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# 2021 – 2024

## CAPITAL IMPROVEMENT PLAN (CIP)

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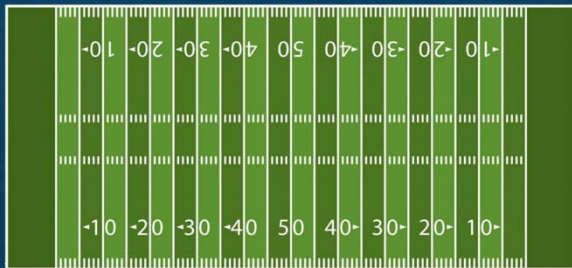
# OUR PAVEMENT NETWORK

**Nearly 1,400 lane miles of pavement**

- 55% Asphalt and 45% Concrete

**Almost 10 million square yards of pavement to maintain**

- Equivalent to 1,500 football fields



**X 1,500**

# OUR WATER MAIN NETWORK

A stylized illustration of a water main network. It features several light blue pipes of varying thicknesses, some with grey joints. There are two blue hydrants with orange handles, one on the left and one on the right. The background is a solid dark blue.

Over 500 Miles of Water Mains

## Fargo's Water Mains:

- 71% are PVC
- 17% are asbestos cement
- 12% are iron (cast or ductile)

# CIP HISTORY

Project	2017 CIP	2018 CIP	2019 CIP	Original 2020 CIP	Reduced 2020 CIP
Federal Aid (New and Recon)	\$ 28,483,822	\$ 16,974,788	\$ 38,344,250	\$ 13,625,498	\$ 14,285,175
Water Main and Street Recon	\$ 24,494,219	\$ 17,938,500	\$ 0	\$ 8,694,470	\$ 8,397,430
Arterial Roadway (New and Recon)	\$ 0	\$ 9,415,333	\$ 0	\$ 22,362,068	\$ 10,252,354
Flood Control	\$ 25,111,535	\$ 43,276,570	\$ 20,024,769	\$ 36,459,800	\$ 15,741,796
Pavement Preservation	\$ 9,655,000	\$ 8,328,646	\$ 8,881,989	\$ 8,416,750	\$ 3,515,718
Storm Sewer Utility	\$ 625,450	\$ 7,960,850	\$ 1,491,795	\$ 1,965,000	\$ 2,039,796
Traffic and Streetlight	\$ 5,796,500	\$ 4,751,510	\$ 2,444,055	\$ 4,028,250	\$ 2,077,559
New Development	\$ 24,513,000	\$ 15,155,000	\$ 11,708,770	\$ 9,170,000	\$ 23,583,834
Alley Paving	\$ 402,000	\$ 138,000	\$ 0	\$ 634,040	\$ 601,824
Sidewalk	\$ 780,150	\$ 701,325	\$ 828,749	\$ 1,139,700	\$ 298,797
Miscellaneous	\$ 1,666,220	\$ 923,500	\$ 800,600	\$ 2,025,000	\$ 60,000
<b>Total CIP</b>	<b>\$ 121,529,913</b>	<b>\$ 125,566,040</b>	<b>\$ 84,524,977</b>	<b>\$ 108,520,576</b>	<b>\$ 80,854,283</b>
<b>Total CIP (less New Dev, Alley, and Flood)</b>	<b>\$ 71,503,378</b>	<b>\$ 66,996,470</b>	<b>\$ 52,791,438</b>	<b>\$ 62,256,736</b>	<b>\$ 40,926,828</b>

Costs include all project-related costs including fees.

# PROPOSED 2021-2024 CIP

Project	2021 CIP	2022 CIP	2023 CIP	2024 CIP
Federal Aid (New and Recon)	\$ 32,450,291	\$ 13,624,000	\$ 29,166,549	\$ 13,530,000
Water Main and/or Street Recon	\$ 10,143,000	\$ 9,828,000	\$ 9,450,000	\$ 18,522,000
Flood Control	\$ 31,682,773	\$ 21,655,000	\$ 13,877,900	\$ 8,365,000
Pavement Preservation	\$ 6,399,225	\$ 11,037,600	\$ 10,092,600	\$ 10,697,400
Storm Sewer Utility	\$ 1,606,500	\$ 1,631,700	\$ 1,606,500	\$ 1,606,500
Traffic and Streetlight	\$ 3,417,750	\$ 3,509,100	\$ 3,509,100	\$ 3,565,800
New Development	\$ 38,219,024	\$ 8,820,000	\$ 8,820,000	\$ 8,820,000
Alley Paving	\$ 529,200	\$ 504,000	\$ 504,000	\$ 504,000
Sidewalk	\$ 529,200	\$ 1,111,320	\$ 1,166,886	\$ 1,225,230
Miscellaneous	\$ 150,000	\$ 1,824,000	\$ 249,000	\$ 1,824,000
<b>Total CIP</b>	<b>\$ 125,126,964</b>	<b>\$ 73,544,720</b>	<b>\$ 78,442,535</b>	<b>\$ 68,659,930</b>
<b>Total CIP (less New Dev, Alley, and Flood)</b>	<b>\$ 54,695,966</b>	<b>\$ 42,565,720</b>	<b>\$ 55,240,635</b>	<b>\$ 50,970,930</b>

Costs include all project related costs including fees.

# 2021 CAPITAL IMPROVEMENT PLAN FUNDING

Project	Special Assessments (in millions)	Prairie Dog (in millions)	Street Sales Tax (in millions)	Flood Sales Tax (in millions)	Outside Funds (in millions)	Utility Funds (in millions)
Federal Aid (New and Recon)	\$ 14.33	\$ 0	\$ 2.25	\$0	\$ 15.88	\$ 0
Water Main and/or Street Recon	\$ 2.70	\$ 2.50	\$ 0.58	\$ 0	\$ 0	\$ 4.36
Flood Control	\$ 0	\$ 0	\$ 0	\$ 31.68	\$ 0	\$ 0
Pavement Preservation	\$ 2.36	\$ 0	\$ 4.04	\$ 0	\$ 0	\$ 0
Storm Sewer Utility	\$ 0.47	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1.13
Traffic and Streetlight	\$ 2.65	\$ 0	\$ 0.25	\$ 0	\$ 0	\$ 0.52
New Development	\$ 36.87	\$ 0	\$ 0	\$ 0	\$ 1.35	\$ 0
Alley Paving	\$ 0.53	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Sidewalk	\$ 0.26	\$ 0	\$ 0.26	\$ 0	\$ 0	\$ 0
Miscellaneous	\$ 0	\$ 0	\$ 0.15	\$ 0	\$ 0	\$ 0
<b>Total (\$125.13 Million)</b>	<b>\$ 60.17</b>	<b>\$2.50</b>	<b>\$ 7.53</b>	<b>\$ 31.68</b>	<b>\$ 17.23</b>	<b>\$ 6.02</b>

# HOW DO WE PRIORITIZE OUR AVAILABLE FUNDS?

- Maintain current infrastructure
  - Pavement Preservation Projects
- Maximize benefits of outside funding
  - Federal Aid Projects
- Make improvements that benefit the most people
  - Arterial Roadway Projects
- Replacement infrastructure to support redevelopment and/or reduce maintenance costs
  - Water Main Replacement and/or Street Reconstruction Projects

# WHAT FACTORS INTO WHICH PROJECTS WE PROGRAM?

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- Pavement Condition Index (PCI)
- Age of Infrastructure (Water main break history)
- Street Light and Traffic Signal Needs (Increase in Average Daily Traffic)
- Flood Control Needs
- Coordination with Public Works
  - Determining which roadways are most problematic and expensive for Public Works to maintain
- Coordination with Planning
  - Determining likely redevelopment and infrastructure needs to support it.

# PAVEMENT CONDITION INDEX

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- Every 4 years, the City hires a consultant to perform a pavement condition survey.
- This survey uses the ASTM Pavement Condition Index (PCI) methodology to assign a rating to each segment of road in Fargo on a range of 100 (newly surfaced pavement) to 0 (failed pavement).
- This survey information is imported into our Pavement Management Software and aids in the selection of the projects included in our Capital Improvement Plan.
- The most recent Pavement Condition Survey was performed in 2017.
- A Pavement Condition Survey is planned for 2021.

# UNDERSTANDING THE PAVEMENT CONDITION INDEX

PCI Range	Description	Relative Remaining Life	Definition
80 – 100	Excellent	15 to 25 Years	Like new to fairly new condition. Pavement is very smooth and has minimal deficiencies that impact ride quality. Little to no maintenance is required when the pavement is new. Patching, crack sealing, and surface treatments like seal coats are likely pavement preservation options for this PCI range.
60 – 80	Good	10 to 15 Years	Pavement is fairly smooth, but has some bumps and depressions that cause occasional roughness. Patching, crack sealing, and possible heavier surface treatments like thin overlays and local panel replacements are all viable pavement preservation options for this PCI range.
40 – 60	Fair	7 to 12 Years	Pavement is becoming uncomfortable to drive at times due to more frequent bumps and depressions. Progressively thicker overlays with localized repairs and moderate to extensive panel replacements are likely pavement preservation options for this PCI range.
20 – 40	Poor	5 to 10 Years	Pavement is uncomfortable to drive due to frequent bumps and depressions. Very thick overlays or surface replacement along with locations large areas of base reconstruction and subgrade stabilization will be necessary for pavements in this PCI range.
0 - 20	Very Poor	0 to 5 Years	Pavement is very uncomfortable to drive due to nearly constant bumps and depressions. Pavement preservation techniques are no longer feasible and full reconstruction is necessary.

# PAVEMENT CONDITION INDEX

Pavement Condition Description					
Surface Type	Total Network	Arterial	Collector	Local	Alley
All Streets	82.48	88.81	81.68	79.88	60.35
Asphalt	78.77	73.14	76.58	81.12	46.02
Composite	57.04	64.08	35.52	55.26	26.79
Concrete	90.04	93.58	92.37	79.13	87.94

Pavement Condition Description					
Surface Type	Total Network	Arterial	Collector	Local	Alley
All Streets	Excellent	Excellent	Excellent	Good	Good
Asphalt	Good	Good	Good	Excellent	Fair
Composite	Fair	Good	Poor	Fair	Poor
Concrete	Excellent	Excellent	Excellent	Good	Excellent

# PCI - WHAT DOES IT LOOK LIKE?



Location: 7 Ave N between 24 St N and 25 St N

## CITY SNAPSHOT

Classification:	Arterial
Material Type:	Concrete
Average Rating:	93.58

## EXAMPLE IN PHOTO

Location:	7 <sup>th</sup> Ave N
PCI Score:	94
Description:	"Excellent"

# PCI - WHAT DOES IT LOOK LIKE?



Location: 37 ½ Ave S between 33 St S and 32 St S

## CITY SNAPSHOT

Classification:	Local
Material Type:	Asphalt
Average Rating:	81.12

## EXAMPLE IN PHOTO

Location:	37 ½ St S
PCI Score:	81
Description:	"Excellent"

# PCI - WHAT DOES IT LOOK LIKE?



Location: 15 St S between 14 Ave S and 15 Ave S

## CITY SNAPSHOT

Classification:	Local
Material Type:	Concrete
Average Rating:	79.13

## EXAMPLE IN PHOTO

Location:	15 <sup>th</sup> St S
PCI Score:	79
Description:	"Good"

# PCI - WHAT DOES IT LOOK LIKE?



Location: Elm St N between 21 Ave N and 22 Ave N

## CITY SNAPSHOT

Classification:	Arterial
Material Type:	Asphalt
Average Rating:	73.14

## EXAMPLE IN PHOTO

Location:	Elm St N
PCI Score:	74
Description:	"Good"

# PCI - WHAT DOES IT LOOK LIKE?



Location: 8 St S between 4 Ave S and 5 Ave S

## CITY SNAPSHOT

Classification:	Local
Material Type:	Composite
Average Rating:	55.26

## EXAMPLE IN PHOTO

Location:	8 <sup>th</sup> St S
PCI Score:	54
Description:	"Fair"

# PCI - WHAT DOES IT LOOK LIKE?



**POOR**

Location: 19 St S between 8 Ave S and 9 Ave S

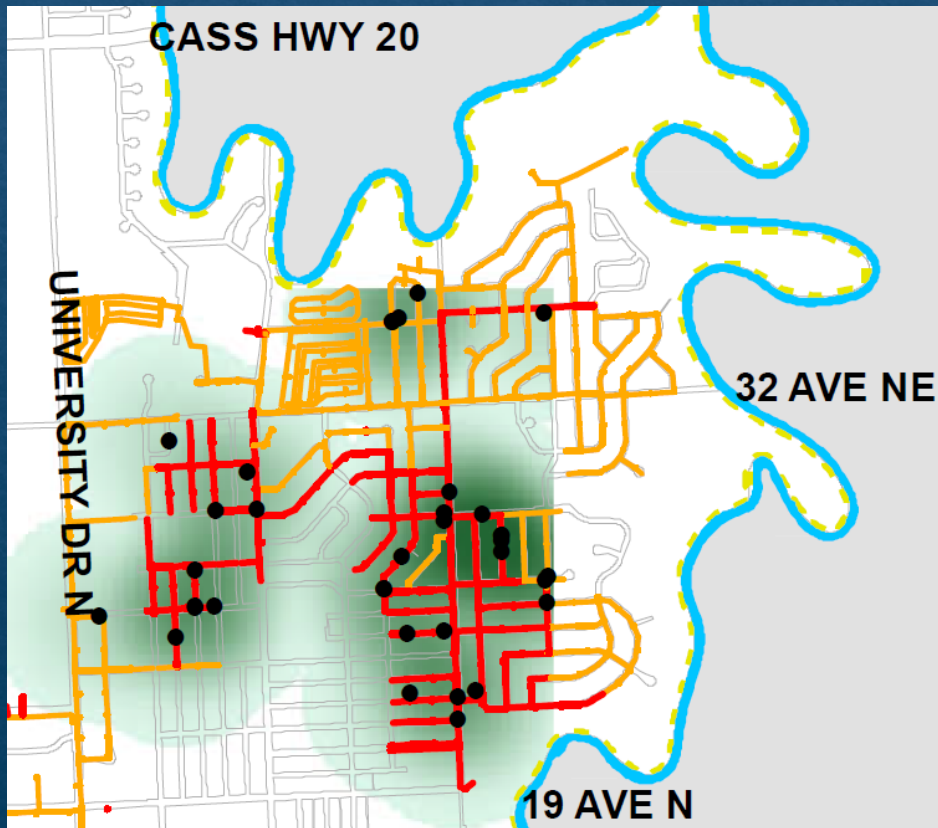
## CITY SNAPSHOT

Classification:	Local
Material Type:	Concrete
Average Rating:	79.13

## EXAMPLE IN PHOTO

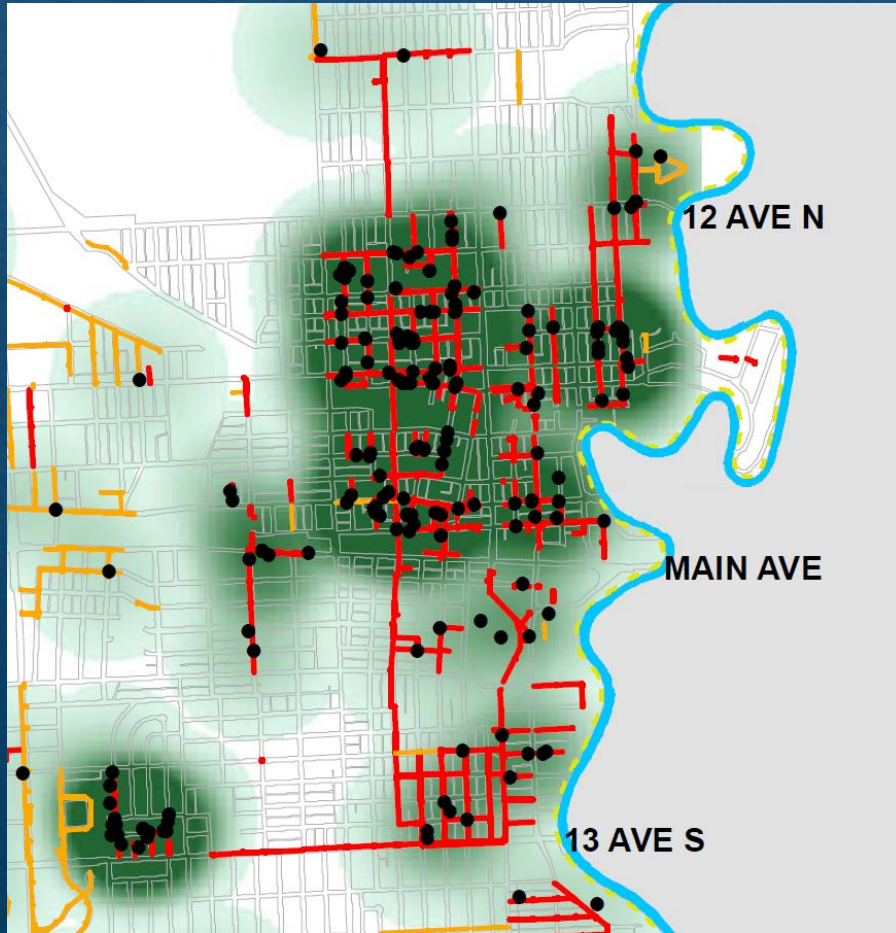
Location:	19 <sup>th</sup> St S
PCI Score:	35
Description:	"Poor"

# AGE OF INFRASTRUCTURE (WATER MAIN BREAK HISTORY)



- Each dot represents a water main break from 2010 through October 9, 2020
- (482 total breaks)

# AGE OF INFRASTRUCTURE (WATER MAIN BREAK HISTORY)



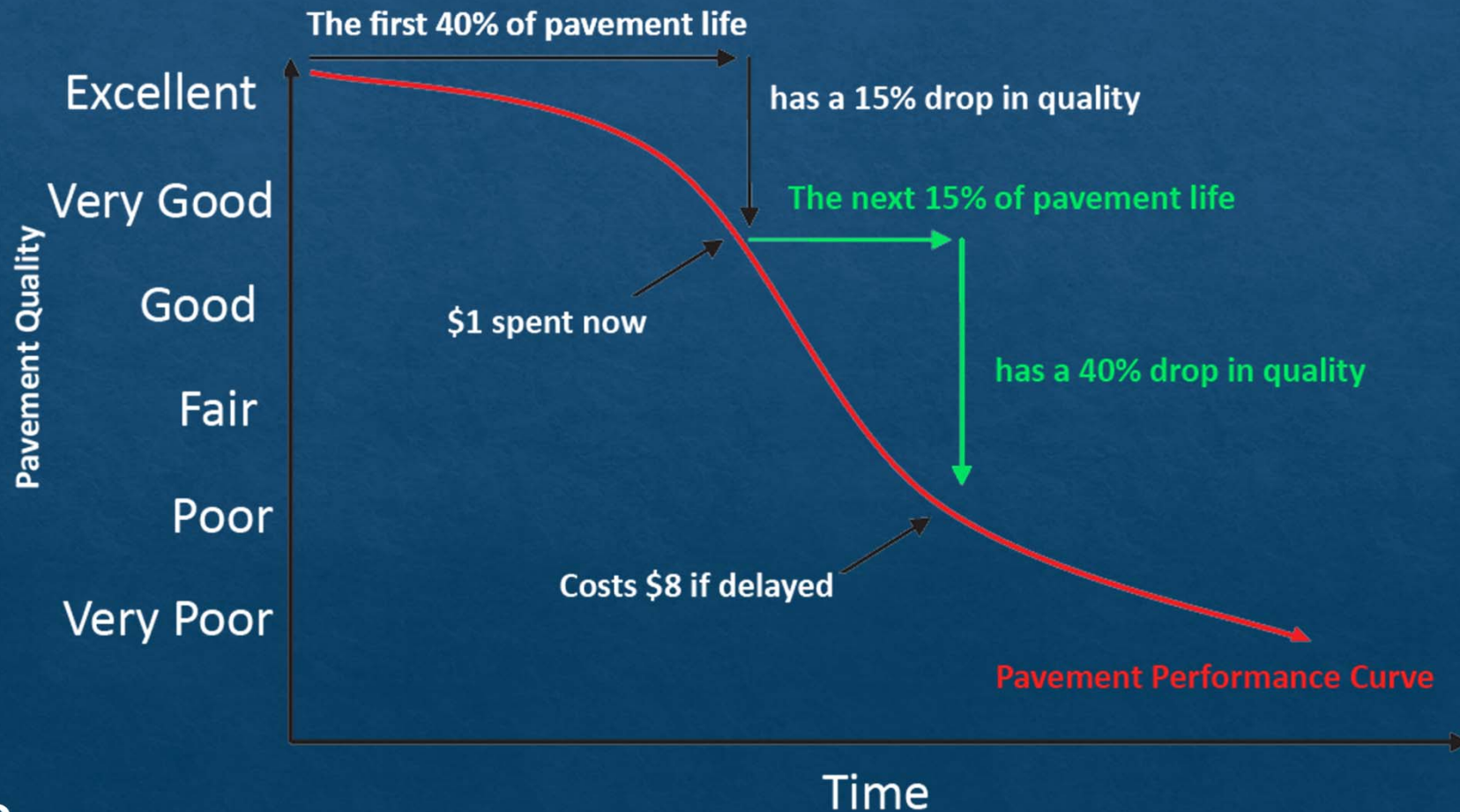
- Each dot represents a water main break from 2010 through October 9, 2020
- (482 total breaks)

# PAVEMENT PRESERVATION PROJECTS

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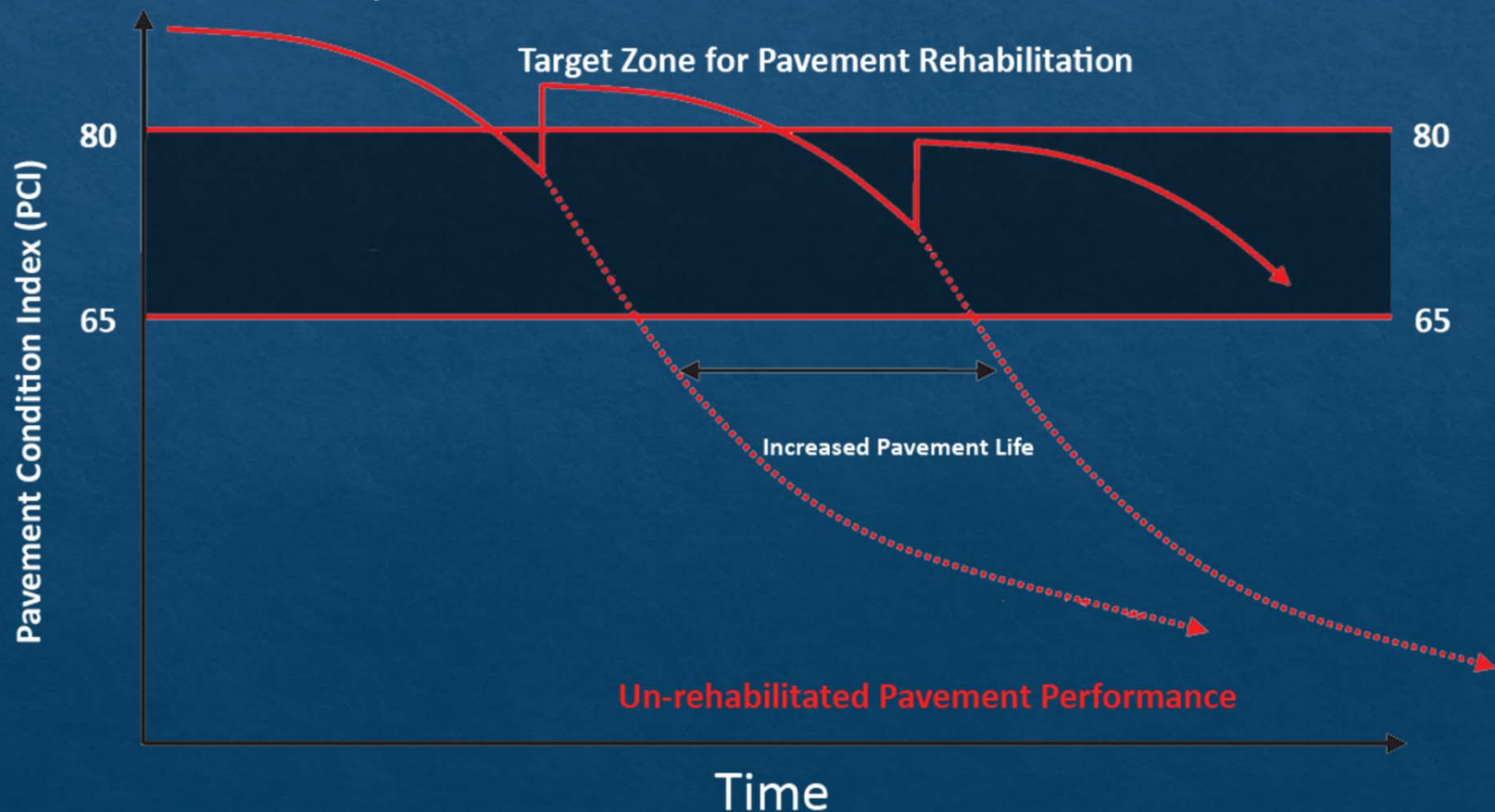
- Pavement preservation
  - Proactive approach implementing a series of low-cost, preventative maintenance treatments
  - Aimed at preserving the investment of our roadway network, extending the pavement life, and meeting our citizens' needs
- No pavement will last forever, but with timely applications of these projects we can extend the pavement life resulting in cost savings

# WHY IS PAVEMENT PRESERVATION IMPORTANT?



# WHY IS PAVEMENT PRESERVATION IMPORTANT?

- Pavement life can be extended through the application of timely rehabilitation activities



# PAVEMENT PRESERVATION PROJECTS

2021 Pavement Preservation Projects	Preliminary Estimated Total Costs
Asphalt Crack Seal	\$ 99,225
Seal Coat	\$ 1,260,000
Mill and Overlay	\$ 3,087,000
Concrete Spot Repair – City wide	\$ 693,000
Concrete Spot Repairs – 13 Ave S Corridor	\$ 1,260,000
<b>Total Pavement Preservation Projects</b>	<b>\$ 6,399,225</b>

# FEDERAL AID PROJECTS

These projects typically come out of the Long Range Transportation Plan – completed every 5 years by MetroCOG



SOURCE: Historical and Cultural Society of Clay County



**Fargo-Moorhead Metropolitan Council of Government**

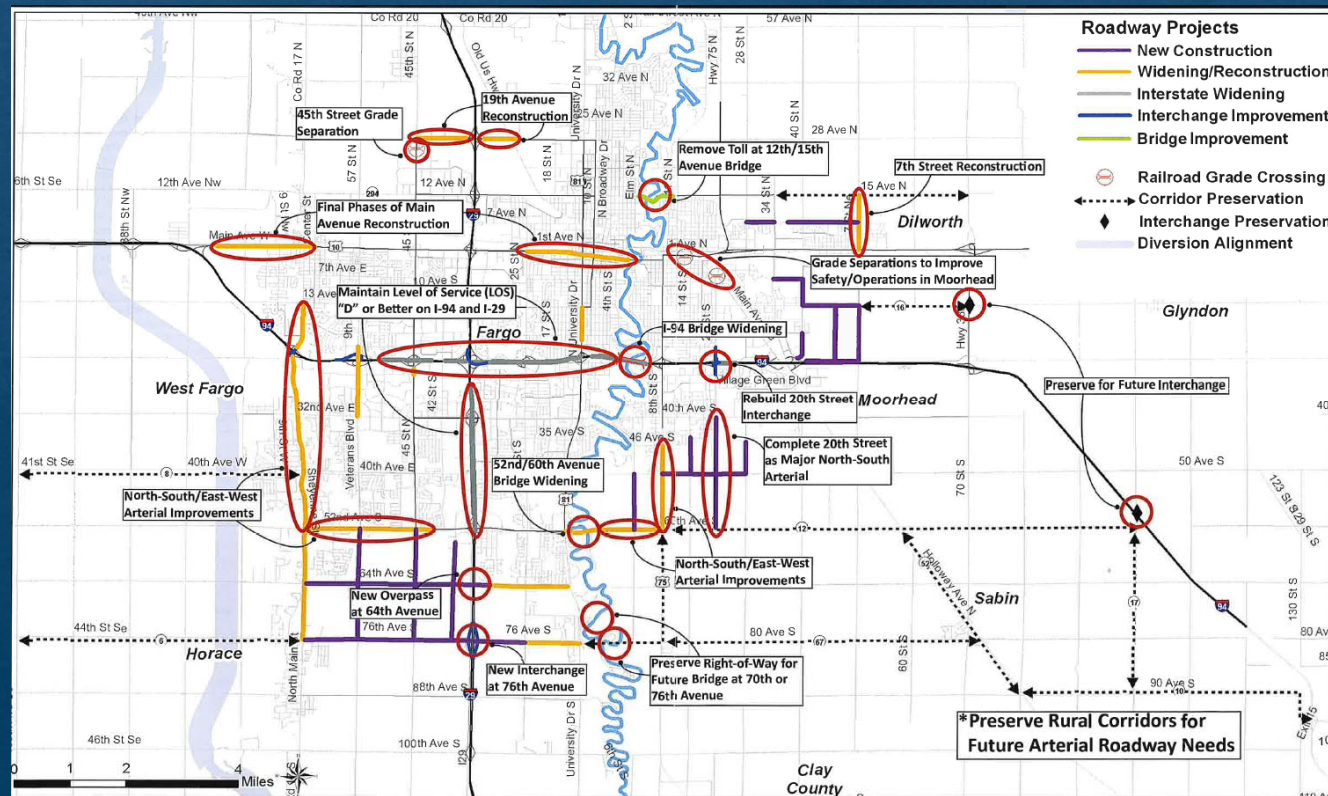
2045 Fargo-Moorhead Metropolitan Transportation Plan

September, 2019



# FEDERAL AID PROJECTS

These projects typically come out of the Long Range Transportation Plan – completed every 5 years by MetroCOG



# FEDERAL FUNDING BUCKETS

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- **URBAN ROADS FUNDS**
  - All City arterials and collectors
- **URBAN REGIONAL HIGHWAY FUNDS**
  - US 10 and 81
- **URBAN GRANT PROGRAM FUNDS**
  - Specifically for downtowns
- **TRANSIT**
- **TRANSPORTATION ALTERNATIVES**
  - Shared Use Paths and Safe Routes to School
- **RECREATIONAL TRAILS PROGRAM**
- **SPECIAL ROAD FUND**
  - Access to and/or within recreational, tourist, and historical areas
- **HIGHWAY SAFETY IMPROVEMENT PROGRAM**
  - Used to correct an existing safety hazard or eliminate a potential safety hazard.
- **RAIL SAFETY FUNDS**
  - For improvements to railroad/street crossings

# FEDERAL AID PROJECTS

- **Requests to NDDOT made 5 years in advance of construction**
  - Currently our projects are programmed through 2024
  - 2020 Requests will be for 2025 Construction Season

2021 Federal Aid Projects	Preliminary Estimated Total Costs
University Dr. N from 32 Ave N to 40 Ave N	\$ 8,863,789
64 Ave S from 38 St S to 33 St S*	\$ 23,586,503
<b>Total Federal Aid Projects</b>	<b>\$ 32,450,291</b>

- \*Cost based on actual bid prices

# ARTERIAL ROADWAY PROJECTS

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- **How is a roadway designated as an arterial?**
  - Arterials are the streets that you rely on to move you throughout the City
  - The City and MetroCOG work with NDDOT on designation
  - NDDOT requires an official map of the City designating collectors and arterial streets
    - These streets are the only ones eligible for Federal Aid

# ARTERIAL ROADWAY PROJECTS

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- Not enough federal money to support all arterial construction/reconstruction
- Construction/reconstruction is necessary:
  - City growth
  - Roadway capacity reasons
  - Replace worn out infrastructure
  - Other reasons (water and/or sewer utility needs, flood control, etc.)
  - Funded locally with special assessments, sales tax, and utility funds

# **WATERMAIN REPLACEMENT AND/OR STREET RECONSTRUCTION PROJECTS**

<b>2021 Watermain Replacement and/or Street Reconstruction Projects</b>	<b>Preliminary Estimated Total Costs</b>
<b>7 Ave N* from University Dr. to Broadway</b>	<b>\$ 5,418,000</b>
<b>21 Ave S from Gold Dr to 15 St S</b>	<b>\$ 3,402,000</b>
<b>11 St N from NP Ave to 1 St N</b>	<b>\$ 1,323,000</b>
<b>Total</b>	<b>\$ 10,143,000</b>

\*Denotes an Arterial Roadway

# FLOOD PROTECTION PROJECTS

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- These projects are:
  - Necessary for the proposed In-Town 100 year flood elevations with the Diversion in place
  - Constructed upon completion of necessary property and easement acquisitions
  - Paid by Flood Sales Tax

# FLOOD PROTECTION PROJECTS

2021 Flood Control Projects	Preliminary Estimated Total Costs
Belmont Addition - WTP Intake (Local Share for Flood Portion Only)	\$ 1,305,000
Riverwood	\$ 8,748,100
Royal Oaks	\$ 6,168,639
Elm Circle	\$ 2,549,034
Oak Grove	\$ 11,340,000
South University Rip Rap	\$ 1,500,000
Demolition - Flood Buyouts	\$ 72,000
<b>Total Flood Control Projects</b>	<b>\$ 31,682,773</b>

# STORM SEWER UTILITY

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- Citywide Storm Sewer System Televising
  - Performed by Public Works
  - Identifies areas in need of rehabilitation.
- Rehabilitation Projects
  - Outfall repairs
  - Minor drain repairs
  - Lift station rehabilitation & reconstruction
  - Storm sewer hydraulic modeling

# TRAFFIC AND STREET LIGHT PROJECTS

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- Traffic signal projects are to keep the existing components running or to modify to operate differently
  - LED signal head need to be replaced every 10 years
  - New operations (flashing yellow left turn arrows) become available to improve traffic flow
- New traffic signals or crosswalk devices are installed occasionally throughout the city
- Railroad quiet zones

# 2022 PROJECTS

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## FEDERAL AID PROJECTS

32 Ave S from 32 St S to 22 St S

## WATER MAIN REPLACEMENT AND/OR STREET RECONSTRUCTION PROJECTS

21 St S from 13 Ave S to 9 Ave S

7 Ave N from 2 St N to Elm St; Oak St from 7 Ave to BNSF RR

3 Ave N from 10 St N to 7 St N; 7 St N from 2 Ave N to 4 Ave N

4 St N from Main Ave to 1 Ave N

# 2023 PROJECTS

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## FEDERAL AID PROJECTS

52 Ave S from 63 St S to Sheyenne

Main Ave from 25 St to University Dr

## WATER MAIN REPLACEMENT AND/OR STREET RECONSTRUCTION PROJECTS

8 St S from 9 Ave S to 13 Ave S

7 Ave S from 4 St to East; 8 Ave S from 4 St to East

2 Ave N from Broadway to 4 St N

# 2024 PROJECTS

FEDERAL AID PROJECTS
32 Ave S from 22 St S to University Dr
WATER MAIN REPLACEMENT AND/OR STREET RECONSTRUCTION PROJECTS
1 St N from 32 Ave N to 35 Ave N
Evergreen Rd N and Longfellow Rd N from 28 Ave N to 29 Ave N; 29 Ave N from Elm to Longfellow
3 Ave N from Broadway Alley to 4 St N; 5 St N from 3 Ave N to 4 Ave N
6 Ave S from 4 St to East; 9 Ave S from 4 St to East
4 St N from 1 Ave N to 6 Ave N

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# 2021 – 2024 CAPITAL IMPROVEMENT PLAN (CIP)

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*Questions?*