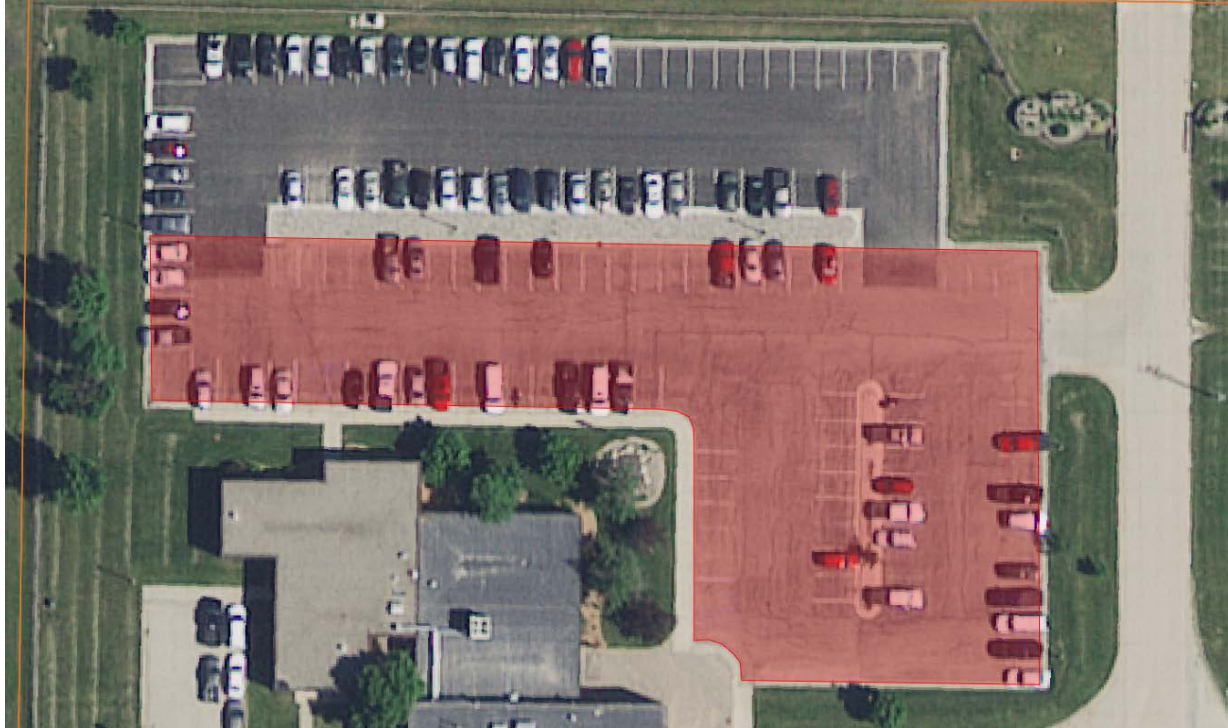
Proposed 2021 Construction

Cass County Highway Department


2021 Proposed Projects



2021 Proposed Project



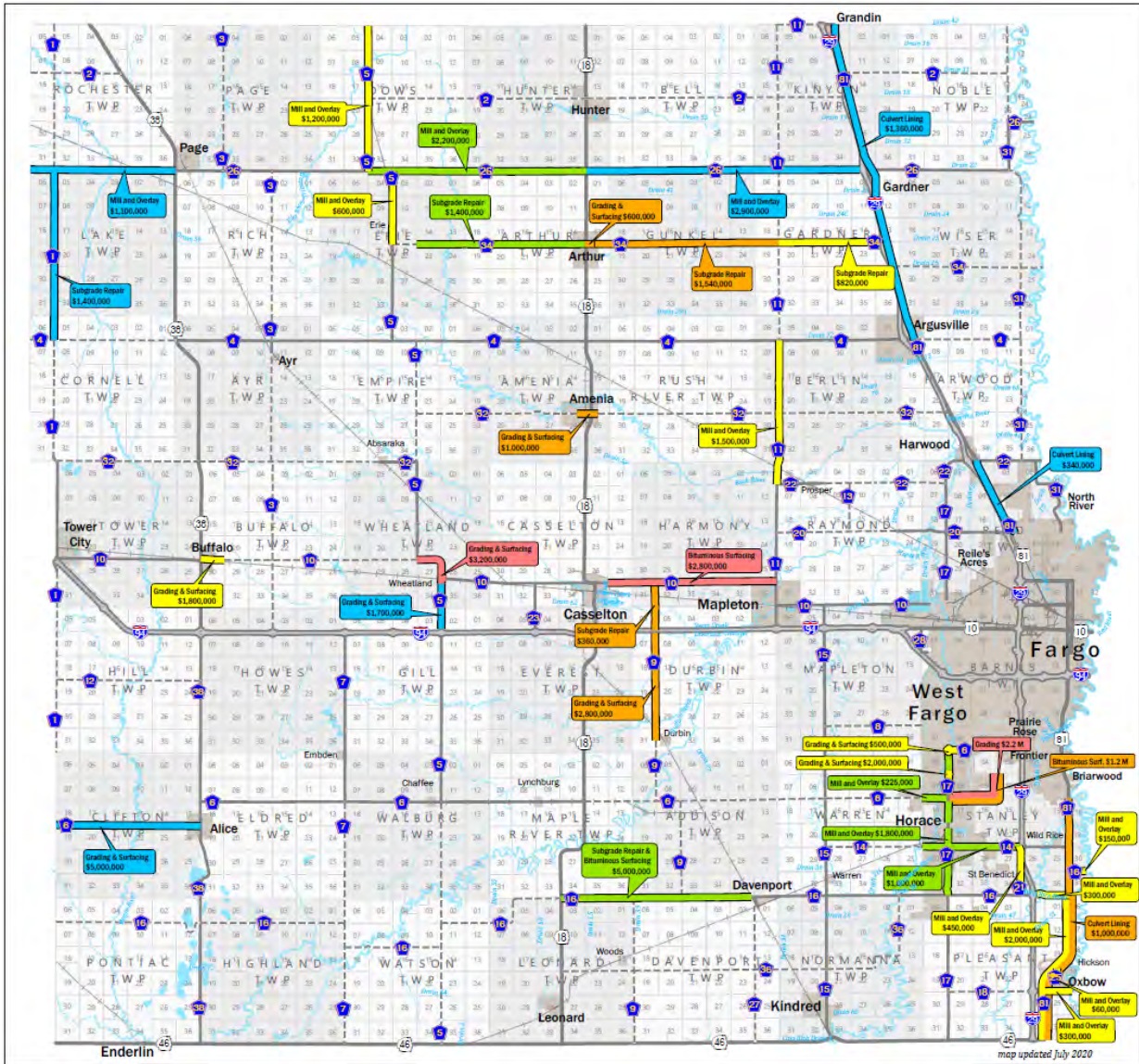
- **Hwy Parking Lot – Mill & Overlay**
- Built in 2001
- Cracks in Pavement
- 2021 Budget
 - \$80K
- 2020 Quotes from Contractors
 - \$53,250 Northern Improvement
 - \$53,938 Border States Paving
 - Remodel Line Item
 - \$400K Davenport Shop
 - Less 2nd Shop Purchase \$160K
 - \$240K Balance



**Road Advisory Meeting
July 21, 2020**

2021-2025 Hwy Plan

Cass County Highway Department



Appendix 1

2021 - 2025

5 Year Capital Improvement Plan

Proposed Highway Projects



TABLE 5 - PROPOSED HIGHWAY IMPROVEMENTS

HWY	LOCATION	PROJECT TYPE	FUNDING	YEAR	COST
10	Cassborn - 15th St to Hwy 11	Bituminous Surfacing	Local	2021	\$2,800,000
New 6	Hwy 17 to 45th St & 45th St to 44th Ave S	Grading	Local	2021	\$2,200,000
5 & 18	Hwy 5 & Hwy 10 Rural Tie Intersection & 5th St to 44th Ave S	Grading & Surfacing	Federal	2021	\$3,200,000
New 6	Hwy 17 to 45th St & 45th St to 44th Ave S	Bituminous Surfacing	Local	2022	\$1,200,000
9	Hwy 10 to 194	Subgrade Repair	Local	2022	\$340,000
9	194 to Durbin	Grading & Surfacing	Local	2022	\$2,800,000
22	State Hwy 18 West through Amenia	Grading & Surfacing	Local	2022	\$1,800,000
34	State Hwy 18 East through Arthur	Grading & Surfacing	Local	2022	\$600,000
34	Arthur to Hwy 11	Subgrade Repair	Local	2022	\$1,540,000
81	76th Ave S to State Hwy 46	Culvert Lining	Local	2022	\$1,800,000
5	Trail Co. Line to Hwy 26	Mill and Overlay	Local	2023	\$1,200,000
5	Hwy 26 to Hwy 34	Mill and Overlay	Local	2023	\$600,000
6	C17 Roundabout & L800	Grading & Surfacing	Local	2023	\$500,000
10	State Hwy 38 through Buffalo 1 Mile East	Grading & Surfacing	Local	2023	\$1,800,000
11	Hwy 4 to Hwy 22	Mill and Overlay	Federal	2023	\$1,500,000
16	129 to Hwy 81	Mill and Overlay	Local	2023	\$300,000
16	Hwy 81 to Red River Bridge	Mill and Overlay	Local	2023	\$1,500,000
17	Hwy 17 & 44th Ave S - Roundabout	Grading & Surfacing	Local	2023	\$2,000,000
18	129 to Red River Bridge	Mill and Overlay	Local	2023	\$300,000
21	Hwy 14 to Hwy 16	Mill and Overlay	Local	2023	\$450,000
25	Hwy 81 to 0.4 Miles S. through Hickson	Mill and Overlay	Local	2023	\$600,000
34	Hwy 11 to 129	Subgrade Repair	Local	2023	\$820,000
81	Hwy 16 W to ST Hwy 46	Mill and Overlay	Local	2023	\$2,000,000
6	Sheyene Diversion to Hwy 17	Mill and Overlay	Local	2024	\$225,000
14	Sheyene River to 129	Mill and Overlay	Local	2024	\$1,000,000
16	State Hwy 18 to Davenport	Subgrade Repair & Bituminous Surf.	Local	2024	\$5,000,000
17	52nd Ave S Roundabout to Horace & Horace to Hwy 16	Mill and Overlay	Local	2024	\$1,800,000
26	Hwy 5 North to State Hwy 38	Mill and Overlay	Federal	2024	\$2,200,000
34	State Hwy 18 to 1 Mile East of CS	Subgrade Repair	Local	2024	\$1,400,000
1	Hwy 4 to Hwy 26	Subgrade Repair	Local	2025	\$1,400,000
5	Wheatland to 194	Grading & Surfacing	Local	2025	\$1,700,000
6	Barnes Co Line to Hwy 38	Grading & Surfacing	Local	2025	\$5,000,000
26	Barnes Co Line to ST Hwy 38	Mill and Overlay	Local	2025	\$1,100,000
26	State Hwy 18 to 129	Mill and Overlay	Federal	2025	\$2,900,000
81	Grandin to Argusville	Culvert Lining	Local	2025	\$1,360,000
81	Harwood to Hwy 20	Culvert Lining	Local	2025	\$340,000

Note: Years to be completed are illustrative and subject to change and approved annually and/or as necessary by the Road Advisory Committee.

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 2

2021 - 2025 5 Year Capital Improvement Plan Proposed Structure Projects



TABLE 7 - PROPOSED BRIDGE IMPROVEMENTS

HWY	LOCATION	PROJECT TYPE	FUNDING	STRUCTURE TYPE	YEAR	COST
15	15/16 Noble - North Cass WRD Drain 18	Box Culvert	Local	Major	2021	\$100,000
26	C26 - 35-34 Kinyon Twp - Dr 22	Box Culvert	Local	Major	2021	\$55,000
26	C2 - 16/17 Noble Twp - Drain 31	Box Culvert	Local	Major	2021	\$100,000
26	27/34 Noble - North Cass WRD Drain 32	Box Culvert	Local	Major	2021	\$135,000
26	25-26 Raymond Twp - Drain 34	Box Culvert	Local	Major	2021	\$150,000
31	31-32 Harwood Twp - Lower Branch of the Bath River	Box Culvert	Local	Major	2021	\$120,000
2	2 Ragsdale - 36 Kinyon Twp - Lower Branch of the Bath River	Box Culvert	Local	Major	2021	\$120,000
13	13/24 Stanley Township - Wild River River	Bridge Removal	Local	Major	2021	\$100,000
36	36 Forest - 31 Durbin - Buffalo Creek	Box Culvert	Local	Major	2021	\$100,000
36	36 Forest - 1 Maple River - Tributary of Buffalo Creek	Box Culvert	Local	Major	2021	\$80,000
9	C9 - 17/18 Durbin Township - Tributary of Swan Creek	Box Culvert	Local	Major	2021	\$200,000
18	18/19 Durbin Twp - Tributary of Swan Creek	Box Culvert	Local	Major	2021	\$175,000
27	27/24 Clifton - Maple River	Bridge Replacement	Local	Major	2021	\$900,000
28	28/29 Maple River Twp - Maple River	Low Water Crossing	Federal	Major	2021	\$1,500,000
30	30/31 Normanna Twp - Dr 34	Box Culvert	Local	Minor	2022	\$45,000
9/10	Gardner - North Cass WRD - Drain 23	Box Culvert	Local	Major	2022	\$75,000
33	33/34 Harwood Twp - Elm River Trib.	Box Culvert	Local	Minor	2022	\$125,000
25	25 Gardner/30 River Twp - Dr 26	Box Culvert	Local	Minor	2022	\$50,000
25	25/26 Kinyon Township - Drain 19	Box Culvert	Local	Minor	2022	\$50,000
10	10/15 Clifton Township on Maple River	Box Culvert	Local	Minor	2022	\$150,000
3	3/10 Clifton Township on Maple River	Box Culvert	Local	Minor	2022	\$300,000
5	C5 - 34/35 Gill Twp	Culvert Replacement	Local	Minor	2022	\$80,000
18	18-19 Addition / 13-24 Maple River - Maple River	Bridge Replacement	Federal	Major	2022	\$1,800,000
11	11/12 Everett Township - Wheeland Channel	Box Culvert	Local	Minor	2023	\$90,000
34	34/25 Town Township on Maple River	Box Culvert	Local	Major	2023	\$125,000
4	4/5 Engine/Township on Tributary of the Bath River	Box Culvert	Local	Minor	2023	\$50,000
14	5/8 Pontiac Twp - Tributary of the Maple River	Box Culvert	Local	Minor	2023	\$75,000
5	5/6 Pontiac Twp - Tributary of the Maple River	Box Culvert	Local	Minor	2023	\$75,000
6	6 Pontiac & 31 Clifton Twp - Tributary of the Maple River	Box Culvert	Local	Minor	2023	\$75,000
8	C8 - 4 Stanley/32 Barnes Twp - Sheyenne River	Bridge Replacement	Local	Major	2023	\$1,200,000
17	C17 - 5/6 Stanley Twp - Sheyenne River	Box Culvert	Local	Major	2023	\$1,800,000
36	36 Kinyon/31 Noble - Dr 32 - North	Box Culvert	Local	Major	2024	\$50,000
25	25-26 Rowes Twp	Box Culvert	Local	Minor	2024	\$50,000
35	35/36 Kinyon Twp - Dr 32	Box Culvert	Local	Minor	2024	\$60,000
11	11-12 N Wheeland Twp	Box Culvert	Local	Major	2024	\$90,000
11	11-12 S Wheeland Twp	Box Culvert	Local	Major	2024	\$90,000
13	13-14 Wheeland Twp	Box Culvert	Local	Major	2024	\$90,000
32	C32 - 22/27 Amelia Twp - Bath River	Bridge Replacement	Local	Major	2024	\$900,000
15	C15 - 8/9 Mapleton Township on Drain 14	Bridge Replacement	Local	Major	2024	\$1,000,000
1	1 Everett/6 Durbin Townships - Swan Creek	Box Culvert	Local	Major	2024	\$300,000
33	33/34 Noble - Dr 32 - North	Box Culvert	Local	Major	2025	\$50,000
32	32/33 Bath River - Bath River	Structure Replacement	Local	Major	2025	\$500,000
19	19/20 Bath - E Branch of Elm River	Box Culvert	Local	Major	2025	\$150,000
30	30-31 Wheeland Twp - Buffalo Creek Trib.	Box Culvert	Local	Major	2025	\$50,000
25	25 Kinyon/30 Noble Township - Drain 19	Box Culvert	Local	Minor	2025	\$50,000
34	C34 - Georgetown Red River Bridge	Bridge Replacement	Local	Major	2025	\$600,000

Note: Years to be completed are illustrative and subject to change and approved annually and/or as necessary by the Road Advisory Committee.

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent

CASS COUNTY
GOVERNMENT

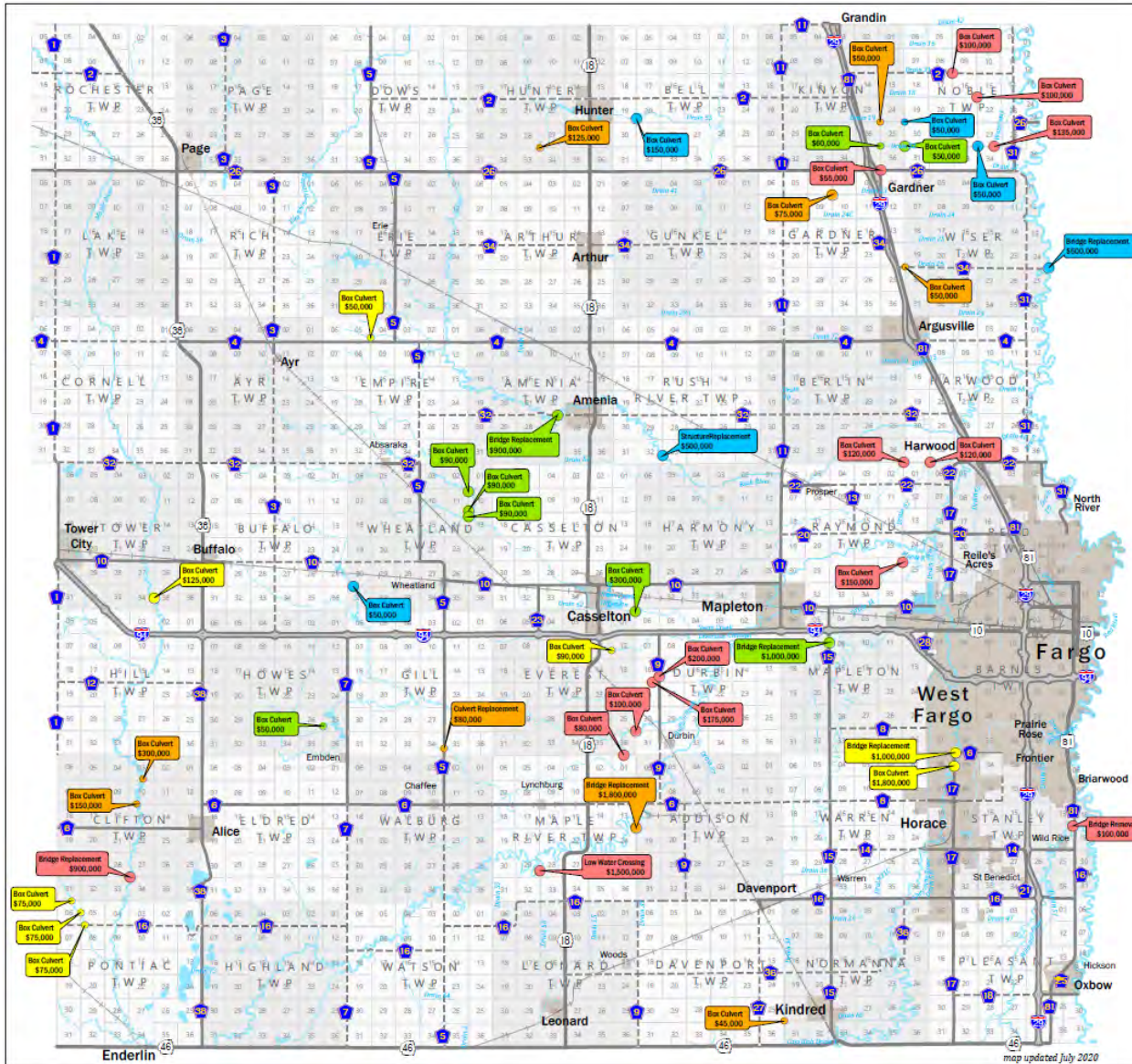


1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov

CASS COUNTY
GOVERNMENT



map updated July 2020

Appendix 3

Pavement Condition Index (PCI) 2017 Testing Results

- █ Poor
- █ Fair
- █ Good
- █ Very Good

PCI	Paved Miles	% of Paved Miles
not measured/unknown	1.81	0.58%
Poor PCI 0 - 65	0	0%
Fair PCI 66 - 80	6.94	2.23%
Good PCI 81 - 90	160.65	51.72%
Very Good PCI 91 - 100	141.22	45.46%

Total Paved Miles: 310.63

Average PCI*: 90.54
*prorated per length

Pavement Evaluation completed by American Engineering Testing in 2017. The evaluation consisted of deflection testing with a Model 8002E Dynatest Falling Weight Deflectometer. Pavement surface condition assessment based on the Pavement Condition Index (PCI) method developed by the Army Corps of Engineers. The resulting data is analyzed to evaluate the structural and surface condition of the existing pavements on the tested road segments.

Roads reconstructed after 2017 have an assumed PCI value of 100.

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

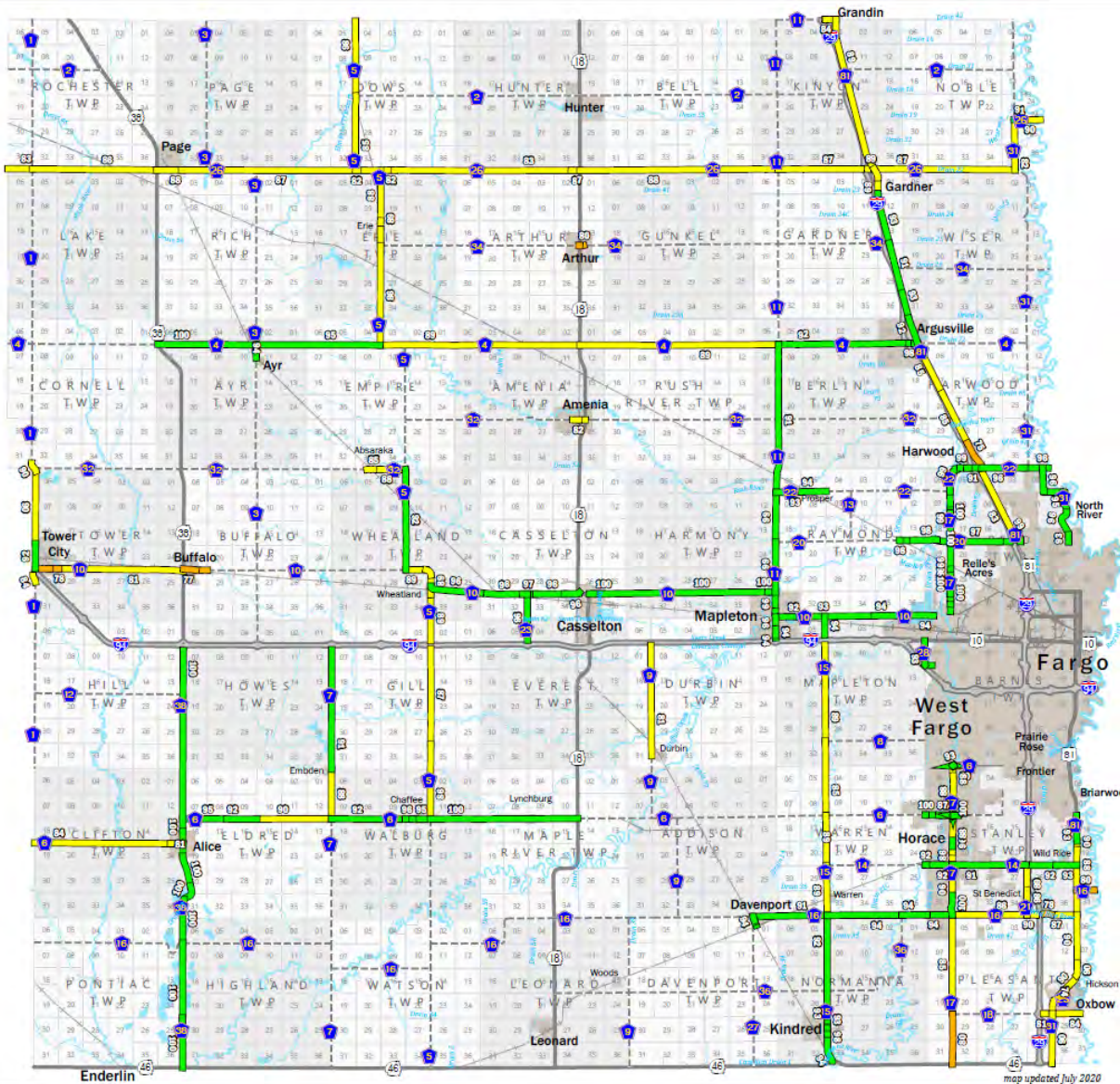
Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 4

Highway Load Capacity 2017 Testing Results

Tons/Axle

- 3 (worst)
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (best)

Pavement Evaluation completed by American Engineering Testing in 2017. The evaluation consisted of deflection testing with a Model 8002E Dynatest Falling Weight Deflectometer. Pavement surface condition assessment based on the Pavement Condition Index (PCI) method developed by the Army Corps of Engineers. The resulting data is analyzed to evaluate the structural and surface condition of the existing pavements on the tested road segments.

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent

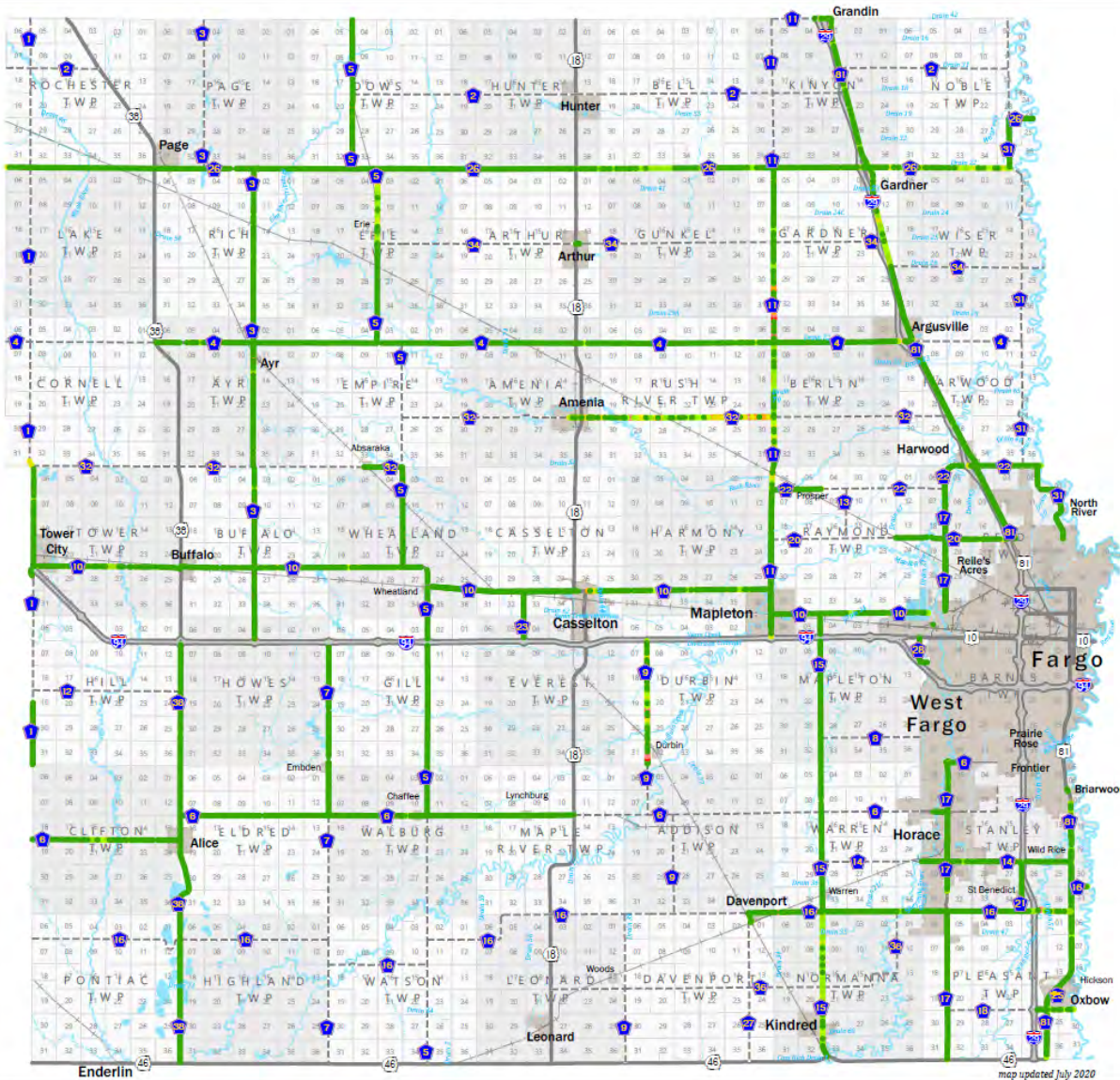
CASS COUNTY
GOVERNMENT



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



map updated July 2020

CASS COUNTY
GOVERNMENT



Appendix 5

Paving Projects

Year of Last Project

- 1949
- 1993 - 1999
- 2000 - 2006
- 2007 - 2010
- 2011 - 2014
- 2015 - 2018
- 2019 - 2020

Year	Miles	Average PCI per segment
1949	10.64	85.5
1993 - 1999	12.41	86.75
2000 - 2006	50.73	85.35
2007 - 2010	68.47	90.13
2011 - 2014	77.58	91.94
2015 - 2018	55.25	95.26
2019 - 2020	35.55	100

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

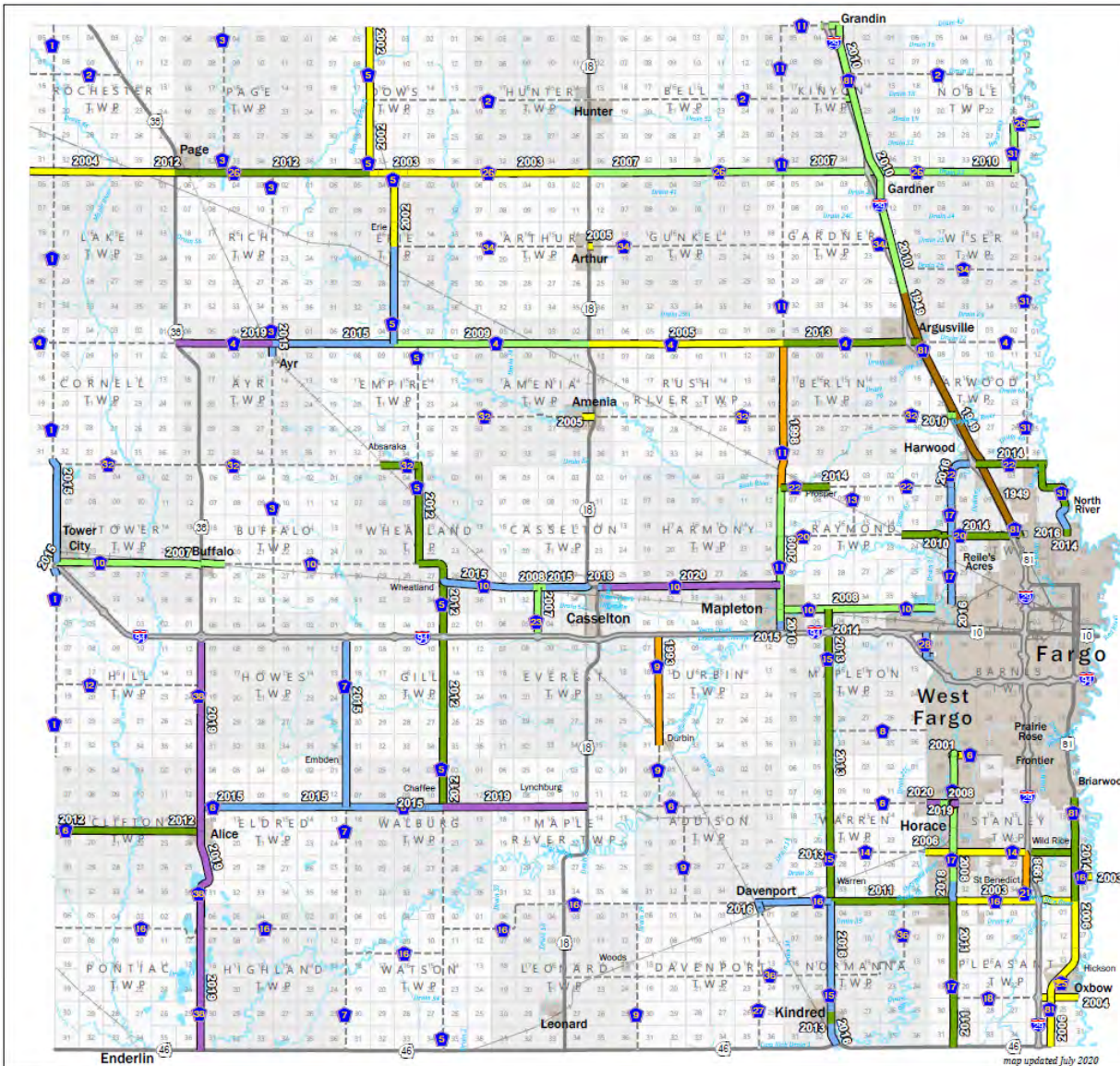
Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 6

Chip Seal Projects

Year of Last Project

2005 - 2006

2007 - 2010

2011 - 2014

2015 - 2018

2019 - 2020

Asphalt - No Chip Seal

Concrete - No Chip Seal

Year	Miles	Average PCI per segment
2005 - 2006	16	88.43
2007 - 2010	41.62	84.85
2011 - 2014	72.98	88.32
2015 - 2018	131.8	93.05
2019 - 2020	26.93	100
Asphalt - No Chip Seal	1.86	100
Concrete - No Chip Seal	19.43	94.96

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

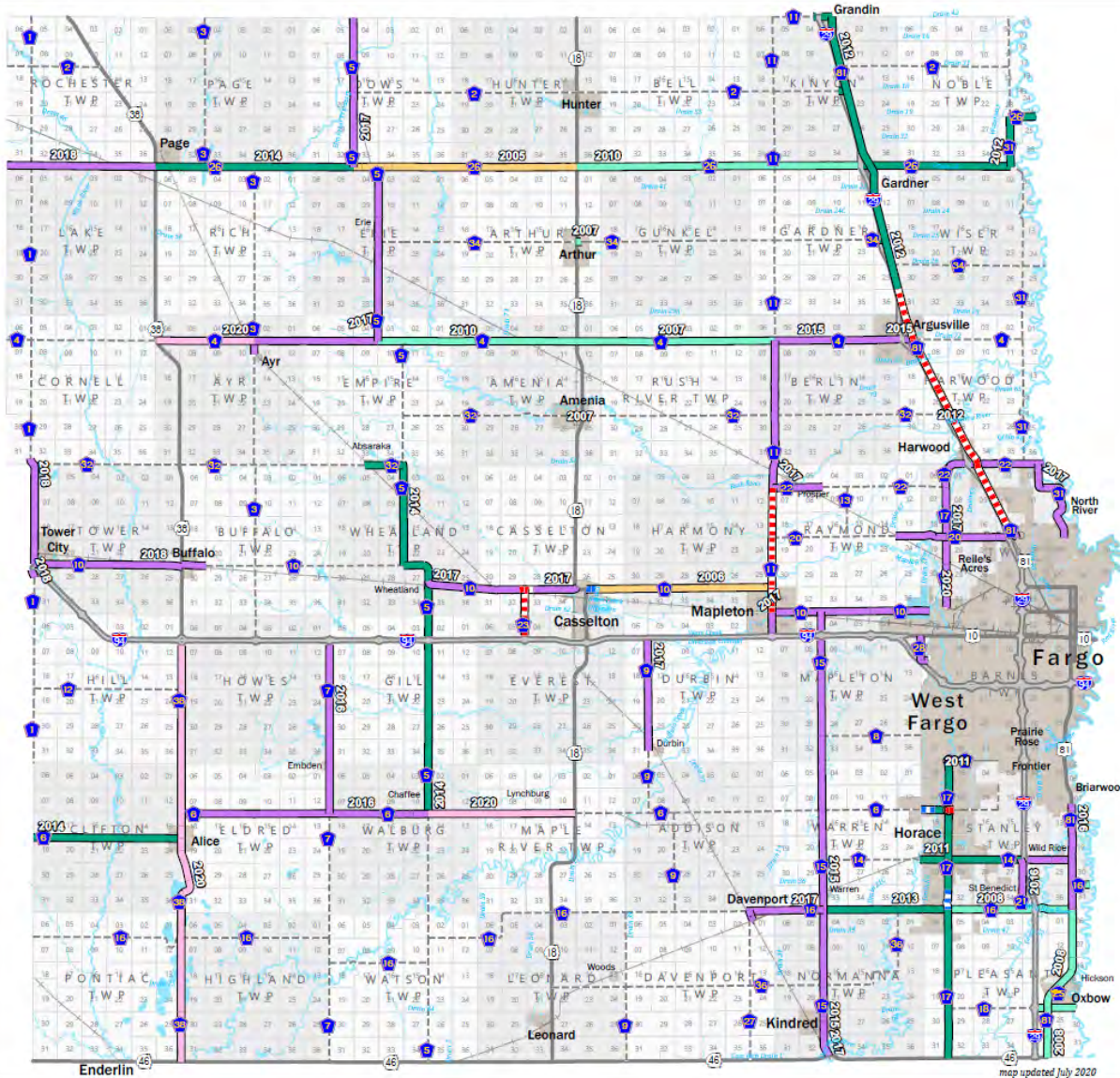
Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

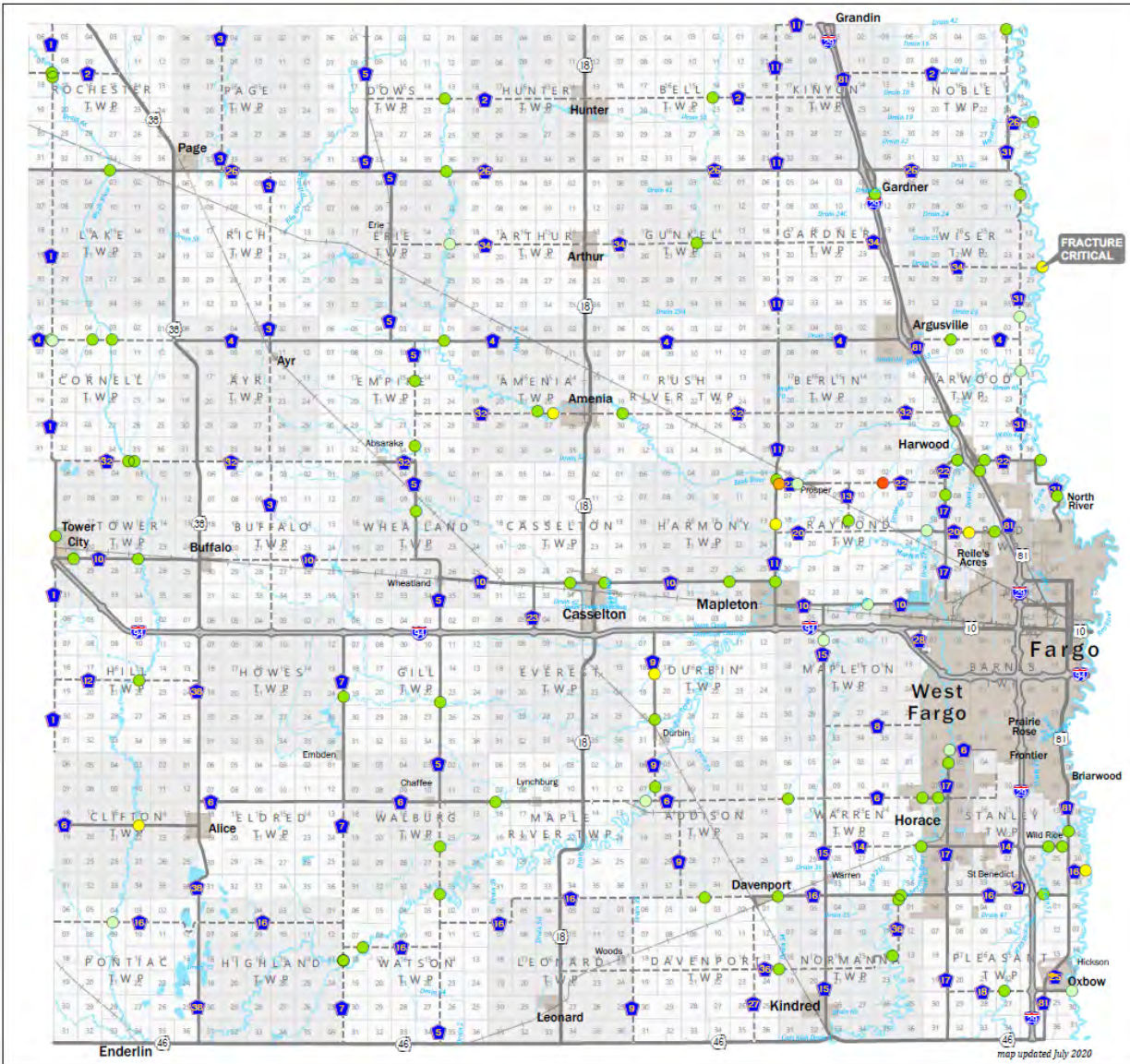
(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



map updated July 2020





Appendix 7

Bridges on County Roads: ND DOT 2019/2020 Bridge Inspection and Appraisal

Bridge Sufficiency Rating

- 50 - 59.9
- 60 - 69.9
- 70 - 79.9
- 80 - 89.9
- 90 - 100

Sufficiency Rating	Bridge Count
50 - 59.9	1
60 - 69.9	1
70 - 79.9	7
80 - 89.9	12
90 - 100	67

Average Rating: 93.86

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent

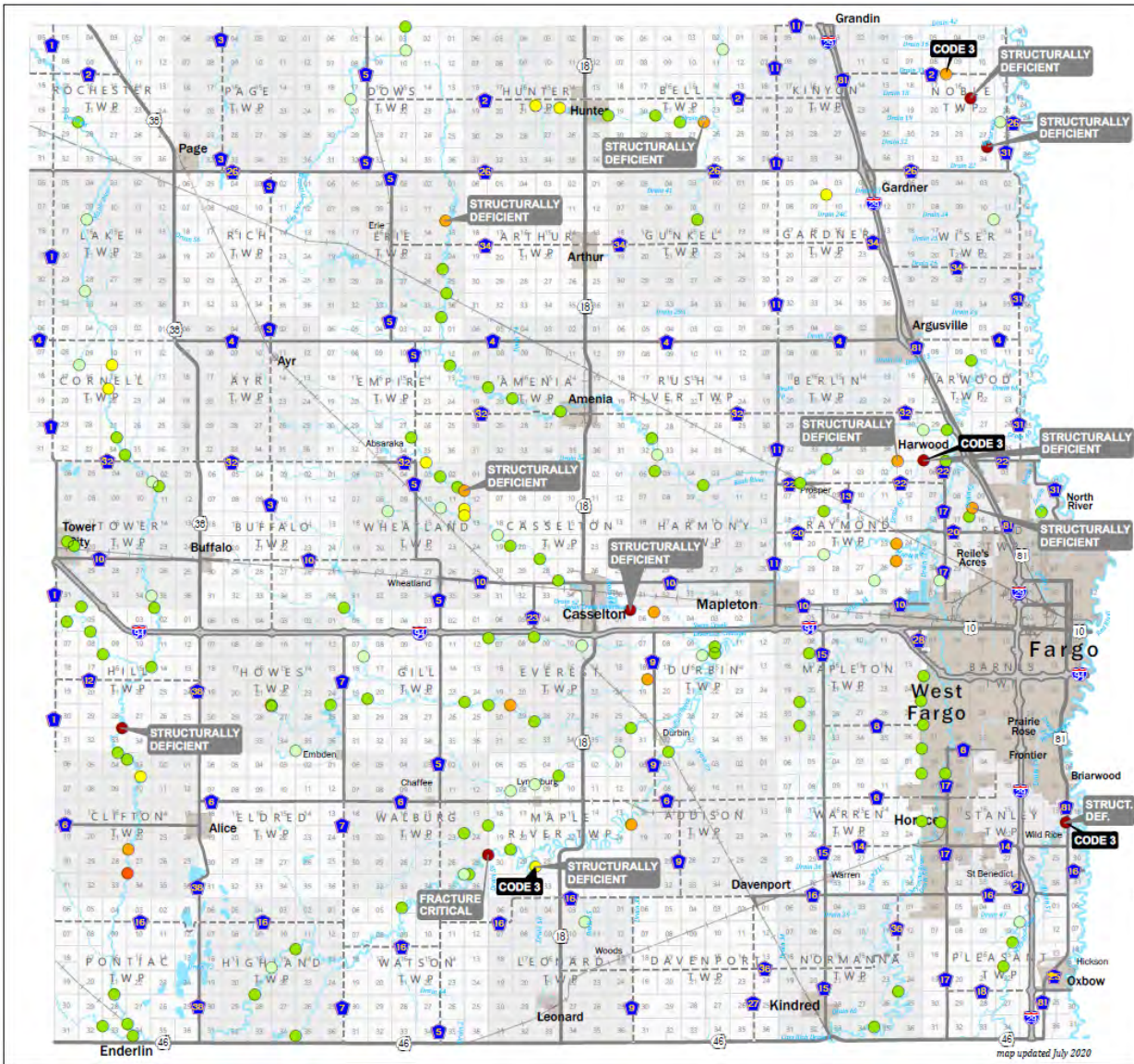


1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov





Appendix 8
Bridges on Township Roads:
ND DOT 2019/2020
Bridge Inspection and Appraisal

Bridge Sufficiency Rating

- 37 - 49.9
- 50 - 59.9
- 60 - 69.9
- 70 - 79.9
- 80 - 89.9
- 90 - 100

Sufficiency Rating	Bridge Count
37 - 49.9	7
50 - 59.9	1
60 - 69.9	12
70 - 79.9	11
80 - 89.9	29
90 - 100	85

Average Rating: 87.92

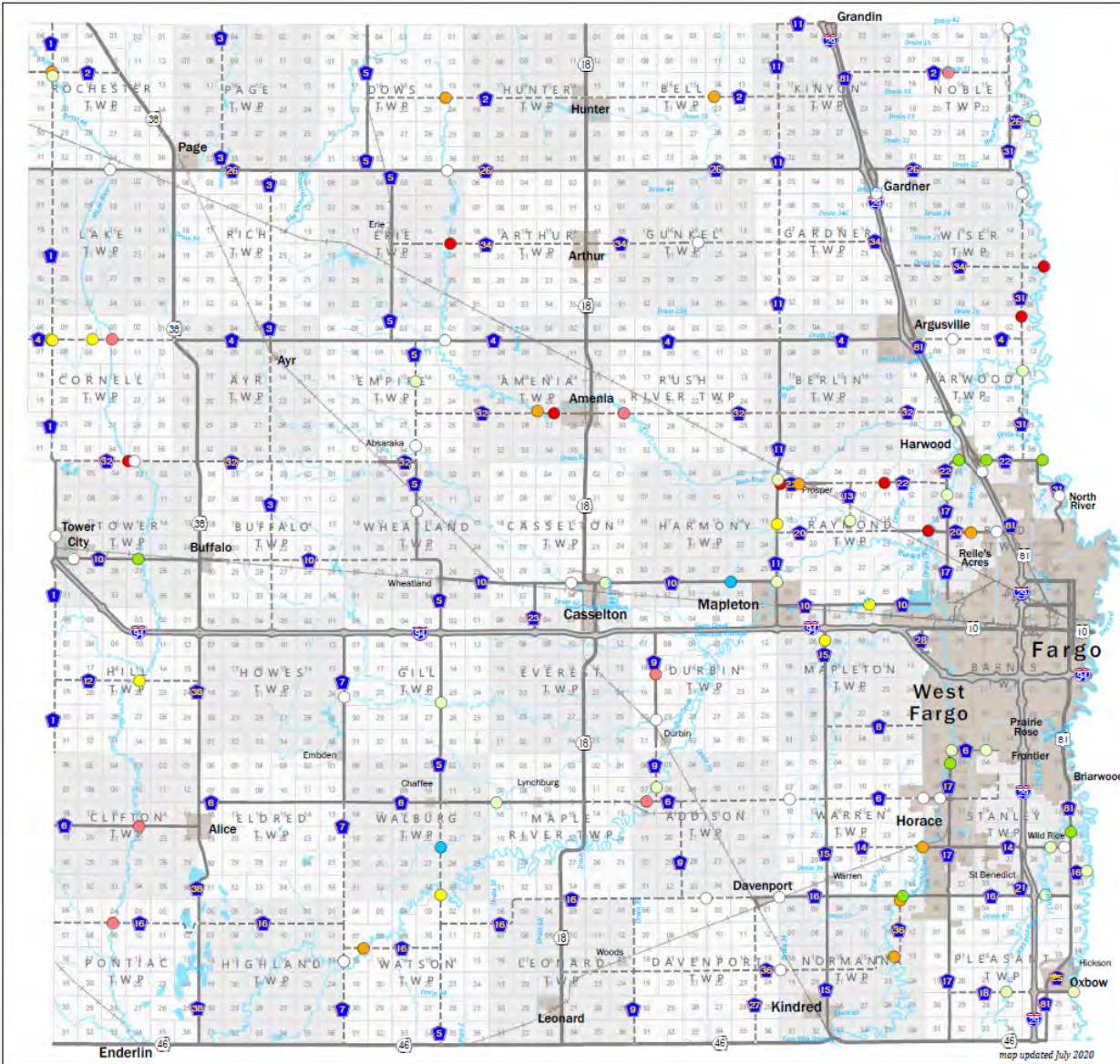
Cass County Highway Department

Jason Benson
 County Engineer, P.E.
 Tom Soucy
 Deputy County Engineer, P.E.
 Blaine Laaveg
 Highway Superintendent



1201 Main Ave. W
 West Fargo, ND 58078
 (701) 298-2370
www.casscountynv.gov
highway@casscountynv.gov





Appendix 9

Bridges on County Roads: ND DOT 2019/2020 Curb to Curb Roadway Width

Structure Width

- under 24'
- 24' - 25.9'
- 26' - 27.9'
- 28' - 29.9'
- 30' - 39.9'
- 40' - 49.9'
- 50' +
- culvert

Structure Width	Bridge Count
under 24'	8
24' - 25.9'	7
26' - 27.9'	8
28' - 29.9'	10
30' - 39.9'	19
40' - 49.9'	7
50' +	2
culvert	28

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent



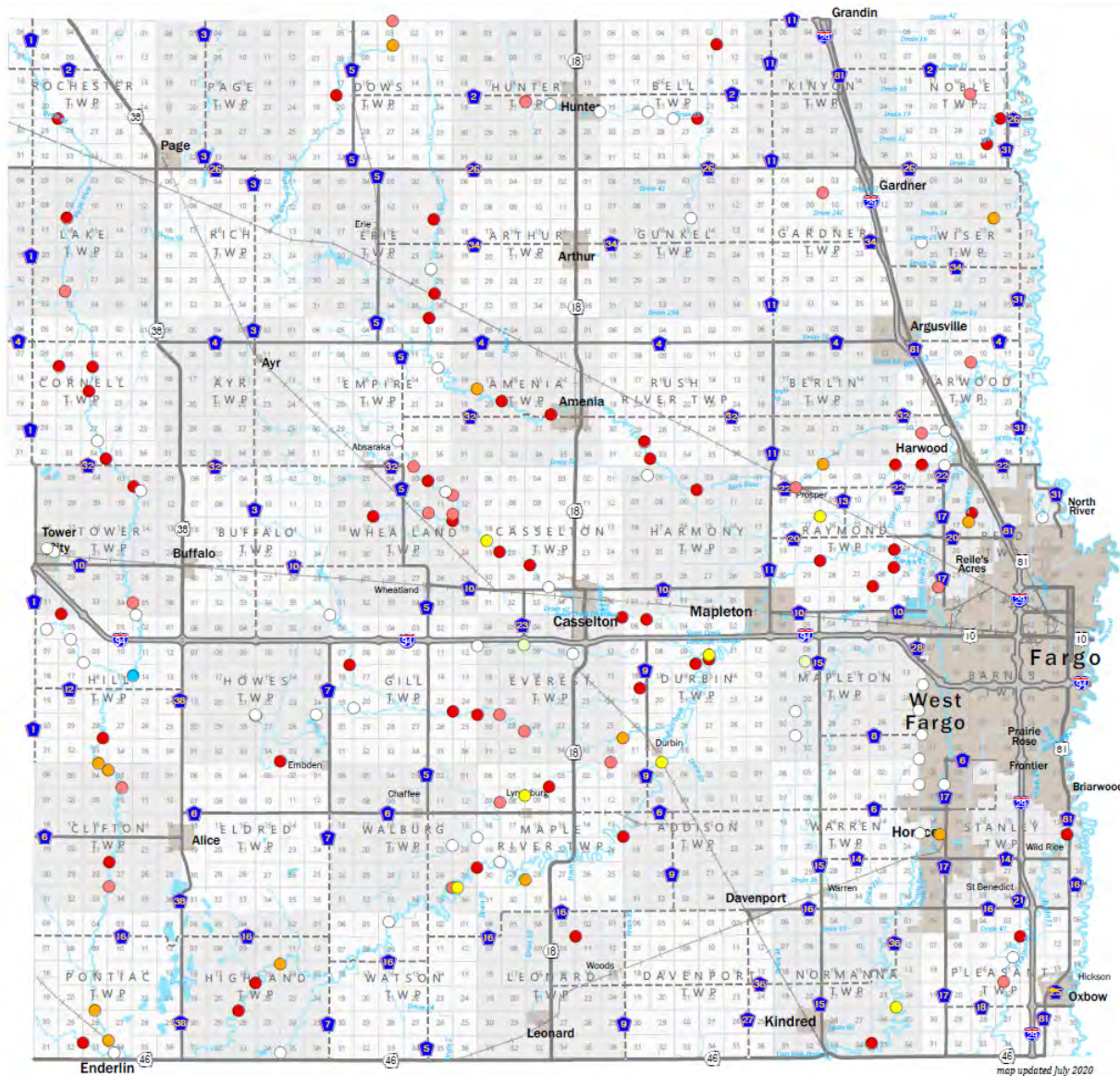
1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 10
Bridges on Township Roads:
ND DOT 2019/2020
Curb to Curb Roadway Width



Structure Width

- under 24'
- 24' - 25.9'
- 26' - 27.9'
- 28' - 29.9'
- 30' - 39.9'
- 40' - 49.9'
- 50' +
- culvert

Structure Width	Bridge Count
under 24'	49
24' - 25.9'	21
26' - 27.9'	10
28' - 29.9'	10
30' - 39.9'	2
40' - 49.9'	0
50' +	1
culvert	51

Cass County Highway Department

Jason Benson
 County Engineer, P.E.

Tom Soucy
 Deputy County Engineer, P.E.

Blaine Laaveg
 Highway Superintendent



1201 Main Ave. W
 West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
 highway@casscountynd.gov



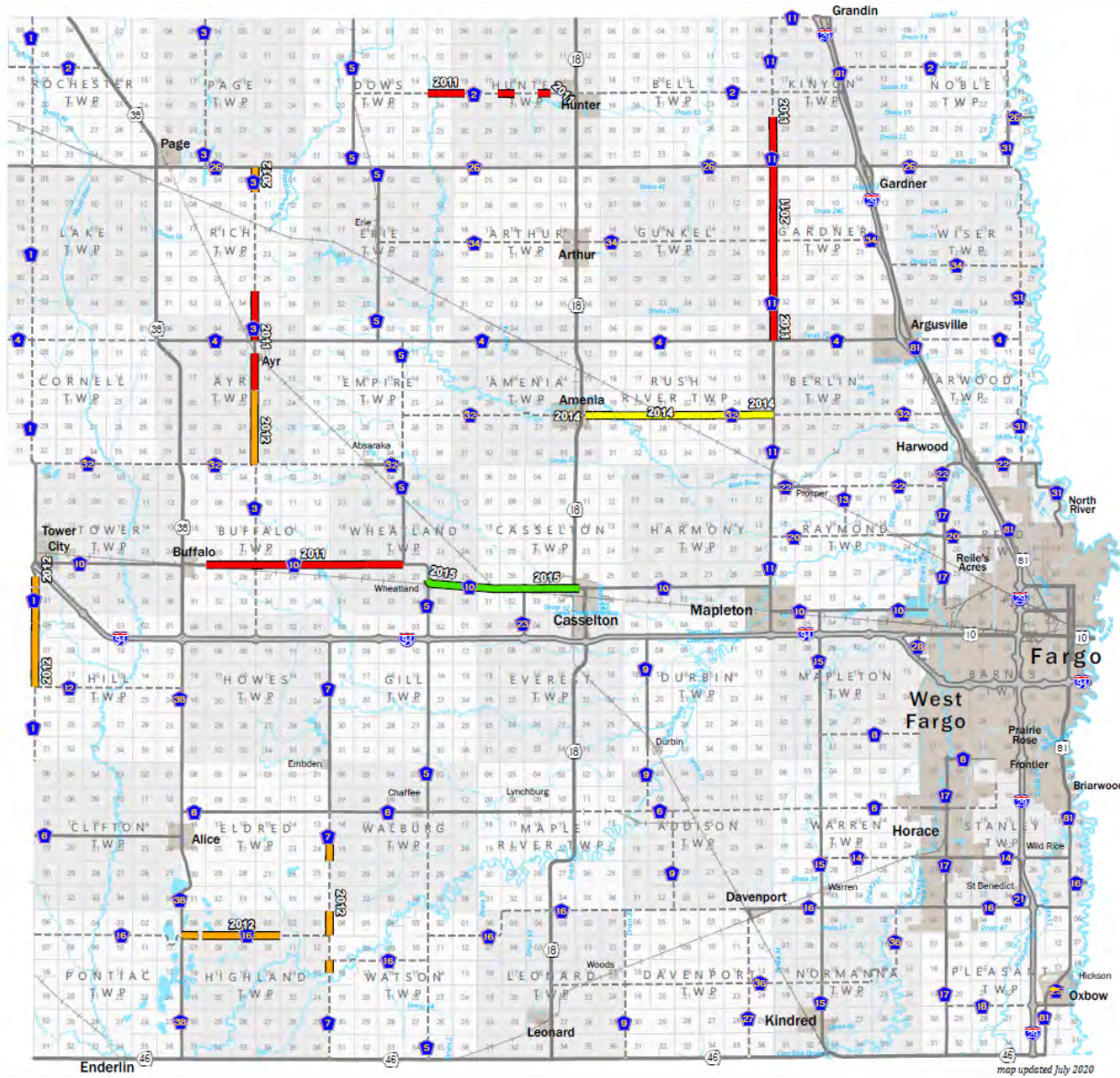
Appendix 11

Drain Tile Projects

Year of Last Project

- █ 2011
- █ 2012
- █ 2014
- █ 2015

Year	Miles
2011	23.07
2012	14.25
2014	7.45
2015	6.2
Total	50.97



Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 12

Subgrade Repair Projects

Year of Last Project

- █ 2011 - 2012
- █ 2013 - 2014
- █ 2015 - 2016
- █ 2017 - 2018
- █ 2019 - 2020

Year	Gravel Miles	Paved Miles	Total Miles
2011 - 2012	9.56	0	9.56
2013 - 2014	15.01	0.75	15.76
2015 - 2016	20.19	1.8	21.99
2017 - 2018	0	16.28	16.28
2019 - 2020	25.43	6.97	32.4
Total	70.19	25.8	95.99

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

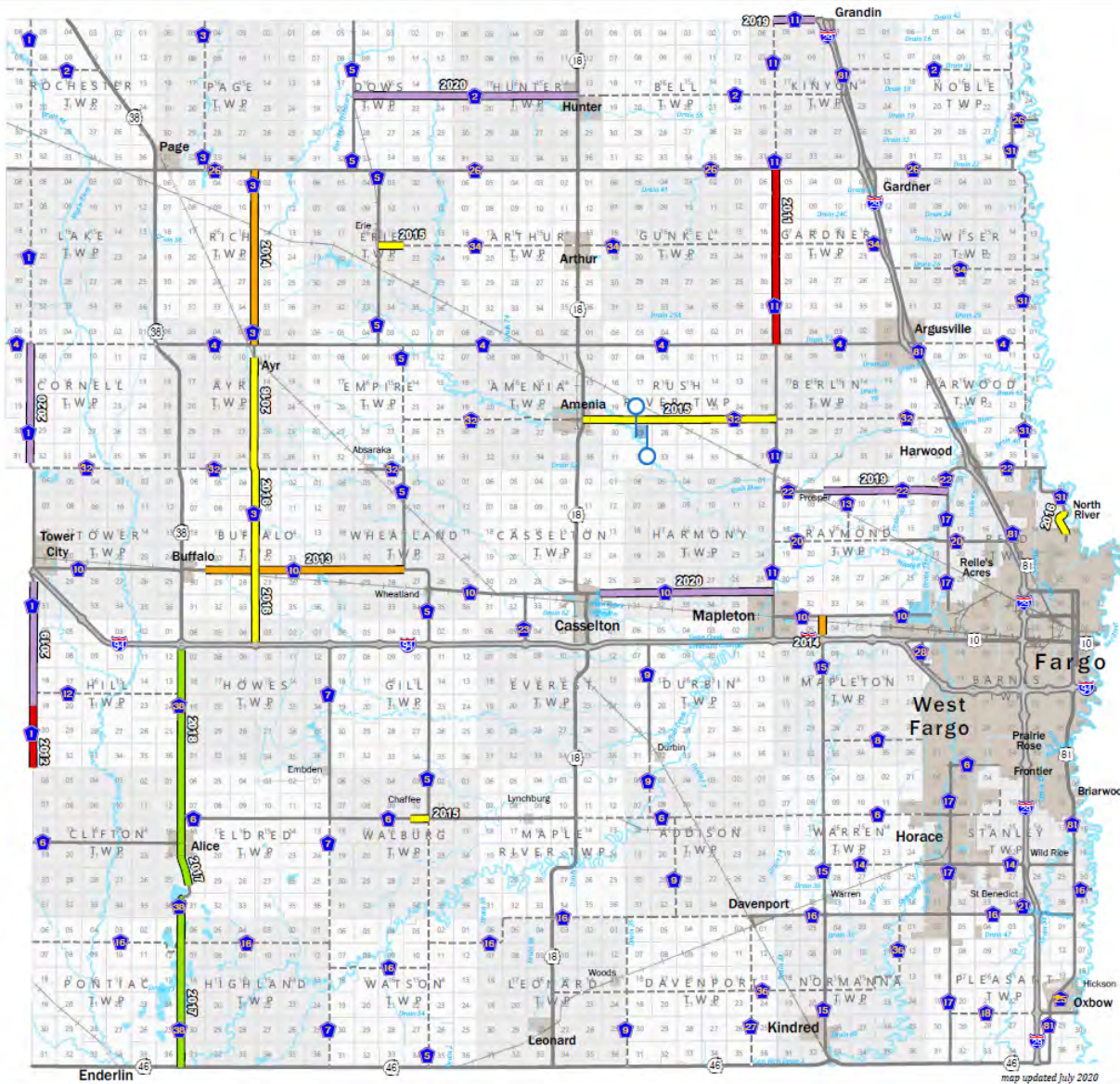
Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 13

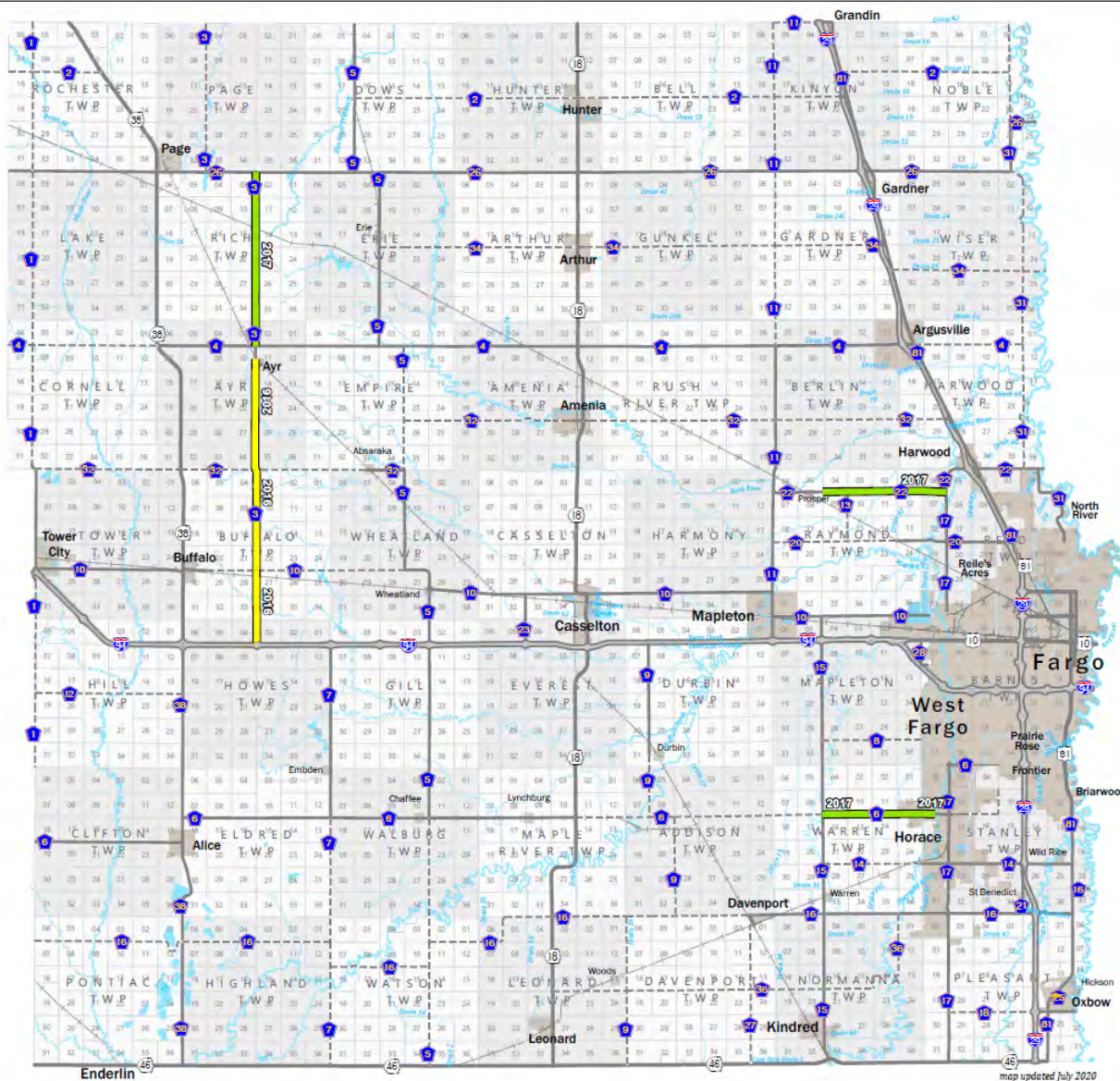
Gravel Stabilization Projects

Year of Last Project

 2016

 2017

Year	Miles
2016	11.42
2017	16.55
Total	27.97



Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

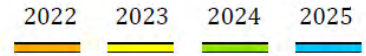
(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov

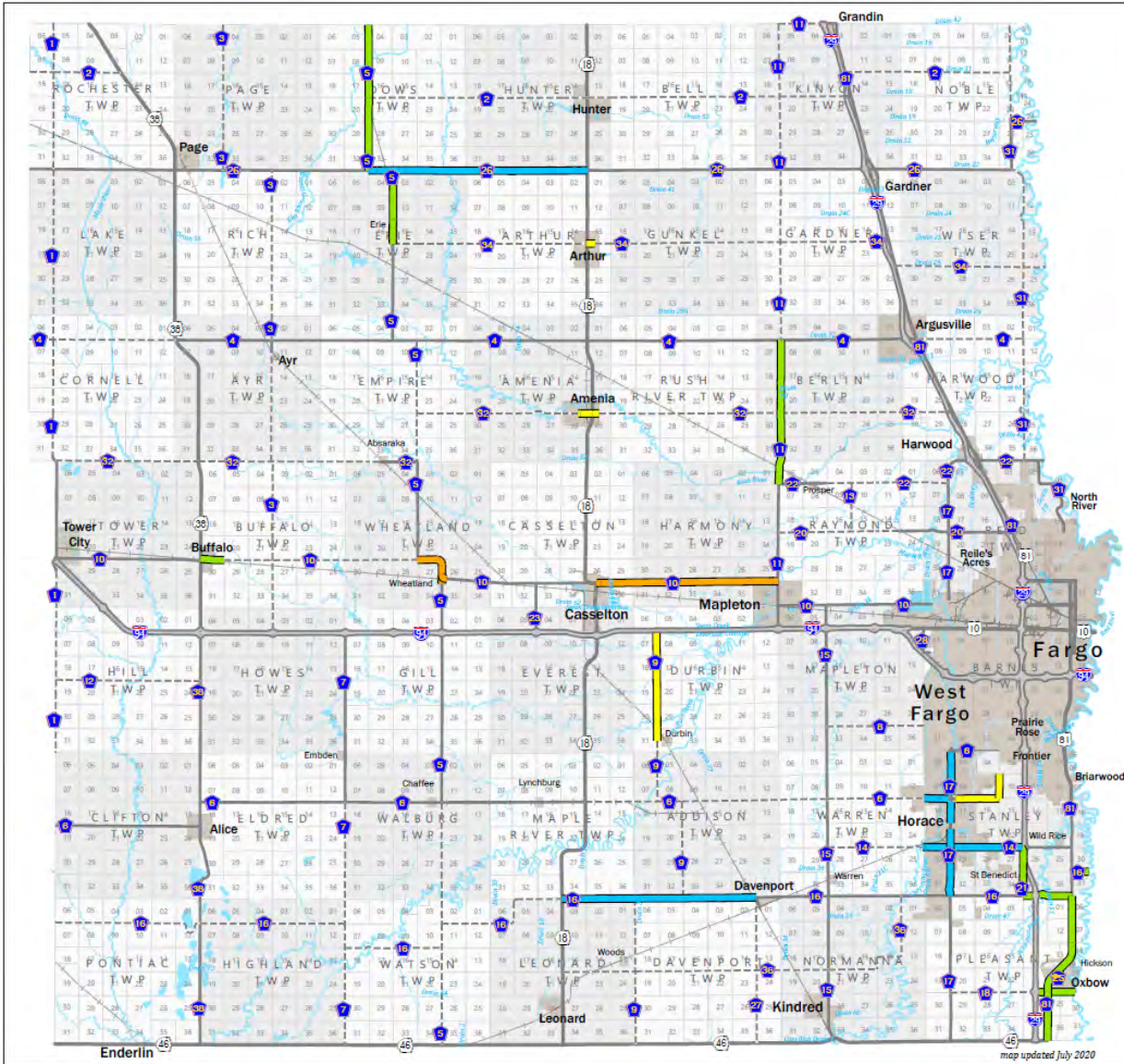


Appendix 14

Proposed Chip Seal Projects



Year	Miles
2022	9.65
2023	8.43
2024	28.55
2025	27.49
Total	74.12



map updated July 2020

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent

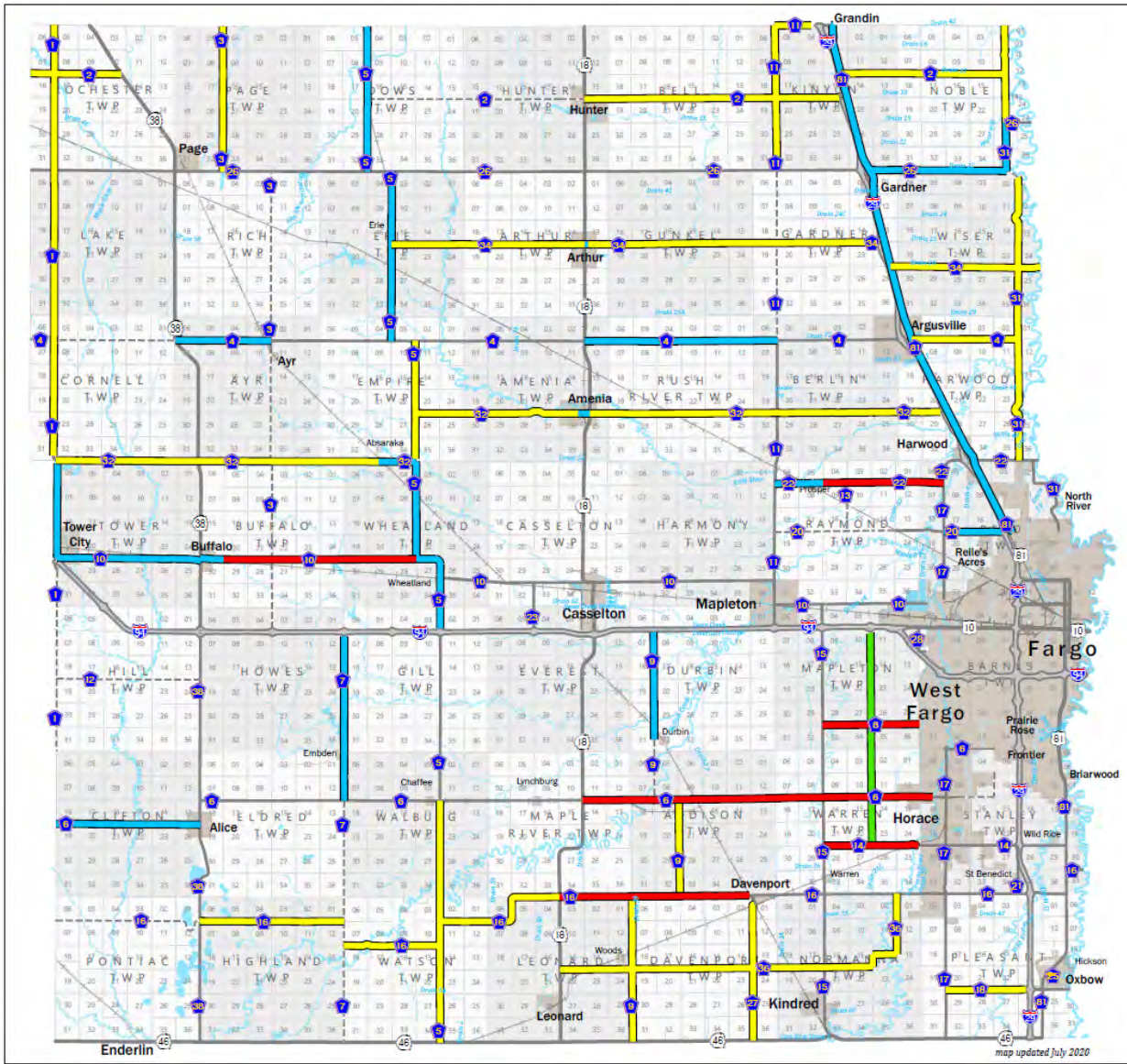


1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov





Appendix 15

Projected 30 Year Improvements

- Gravel - Needs Paving/Grading
- Gravel - Needs Reshaping
- Paved - Needs Widening
- Future County Highway

Type of Improvement	Miles	Cost/Mile*	Estimated Total
Gravel - Needs Paving/Grading	43.3	\$1.5 Million	\$65 Million
Gravel - Needs Reshaping	200.46	\$150,000	\$30.1 Million
Paved - Needs Widening	97.78	\$1.2 Million	\$117.3 Million
Future County Highway	8.8	\$1.5 Million	\$13.2 Million
Total:			\$225.6 Million

**Cost per mile figures represent today's costs and do not take into account inflation.*

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370








www.casscountynd.gov
highway@casscountynd.gov



map updated July 2020

Appendix 16

Recommended Pavement Overlay

-  1.5 - 1.75 inch Mill and Overlay
-  1.5 - 1.75 inch Overlay
-  2 inch Mill and Overlay
-  2 inch Overlay
-  2.5 - 2.75 inch Mill and Overlay
-  2.5 - 2.75 inch Overlay
-  3 inch Overlay

Recommended Pavement Overlay*	Miles
1.5 - 1.75 inch Mill and Overlay	4.64
1.5 - 1.75 inch Overlay	50.64
2 inch Mill and Overlay	2.57
2 inch Overlay	1.8
2.5 - 2.75 inch Mill and Overlay	0.98
2.5 - 2.75 inch Overlay	17.58
3 inch Overlay	1.03
Total	79.24

* Recommended pavement overlay thickness needed to achieve a 10 tons/axle road (from American Engineering 2017 testing results)

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

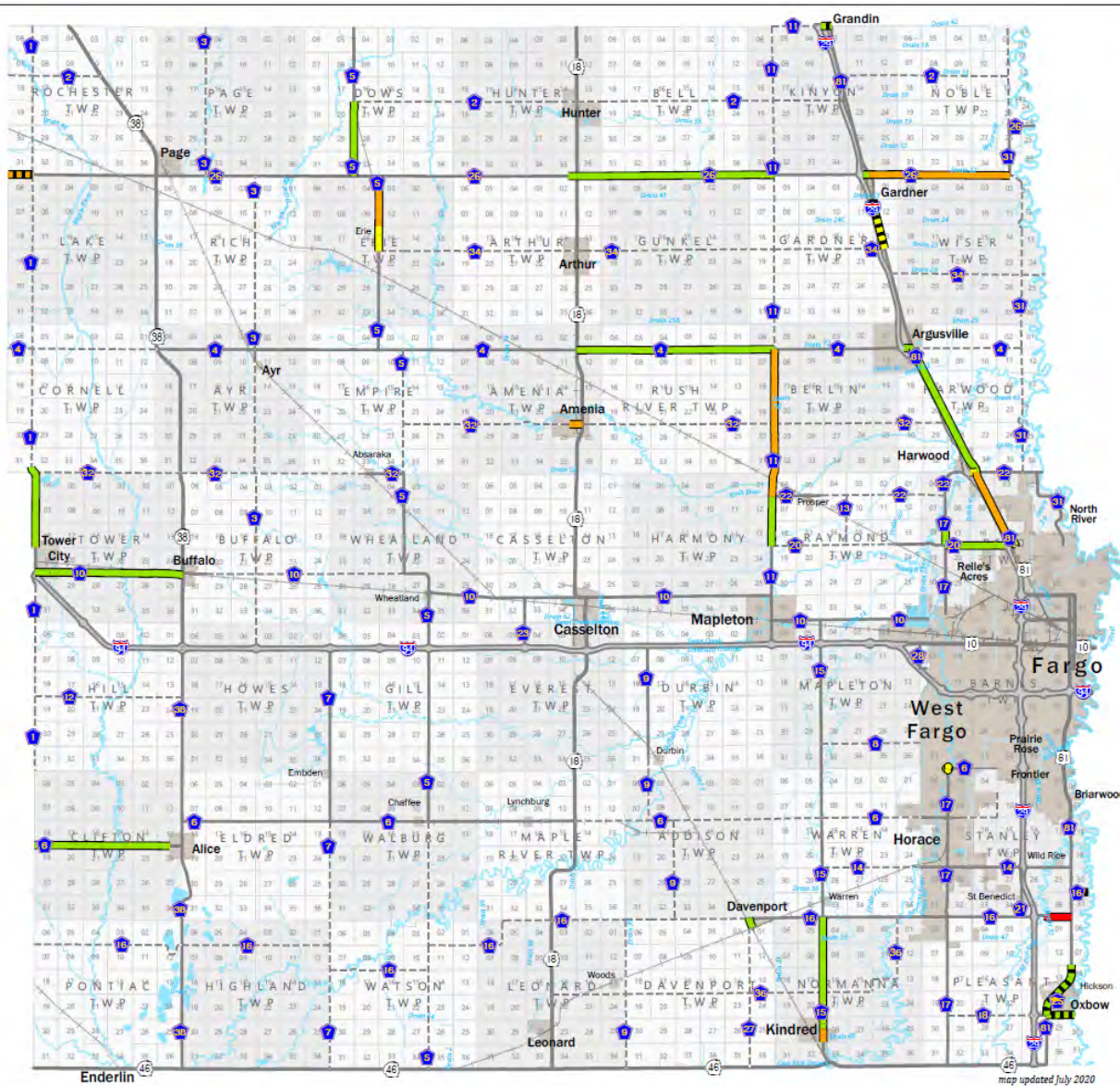
Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov







map updated July 2020



Appendix 17

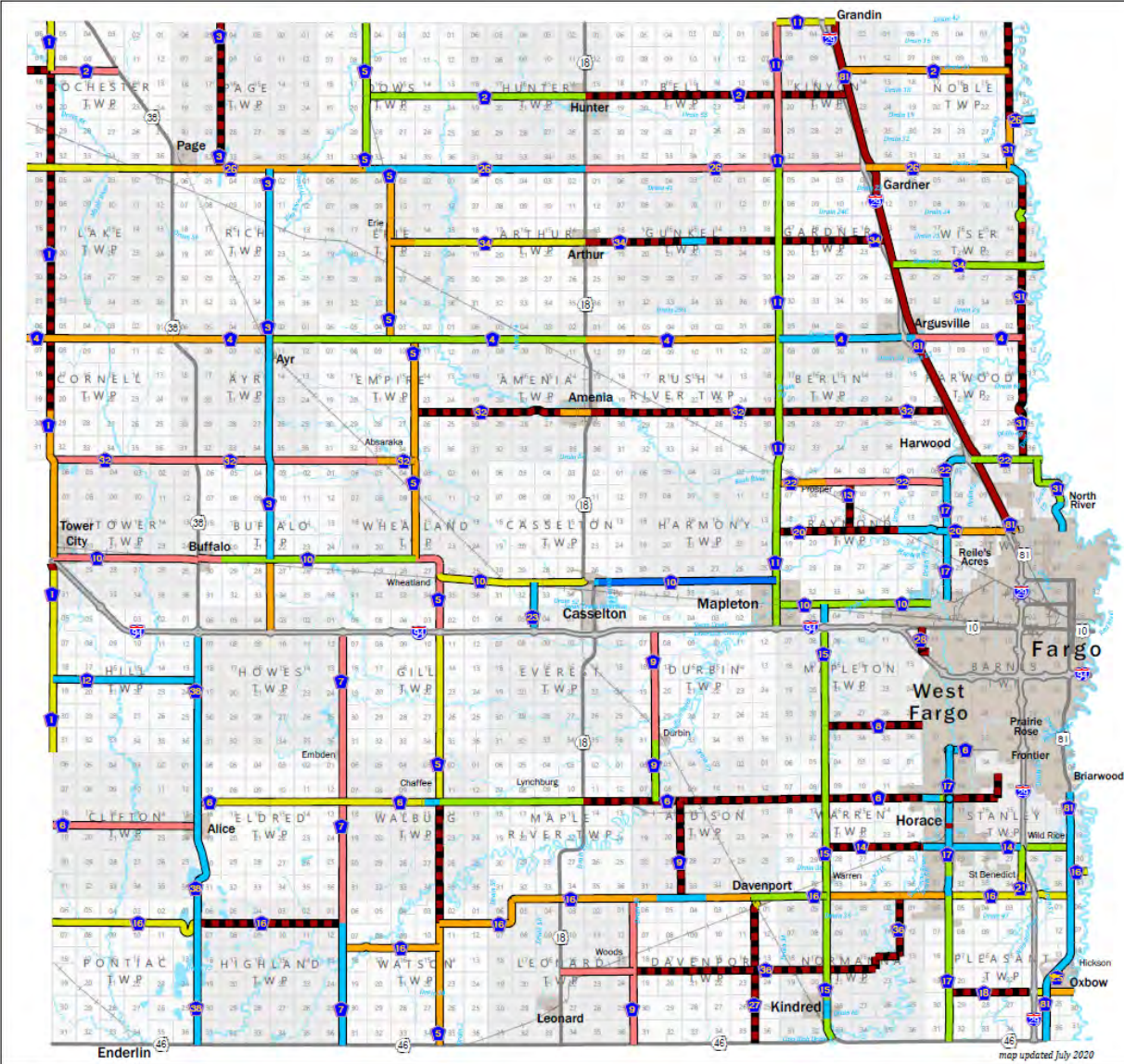
Age of Highways and Estimated Age of Culvert Infrastructure

Year of Road Grading - Est. Age of Culverts

-  unknown/TBD 65+ years old
-  1937 - 1949 71 - 83 years old
-  1950 - 1959 61 - 70 years old
-  1960 - 1969 51 - 60 years old
-  1970 - 1979 41 - 50 years old
-  1980 - 1999 21 - 40 years old
-  2000 - 2019 1 - 20 years old
-  2020 0 years old

Year of Road Grading	Miles	% of Mileage
unknown/TBD (65+ years old)	151.12	23.71%
1937 - 1949	22.04	3.46%
1950 - 1959	84.79	13.30%
1960 - 1969	102.25	16.04%
1970 - 1979	60.63	9.51%
1980 - 1999	111.61	17.51%
2000 - 2019	97.68	15.32%
2020	7.29	1.14%

The age of highways is based upon the year of road graded. In most cases, the age of culverts is equivalent to the age of highways.



Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent



1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



Appendix 18

**Crashes on County Highways:
2006 - 2019**

Crash Severity

- Fatal
- Incapacitating Injury
- Non-incapacitating Injury
- Possible Injury
- Property Damage Only (PDO)

Average Daily Traffic Count (2018)



County Highway Type

- Paved
- Gravel

Crash Data Source: North Dakota Department of Transportation
Traffic Count Source: KLI Engineering

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Soucy
Deputy County Engineer, P.E.

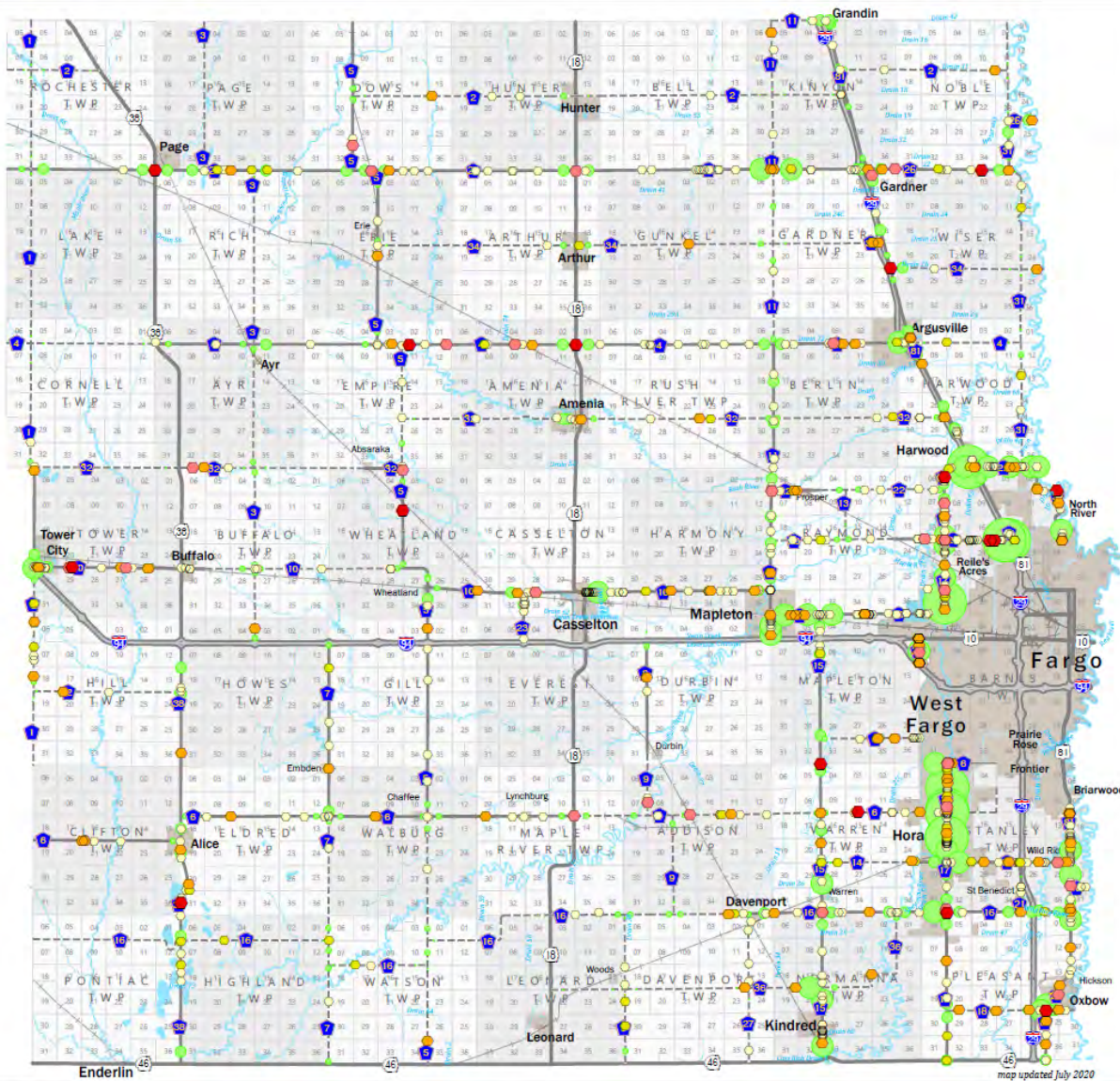
Blaine Laaveg
Highway Superintendent




1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov



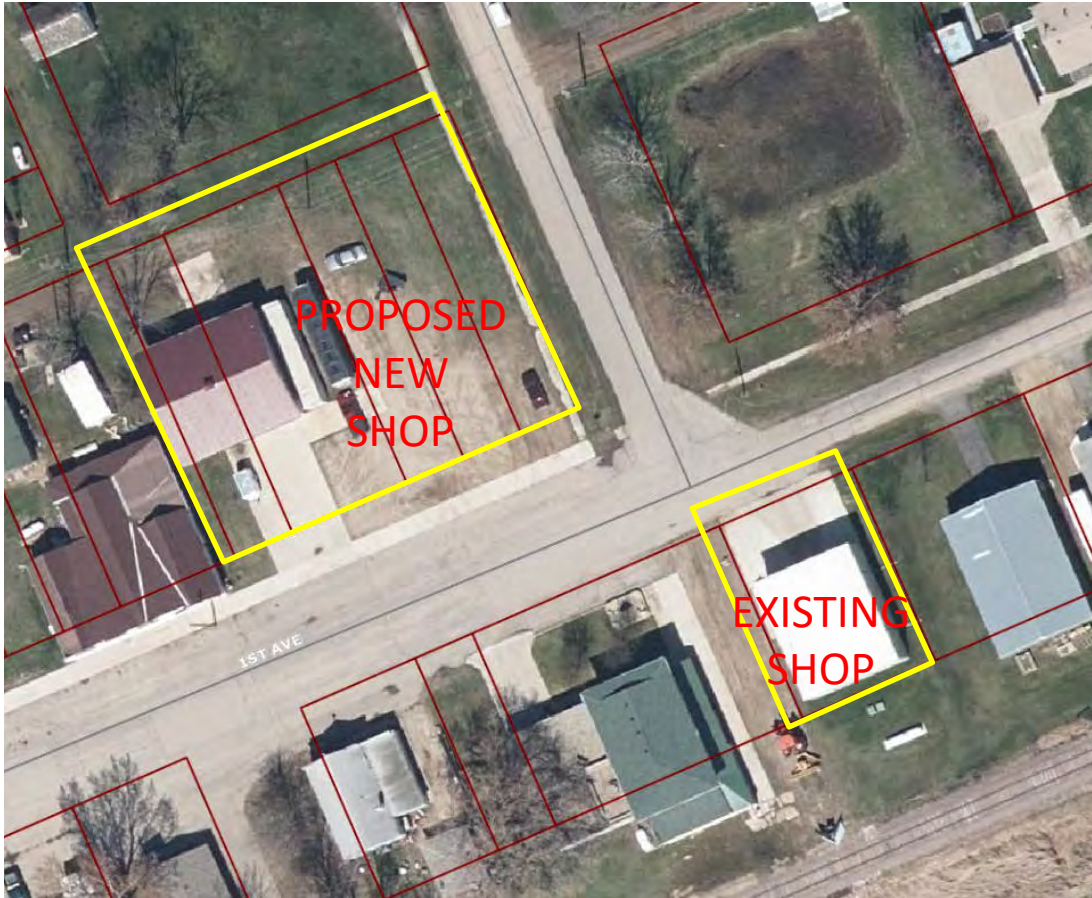


**Road Advisory Meeting
July 21, 2020**

Davenport Shop Options

Cass County Highway Department

Davenport Shop



- **Tight Quarters**
- **Path Forward - Secure ownership of building**
- **Use the budgeted \$400K to purchase in 2020 for approximately \$155K**
- **In 2022 budget to remodel/add onto to new shop and sell the old.**


Davenport Shop

- Existing Shop



- Proposed New Shop



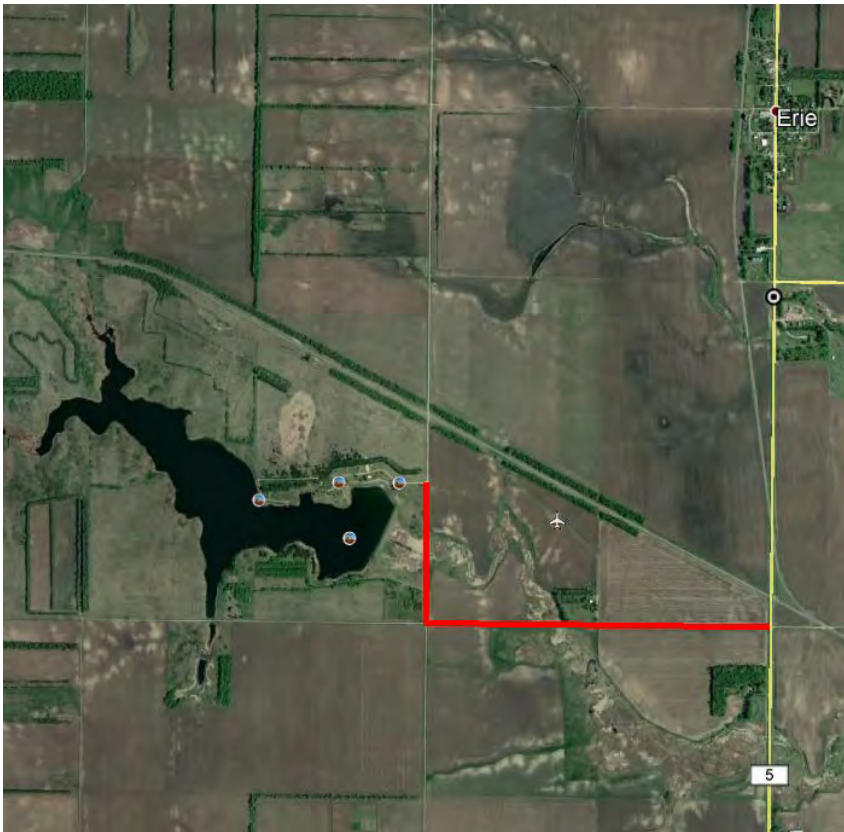


**Road Advisory Meeting
July 21, 2020**


Brewer Lake – Erie Twp. Road

Cass County Highway Department

Brewer Lake – Erie Twp Road



- Road Issues
 - Total Length 1.5 Miles
 - Soft Spots
 - Subgrade Repair Project Needed to correct these issues.
 - Costly for the Township to maintain gravel road section.
 - Blade 1 per moth
 - Winter snowplowing issues
 - Connects to a County Owned park therefore should this be a County Road?
- Options
 - Do Nothing
 - Repair Soft Spots – Assist Township with Blading
 - Take it over as a county road and potentially pave the access road and campground.

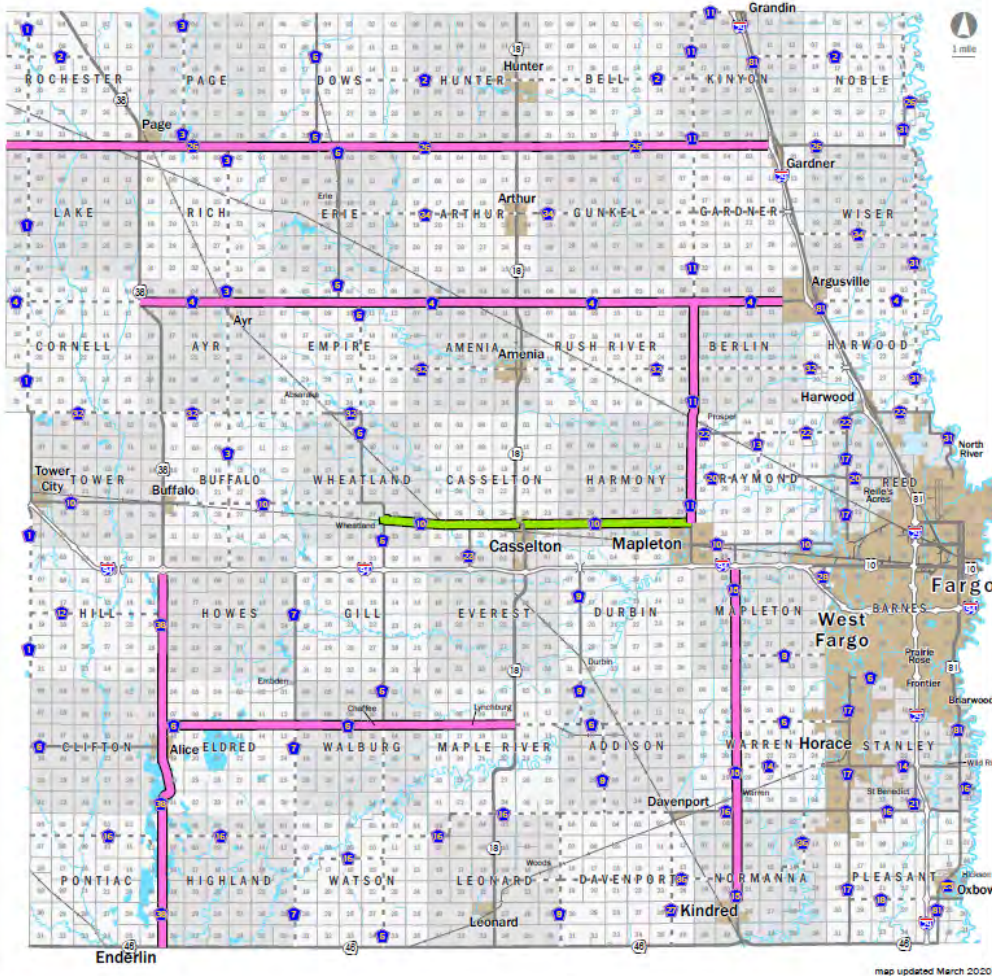


**Road Advisory Meeting
July 21, 2020**

Potential 65 MPH Speed Changes

Cass County Highway Department

Cass County Highways 65 MPH Capability





65 MPH Routes

Recommend the following routes be increased to 65 mph except in areas already posted speeds less than 55 mph. (i.e. through towns, schools, or curves)

Met with the Sheriff's department and discussed which roads had the potential to be raised to 65 mph.

- C4 – State Hw38 to I-29
- C11 – C10 to C4
- C15 – State Hwy 46 to I94
- C26 – Barnes Co. to I29
- C38 – State Hwy 46 to I-94
- C-10 – Wheatland to C11

- Pros
 - Connects Higher Volume County Roads to NDDOT 65 MPH Routes
 - Closes Gap of the 85% Speed
- Cons
 - Increases Stopping Distance
 - Potential confusion to overall county speed limit.

-  Potential 65 MPH Highway (121.04 miles)
-  Future 65 MPH Highway (13.56 miles)

Cass County Highway Department

Jason Benson
County Engineer, P.E.

Tom Spicy
Deputy County Engineer, P.E.

Blaine Laaveg
Highway Superintendent




1201 Main Ave. W
West Fargo, ND 58078

(701) 298-2370

www.casscountynd.gov
highway@casscountynd.gov

Disclaimer: As with all public information derived from variable sources, this data may contain errors or faults. Therefore, Cass County does not provide any warranty express or implied, as to the accuracy of this data. The recipient is encouraged to make an independent investigation or verification of the data. If an error is found, it is requested the County Engineer be advised of the inaccuracy so the data can be corrected and corrected. THIS MAP IS NOT A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.





**Road Advisory Meeting
July 21, 2020**

Other Business

Cass County Highway Department