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Mid-Town Street Imp. Dist. 215

Public Input Meeting
Mandan, North Dakota
November 6, 2019

City Engineer – Justin Froseth, PE
Moore Engineering, Inc. - Jerod Klabunde & Jim Jackson

THE INFORMATION
PROVIDED IS BASED ON
A DRAFT REPORT, MAPS
AND ESTIMATES ARE
SUBJECT TO CHANGE.



About Moore Engineering



- **Mission:**
 - “Improving lives by building strong communities.”
- **Engineer for:**
 - 92 cities in North Dakota
 - 30 cities in Minnesota
 - 20,000 Projects since 1961



Topics



- Map of Project Areas
- Need for Improvements
- Schedule, Scope and Costs
- Assessments, Past Projects & Policy
- Procedure and Protest Period
- Questions and Answers

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Mid-Town Neighborhood Evaluation



Primary Objectives:

- Asphalt Streets
- Curb and Gutter
- ADA Compliance
- Water System
- Sanitary Sewer
- Storm Sewer
- Alleys
- Lighting
- Signs & Pavement Markings

Not evaluated:

- Private Driveways
- *Sidewalks

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Need for Improvements



City of Mandan - Major Planning Efforts:

- Storm Water Master Plan
- 2020 Water Main Replacement
- Sanitary Sewer Televising & Extension
- School Safety Study
- Lighting Needs
- Complete larger projects, economy of scale

Need for Improvements



▪ **Flexible Pavement – Hot Bituminous Pavement (HBP)**

- Ingredients in flexible pavement
- Aggregates
- Asphalt Cement Binder



Why do pavements fail?



- **Two main causes of deterioration**
 - Environmental - Weathering & Aging (Residential)
 - Structural - Traffic Loadings (Oil Fields)

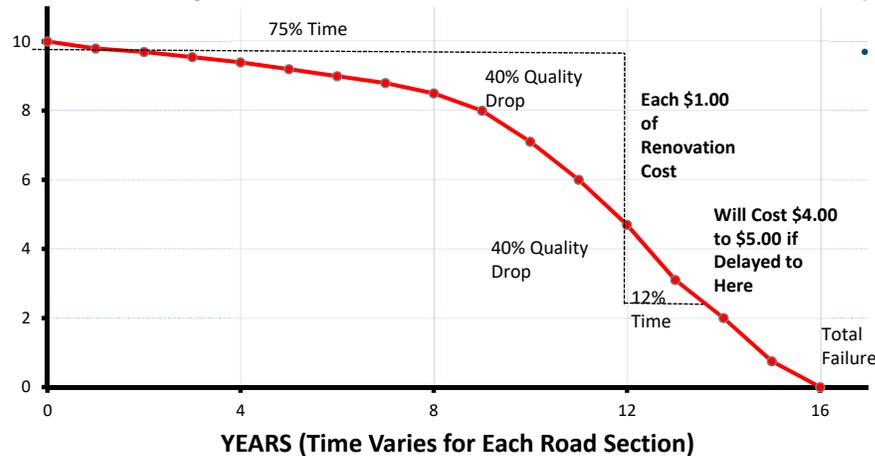


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Normal Pavement Deterioration



Cost of 'Timely' Maintenance



Street Improvement Schedule:

- Typical Design Life is 15-20 years
- Neighborhood has gotten +30 years

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Typ. Deterioration Progression



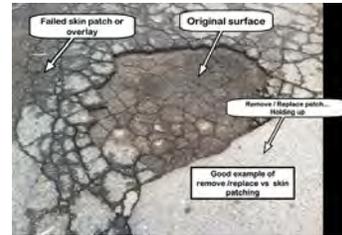
Typical 5-10 Year Old Pavement



Typical 10-15 Year Old Pavement



Alligator Cracking



Pavement Conditions



Pavement Conditions



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Pavement Conditions



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Pavement Conditions



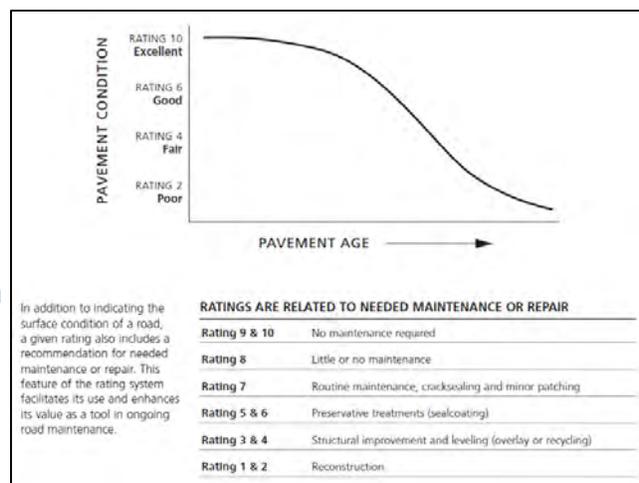
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Evaluating Pavement Condition



- **PASER Manual for Asphalt Roads**
 - Pavement Surface Evaluation Rating (PASER)
 - Developed by Transportation Information Center at the University of Wisconsin-Madison
- **Establishes baseline of condition**
 - Not related to a proposed treatment
 - Performed by visual inspection



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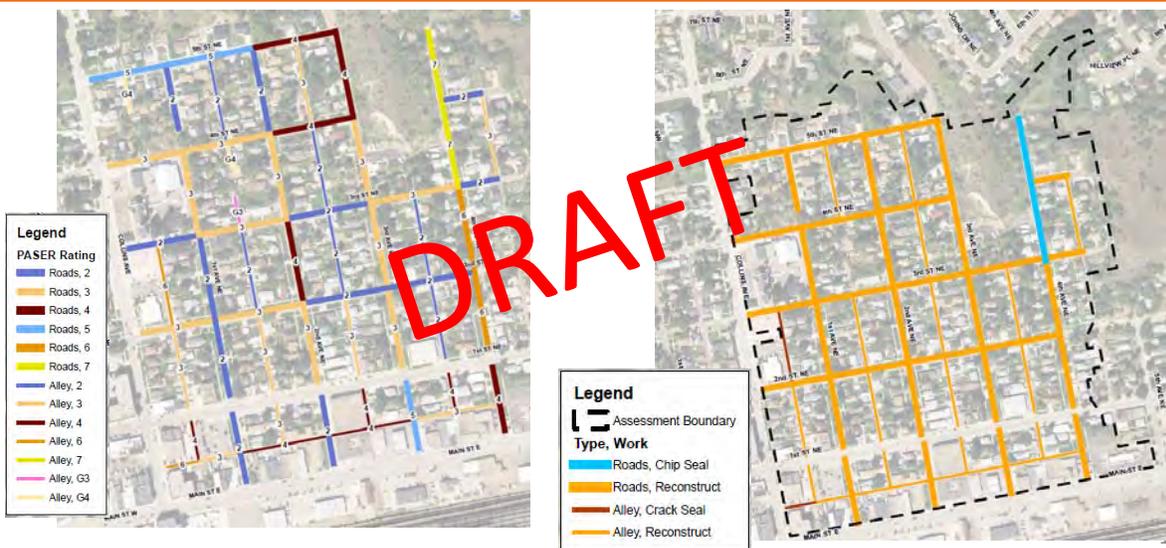
Evaluating Asphalt Pavements



- **Additional conditions beyond visual inspections**
 - Understand the environment
 - Truck Traffic
 - Drainage
 - Soil Conditions
 - Groundwater
 - Understand what is causing failures to avoid temporary fix



Asphalt Evaluation & Recommendations (20 Year Design Life)



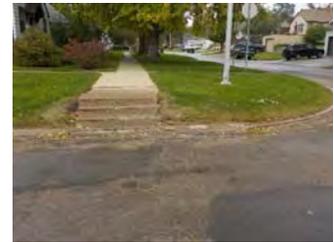
Timing: Other Needs

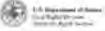


- Infrastructure Replacement
 - Lighting



- Tripping Hazards
 - Inadequate ADA Access
- Signs & Striping





 Department of Justice/Department of Transportation
 Joint Technical Assistance on the Title II of the
 Americans with Disabilities Act Requirements to
 Provide Curb Ramps when Streets, Roads, or Highways
 are Altered through Resurfacing

Street Lighting Improvements



Replace these Wooden Poles with Metal Poles



Retrofit these Lights to energy efficient LED fixtures

- Replace wiring to all street lights

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Water System Improvements



Old Cast Iron Water Pipe



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Sanitary Sewer Improvements



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Storm Water & Drainage



• Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

• Key Requirements

- Grade
 - ...where pedestrian access routes are...within a street or highway right-of-way, the grade ...shall not exceed the general grade established for the adjacent street or highway. Where pedestrian access routes are not contained within a street or highway right-of-way, **the grade of pedestrian access routes shall be 5 percent maximum**
- Cross Slope
 - ...the cross slope...shall be 2 percent maximum.

• What does this mean?

- Locations where existing sidewalk has a 2% cross slope and a running slope greater than 5% but the street is also at the same running slope are within the standards.
- **Existing stairs...are not...eliminated unless if that portion of sidewalk is being altered.**



City will be making reasonable improvements?



- **Reasonable**
 - Providing alternate sidewalk route around stairs (Limited route Length i.e. building 300' of sidewalk around a single set of stairs is unreasonable)
 - Removing single steps (potentially double) and replacing with a higher sloped sidewalk meeting the technical requirements
- **Unreasonable**
 - Building switchback ramps to avoid stairs
 - Building Large Extensive Retaining Walls

SE Quad – 5th Street & 2nd Avenue



- **Reasonable**
 - Provide alternate sidewalk route along back of curb and tie into existing sidewalk near driveway

2nd Avenue Between 4th & 5th Street



- **Unreasonable**

- Would require significant retaining walls and fill

2nd Avenue Between 4th & 5th Street



- **Reasonable**

- Single step to be eliminated by removing sidewalk back and replacing with a higher sloped sidewalk

4th Street Between 2nd & 3rd Avenue



- **Reasonable**

- Steps to be eliminated by removing sidewalk back and replacing with a higher sloped sidewalk.

4th Street Between 1st & 2nd Avenue



- **Unreasonable**

- Would require “Switchback” ramp and retaining wall

4th Street Between 1st & 2nd Avenue



▪ Unreasonable

- Would require “Switchback” ramp and significant retaining wall

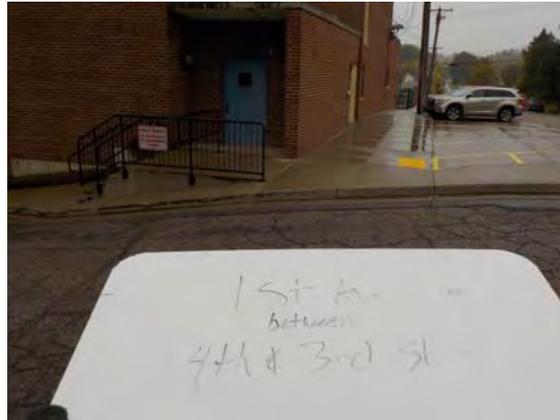
SE Quad – 1st Avenue & 4th Street



▪ Reasonable

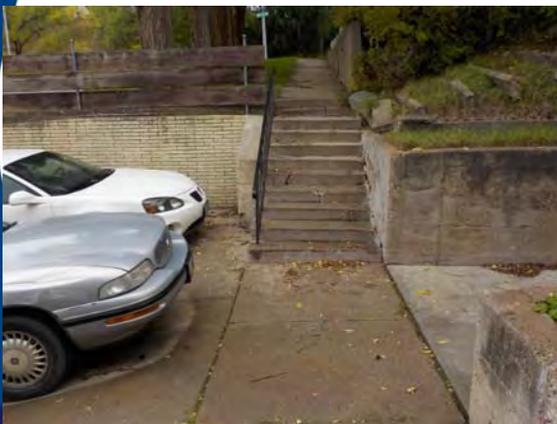
- Relocate Hydrant and direct ramp down to midpoint of curb return

SW Quad – 1st Avenue & 4th Street



- **Reasonable**
 - Widen sidewalk along stairs to meet width requirement. Allowable for sidewalk to follow the roadway grade.

1st Avenue Between 4th & 3rd Street



- **Unreasonable**
 - Would require additional ROW, “Switchback” ramp and significant retaining wall

NE Quad – 1st Avenue & 3rd Street



- **Reasonable**
 - Provide sidewalk ramp behind hydrant that ties into upper sidewalk.

SE Quad – 1st Avenue & 3rd Street



- **Reasonable**
 - Provide sidewalk ramp between the roadway and existing sidewalk that into upper sidewalk

Costs, Funding and Repayment



- **Assessment District Policy**
 - Roadway & Lighting Improvements: Front Footage
 - Impact Fee
 - Storm Sewer Improvements: Contributing Area
 - Water Main & Sewer Improvements: City Utility Fund
- **Front Footage (FF)**
 - Roadway 15,666 FF
 - Residential Alley 6,599 FF
 - Commercial Alley 3,520 FF
 - Area Impact Fee
 - Commercial vs. Residential
 - Contributing Area - 2.8 Million FT²



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Engineer's Opinion of Project Cost



- **Street and Lighting Improvements (\$4.0M)**
 - Approximate Assessment per Front Foot - \$240-\$250
- **Alley Improvements**
 - Approximate Assessment per Front Foot - \$55-\$65
- **Storm Sewer Improvements (\$900K-\$1,000K)**
 - Approximate Assessment per Square Foot - \$0.35
- **Project Funding**
 - Low Interest Loans Available for City (AA Rating)
 - Market Rates are currently estimated at 3.5-4% Interest Loan
 - Repayment – 20 years for street projects
 - Assessments Can Pay off day 1 with zero interest



Estimated Assessments

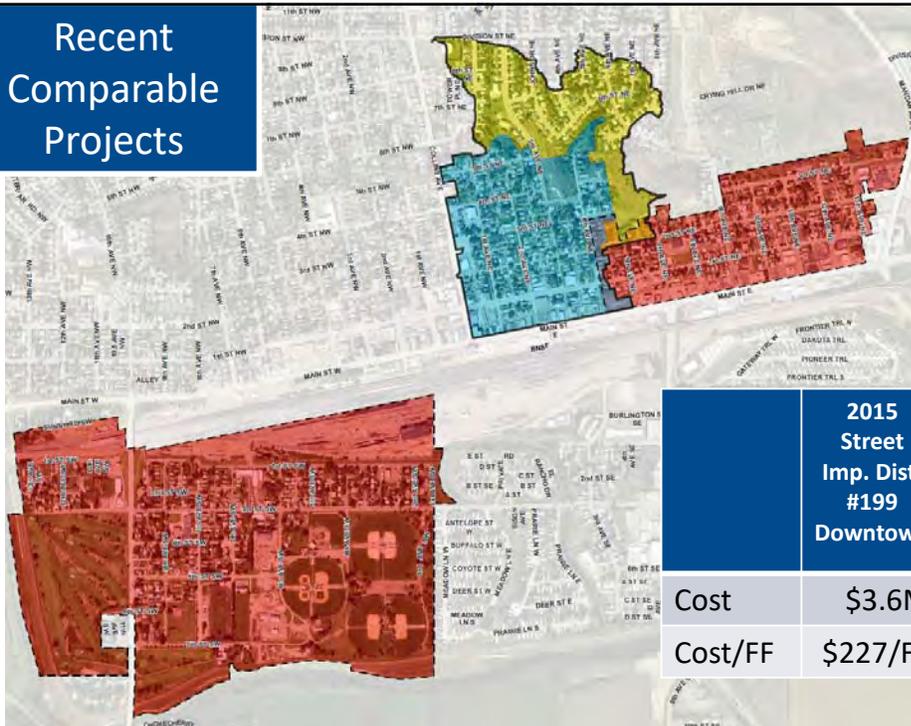


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		50' Lot	75' Lot	100' Lot
Street	Total Assessment	\$12.4K	\$18.5K	\$24.7K
	Annual Payment	\$870	\$1300	\$1740
Alley	Total Assessment	\$2.8	\$4.1K	\$5.5K
	Annual Payment	\$195	\$290	\$390
Storm Sewer	Total Assessment	\$2.5K	\$4.9K	\$7.4K
	Annual Payment	\$175	\$345	\$520

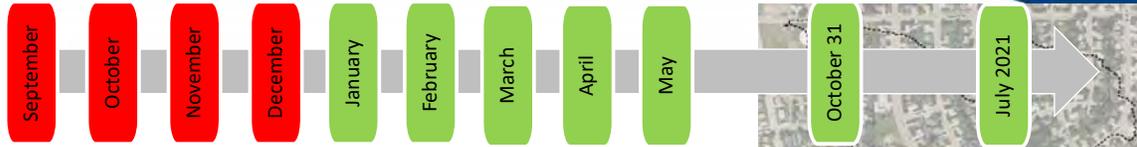
*Calculated with \$247/FF with 3.5% interest over 20 years.

Recent Comparable Projects



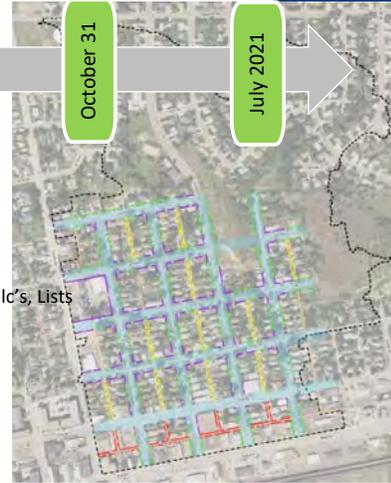
	2015 Street Imp. Dist. #199 Downtown	2018 Street Imp. Dist. #213 Southside	2019 Street Imp. Dist. #215 Midtown
Cost	\$3.6M	\$7.0M	\$4.0M
Cost/FF	\$227/FF	\$188/FF	\$247/FF

Overall Project Schedule



Project Concept Report, 30% Design

- Topographic Survey & Pavement Ratings
- Geotech & Pavement Design
- Lighting, Alleys, Decorative
- Storm Sewer Modeling & Design
- Sanitary Sewer Televising
- Water Distribution System
- ADA Challenges
- Traffic & Detour Routes
- Public Input Meetings
- Finalize 30% Design
- Assessment District Maps, Calc's, Lists
- Develop Project Alternates
- ID Right-of-Way Challenges
- Final Project Concept Report
- Resolution of Necessity



Project Schedule



- Preliminary Assessment List
- Resolution of Necessity
 - Anticipated in December
- Letters to Residents
- Review Protests
- Determine Sufficiency of Protests
 - Anticipated in January

IMPROVEMENTS BY SPECIAL ASSESSMENT CITY ATTORNEY CHECKLIST - IMPROVEMENT DISTRICT

- Create the improvement district by resolution. 40-22-08
- Direct the Engineer to prepare the Engineer's Report. 40-22-10
- Approve the Engineer's Report. 40-22-11
- Adopt a Resolution of Necessity (except water or sewer or petition of majority). 40-22-15
- Publish Resolution of Necessity one (1) week for two (2) weeks.
- 30 days to file protests after date of first publication.
- Hearing at next meeting to determine sufficiency of protests and a majority of area protesting is bar to proceeding.
- Direct Engineer to prepare detailed plans and specifications. 40-22-11
- Approve plans and specifications and file with City Auditor. 40-22-11 and 14
- Check with Funding Agencies for Approval to Advertise for Bids.
- Direct City Auditor to Advertise for Bids in official newspaper and in trade publication. 40-22-19 and 48-01-03
- Publish Ad for bids one (1) Week for two (2) consecutive weeks. 40-22-19 and 48-01-1-03
- Bid opening not less than 14 days after 1st publication. 48-01-1-03
- Determination as to type of paying if applicable. 40-22-28
- Bidders bond (5%) and contractor's license required. 48-01-1-05
- Bids entered on minutes and referred to Engineer for Statement of Estimated Costs. 40-22-29
- Accept bid and award contract (unless more than 40% over estimate) or reject all bids. 48-01-1-07
- Bond required for Performance and Payment. 48-02-06.2
- Construction contract. 40-22-35 and 36
- Issued improvement warrant/bonds. 40-24-10

Project Process



- **Protests should be submitted in writing prior to public hearing. NDCC 40-22-17.**
- **If a majority of property owners within the project area protest the project, the project cannot proceed.**
- **If the project does proceed, the intent would be to bid the project this winter in time for construction to begin in 2020.**



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Looking for Public Input

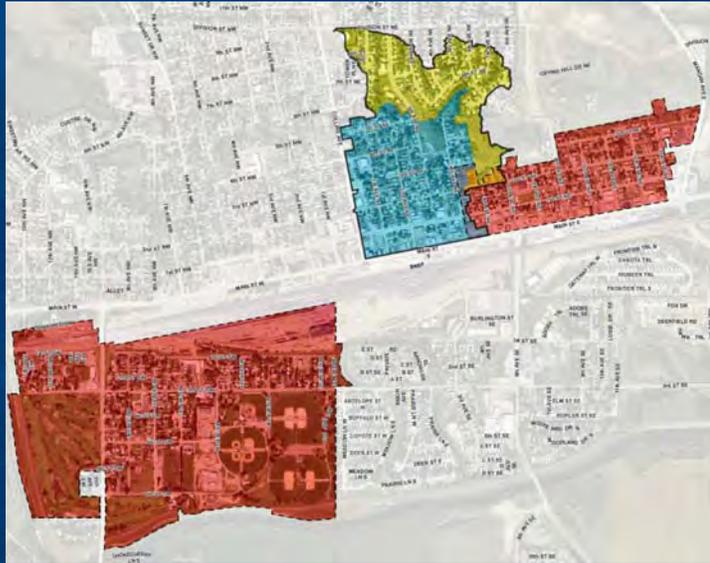
- Questions?
- Concerns?
- General feelings?
- Are there other improvements desired?
 - Reconstruct alleys?
 - Decorative lighting?
 - Pedestrian trails?
- How can I provide feedback?
 - Survey Cards
 - Written Comments



moore
engineering, inc.

Written Comments:

Mandan City Hall
Attn: Engineering Dept.
205 Second Avenue NW
Mandan, ND 58554



Contact Engineer :

Email: jerod.klabunde@mooreengineeringinc.com
Telephone: 701.751.8380