AGENDA
CITY COMMISSION
JANUARY 20, 2026
ED "BOSH" FROEHLICH MEETING ROOM
MANDAN CITY HALL
5:00 PM
WWW.CITYOFMANDAN.COM

The public may access the LIVE meeting at:	
Watch & Listen	***Listen***
Government Access (Midcontinent) cable channels 2 & 602 HD Streaming LIVE at: tinyURL.com/FreeTV-602 and on Roku or Apple TV	*Radio Access 102.5 FM RadioAccess.org*
Dial: *+1 312 626 6799*	***Web:*** *https://us02web.zoom.us/j/86033747071*

The City of Mandan is encouraging citizens to provide their comments for agenda items via email to info@cityofmandan.com. Please provide your comments before Noon on the day of the meeting. Include the agenda item number your comment references. Comments will be forwarded to the Commissioners and appropriate departments.

A. ROLL CALL

1. Roll call of all City Commissioners

B. THE PLEDGE OF ALLEGIANCE

C. ANNOUNCEMENTS

1. New Employee Introductions

a. Abigail Varner - Real Property Appraiser Tech

2. Golden Shovel Award Nominations Accepted Through February 1

3. State of the Cities - February 3

4. Project Update

D. PUBLIC COMMENT

E. APPROVAL OF AGENDA

F. MINUTES

1. Consider approval of the January 6, 2026 Board of City Commission Meeting Minutes

2. Consider approval of the January 13, 2026 Board of City Commission Special Meeting Minutes

G. PUBLIC HEARING

1. Consider a variance for Lots 1 & 2, Block 1, North Prairie Second Subdivision

H. BIDS

I. CONSENT AGENDA

1. Consider Abatements

a. 2025 Veterans Credit Abatement for Joshua Boehm

2. Consider a minor plat for Mandan Hill First Addition Replat Lot 20, Block 1

3. Consider a minor plat for Heart Ridge 5th Addition

4. Consider approval of a raffle permit for Off the Grid Ministries

5. Consider appointing Micaela Ranisate, Ben Kappel, and Sarah Johnston to the Community Beautification Committee

6. Consider approval of 2026 Compensation Study and Budget Amendment

7. Consider approval of updates to the Human Resources Generalist job description

8. Consider the following Gaming Site Authorizations:

a. Mule Deer Foundation at Baymont Inn & Suites on February 21, 2026

b. Fort Abraham Lincoln Foundation at Lonesome Dove through June 30, 2026 (additions)

9. Consider approval of Monthly Bills

J. OLD BUSINESS

K. NEW BUSINESS

1. Update on activities of the Bismarck Mandan Chamber EDC

2. Consider rewrite of Stormwater Design Manual and ordinance update

L. RESOLUTIONS AND ORDINANCES

1. Introduction and first consideration of Ordinance No. 1481, Relating to On-Call Pay

2. Introduction and first consideration of Ordinance No. 1483 Stormwater Rewrite *(Documentation Forthcoming)*

M. OTHER BUSINESS

N. FUTURE MEETING DATES FOR BOARD OF CITY COMMISSIONERS

-
    - Tuesday, February 3, 2026, at 5:30 p.m.
    - Tuesday, February 17, 2026, at 5 p.m.
    - Tuesday, March 3, 2026, at 5:30 p.m.

O. ADJOURN

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 14, 2026
SUBMITTING DEPARTMENT: Administration
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Jim Neubauer, City Administrator
SUBJECT: State of the Cities

STATEMENT/PURPOSE:
State of the Cities announcement

BACKGROUND/ALTERNATIVES:
Join the Chamber EDC for the 2026 State of the Cities event on Tuesday, February 3rd at the Bismarck Event Center, Hall A. At this event, the Bismarck and Mandan mayors will speak about the challenges and successes our community has faced throughout the past year and what we can look forward to in Bismarck-Mandan in the upcoming year. There will also be a keynote address from national economist Michael H. Shuman to provide valuable perspective on our future economic outlook at a national level.

Event check-in and a pre-event social featuring a coffee bar will begin at 7:00am, with the main event to follow from 8-9:30am.

The cost to attend is $75 for Chamber EDC Members and $125 for General Admission. For more information about the event or tickets contact Tate Mills, tmills@bmcedc.com, or call the Chamber EDC office, 701-223-5660.

ATTACHMENTS:
None

FISCAL IMPACT:
n/a

STAFF IMPACT:
n/a

LEGAL REVIEW:
n/a

RECOMMENDATION:
n/a

SUGGESTED MOTION:
n/a

The Mandan City Commission met in regular session at 5:30 PM on January 6, 2026 in the Ed "Bosh" Froehlich Meeting Room at City Hall, Mandan, North Dakota. Mayor Froelich called the meeting to order.

A. ROLL CALL

1. *Roll call of all City Commissioners*. Those present were Dennis Rohr, Mike Braun, James Froelich, Craig Sjoberg, Ryan Heinsohn. Department heads present were City Administrator Neubauer, Finance Director Welch, Assistant Finance Director Schulz, Assessor Markley, Human Resource Director Berger, City Engineer Wigness, Assistant City Engineer McAdoo-Roesler, Deputy Chief Bier, Building Official Singer, Fire Chief Bitz, Public Works Director O'Keefe, Business Development & Communications Director Cermak, Contracted Planner Laqua, CIS Manager Mischel, Administrative Assistant Newman, and Attorney Oster.

B. THE PLEDGE OF ALLEGIANCE

C. ANNOUNCEMENTS

1. *2026 Homestead, Veterans & Primary Residence Credit Programs*. City Assessor Markley presented.

2. *Update and Thank You's on New Year's Eve Celebration - Mandan Progress Organization, Matt Schanandore*. Mandan Progress Organization Executive Director Matt Schanandore presented.

3. *Project Updates*. City Engineer Wigness presented.

D. PUBLIC COMMENT There was one public comment prior to the meeting.

E. APPROVAL OF AGENDA Commissioner Braun moved and Commissioner Sjoberg seconded to approve. Roll Call vote: Aye 5, Nay 0. The motion passed.

F. MINUTES

1. *Consider Approval of the December 16, 2025 Board of City Commission Meeting Minutes*. Commissioner Heinsohn moved and Commissioner Rohr seconded to approve. Roll Call vote: Aye 5, Nay 0. The motion passed.

G. PUBLIC HEARING

1. *Consider an amendment to a Special Use Permit by amending the proposed site plan for Lot 1, Block 1, Bridgeview Bay Addition*. City Building Official Singer presented. Mayor Froelich opened the public hearing and invited the public to come forward to comment. A second and third invitation for comment was given. Hearing none, the public hearing closed. Commissioner Sjoberg moved and Commissioner Braun seconded to recommend approval of the amendment to the special use permit by amending the proposed site plan to the presented site plan, for 2600 Marina Road SE. Roll Call vote: Aye 5, Nay 0. The motion passed.

2. *Consider a resolution determining the sufficiency/insufficiency of protests for Street Improvement District 241 (Red Trail)*. City Engineer Wigness presented. Mayor Froelich opened the public hearing and invited the public to come forward to comment. A second and third invitation for comment was given. Hearing none, the public hearing closed.

H. BIDS

1. *Consider awarding bids for the Terra Vallee Decommissioning project*. Assistant City Engineer McAdoo-Roesler presented. Commissioner Braun moved and Commissioner Sjoberg seconded

to award the bid for Terra Vallee Decommissioning to Crow River Construction. Roll Call vote: Aye 5, Nay 0. The motion passed.

I. CONSENT AGENDA Commissioner Braun moved and Commissioner Heinsohn seconded to approve. Roll Call vote: Aye 5, Nay 0. The motion passed.

1. *Consider the 2026 budget amendment and contract Amendment 2, with Interstate Engineering for planning department assistance*.

2. *Consider Abatements*.

a. *2024 Veterans Credit Abatement for Brady Wolf*.

b. *2025 Veterans Credit Abatement for Johnathan Allen*.

c. *2025 Veterans Credit Abatement for Soma/Torger*.

3. *Consider a change order related to the 2026 Pierce Fire Truck*.

4. *Consider designation of financial institutions as depositories for City's funds*.

5. *Consider approval of a raffle permit for Knife River Corporation*.

6. *Consider Approval of Morton Mandan Public Library's Destination Grant Agreement*.

7. *2026 Appointments to the Mandan Growth Fund Committee*.

8. *2026 Appointments to the Renaissance Zone Committee*.

J. OLD BUSINESS

K. NEW BUSINESS

1. *Consider a task order amendment to proceed with design for the Red Trail reconstruction project*. City Engineer Wigness presented. Commissioner Heinsohn moved and Commissioner Sjoberg seconded to approve Amendment 1 of Task Order 9, as presented. Roll Call vote: Aye 5, Nay 0. The motion passed.

2. *Consider an engineering agreement and submitting a State Water Commission funding application for Area 2B (near Roosevelt Elementary)*. City Engineer Wigness presented. Commissioner Sjoberg moved and Commissioner Heinsohn seconded to approve Task Order 11, as presented and to authorize the submission of the State Water Commission application, as presented. Roll Call vote: Aye 5, Nay 0. The motion passed.

3. *Consider entering into an agreement with EAPC Architects for Fire Station 3*. Fire Chief Bitz presented. Commissioner Rohr moved and Commissioner Heinsohn seconded to allow staff to enter into agreement with EAPC Architects and amend the 2026 Fire Department Budget as presented. Roll Call vote: Aye 5, Nay 0. The motion passed.

L. RESOLUTIONS AND ORDINANCES

1. *Second consideration of Ordinance 1482, a zone change from RM - Residential Multi Family and Agriculture to RM - Residential Multi Family for Big Sky Estates 8th Add.*. Planner Laqua presented. Commissioner Heinsohn moved and Commissioner Sjoberg seconded to approve the second consideration of Ordinance 1482. Roll Call vote: Aye 5, Nay 0. The motion passed.

2. *Consider a resolution determining the sufficiency/insufficiency of protests for Street Improvement District 241 (Red Trail)*. City Engineer Wigness presented. Mayor Froelich opened the public hearing and invited the public to come forward to comment. A second and third invitation for

comment was given. Hearing none, the public hearing closed. Commissioner Rohr moved and Commissioner Sjoberg seconded to approve. Roll Call vote: Aye 5, Nay 0. The motion passed.

M. OTHER BUSINESS

N. FUTURE MEETING DATES FOR BOARD OF CITY COMMISSIONERS

Tuesday, January 13, 2026 at 2 p.m., Working Session - Financing Options for Public Facility Projects.

Tuesday, January 20, 2026 at 5 p.m..

Tuesday, February 3, 2026 at 5:30 p.m..

Tuesday, February 17, 2026 at 5 p.m..

Tuesday, March 3, 2026 at 5:30 p.m..

O. ADJOURN There being no other business to come before the Board, the meeting adjourned at 6:14 p.m.

James Neubauer
City Administrator

James Froelich
Board of City Commissioners

The Mandan City Commission met in special/working session at 2:00 PM on January 13, 2026 in the Veterans Conference Room at City Hall, Mandan, North Dakota. Mayor Froelich called the meeting to order.

A. ROLL CALL

1. *Roll call of all City Commissioners*. Those present were Dennis Rohr, Mike Braun, James Froelich, Craig Sjoberg, Ryan Heinsohn, Zac Ranisate with AE2S, Marty Doll with AE2S, John Lundby with Colliers Securities, and Scott Wagner. Department heads present were City Administrator Neubauer, Finance Director Welch, Assistant Finance Director Schulz, Assessor Markley, City Engineer Wigness, Police Chief Ziegler, Deputy Police Chief Bier, Building Official Singer, Fire Chief Bitz, Business Development & Communications Director Cermak, Communications Specialist Schmidt, Administrative Assistant Newman, and Attorney Oster.

B. THE PLEDGE OF ALLEGIANCE

C. APPROVAL OF AGENDA

Commissioner Heinsohn moved and Commissioner Braun seconded to approve. Roll Call vote: Aye 5, Nay 0. The motion passed.

D. NEW BUSINESS

1. *Public Facility Projects Discussion*. Financing alternatives such as property tax and sales tax were discussed relative to Waste Water Treatment Plant improvements, potential northwest Fire Station, City Hall and future police department facilities.

E. FUTURE MEETING DATES FOR BOARD OF CITY COMMISSIONERS

- *Tuesday, January 20, 2026 at 5 p.m.*
- *Tuesday, February 3, 2026 at 5:30 p.m.*
- *Tuesday, February 17, 2026 at 5 p.m.*

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F. ADJOURN

There being no other business to come before the Board, the meeting adjourned at 3:33 p.m.

James Neubauer City Administrator	James Froelich Board of City Commissioners

City Commission

Agenda Documentation

MEETING DATE:	January 20, 2026
PREPARATION DATE:	January 8, 2026
SUBMITTING DEPARTMENT:	Planning
DEPARTMENT DIRECTOR:	Jim Neubauer
PRESENTER:	Rachel LaQua, Interim Planner
SUBJECT:	Consider a variance for Lots 1 & 2, Block 1, North Prairie Second Subdivision

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STATEMENT/PURPOSE:
Consider an accessory structure variance at 5405 Highland Road N.

BACKGROUND/ALTERNATIVES:
Myron Schmidt requests consideration of a variance to Section 105-1-3 (4) of the City Code of Ordinances related to Incidental uses, Accessory Structures. The property is located at 5405 Highland Road N. The proposed structure would be larger than allowed based on code.

The code regarding Accessory Structures in R-7 reads: "*Size.* For R3.2, R4, R7, RH and RMH districts, the total square footage of all accessory buildings may not exceed ten percent of the lot area and the maximum size of any accessory building shall be no greater than 75 percent the size of the primary structure on the lot." The proposed structure is larger than 75% of the size of the primary structure, as it is proposed by 60'x120', a total of 7,200 sq ft.

in addition, this accessory structure will add an additional structure to Lots 1 & 2 (it is unclear which lot the new building will sit on).

Adjacent Properties Zoning, Land Use and Future Land Use
The properties surrounding this property are zoned R7 - Residential, with Agriculture further to the east. The future land use plan identifies this area as low and medium density residential.

Additional Information and Public Outreach
Application and fee of $400 was received on November 21, 2025.
Letters were sent to eight adjacent property owners.

Staff Comments
The requested storage building size is beyond what is allowed by the code in R-7. However, the lot is a large rural lot with much distance between neighboring properties, including a large tree row to the south. The owner intends to use the additional building to store items which are now stored outside. The use would not be allowable on its own on a lot, so the owner will need to sell the lots 1 & 2 together.

Findings of Fact
Variance
1. The hardship is caused by the provisions of the zoning ordinance. *(This hardship is caused because the code will not allow for an accessory building larger than the primary)*
2. Strict application of the provisions of the zoning ordinance would deprive the property owner the reasonable use of the property. *(nearby property owners also have large storage barn structures)*
3. The requested variance is the minimum variance that would accomplish the relief sought by the applicant. (*this building size is a standard size building)*
4. The granting of the variance is in harmony with the general purposes and intent of the zoning ordinance. *(The surrounding area operates as a rural residential area, though there is no rural residential zoning)*

ATTACHMENTS:
1. Application_Redacted
2. Additional Submittal
3. Location Map
4. Exhibit
5. North Prairie Second r

FISCAL IMPACT:
N/A

STAFF IMPACT:
minimal

LEGAL REVIEW:
This item has been reviewed as part of the agenda packet.

RECOMMENDATION:
The Planning & Zoning Commission recommended approval of a variance to Section 105-1-3 (4) of the City Code of Ordinances related to incidental uses of accessory structures for Lots 1 & 2, Block 1, North Prairie Second Subdivision due to the following hardship provision that is caused by city zoning ordinances that does not allow or

restrict this type of building and to modify the findings of fact, at the December 22, 2025 meeting.

SUGGESTED MOTION:

I move to approve the variance for Lots 1&2, Block 1, North Prairie Second Subdivision, for an accessory structure.

CITY OF MANDAN

Development Review Application

	Minor Plat ($300)		Zone Change ($600)
	Preliminary Plat up to 20 acres ($450)		Planned Unit Development ($700)
	Preliminary Plat more than 20 acres ($500)		Land Use and Transportation Plan Amendment ($1,000)
	Final Plat up to 20 lots ($450)		Vacation ($500)
	Final Plat 21 to 40 lots ($600)	X	Variance ($400)
	Final Plat more than 40 lots ($750)		Special Use Permit ($450)
	Annexation ($450)		Stormwater submittal ($300)
	Masterplanned Subdivision (not accepted without preliminary plat) ($250)		Stormwater 2nd & subsequent resubmittal ($50)
	Appeals to Administrative Denials (Variance to Non-zoning/Non-subdivision regulations) ($250)		Document Recording ($30)

Summary of Request (Add separate sheet(s) as necessary)

Build a machinery building to store equipment, tractors, baler, rake, etc. ~~THIS WILL CLEAN UP MY YARD AND IMPROVE YARD~~ appearance.

Engineer/Surveyor			Property Owner or Applicant		
Name			Name MYRON SCHMIDT		
Address			Address [redacted]		
City	State	Zip	City MANDAN	State ND	Zip 58554
email			[redacted]		
Phone	Fax		Phone [redacted]	Fax N/A	

If the applicant is not the current owner, the current owner must submit a notarized statement authorizing the applicant to proceed with the request.

Location		Type		Existing Zone	Proposed Zone	Project Name
City	ETA	New	Addition	R7	R7	

Property Address	Legal Description
5405 Highland Road N	Lots 1 + 2, Block 1
Current Use	
	North Prairie Second Subdivision
Proposed Use	
	Section 8 / Township 139 / Range 81

Parcel Size	Building Footprint	Stories	Building SF	Required Parking	Provided Parking
6.78 AC					

Print Name	Signature	Date
	[signature]	11-21-2025

Office Use Only

Date Received:	Initials: YM	Fees Paid: $400	Date 11-21-2025
Notice in paper	Mailed to neighbors	P&Z meeting	
Approved	Approved with conditions:		
Denied			

Additional Submittals

Variance

A zoning variance application shall include a detailed statement with the following information:

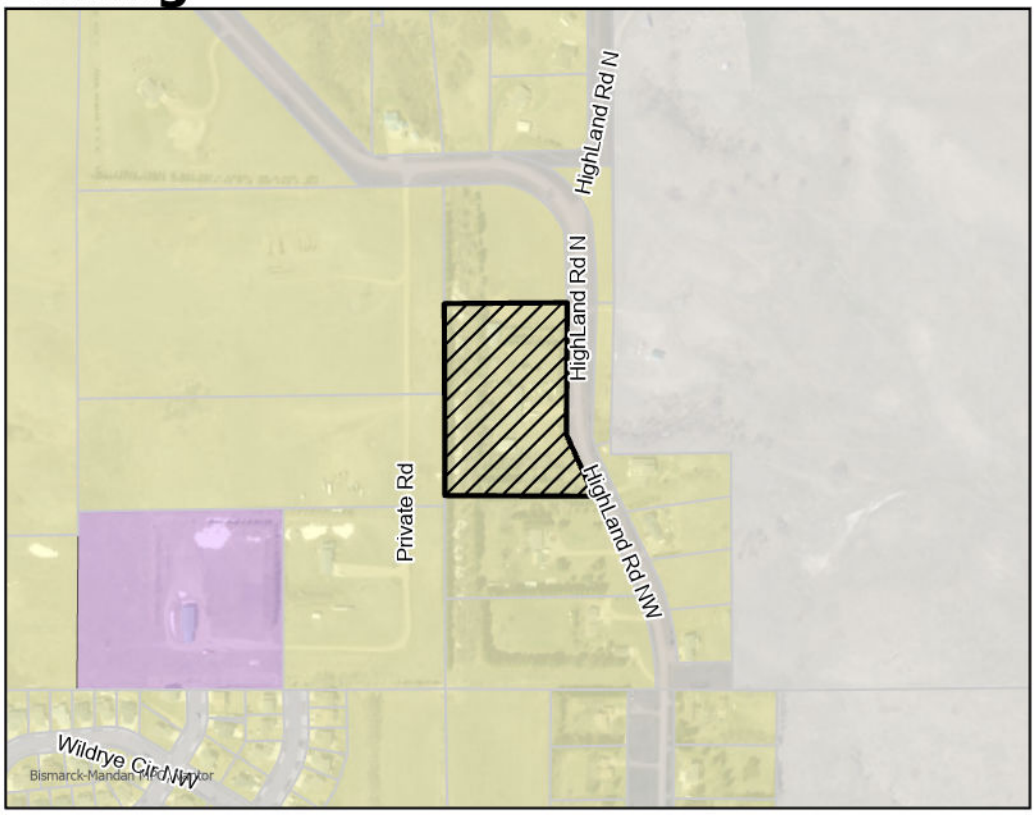
1. The circumstances or conditions applying to the land or buildings for which the variance is sought To store machinery & equipment inside to Protect from the elements and improve yard Appearance. this would allow to cut grass and prevent weed growth. Equipment would include Tractors, HAYBINE, Baler, rake, mower, skid steer and Attachments.
2. How the applicant is deprived of a reasonable use of said land or building;
   The Location is too small for becoming a residential Lot, However, It's a good fit for a storage building for my Equipment.
3. How the grant of a variance will not be injurious to the neighborhood or otherwise detrimental to the public welfare; and
   The building would be Located Far enough away from any easements and property boundry. the location would be surrounded by trees and mostly out of sight.
4. The minimum variance that will accomplish the relief sought.
   the minimum size building should be 50' x 100', I'm Looking at a 60' x 120' as an option.

The zoning map may be used to view the subject property and surrounding property's zoning and view property lines overlaid on an aerial. The zoning map may be found on the City's website at CityofMandan.com and selecting Departments → Engineering and Planning → Maps → Zoning Map or by clicking here if viewing this document digitally.

Zoning and Future Land Use Reference Map

North Prairie 2nd

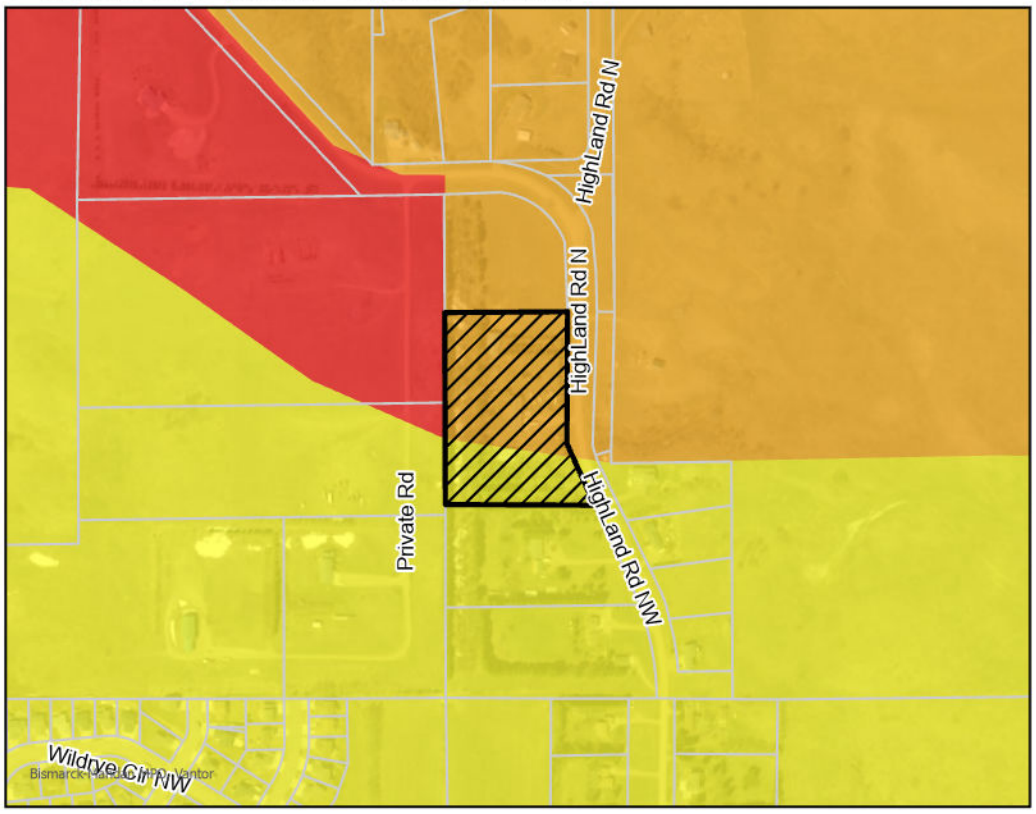
Zoning



Zoning Map Key

- Agriculture - City of Mandan
- Agriculture - Morton County
- CA - Neighborhood Commercial
- CB - Business Commercial
- CC - Commercial/Light Industrial Transition
- DC - Downtown Core
- DF - Downtown Fringe
- Industrial - Morton County
- LSMHS - Trailer Park Subdivision
- MA - Heavy Commercial/Light Industrial
- MB - Heavy Commercial/Heavy Industrial
- MC - Heavy Commercial/Light Industrial Restricted
- MD - Heavy Commercial/Heavy Industrial Restricted
- MHS - Trailer Park
- PUD - Planned Unit Development
- R3.2 - Residential Single & Two Family
- R7 - Residential Single Family
- RH - Residential Mobile Home Park
- RM - Residential Multi-family Dwellings
- RMH - Residential Mobile Home Subdivision
- Residential - County Residential Zoning
- ROW - Right-of-Way
- Proposed Site

Future Land Use Plan



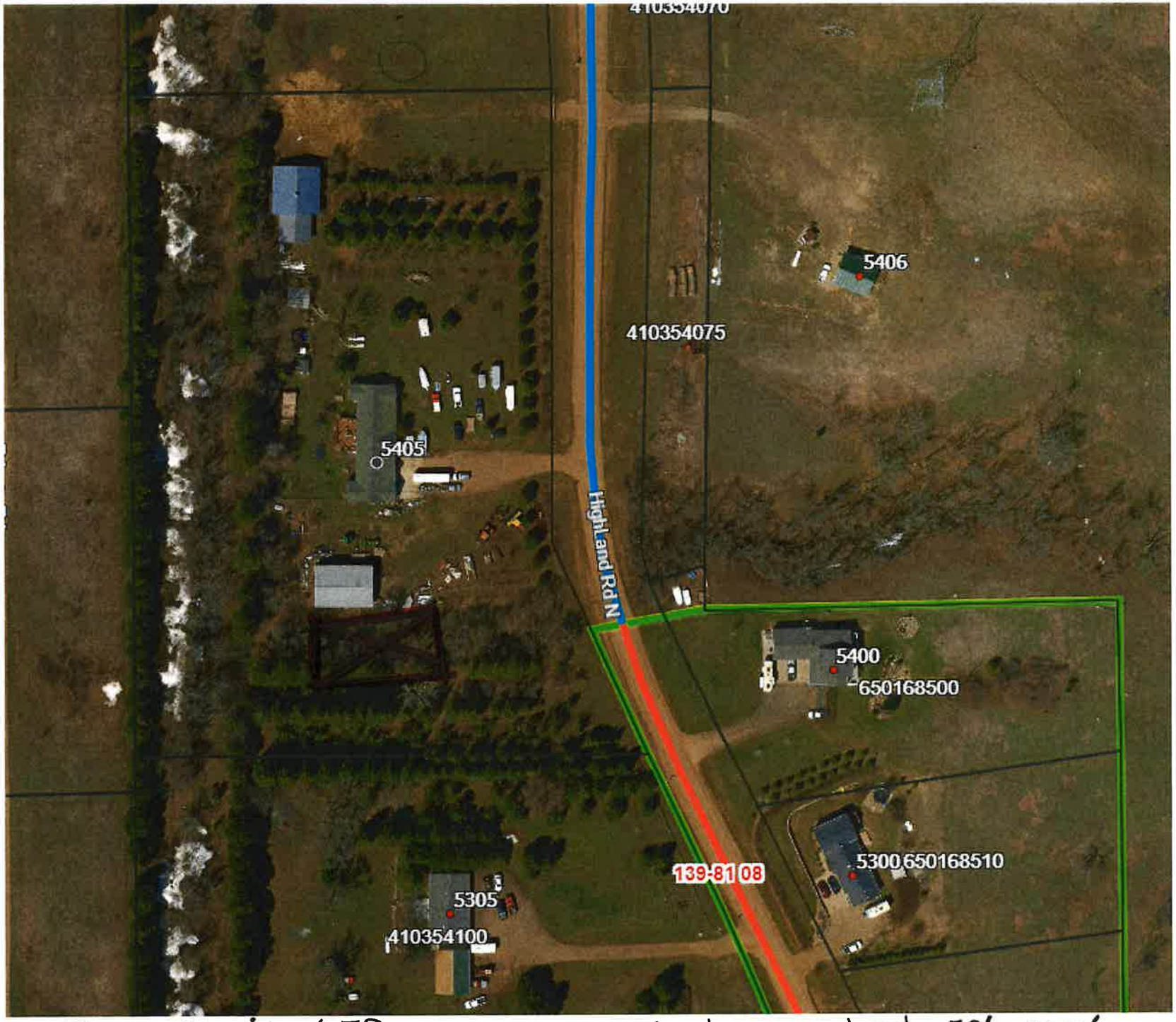
Future Land Use Plan Key

- Rural Residential
- Low Density Residential
- Medium Denstiy Residential
- High Density Residential
- Commercial
- Industrial
- Public/Semi-Public
- Public Land
- Park
- Greenways
- Open Space
- Open Water
- Proposed Site

0 0.1 0.2 0.4 Miles

N

City of Mandan
Planning Department
11/24/25



Property is 6.78 acres. Machine shed 50' x 100'

NORTH PRAIRIE SECOND SUBDIVISION

AUDITOR'S LOT C OF THE NORTHWEST 1/4 SECTION 8, T. 139 N., R. 81 W. MORTON COUNTY, NORTH DAKOTA

LYING WITHIN THE ONE MILE EXTRATERRITORIAL JURISDICTION OF THE CITY OF MANDAN, NORTH DAKOTA

DOC. NO. 345452
MIC.
TRACT
7-22-97
3:08 P.M.
Mary Stewart
R.O.D's

DESCRIPTION

ALL THAT PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWNSHIP 139 NORTH, RANGE 81 WEST OF THE 5TH PRINCIPAL MERIDIAN, MORTON COUNTY, NORTH DAKOTA, MORE FULLY DESCRIBED AS FOLLOWS.

BEGINNING ON THE EAST LINE OF THE NORTHWEST 1/4, 602.34 FEET NORTH OF THE CENTER OF SECTION 8, AT THE NORTHEAST CORNER OF PATIENCE SUBDIVISION, MORTON COUNTY, NORTH DAKOTA; THENCE NORTH 0 DEGREES 17 MINUTES 37 SECONDS WEST, ALONG THE WEST LINE OF THE NORTHWEST 1/4, A DISTANCE OF 2017.28 FEET TO THE NORTHEAST CORNER OF SAID NORTHWEST 1/4; THENCE SOUTH 88 DEGREES 18 MINUTES 11 SECONDS WEST, ALONG THE NORTH LINE OF SAID NORTHWEST 1/4, A DISTANCE OF 1653.52 FEET TO THE NORTHEAST CORNER OF NORTH PRAIRIE SUBDIVISION; THENCE SOUTH 43 DEGREES 09 MINUTES 10 EAST, ALONG THE EAST LINE OF SAID NORTH PRAIRIE SUBDIVISION, A DISTANCE OF 1252.01 FEET; THENCE NORTH 87 DEGREES 23 MINUTES 31 SECONDS EAST, CONTINUING ALONG SAID EAST LINE, A DISTANCE OF 249.66 FEET; THENCE SOUTH 0 DEGREES 12 MINUTES MINUTES 26 SECONDS EAST, CONTINUING ALONG SAID EAST LINE, A DISTANCE OF 1063.91 FEET TO THE NORTHWEST CORNER OF PATIENCE SUBDIVISION; THENCE SOUTH 89 DEGREES 45 MINUTES 17 SECONDS EAST, ALONG THE NORTH LINE OF PATIENCE SUBDIVISION, A DISTANCE OF 553.58 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED TRACT CONTAINS 40.00 ACRES, MORE OR LESS.

APPROVAL OF CITY PLANNING COMMISSION

THE SUBDIVISION OF LAND AS SHOWN ON THE ANNEXED PLAT HAS BEEN APPROVED BY THE PLANNING COMMISSION OF THE CITY OF MANDAN, ON THE 16th DAY OF June, 1997, IN ACCORDANCE WITH THE LAWS OF THE STATE OF NORTH DAKOTA, ORDINANCES OF THE CITY OF MANDAN AND REGULATIONS ADOPTED BY THE SAID PLANNING COMMISSION. IN WITNESS WHEREON ARE SET THE HANDS AND SEALS OF THE CHAIRMAN AND SECRETARY OF THE PLANNING COMMISSION OF THE CITY OF MANDAN, NORTH DAKOTA.

TERRIL BERNHARDT – CHAIRMAN

STEVE HOAGLUND – SECRETARY

APPROVAL OF BOARD OF CITY COMMISSIONERS

THE BOARD OF CITY COMMISSIONERS OF THE CITY OF MANDAN, NORTH DAKOTA, HAS APPROVED THE SUBDIVISION OF LAND AS SHOWN ON THE ANNEXED PLAT, HAS ACCEPTED THE DEDICATION OF EASEMENTS AS SHOWN THEREON AND HAS APPROVED THE GROUNDS AS SHOWN ON THE ANNEXED PLAT AS AN AMENDMENT TO THE MASTER PLAN OF THE CITY OF MANDAN, NORTH DAKOTA, AND DOES HEREBY VACATE ANY PREVIOUSLY PLATTED PROPERTIES THAT LIE WITHIN THE BOUNDARIES OF THE ANNEXED PLAT. THE FOREGOING ACTION OF THE BOARD OF CITY COMMISSIONERS OF THE CITY OF MANDAN, NORTH DAKOTA, WAS TAKEN BY RESOLUTION APPROVED THE 17 DAY OF June 1997.

THE FOREGOING ACTION OF THE BOARD OF CITY COMMISSIONERS OF MANDAN, NORTH DAKOTA, WAS TAKEN BY RESOLUTION APPROVED THE 17th DAY OF June, 1997.

ROBERT DYKSHOORN – MAYOR

ATTEST – KEVIN CHRIST
CITY AUDITOR

SURVEYOR'S CERTIFICATE

I, LARRY J. SMITH, A REGISTERED LAND SURVEYOR IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT THE ANNEXED PLAT IS A TRUE COPY OF THE NOTES OF A SURVEY PERFORMED UNDER MY SUPERVISION AND COMPLETED ON AUGUST 23, 1996, AND THAT ALL INFORMATION SHOWN HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

LARRY J. SMITH
REGISTERED LAND SURVEYOR
N.D. REGISTRATION NO. 2363

LARRY J. SMITH REGISTERED LAND SURVEYOR 2363 NORTH DAKOTA

STATE OF NORTH DAKOTA)
SS)
COUNTY OF BURLEIGH)

ON THIS 11th DAY OF July, 1997, BEFORE ME PERSONALLY APPEARED LARRY J. SMITH, KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING SURVEYOR'S CERTIFICATE AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME.

DAVID PATIENCE, NOTARY PUBLIC
BURLEIGH COUNTY, NORTH DAKOTA
MY COMMISSION EXPIRES AUGUST 24, 1998

APPROVAL OF CITY ENGINEER

I, THOMAS R. LITTLE, CITY ENGINEER FOR THE CITY OF MANDAN, NORTH DAKOTA, HEREBY APPROVE "NORTH PRAIRIE SECOND SUBDIVISION" MORTON COUNTY, NORTH DAKOTA AS SHOWN ON THE ANNEXED PLAT.

THOMAS R. LITTLE
CITY ENGINEER

THOMAS R. LITTLE REGISTERED PROFESSIONAL ENGINEER 1530 NORTH DAKOTA

OWNER'S CERTIFICATE & DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT MYRON F. SCHMIDT AND CARRIE L. SCHMIDT, BEING THE OWNER'S AND PROPRIETORS OF THE PROPERTY SHOWN ON THE ANNEXED PLAT HAVE CAUSED THAT PORTION DESCRIBED HEREON TO BE SURVEYED AND PLATTED AS "NORTH PRAIRIE SECOND SUBDIVISION" MORTON COUNTY, NORTH DAKOTA AND DO SO DEDICATE STREETS AS SHOWN HEREON INCLUDING ALL SEWER, CULVERTS, WATER AND GAS DISTRIBUTION LINES AND OTHER PUBLIC UTILITY LINES, WHETHER SHOWN HEREON OR NOT, TO THE PUBLIC USE FOREVER.

THEY ALSO DEDICATE EASEMENTS TO RUN WITH THE LAND, FOR GAS, ELECTRIC, TELEPHONE OR OTHER PUBLIC UTILITIES OR SERVICES ON OR UNDER THOSE CERTAIN STRIPS OF LAND DESIGNATED HEREON AS "UTILITY EASEMENTS".

MYRON F. SCHMIDT

CARRIE L. SCHMIDT

STATE OF NORTH DAKOTA)
SS)
COUNTY OF)

ON THIS 11th DAY OF July, 1997, BEFORE ME PERSONALLY APPEARED MYRON F. SCHMIDT AND CARRIE L. SCHMIDT KNOWN TO ME TO BE THE OWNERS THAT ARE DESCRIBED IN AND THAT EXECUTED THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME.

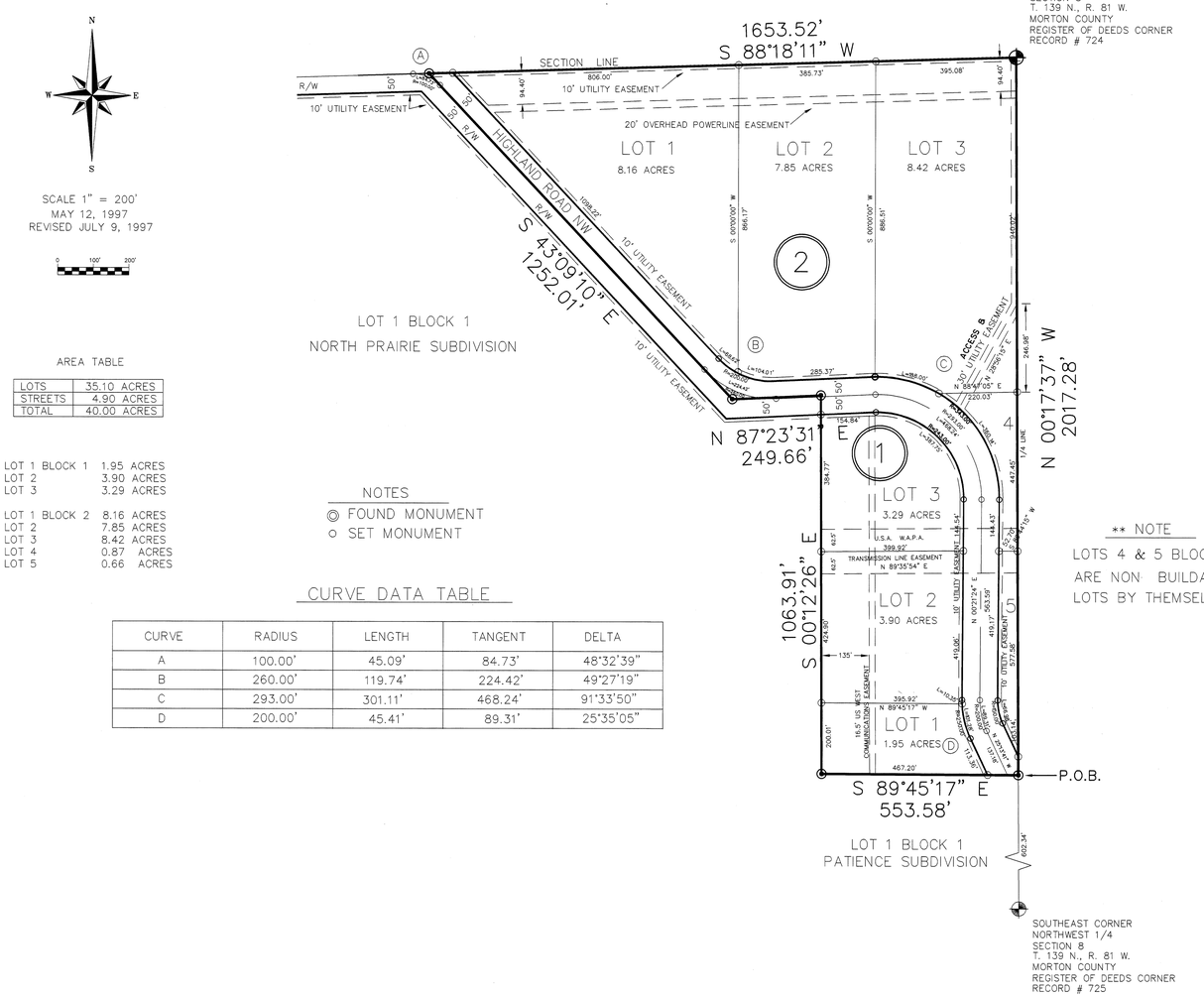
DAVE PATIENCE NOTARY PUBLIC
BURLEIGH COUNTY, NORTH DAKOTA
MY COMMISSION EXPIRES 8/24/98

Approved by Morton County Auditor's Office
Paul E. Trauger, County Auditor
By: Kathy Krance Deputy
Date: 7-22-97

Auditor's Office, Morton Co., N.D.
Delinquent Taxes and Special Assessments or instruments of Special Assessments, Paid and Transfer Accepted
7-22-97
PAUL E. TRAUGER, County Auditor
By Kathy Krance, Deputy

41-31200

$10.00 P.C.



AREA TABLE

LOTS	35.10 ACRES
STREETS	4.90 ACRES
TOTAL	40.00 ACRES

LOT 1 BLOCK 1	1.95 ACRES
LOT 2	3.90 ACRES
LOT 3	3.29 ACRES
LOT 1 BLOCK 2	8.16 ACRES
LOT 2	7.85 ACRES
LOT 3	8.42 ACRES
LOT 4	0.87 ACRES
LOT 5	0.66 ACRES

NOTES

◎ FOUND MONUMENT
○ SET MONUMENT

CURVE DATA TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA
A	100.00'	45.09'	84.73'	48°32'39"
B	260.00'	119.74'	224.42'	49°27'19"
C	293.00'	301.11'	468.24'	91°33'50"
D	200.00'	45.41'	89.31'	25°35'05"

** NOTE

LOTS 4 & 5 BLOCK 2 ARE NON BUILDABLE LOTS BY THEMSELVES

SWENSON, HAGEN & CO. P.C.
PLANNING CIVIL ENGINEERING SURVEYING
SITE DESIGN CONSTRUCTION MANAGEMENT
909 BASIN AVE P.O. BOX 1135 (701) 223-2600
BISMARCK, N.D. 58504 FAX (701) 223-2606

C:\FILEMAKER\PATRICA

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 5, 2026
SUBMITTING DEPARTMENT: Assessing
DEPARTMENT DIRECTOR:
PRESENTER: Kimberly Markley, City Assessor
SUBJECT: Consider Abatements

STATEMENT/PURPOSE:
Consider Abatements

BACKGROUND/ALTERNATIVES:

ATTACHMENTS:
None

FISCAL IMPACT:

STAFF IMPACT:

LEGAL REVIEW:

RECOMMENDATION:

SUGGESTED MOTION:

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 5, 2026
SUBMITTING DEPARTMENT: Assessing Department
DEPARTMENT DIRECTOR: Kimberly Markley
PRESENTER: Kimberly Markley, City Assessor
SUBJECT: Veterans Credit Abatement for Joshua Boehm

STATEMENT/PURPOSE:

To consider 2025 Application for Disabled Veterans Property Tax Credit for property located at 4212 41st Ave NW.

BACKGROUND/ALTERNATIVES:

This parcel is also known as parcel #65-0199000 with a legal description of Lot 5, Block 2, Crown Point Subdivision Replat.

Reason for Abatement: I have reviewed the Disabled Veterans Property Tax Credit Application and documentation, which are on file in my office. This applicant qualifies for the Disabled Veterans Property Tax Credit for 2025.

ATTACHMENTS:

1. Application for Abatement- Joshua Boehm
2. Disabled Veterans Flier

FISCAL IMPACT:

No fiscal impact to the City since the Tax Credit is reimbursed by the State of ND.

STAFF IMPACT:

N/A

LEGAL REVIEW:

Submitted to City Attorney Amy Oster

RECOMMENDATION:

I recommend a motion to recommend approval to the Morton County Commission of the 2025 Abatement Application for Joshua Boehm at 4212 41st Ave NW.

SUGGESTED MOTION:

I move to recommend approval to the Morton County Commission of the 2025 Abatement Application for Joshua Boehm at 4212 41st Ave NW as presented.

Application For Abatement Or Refund Of Taxes

North Dakota Century Code § 57-23-04

File with the County Auditor on or before November 1 of the year following the year in which the tax becomes delinquent.

State of North Dakota **Assessment District** CITY OF MANDAN

County of MORTON **Property I.D. No.** 65-0199000

Name BOEHM/JOSHUA N **Telephone No.**

Address 4212 41ST AVE NW, MANDAN, ND 58554-0000

RECEIVED
JAN 05 2026

Legal description of the property involved in this application:

LOT5 BLOCK 2 CROWN POINT SUBDIVISION REPLAT

Total true and full value of the property described above for the year 2025 **is:**

Land $

Improvements $

Total $ (1)

Total true and full value of the property described above for the year 2025 **should be:**

Land $

Improvements $

Total $ (2)

The difference of $ _____ true and full value between (1) and (2) above is due to the following reason(s):

- ☐ 1. Agricultural property true and full value exceeds its agricultural value defined in N.D.C.C. § 57-02-27.2
- ☐ 2. Residential or commercial property's true and full value exceeds the market value
- ☐ 3. Error in property description, entering the description, or extending the tax
- ☐ 4. Nonexisting improvement assessed
- ☐ 5. Complainant or property is exempt from taxation. Attach a copy of Application for Property Tax Exemption.
- ☐ 6. Duplicate assessment
- ☐ 7. Property improvement was destroyed or damaged by fire, flood, tornado, or other natural disaster (see N.D.C.C. § 57-23-04(1)(g))
- ☐ 8. Error in noting payment of taxes, taxes erroneously paid
- ☑ 9. Property qualifies for Homestead Credit (N.D.C.C. § 57-02-08.1) or Disabled Veterans Credit (N.D.C.C. § 57-02-08.8). Attach a copy of the application.
- ☐ 10. Other (explain)

The following facts relate to the market value of the residential or commercial property described above. For agricultural property, go directly to question #5.

1. Purchase price of property: $ Date of purchase:

   Terms: Cash Contract Trade Other (explain)

   Was there personal property involved in the purchase price? _____ (yes/no) Estimated value: $

2. Has the property been offered for sale on the open market? _____ (yes/no). If yes, how long?

   Asking price: $ Terms of sale:

3. The property was independently appraised: _____ (yes/no) Purpose of appraisal:

   Market value estimate: $

   Appraisal was made by whom?

4. The applicant's estimate of market value of the property involved in this application is $

5. The estimated agricultural productive value of this property is excessive because of the following condition(s):

Applicant asks that 2025 Vet credit

By filing this application, I consent to an inspection of the above-described property by an authorized assessment official for the purpose of making an appraisal of the property. I understand the official will give me reasonable notification of the inspection. See N.D.C.C. § 57-23-05.1.

I declare under the penalties of N.D.C.C. § 12.1-11-02, which provides for a Class A misdemeanor for making a false statement in a governmental matter, that this application is, to the best of my knowledge and belief, a true and correct application.

Signature of Preparer (if other than applicant) Date Signature of Applicant 12-8-25 Date

24775
(2-2016)

Additional Information

To qualify, veterans must meet all eligibility requirements and file an application with the local assessor or county director of tax equalization, by March 31 in the year that the property is assessed and credit is requested.

To obtain disability and honorable discharge documentation, please contact the North Dakota Department of Veterans Affairs at 1-866-634-8387.

The following table shows how taxable values may be reduced with the credit.

Disability %	Maximum Reduction
100%	$9,000
90%	$8,100
80%	$7,200
70%	$6,300
60%	$5,400
50%	$4,500

Office of State Tax Commissioner
Brian Kroshus
Tax Commissioner

600 E. Boulevard Ave., Dept. 127
Bismarck, ND 58505-0599
propertytax@nd.gov

701-328-3127 or 877-328-7088
800-366-6888 (TTD)

ND Tax
NORTH DAKOTA

Visit **tax.nd.gov** for more information.

Disabled Veterans

PROPERTY TAX CREDIT

OFFICE OF STATE TAX COMMISSIONER

ND Tax
NORTH DAKOTA

The Program

The Disabled Veterans Credit is a property tax credit program that is available to veterans of the United States Armed Forces with a service-connected disability. This credit may help reduce the taxable value of a residence and associated taxes due.

Eligibility Details

1. You must be a disabled veteran of the United States Armed Forces with a service-connected disability of 50% or greater in the year for which your application is made.
2. You must have received an honorable discharge or be retired from the United States Armed Forces.
3. You must reside on and have an ownership interest in the property, as of the assessment date.

Applicants will need to provide their Certificate of Release or Discharge from Active Duty (DD214) provided by the United States Department of Defense and the determination of disability by the United States Department of Veterans Affairs to your local assessor or county director of tax equalization.

Visit the North Dakota Office of State Tax Commissioner's website for more information at **tax.nd.gov**.

To apply, please submit the Application for Disabled Veterans Property Tax Credit to your local assessor.

Download the application at **tax.nd.gov/veterans** or via the QR code.

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 9, 2026
SUBMITTING DEPARTMENT: Planning
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Rachel LaQua, Interim Planner
SUBJECT: Consider a minor plat for Mandan Hill First Addition Replat Lot 20, Block 1

STATEMENT/PURPOSE:
Consider a minor plat for Mandan Hill First Addition Replat Lot 20, Block 1

BACKGROUND/ALTERNATIVES:
This plat is a request to split a lot into two.

Property History

Minor Plat
This plat creates 2 lots from .52 acres, with Lot 1 containing .31 acres and Lot 2 .21 acres. Each lot has a 10' utility easement in the front, and all take access from Chippewa Loop NE.

Findings of Fact
Minor Plat

1. 1. All technical requirements for consideration of a minor plat have been met;
   2. The proposed lot configuration would likely not have substantial effects on the surrounding properties or generate significantly increased traffic;
   3. The proposed subdivision is not located in the Special Flood Hazard Area or an area where the proposed development would adversely impact water quality and/or environmentally sensitive lands, or areas that are topographically unsuited for development;
   4. The proposed subdivision is consistent with the general intent and purpose of the zoning ordinance;
   5. The proposed subdivision is consistent with the Comprehensive Plan, the

Future Land Use Plan, and other plans and studies, policies and accepted planning practice;
6. The proposed subdivision would not adversely affect the public health, safety and general welfare.

ATTACHMENTS:
1. Application_Redacted
2. Mandan Hill First Add. Lot 20 Block 1 Replat
3. Location Map

FISCAL IMPACT:
N/A

STAFF IMPACT:
N/A

LEGAL REVIEW:
This item has been reviewed as part of the agenda packet.

RECOMMENDATION:
Planning staff recommends approval of the minor plat for Mandan Hill First Addition Replat Lot 20, Block 1.

SUGGESTED MOTION:
I move to recommend approval of the minor plat for Mandan Hill First Addition Replat Lot 20, Block 1.

CITY OF MANDAN

Development Review Application

x	Minor Plat ($300)		Zone Change ($600)
	Preliminary Plat up to 20 acres ($450)		Planned Unit Development ($700)
	Preliminary Plat more than 20 acres ($500)		Land Use and Transportation Plan Amendment ($1,000)
	Final Plat up to 20 lots ($450)		Vacation ($500)
	Final Plat 21 to 40 lots ($600)		Variance ($400)
	Final Plat more than 40 lots ($750)		Special Use Permit ($450)
	Annexation ($450)		Stormwater submittal ($300)
	Masterplanned Subdivision (not accepted without preliminary plat) ($250)		Stormwater 2nd & subsequent resubmittal ($50)
	Appeals to Administrative Denials (Variance to Non-zoning/Non-subdivision regulations) ($250)		Document Recording ($30)

Summary of Request (Add separate sheet(s) as necessary)

Lot modification to allow the construction of a twin hon

Engineer/Surveyor			Property Owner or Applicant		
Name: Swenson Hagen, & Co			Name: J.E. Homes, LLC		
Address: [redacted]			Address: [redacted]		
City: Bismarck	State: ND	Zip: 58504	City: Bismarck	State: ND	Zip: 58502
email: [redacted]			email: [redacted]		
Phone: [redacted]	Fax:		Phone: [redacted]	Fax:	

If the applicant is not the current owner, the current owner must submit a notarized statement authorizing the applicant to proceed with the request.

Location	Type	Existing Zone	Proposed Zone	Project Name
x City ETA	New Addition	RM		Mandan Hill Replat of Lot 20 Bl 1

Property Address	Legal Description		
1129 Chippewa Loop NE	Lot 20 Block 1		
Current Use			
Vacant	Mandan Hill First Addition		
Proposed Use			
Twin Home	Section 26	Township 139	Range 81

Parcel Size	Building Footprint	Stories	Building SF	Required Parking	Provided Parking
0.52 AC					

Print Name	Signature	Date
Jerry Thomson		12-4-25

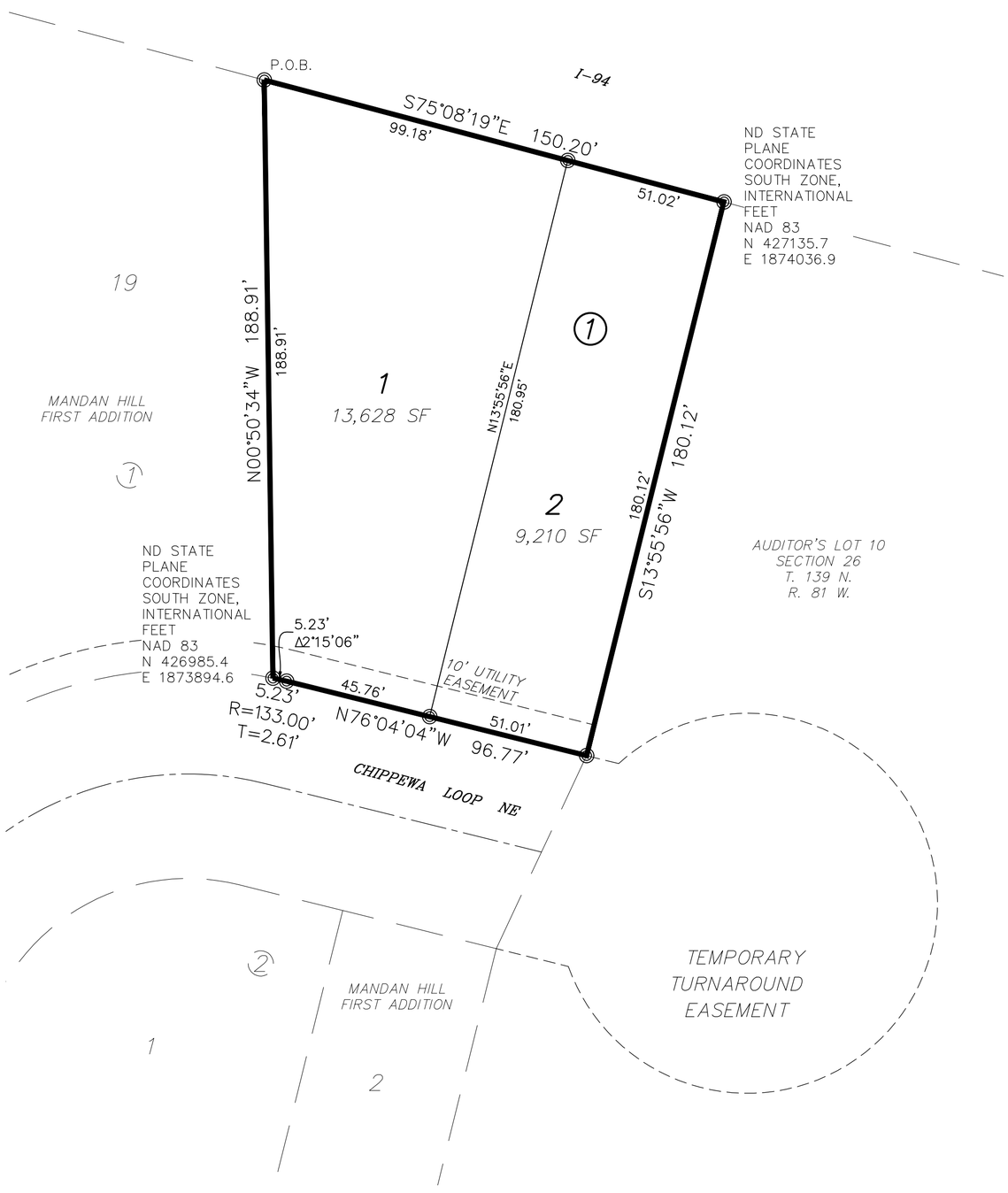
Office Use Only

Date Received:	Initials: YM	Fees Paid: $300.00	Date 12-8-2025
Notice in paper	Mailed to neighbors	P&Z meeting	
Approved	Approved with conditions:		
Denied			

MANDAN HILL FIRST ADDITION
REPLAT OF LOT 20 BLOCK 1

OF SECTION 26, TOWNSHIP 139 NORTH, RANGE 81 WEST
OF THE 5TH PRINCIPAL MERIDIAN TO THE CITY OF

MANDAN, MORTON COUNTY, NORTH DAKOTA



NOTES

BASIS OF BEARING:
NORTH DAKOTA STATE PLANE, SOUTH ZONE

COORDINATE DATUM:
NORTH DAKOTA STATE PLANE COORDINATE SYSTEM
NAD 83 SOUTH ZONE
ADJUSTMENT OF 2011
UNITS ARE INTERNATIONAL FEET

BEARINGS AND DISTANCES MAY VARY FROM PREVIOUS PLATS DUE TO DIFFERENT METHODS OF MEASUREMENTS.

SCALE: 1"=30'

NOVEMBER 24, 2025

○ MONUMENT TO BE SET
◎ MONUMENT IN PLACE

DESCRIPTION

BEING A REPLAT OF ALL OF LOT 20 BLOCK 1 MANDAN HILL FIRST ADDITION OF SECTION 26, TOWNSHIP 139 NORTH, RANGE 81 WEST OF THE FIFTH PRINCIPAL MERIDIAN, MANDAN, MORTON COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF LOT 19 BLOCK 1 MANDAN HILL FIRST ADDITION; THENCE SOUTH 75 DEGREES 08 MINUTES 19 SECONDS EAST, ON THE SOUTH LINE OF I-94 RIGHT-OF-WAY, A DISTANCE OF 150.21 FEET TO THE EAST LINE OF MANDAN HILL FIRST ADDITION; THENCE SOUTH 13 DEGREES 55 MINUTES 56 SECONDS WEST, ON SAID EAST LINE, A DISTANCE OF 180.12 FEET TO THE NORTH LINE OF CHIPPEWA LOOP NE RIGHT-OF-WAY; THENCE NORTH 76 DEGREES 04 MINUTES 04 SECONDS WEST, ON SAID NORTH LINE, A DISTANCE OF 96.77 FEET; THENCE NORTHWESTERLY AND TO THE LEFT, CONTINUING ON SAID NORTH LINE, ON A 133.00 FOOT RADIUS CURVE, AN ARC LENGTH OF 5.23 FEET TO THE EAST LINE OF LOT 19 BLOCK 1 MANDAN HILL FIRST ADDITION; THENCE NORTH 00 DEGREES 50 MINUTES 34 SECONDS WEST, ON SAID EAST LINE, A DISTANCE OF 188.91 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED TRACT CONTAINS 22,838 SF, MORE OR LESS.

APPROVAL OF CITY ENGINEER

I, JAREK WIGNES, CITY ENGINEER OF THE CITY OF MANDAN, NORTH DAKOTA, HEREBY APPROVE "MANDAN HILL FIRST ADDITION REPLAT OF LOT 20 BLOCK 1", MANDAN, MORTON COUNTY, NORTH DAKOTA AS SHOWN ON THE APPROVED PLAT.

_____
JAREK WIGNESS
CITY ENGINEER

SURVEYOR'S CERTIFICATE

I, TERRY BALTZER, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT THE APPROVED PLAT IS A TRUE COPY OF THE NOTES OF A SURVEY PERFORMED UNDER MY SUPERVISION AND COMPLETED ON _____ 2025, THAT ALL INFORMATION SHOWN HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT ALL MONUMENTS SHOWN HEREON ARE CORRECT, THAT ALL REQUIRED MONUMENTS HAVE BEEN SET, AND THAT ALL DIMENSIONAL AND GEODETIC DETAILS ARE CORRECT.

SWENSON, HAGEN & CO. P.C.
909 BASIN AVENUE
BISMARCK, NORTH DAKOTA
58504

_____
TERRY BALTZER
PROFESSIONAL LAND SURVEYOR
N.D. REGISTRATION NO. 3595

OWNER'S CERTIFICATE & DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT J.E HOMES, LLC, BEING THE OWNER AND PROPRIETOR OF THE PROPERTY SHOWN HEREON HAS CAUSED THAT PORTION DESCRIBED HEREON TO BE SURVEYED AND PLATTED AS "MANDAN HILL FIRST ADDITION REPLAT OF LOT 20 BLOCK 1", MANDAN, MORTON COUNTY, NORTH DAKOTA.

STATE OF NORTH DAKOTA)
)SS
COUNTY OF BURLEIGH)

_____
JERAN THOMSON
JE HOMES, LLC
PO BOX 3121
BISMARCK, ND 58502

ON THIS ____ DAY OF _____, 2025, BEFORE ME PERSONALLY APPEARED JERAN THOMSON OF JE HOMES, LLC, KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING CERTIFICATE AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME.

_____
NOTARY PUBLIC
BURLEIGH COUNTY, NORTH DAKOTA
MY COMMISSION EXPIRES _____

APPROVAL OF BOARD OF CITY COMMISSIONERS

THE BOARD OF CITY COMMISSIONERS OF THE CITY OF MANDAN, NORTH DAKOTA, HAS APPROVED THE SUBDIVISION OF LAND AS SHOWN HEREON, THE FOREGOING ACTION BY THE BOARD OF CITY COMMISSIONERS OF MANDAN, NORTH DAKOTA, HAS TAKEN BY RESOLUTION THIS ____ DAY OF _____, 2025.

_____ JIM NEUBAUER--CITY ADMINISTRATOR

_____ JAMES FROELICH--MAYOR

SWENSON, HAGEN & COMPANY P.C.
Surveying
Hydrology
Land Planning
Civil Engineering
Landscape & Site Design
Construction Management
909 Basin Avenue
Bismarck, North Dakota 58504
sheng@swensonhagen.com
Phone (701) 223 - 2600
Fax (701) 223 - 2606

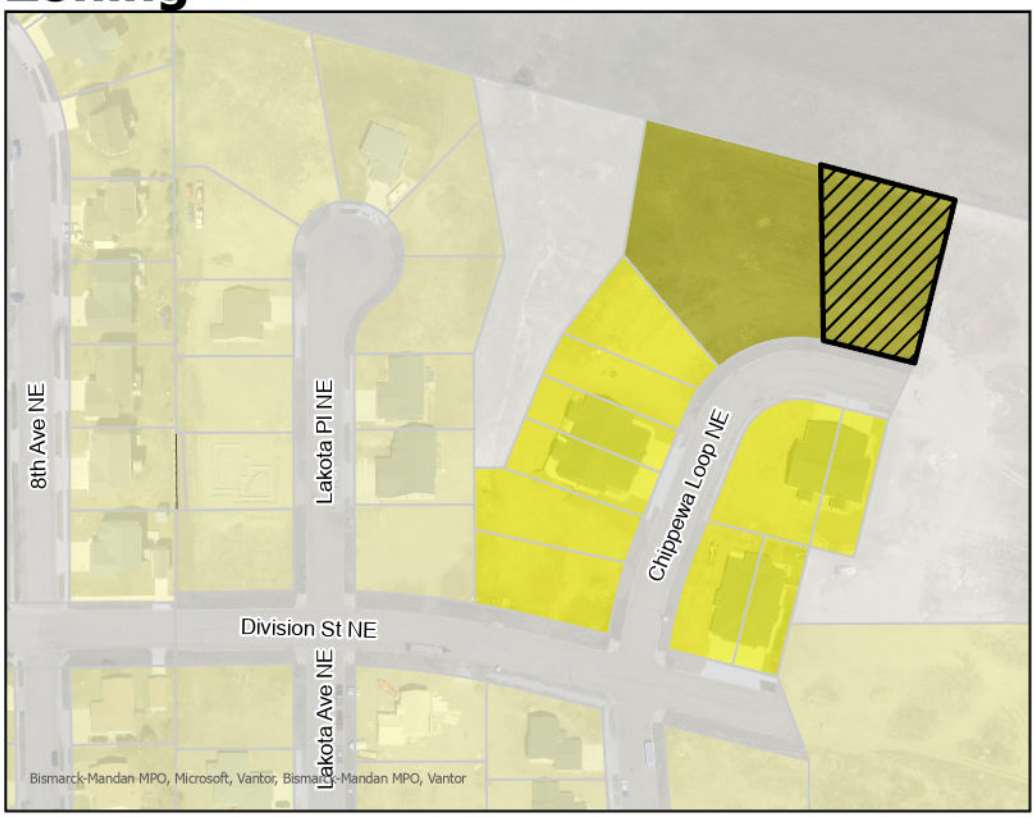
Zoning and Future Land Use Reference Map

Mandan Hill Block 1 Lot 20

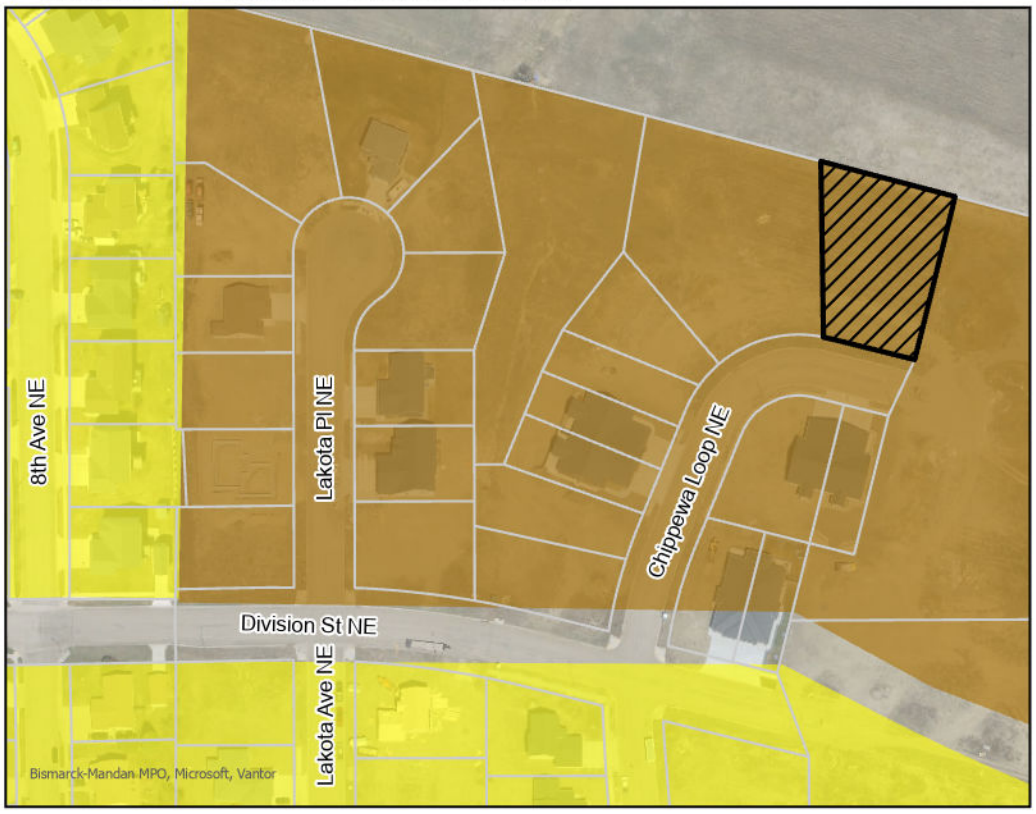
Zoning Map Key

- Agriculture - City of Mandan
- Agriculture - Morton County
- CA - Neighborhood Commercial
- CB - Business Commercial
- CC - Commercial/Light Industrial Transition
- DC - Downtown Core
- DF - Downtown Fringe
- Industrial - Morton County
- LSMHS - Trailer Park Subdivision
- MA - Heavy Commercial/Light Industrial
- MB - Heavy Commercial/Heavy Industrial
- MC - Heavy Commercial/Light Industrial Restricted
- MD - Heavy Commercial/Heavy Industrial Restricted
- MHS - Trailer Park
- PUD - Planned Unit Development
- R3.2 - Residential Single & Two Family
- R7 - Residential Single Family
- RH - Residential Mobile Home Park
- RM - Residential Multi-family Dwellings
- RMH - Residential Mobile Home Subdivision
- Residential - County Residential Zoning
- ROW - Right-of-Way
- Proposed Site

Zoning



Future Land Use Plan



Future Land Use Plan Key

- Rural Residential
- Low Density Residential
- Medium Denstiy Residential
- High Density Residential
- Commercial
- Industrial
- Public/Semi-Public
- Public Land
- Park
- Greenways
- Open Space
- Open Water
- Proposed Site

0 0.04 0.07 0.14 Miles

N

City of Mandan
Planning Department
12/8/25

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 9, 2026
SUBMITTING DEPARTMENT: Planning
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Rachel LaQua, Interim Planner
SUBJECT: Consider a minor plat for Heart Ridge 5th Addition.

STATEMENT/PURPOSE:
Consider a minor plat for Heart Ridge 5th Addition.

BACKGROUND/ALTERNATIVES:
This plat is a request to split one lot into two.

Property History

Minor Plat
This plat creates 2 lots from .38 acres, with Lot 1 containing .19 acres and Lot 2 .19 acres. Each lot has a 10' utility easement in the front, and all take access from 18th Street SE.

Findings of Fact
Minor Plat

1. 1. All technical requirements for consideration of a minor plat have been met;
   2. The proposed lot configuration would likely not have substantial effects on the surrounding properties or generate significantly increased traffic;
   3. The proposed subdivision is not located in the Special Flood Hazard Area or an area where the proposed development would adversely impact water quality and/or environmentally sensitive lands, or areas that are topographically unsuited for development;
   4. The proposed subdivision is consistent with the general intent and purpose of the zoning ordinance;
   5. The proposed subdivision is consistent with the Comprehensive Plan, the Future Land Use Plan, and other plans and studies, policies and accepted

planning practice;
6. The proposed subdivision would not adversely affect the public health, safety and general welfare.

ATTACHMENTS:
1. Application_Redacted
2. Heart Ridge 5th Addition
3. Location Map

FISCAL IMPACT:
N/A

STAFF IMPACT:
N/A

LEGAL REVIEW:
This item has been reviewed as part of the agenda packet.

RECOMMENDATION:
Planning staff recommends approval of the minor plat for Heart Ridge 5th Addition.

SUGGESTED MOTION:
I move to recommend approval of the minor plat for Heart Ridge 5th Addition.

CITY OF MANDAN			
Development Review Application			
X	Minor Plat ($300)		Zone Change ($600)
	Preliminary Plat up to 20 acres ($450)		Planned Unit Development ($700)
	Preliminary Plat more than 20 acres ($500)		Land Use and Transportation Plan Amendment ($1,000)
	Final Plat up to 20 lots ($450)		Vacation ($500)
	Final Plat 21 to 40 lots ($600)		Variance ($400)
	Final Plat more than 40 lots ($750)		Special Use Permit ($450)
	Annexation ($450)		Stormwater submittal ($300)
	Masterplanned Subdivision (not accepted without preliminary plat) ($250)		Stormwater 2nd & subsequent resubmittal ($50)
	Appeals to Administrative Denials (Variance to Non-zoning/Non-subdivision regulations) ($250)		Document Recording ($30)

Summary of Request (Add separate sheet(s) as necessary)

create 2 lots for the purpose of constructing a twin home.

Engineer/Surveyor			Property Owner or Applicant		
Name Mark Isaacs - ILSE Inc			Name Hunter J. Roll		
Address [redacted]			Address [redacted]		
City Mandan	State ND	Zip 58554	City Mandan	State ND	Zip 58554
[redacted]	email		[redacted]	email	
Phone [redacted]	Fax		Phone [redacted]	Fax	

If the applicant is not the current owner, the current owner must submit a notarized statement authorizing the applicant to proceed with the request.

Location			Type			Existing Zone	Proposed Zone	Project Name
X	City	ETA		New	X	Addition	R3.2	R3.2	Heart Ridge Fifth Addition

Property Address	Legal Description		
40718th Street SE, Mandan, ND 58554	Lot 6, Block 1		
Current Use			
Vacant	Heart Ridge 2nd Addition		
Proposed Use			
Residential	Section 34	Township 139	Range 81

Parcel Size	Building Footprint	Stories	Building SF	Required Parking	Provided Parking
0.38 Acres	NA	NA	NA	NA	NA

Print Name	Signature	Date
Hunter Roll		12-29-2025

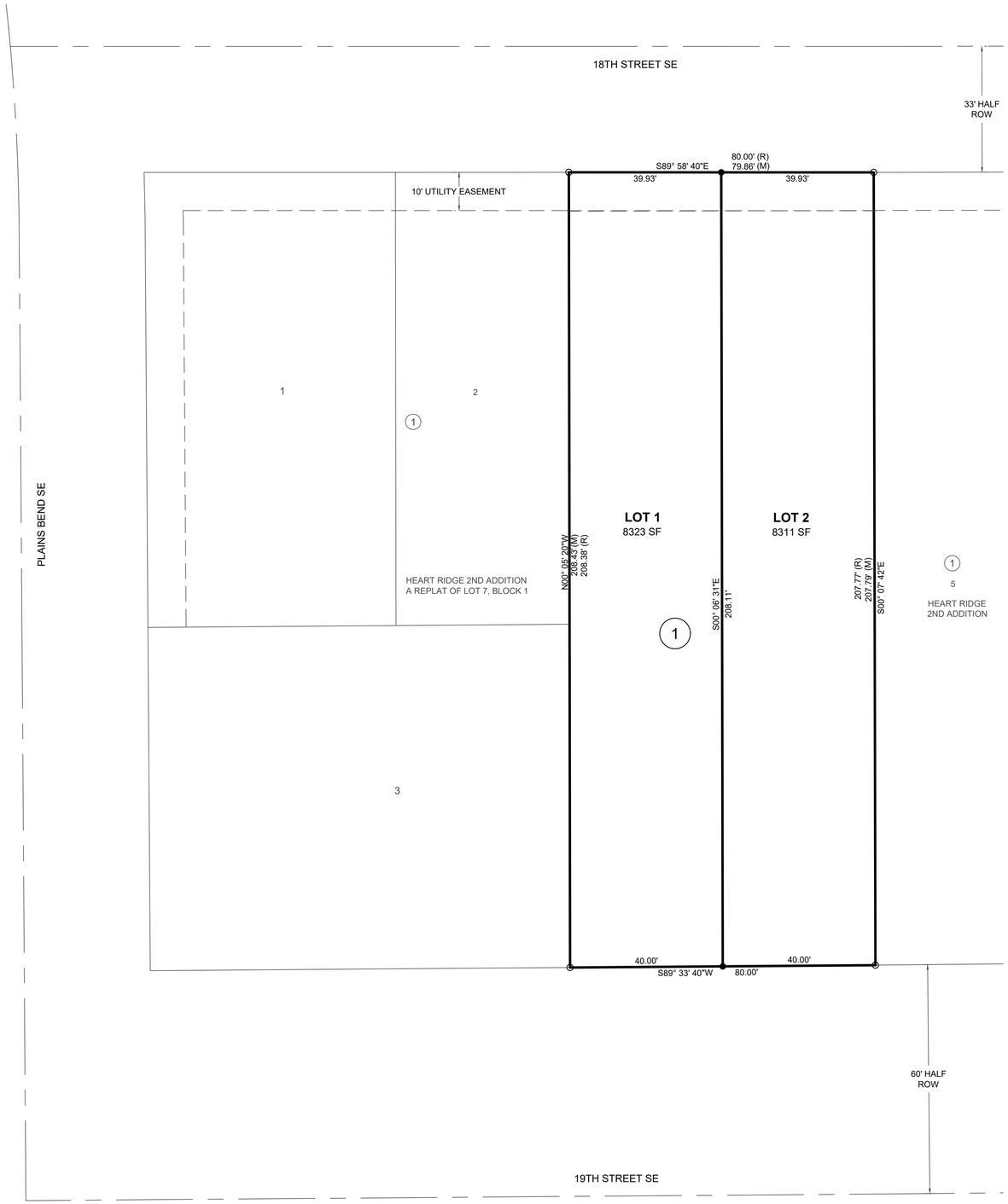
Office Use Only			
Date Received:	Initials: YM	Fees Paid: $ 300	Date 12-29-2025
Notice in paper	Mailed to neighbors	P&Z meeting	
Approved	Approved with conditions:		
Denied			

HEART RIDGE FIFTH ADDITION

TO THE CITY OF MANDAN, MORTON COUNTY, NORTH DAKOTA

LOT 6, BLOCK 1 IN HEART RIDGE 2ND ADDITION

SECTION 34, T139N, R81W



NORTH

SCALE: 1" = 16'

0 8 16

DATE: DECEMBER 27TH, 2025

VERTICAL DATUMN - NAVD 1988.

BASED ON NORTH DAKOTA SOUTH ZONE-NAD83 (2011), INTERNATIONAL FEET.

MEASUREMENTS HAVE BEEN ESTABLISHED BY RTK FROM THE "NDBK" CORS STATION AND ARE REPORTED IN GRID.

AREA TABLE

LOT 6A	8,323 SF	0.19 ACRES
LOT 6B	8,311 SF	0.19 ACRES
TOTAL	16,634 SF	0.38 ACRES

LEGEND

○	FOUND SURVEY MONUMENT
●	SET CAPPED REBAR "LS-9628"
ROW	RIGHT OF WAY
(R)	RECORD DISTANCE
(M)	MEASURED DISTANCE

OWNER:

HUNTER J. ROLL
109 14TH AVE. NW
MANDAN, ND 58554

NOTES:

1. BEARINGS AND DISTANCES MAY VARY FROM PREVIOUS DOCUMENTS OF RECORD DUE TO DIFFERENT METHODS OF FIELD MEASUREMENTS.
2. SUBJECT TO ALL EASEMENTS OF RECORD WHETHER SHOWN OR NOT SHOWN.

LAND DESCRIPTION

ALL OF LOT 6, BLOCK 1 OF HEART RIDGE 2ND ADDITION, LOCATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 139 NORTH, RANGE 81 WEST OF THE 5TH PRINCIPAL MERIDIAN, MORTON COUNTY, NORTH DAKOTA. SAID TRACT OF LAND CONTAINS 0.38 ACRES (16,634 SF), MORE OR LESS, AND SUBJECT TO ALL RIGHTS OF WAY AND EASEMENTS.

SURVEYOR'S CERTIFICATE

I, MARK R. ISAACS, A NORTH DAKOTA REGISTERED LAND SURVEYOR NO. 9628, HEREBY CERTIFY THAT I HAVE CAUSED TO BE A SURVEYED BY MY FORCES UNDER MY SUPERVISION THE PROPERTY DESCRIBED HEREON AND I HAVE PREPARED THE ACCOMPANYING PLAT; FURTHER, THAT DISTANCES INDICATED HEREON ARE IN FEET AND HUNDREDTHS OF FEET THEREOF, AND BEARINGS ARE INDICATED IN QUADRANTS AND DEGREES, MINUTES, AND SECONDS THEREOF; FURTHER, THAT SAID PLAT DOES TRULY SHOW THE SURVEY TO THE BEST OF MY KNOWLEDGE AND BELIEF.

_____
MARK R. ISAACS, RLS 9628

OWNER'S CERTIFICATE OF DEDICATION

I, THE UNDERSIGNED, BEING SOLE OWNER OF THE LAND PLATTED HEREON, DO HEREBY VOLUNTARILY CONSENT TO THE EXECUTION OF SAID PLAT AND DO DEDICATE ALL THE STREETS, ALLEYS, PARKS, AND PUBLIC GROUNDS AS SHOWN HEREON, INCLUDING ALL SEWERS, CULVERTS, BRIDGES, WATERLINES, SIDEWALKS, AND OTHER IMPROVEMENTS ON OR UNDER SUCH STREETS, ALLEYS OR OTHER PUBLIC GROUNDS, WHETHER SUCH IMPROVEMENTS ARE SHOWN HEREON OR NOT, TO PUBLIC USE FOREVER. WE ALSO DEDICATE EASEMENTS TO RUN WITH THE LANDS FOR WATER, SEWER, GAS, ELECTRICITY, TELEPHONE, OR OTHER PUBLIC UTILITY LINES OR SERVICES UNDER, ON OR OVER THESE CERTAIN STRIPS OF LAND DESIGNATION AS "UTILITY EASEMENT".

_____
HUNTER J. ROLL
LOTS 1 & 2, BLOCK 1

STATE OF _____)
) SS
COUNTY OF _____)

SUBSCRIBED AND SWORN BEFORE ME, A NOTARY PUBLIC. THIS_____DAY OF _____, 20__.

NOTARY PUBLIC _____

APPROVAL OF THE BOARD OF CITY COMMISSIONERS

THE BOARD OF CITY COMMISSIONERS OF THE CITY OF MANDAN, NORTH DAKOTA, HAS APPROVED THE SUBDIVISION OF LAND SHOWN HEREON, HAS ACCEPTED THE DEDICATION OF ALL STREETS, ALLEYS, AND PUBLIC WAYS SHOWN HEREON LYING WITHIN THE CORPORATE LIMITS OF THE CITY OF MANDAN, HAS ACCEPTED THE DEDICATION OF ALL PARKS AND PUBLIC GROUNDS SHOWN HEREON, FURTHERMORE, SAID BOARD OF CITY COMMISSIONERS HAS APPROVED THE STREETS, ALLEYS, AND OTHER PUBLIC WAYS AND GROUNDS SHOWN HEREON AS AN AMENDMENT TO THE MASTER STREET PLAN OF THE CITY OF MANDAN, THE FOREGOING ACTION BY THE BOARD OF CITY COMMISSIONERS OF MANDAN, NORTH DAKOTA, HAS TAKEN BY RESOLUTION APPROVED THE_____DAY OF_____, 20__.

_____
JIM NEUBAUER - CITY ADMINISTRATOR

_____
JAMES FROELICH - PRESIDENT OF THE BOARD OF CITY COMMISSIONERS

I, JAREK WIGNESS, CITY ENGINEER FOR THE CITY OF MANDAN, NORTH DAKOTA. HEREBY APPROVES "HEART RIDGE FIFTH ADDITION" OF THE CITY OF MANDAN, MORTON COUNTY, NORTH DAKOTA AS SHOWN ON THE ANNEXED PLAT.

_____
JAREK WIGNESS, PE

HEART RIDGE FIFTH ADDITION
LOT 6, BLOCK 1 IN
HEART RIDGE 2ND ADDITION
SECTION 34, T-139-N, R-81-W
MANDAN, NORTH DAKOTA

SHEET: 1 OF 1	JOB NUMBER: 25246	
SCALE: 1"= 16'	DWG REVISION DATES	
DRAWN BY: LCM	–	–
DWG DATE: 12/15/25	–	–
DWG NAME:25246 Survey.dwg		

Independent Land Surveying & Engineering
4215 Old Red Trail NW
Mandan, ND 58554
Phone: 701-663-5184
Cell: 701-595-2079
mark@ilsurveynd.com

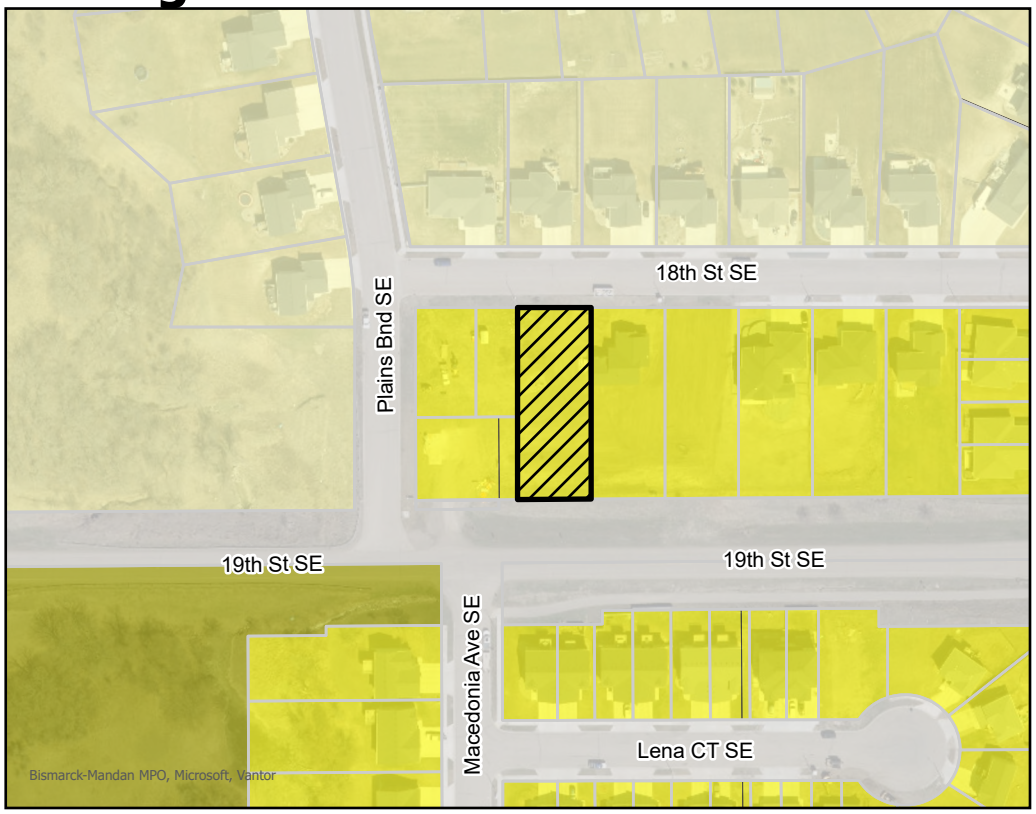
Zoning and Future Land Use Reference Map

Heart Ridge 5th

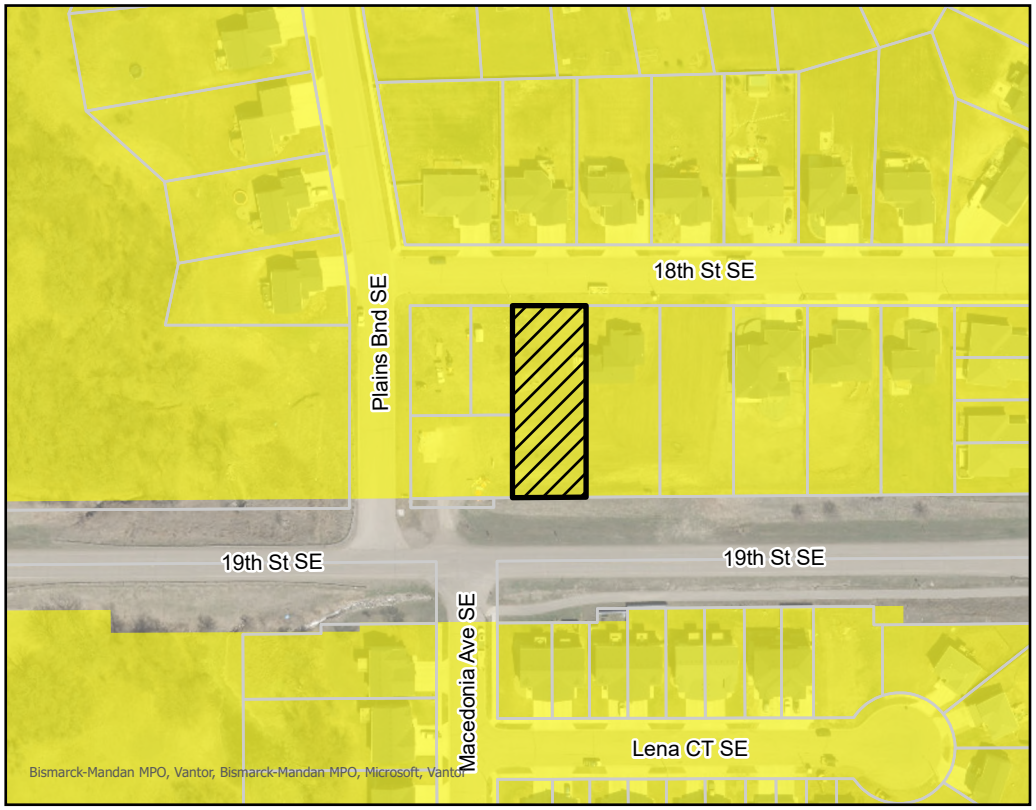
Zoning Map Key

- Agriculture - City of Mandan
- Agriculture - Morton County
- CA - Neighborhood Commercial
- CB - Business Commercial
- CC - Commercial/Light Industrial Transition
- DC - Downtown Core
- DF - Downtown Fringe
- Industrial - Morton County
- LSMHS - Trailer Park Subdivision
- MA - Heavy Commercial/Light Industrial
- MB - Heavy Commercial/Heavy Industrial
- MC - Heavy Commercial/Light Industrial Restricted
- MD - Heavy Commercial/Heavy Industrial Restricted
- MHS - Trailer Park
- PUD - Planned Unit Development
- R3.2 - Residential Single & Two Family
- R7 - Residential Single Family
- RH - Residential Mobile Home Park
- RM - Residential Multi-family Dwellings
- RMH - Residential Mobile Home Subdivision
- Residential - County Residential Zoning
- ROW - Right-of-Way
- Proposed Site

Zoning



Future Land Use Plan



Future Land Use Plan Key

- Rural Residential
- Low Density Residential
- Medium Denstiy Residential
- High Density Residential
- Commercial
- Industrial
- Public/Semi-Public
- Public Land
- Park
- Greenways
- Open Space
- Open Water
- Proposed Site

0 0.04 0.07 0.14 Miles

N

City of Mandan
Planning Department
1/5/2026

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 12, 2026
SUBMITTING DEPARTMENT: Police Department
DEPARTMENT DIRECTOR: Jason Ziegler
PRESENTER: Jason Ziegler, Police Chief
SUBJECT: Consider approval of a raffle permit for Off the Grid Ministries

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STATEMENT/PURPOSE:
Consider approval of a raffle permit for Off the Grid Ministries

BACKGROUND/ALTERNATIVES:
Off the Grid Ministries is holding a raffle on 1/31/2026 at Central Station to raise funds for veteran hunts. See attached permit application.

ATTACHMENTS:
1. 2026-05 Off the Grid Ministries

FISCAL IMPACT:
N/A

STAFF IMPACT:
N/A

LEGAL REVIEW:
N/A

RECOMMENDATION:
I recommend approving the raffle permit for Off the Grid Ministries.

SUGGESTED MOTION:
I move to approve the raffle permit for Off the Grid Ministries.

LOCAL PERMIT OR RESTRICTED EVENT PERMIT

NORTH DAKOTA OFFICE OF ATTORNEY GENERAL
GAMING DIVISION
SFN 17926 (8-2025)

Permit Number
2026-05

Permit Type *(check one)*

[X] Local Permit [ ] Restricted Event Permit*

Games Authorized [ ] Raffle by a Political or Legislative District Party

[ ] Bingo [X] Raffle [ ] Raffle Board [ ] Calendar Raffle [ ] Sports Pool [ ] Poker* [ ] Twenty-One* [X] Paddlewheels*

**See Instruction 2 (f) on Page 2. Poker, Twenty-One, and Paddlewheels may be conducted Only with a Restricted Event Permit. Only one permit per year.*

LOCAL PERMIT RAFFLES MAY NOT BE CONDUCTED ONLINE AND CREDIT CARDS MAY NOT BE USED FOR WAGERS

ORGANIZATION INFO

Name of Organization or Group		Dates Authorized *(Read Instruction 2)*	
Off the Grid Ministries		**1/31/2026**	
Organization or Group Contact Person	E-mail	Telephone Number	
Ryan Deichert	**missourivalleyrentals@gmail.com**	**701-391-9489**	
Mailing Address	City	State	ZIP Code
PO Box 2021	**Bismarck**	**ND**	**58502**

SITE INFO

Site Name		County	
Central Station Bar & Events		**Morton**	
Site Address	City	State	ZIP Code
111 Collins Ave	**Mandan**	**ND**	**58554**

If the city or county is placing restrictions on the permit, please explain

N/A

Provide the exact date(s) & frequency of each event & type (Ex. Bingo every Friday 10/1-12/31, Raffle - 10/30, 11/30, 12/31, etc.)

Chinese Raffle and Paddle Wheel to be held on 1/31/2026 at Central Station & Events in an area separate from the bar.

Permits must be issued prior to the 1st event date.

Local governing bodies please see the instructions on the backside of this form on how to complete the permit. Be certain to provide the organization or group with the "Information Required to be Preprinted on a Standard Raffle Ticket" found on the backside of this forms if a raffle is being conducted. If a "Restricted Event Permit" is being issued, either provide organization or group with SFN 52880 "Report on a Restricted Event Permit" or make them aware that the report must be filed with the city or county **and** the Office of Attorney General within 30 days after the event. Before approving a site location, ensure compliance with the gaming law below

Before approving a local permit or restricted event permit the local governing body should review North Dakota Century Code 53-06.1-03(3)(a) which states:

3. A licensed organization or organization that has a permit shall conduct games as follows:
   a. Only one licensed organization or organization that has a permit may conduct games at an authorized site on a day, except that a raffle may be conducted for a special occasion by another licensed organization or organization that has a permit when one of these conditions is met:
      (1) When the area for the raffle is physically separated from the area where games are conducted by the regular organization.
      (2) Upon request of the regular organization and with the approval of the alcoholic beverage establishment, the regular organization's license or permit is suspended for that specific time of day by the Attorney General.

Local governing bodies should also review North Dakota Administrative Code 99-01.3-01-05 (Permits) for the administrative rules governing permits. These rules may be viewed on the North Dakota Attorney General's website at https://attorneygeneral.nd.gov/licensing-and-gaming/gaming/gaming-laws-rules-and-publications

CITY OR COUNTY CONTACT PERSON

Printed Name of City or County Official	Title of City or County Official	Telephone Number	E-mail Address
Tasha Scott	Administrative Assistant	701-667-3250	tasha.scott@mandanpd.com
Signature of City or County Official		Date	Issuing Governing Body
		1/12/2026	[X] City [ ] County

City or County must submit a copy of the permit above to the Office of Attorney General within 14 days of issuance.

Information required to be preprinted on a standard raffle ticket:

1. Name of Organization;
2. Ticket Number;
3. Price of the ticket, including any discounted price;
4. Prize, description of an optional prize selectable by a winning player or option to convert a **merchandise** prize to a cash prize that is limited to the lesser of the value of the merchandise prize or fifteen thousand dollars. However, if there is insufficient space on a ticket to list each minor prize that has a retail price not exceeding twenty-five dollars, an organization may state the total number of minor prizes and their total retail price;
5. Print the authorizing city or county and permit number
6. A statement that a person is or is not required to be present at a drawing to win;
7. Date and time of the drawing or drawings and, if the winning player is to be announced later, date and time of that announcement. For a calendar raffle, if the drawings are on the same day of the week or month, print the day and time of the drawing;
8. Location and street address of the drawing;
9. If a merchandise prize requires a title transfer involving the Department of Transportation, a statement that a winning player is or is not liable for sales or use tax;
10. If a purchase of ticket or winning prize is restricted to a person of a minimum age, a statement that a person must be at least "-" years of age to buy a ticket or win a prize;
11. A statement that a purchase of the ticket is not a charitable donation;
12. If a secondary prize is an non-guaranteed cash or merchandise prize, a statement that the prize is not guaranteed to be won and odds of winning the prize based on numbers of chances; and
13. If a prize is live beef or dairy cattle, horse, bison, sheep, or pig, a statement that the winning player may convert the prize to a cash prize that is limited to the lesser of the market value of the animal or fifteen thousand dollars.

North Dakota Administrative Code 99-01.3-05-02(4) states that an employee may not sell a ticket on a site where another organization is licensed or has a permit unless the employee is granted permission by the lessor and other organization.

North Dakota Administrative Code 99-01.3-05-01 through 99-01.3-05-05 (Raffles) in its entirety can be reviewed on the North Dakota Attorney General's website at https://attorneygeneral.nd.gov/licensing-and-gaming/gaming/gaming-laws-rules-and-publications

INSTRUCTIONS:

After a city or county governing board has authorized an organization to receive a local permit or restricted event permit, the city or county must complete the form.

1. Enter the city or county assigned "Permit Number".
2. Enter the beginning and ending date(s) for which the permit is authorized. **Note: Unexact blanket dates will not be accepted**
   a. A permit must be on a fiscal year basis from July first to June thirtieth or on a calendar year basis.
   b. A local permit can be issued for one or more events per fiscal year.
   c. The "Dates Authorized" must only be the actual dates of the event(s) and does not include the dates the organization is selling tickets.
   d. For a "one time" event permit, the beginning and ending date for "Dates Authorized" is the date of the event date.
   e. If a local permit is issued for more than one event, enter the date of the first event as the beginning date and the date of the last event as the ending date.
   f. A permit may not be issued more than twelve months prior to the first raffle drawing date.
   g. A restricted event permit may be issued for only one event per year. if the organization has received a local permit during a fiscal year, it may not receive a restricted event permit. If the organization received a restricted event permit during the fiscal year, it may not receive a local permit.
3. Permits must provide the specific dates of event(s), site name, and site physical address. If there are multiple event dates that do not fit on the permit, a separate sheet must be submitted with the permit that provides a list of all event dates.
4. Enter any restriction place on the organization or group, such as days of the week or designation of an area at a site where games may be conducted.
5. When a restricted event permit is issued, provide a "Report on a Restricted Event Permit (SFN 52880)" form to the organization or be sure they know the form is available at https://attorneygeneral.nd.gov/licensing-and-gaming/licensing/charitable-gaming by scrolling to the bottom of the page.
6. Give the organization or group the completed permit form, keep a copy for your records, and send a copy within 14 days of issuance of the permit. However, all permits must be sent to the Gaming Division, no later than 7 days prior to the first event date by email to agogaming@nd.gov or fax to (701) 328-3535.

If you have questions on the local permit or restricted event permit process, please call: 1-800-326-9240.

Office of Attorney General
Gaming Division
600 E Blvd Ave, Dept. 125
Bismarck, ND 58505-0040

APPLICATION FOR A LOCAL PERMIT OR RESTRICTED EVENT PERMIT

NORTH DAKOTA OFFICE OF ATTORNEY GENERAL
GAMING DIVISION
SFN 9338 (9-2023)

Applying for *(check one)*
- [x] Local Permit
- [x] Restricted Event Permit*

Games to be conducted
- [ ] Raffle by a Political or Legislative District Party
- [ ] Bingo
- [x] Raffle
- [ ] Raffle Board
- [ ] Calendar Raffle
- [ ] Sports Pool
- [ ] Poker*
- [ ] Twenty-One*
- [x] Paddlewheels*

**See Instruction 2 (f) on Page 2. Poker, Twenty-One, and Paddlewheels may be conducted Only with a Restricted Event Permit. Only one permit per year.*

LOCAL PERMIT RAFFLES MAY NOT BE CONDUCTED ONLINE AND CREDIT CARDS MAY NOT BE USED FOR WAGERS

ORGANIZATION INFO

Name of Organization or Group		Dates of Activity *(Does not include dates for the sales of tickets)*	
Off the Grid Ministries		1-31-2026	
Organization or Group Contact Person	E-mail	Telephone Number	
Ryan Deichert	missouri.valleyrentals@gmail.com	701-391-9489	
Business Address	City	State	ZIP Code
PO Box 2021	Bismarck	ND	58502
Mailing Address (if different)	City	State	ZIP Code

SITE INFO

Site Name		County	
Central Station Bar + Events		Morton	
Site Physical Address	City	State	ZIP Code
111 Collins Ave	Mandan	ND	58554

Provide the exact date(s) & frequency of each event & type *(Ex. Bingo every Friday 10/1-12/31, Raffle - 10/30, 11/30, 12/31, etc.)*

1-Time, January 31, 2026

PRIZE / AWARD INFO (If More Prizes, Attach An Additional Sheet)

Game Type	Description of Prize	Exact Retail Value of Prize
Chinese Raffle	scope, hunt, rangefinder, bourbon	2500.00
Paddlewheel	rangefinder, gun, bourbon	1000.00
	Total *(limit $40,000 per year)*	$ 3500.00

ADDITIONAL REQUIRED INFORMATION

Intended Uses of Gaming Proceeds

Veteran Hunts

Does the organization presently have a state gaming license? *(If yes, the organization is not eligible for a local permit or restricted event permit and should call the Office of Attorney General at 1-800-326-9240)*

- [ ] Yes
- [x] No

Has the organization or group received a restricted event permit from any city or county for the fiscal year July 1 - June 30 (If yes, the organization or group does not qualify for a local permit or restricted event permit)

- [ ] Yes
- [x] No

Has the organization or group received a local permit from an city or county for the fiscal year July 1 - June 30 *(If yes, indicate the total retail value of all prizes previously awarded).*

- [x] No
- [ ] Yes - Total Retail Value: _____ (This amount is part of the total prize limit for $40,000 per fiscal year)

Is the organization or group a state political party or legislative district party? *(If yes, the organization or group may only conduct a raffle and must complete SFN 52880 "Report on a Restricted Event Permit" within 30 days of the event. Net proceeds may be for political purposes.)*

- [ ] Yes
- [x] No

Printed Name of Organization Group's Permit Organizer	Telephone Number	E-mail Address	
Ryan Deichert	701-391-9489	missouri.valleyrentals@gmail.com	
Signature of Organization Group's Permit Organizer	Title		Date
Ryan Deichert	Member		1-12-2026

Information required to be preprinted on a standard raffle ticket:

1. Name of organization;
2. Ticket number;
3. Price of the ticket, including any discounted price;
4. Prize, description of an optional prize selectable by a winning player, or option to convert a merchandise prize to a cash prize that is limited to the lesser of the value of the merchandise prize or eight thousand dollars. However, if there is insufficient space on a ticket to list each minor prize that has a retail price not exceeding twenty-five dollars, an organization may state the total number of minor prizes and their total retail price;
5. For an organization that has a permit, print the authorizing city or county and permit number;
6. A statement that a person is or is not required to be present at a drawing to win;
7. Date and time for each drawing and, if the winning player is to be announced later, date and time of that announcement. For a calendar raffle, if the drawings are on the same day of the week or month, print the day and time of the drawing;
8. Location and physical street address of the drawing;
9. If a merchandise prize requires a title transfer involving the Department of Transportation, a statement that a winning player is or is not liable for sales or use tax;
10. If a purchase of a ticket or winning prize is restricted to a person of a minimum age, a statement that a person must be at least "-" years of age to buy a ticket or win a prize;
11. A statement that a purchase of the ticket is not a charitable donation;
12. If a secondary prize is an unguaranteed cash or merchandise prize, a statement that the prize is not guaranteed to be won and odds of winning the prize based on numbers of chances; and
13. If a prize is live beef or dairy cattle, horse, bison, sheep, or pig, a statement that the winning player may convert the prize to a cash prize that is limited to the lesser of the market value of the animal or six thousand dollars.

PRIZE RESTRICTIONS:

A single cash prize cannot exceed $8,000

The retail value of a merchandise prize cannot exceed $8,000.

The **total** of all cash prizes and retail value of all merchandise prizes for all games cannot exceed $40,000 per year.

If the value of the planned cash and merchandise prizes exceed $40,000, the organization or group must reduce the prizes to this limit or a nonprofit corporation may apply for a state gaming license with the Office of Attorney General.

LOCAL PERMIT AND RESTRICTED EVENT PERMIT DIFFERENCES:	**Local Permit**	**Restricted Event Permit**
Number of events per year	Limited by prizes	One
Must file an information report	Yes, if political party	Yes
May pay employees compensation	Yes	No
Must use chips as wagers	No	Yes
Use of net income	Unrestricted	Restricted
Games allowed	Bingo Raffles Sports Pools	Bingo Raffles Sports Pools Poker Twenty-One Paddlewheels

Compared to a "Local Permit," an organization or group with a "Restricted Event Permit" may conduct three more game types, but is restricted to one event per year, must file a "Report on a Restricted Event Permit" with the city or county and Office of Attorney General, and disburse net income to eligible uses. These uses are described by North Dakota Century Code 53-06.1-11.1(2) and North Dakota Administrative Code 99-01.3-14-02. Refer to the backside of the "Report on a Restricted Event Permit" form for a general list of eligible uses.

For a Restricted Event Permit, one method to ensure that the total of all cash prizes and retail value of all merchandise prizes do not exceed $40,000 is to charge each player a standard amount at the start of the event for a certain number or value of chips. If a player loses all of the player's chips, the player may re-buy chips. The player would play games and, at the end of the event, the organization would auction merchandise prizes to the players. The player who bid the highest number or value of chips for a prize would win that prize. For those players who have chips but did not successfully bid on a prize, the organization may redeem the chips for a predetermined cash value per chip. For this method, the value of the players' chips redeemed for cash is no a prize.

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 13, 2026
SUBMITTING DEPARTMENT: Administration
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Kari Schmidt, Communications Specialist
SUBJECT: 2026 Appointments to Community Beautification Committee

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STATEMENT/PURPOSE:
Consider appointments to the Community Beautification Committee

BACKGROUND/ALTERNATIVES:
The Community Beautification Committee helps formulate and coordinate programs, projects and policies that enhance the aesthetic appearance of the community. It may also identify the need for amending the Mandan Code of Ordinances.

There are three positions up for consideration that expired at the end of 2025. Candidates should be property owners or representatives of property owners in the City of Mandan. Representation is sought from both residents and businesses. Applications were sought through an October news release with a requested deadline for responses by Oct. 31 or until the positions are filled.

Members whose terms expired:

1. Rena Mehlhoff (2023-2025)
2. Laurie Leingang (2023-2025)
3. Micaela Ranisate (filled an term that was for 2023-2025)

The committee met Dec. 18. Agenda items included consideration of recommendations for 2026 appointments. PEople submitting applications for consideration were:

- Ben Kappel
- Sarah Johnston

- Micaela Ranisate

ATTACHMENTS:

1. CBC - Ben Kappel
2. CBC - Sarah Johnston
3. CBC- Micaela Ranisate

FISCAL IMPACT:
n/a

STAFF IMPACT:
n/a

LEGAL REVIEW:
n/a

RECOMMENDATION:
The Community Beautification Committee recommends the reappointment of Micaela Ranisate, and appointment of Ben Kappel and Sarah Johnston to the Community Beautification Committee for 3-year terms through Dec. 31, 2028.

SUGGESTED MOTION:
I move to approve reappointing Micaela Ranisate, and appointing Ben Kappel and Sarah Johnston to the Community Beautification Committee for 3-year terms through Dec. 31, 2028.

Outlook

Board, Commission & Committee Application

From Karie L. Mischel <karie.mischel@cityofmandan.com>
Date Mon 12/8/2025 3:44 PM
To Karie L. Mischel <karie.mischel@cityofmandan.com>; Ashlee Newman <ashlee.newman@cityofmandan.com>; Kari N. Schmidt <kari.schmidt@cityofmandan.com>

New Form Submission

Question	Answer
Please indicate which board/committee(s) you are interested in	Airport Authority Architectural Review Commission Code Enforcement Appeals Board Community Beautification Committee Growth Fund Committee Parking Authority Renaissance Zone Committee Special Assessment Commission Visitors Committee Planning & Zoning Commission
Name (First & Last)	Ben Kappel
Phone Number	7012600000
Email Address	Ben.J.Kappel@gmail.com
Are you currently a resident of the City of Mandan	Yes
Business or Organization Name	
Functional Title or Role	REALTOR®
Please explain your reasons for wanting to serve on this board, commission or committee	I currently serve as Vice President of the North Dakota Association of REALTORS®, and I believe continued involvement in leadership and community service is essential to that role, along with preparing me for future roles with the State. Serving on a board or committee allows me to contribute professionally, strengthen relationships within the community, and better understand local needs. I checked off multiple boards, since there may be one with a greater need than others. If none have openings, maybe keep me in mind for any future openings. I'm also happy to stop by to do a quick interview with the city so you can meet me in person.
Please give a brief explanation of the skills or qualifications you could	I am familiar with Robert's Rules of Order and have previously served on other committees, including NDAR government affairs at the state level, local real estate boards, and I serve on District 34 GOP's board. That

bring to this board, commission or committee	experience has allowed me to work through policy discussions, communicate clearly, and contribute to productive group decisions. My biggest skill seems to be keeping conversations on track and shutting down those distracting side bar conversations. :) Hope to hear from you at some point. Thanks for the consideration.

Outlook

Committee/Board Application (form) has been filled out on your site.

From donotreply@form.govoffice.com <donotreply@form.govoffice.com>
Date Tue 10/21/2025 10:47 AM
To Kari N. Schmidt <kari.schmidt@cityofmandan.com>; Ashlee Newman <ashlee.newman@cityofmandan.com>

WARNING: EXTERNAL EMAIL DO NOT click links or open attachments unless you recognize the sender, and NEVER provide your username/password.

Your Site has received new information through a form.
Form: Committee/Board Application
Site URL: https://nam10.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.cityofmandan.com%2F&data=05%7C02%7Cashlee.newman%40cityofmandan.com%7Cf23f437d16ab454afab308de10b9320c%7C85e60136b6964b9787755816d76f9434%7C0%7C0%7C638966584790545607%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=LNnHKmsdNhbP2UAK39OClpcGWDXKWV2K46m%2BERkSzHw%3D&reserved=0

Please indicate which board/committee(s) you are interested in::
Community Beautification Committee
Name (First & Last):: Sarah Johnston
Address::
Phone Number:: 7015350805
Email Address:: sarahejohnston28@gmail.com
Are you currently a resident of the City of Mandan?:
Yes
Business or Organization Name (if applicable): n/a
Functional Title or Role: n/a
Please explain your reasons for wanting to serve on this board, commission, or committee:: I have been blessed to live in the community of Mandan since 2017. North Dakota raised, it was instilled at an early age to give back to the community you get to call home. I grew up working in a family business, a greenhouse, in a small town. I believe our community we get to call home, should be beautiful and pleasant to look at. We should be able to look at our community with pride. My previous position was with the North Dakota Human Trafficking Task Force, and I have since moved to a new position working in the federal contracting space with the Department of State and I want to have a new way to give back to the community that has given me so much. This is a unique way to serve and I would love the opportunity to be a part of the Community Beautification Committee.
Please give a brief explanation of the skills or qualification you could bring to this board, commission or committee:: I have event planning experience for volunteer events as well as conferences and retreats. I am a team player and interested in collaborating with others. I am outgoing and social and make connections easily. I have experience working in a greenhouse, so I am familiar with landscaping and understanding the unique needs of our area. During my hometown celebration in Ellendale, I designed the winning fall display. I have experience working in city government, so I am familiar with policies and procedures. During my time with the North Dakota Human Trafficking Task Force, I was in charge of bringing people together from multiple disciplines to work together on a team, finding unique strengths of each member and creating an environment of collaboration. I have been conducting trainings for over 7 years and have facilitated many meetings. I am not afraid to get in the trenches and lead volunteers in clean-ups, planting flowers, or helping design fun displays.

Do Not Click Reply - This e-mail has been generated from a SmartForm.

Outlook

Committee/Board Application (form) has been filled out on your site.

From donotreply@form.govoffice.com <donotreply@form.govoffice.com>
Date Mon 11/10/2025 11:11 AM
To Kari N. Schmidt <kari.schmidt@cityofmandan.com>; Ashlee Newman <ashlee.newman@cityofmandan.com>

WARNING: EXTERNAL EMAIL DO NOT click links or open attachments unless you recognize the sender, and NEVER provide your username/password.

Your Site has received new information through a form.
Form: Committee/Board Application
Site URL: https://nam10.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.cityofmandan.com%2F&data=05%7C02%7Cashlee.newman%40cityofmandan.com%7C9e54e69caa6c452eb72a08de207c1fa5%7C85e60136b6964b9787755816d76f9434%7C0%7C0%7C638983914667071225%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=SNvNXo6SPhtmrVqE64F208SM7SlrF8u3xIUtVi%2F1rUw%3D&reserved=0

Please indicate which board/committee(s) you are interested in::
Community Beautification Committee
Name (First & Last):: Micaela Ranisate
Address::
Phone Number:: 7012027101
Email Address:: micaelar@starionbank.com
Are you currently a resident of the City of Mandan?:
Yes
Business or Organization Name (if applicable): Starion bank
Functional Title or Role: Business Banking Officer
Please explain your reasons for wanting to serve on this board, commission, or committee:: I want to be on the City Beautification Committee because I care deeply about creating an attractive, welcoming, and sustainable environment for our community. I believe that well-maintained public spaces can strengthen civic pride, encourage community involvement, and improve overall quality of life. I'm excited to contribute ideas, collaborate with others, and help make our city a place resident are proud of and visitors admire.
Please give a brief explanation of the skills or qualification you could bring to this board, commission or committee:: During my time on this board, I've gained a deep understanding of the challenges and opportunities in beautifying our community, and I've contributed to several successful project and ideas that we have completed in the last week. My experience has equipped me with practical knowledge of design, project management, and community engagement, making me well-suited to continue driving positive change as a board member.

Do Not Click Reply - This e-mail has been generated from a SmartForm.

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 13, 2026
SUBMITTING DEPARTMENT: HR
DEPARTMENT DIRECTOR: Amy Berger
PRESENTER: Amy Berger, HR Director
SUBJECT: Consider Approval of 2026 Compensation Study and Budget Amendment

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STATEMENT/PURPOSE:
To consider approval of an agreement with Condrey and Associates for a citywide salary study and associated budget amendment.

BACKGROUND/ALTERNATIVES:
It has been approximately six years since we completed our last full-scale salary adjustment with Condrey, and about five years since the new plan was implemented. The City is seeing signs of compression, challenges with market competitiveness, and growing gaps between internal equity and external market rates.To address this, we are requesting approval to move forward with Condrey's proposal for a smaller-scale compensation review. This review would update the salary structure to evaluate market alignment, identify any potential gaps, and support more proactive long-term salary planning.

The proposed study would be a smaller-scale review than the comprehensive study completed in 2020. The project would be completed over a three-month period in 2026, allowing the results to inform 2027 budget development and support improved long-term salary forecasting.

The scope of the study will include the following:

- Review and update the current personnel classification system and pay plan for all employees covered under this agreement.
- Conduct interviews with City department heads to better understand employee duties and responsibilities.

- Review specific positions identified by the City and provide recommendations for placement within the existing pay plan, including a general audit to determine whether additional positions should be reviewed.
- Conduct a project-specific salary survey of up to 15 comparable organizations and 40 benchmark positions, and analyze the data to develop recommended pay ranges based on job analysis, job evaluation, and market data.
- Recommend career ladders and career lattices, as appropriate, to support employee growth and progression.
- Provide training to designated City staff on the classification and pay plan process to support implementation and ongoing maintenance.

The City has been pleased with the work performed by Condrey and Associates in 2007 and 2020. Not only have they completed multiple salary studies for the City of Mandan, but they have also completed salary studies for the City of Bismarck. They have demonstrated strong familiarity with the regional public-sector labor market. This smaller-scale study would build on their prior comprehensive work, allowing for a more efficient and consistent review.

The attached draft contract for services includes preliminary dates for drafting purposes only. Final contract dates will be updated following approval to proceed.

ATTACHMENTS:

1. Mandan , ND agreement 2026

FISCAL IMPACT:

$27,500 flat fee for the 2026 compensation study

A budget amendment is being requested for the Human Resources Department's 2026 budget to support this request. The funding source has been provided by Finance from the General Fund 2025 budget savings.

STAFF IMPACT:

This process will consume time from leadership in all departments.

LEGAL REVIEW:

Reviewed by Attorney Oster.

RECOMMENDATION:

I recommend approval of the proposed contract with Condrey and Associates to complete a salary study and classification analysis for the City of Mandan, including approval of the associated 2026 budget amendment for the Human Resources

Department.

SUGGESTED MOTION:
I move to approve the proposed contract with Condrey and Associates to complete a salary study and classification analysis for the City of Mandan, including approval of the associated 2026 budget amendment for the Human Resources Department.

MEMORANDUM OF AGREEMENT

This agreement is made and entered into this ____ day of _____ 2025, by and between the City of Mandan, party of the first part, hereinafter called the COOPERATOR and Condrey and Associates, Inc., party of the second part, hereinafter called the CONSULTANT. All obligations under this agreement will be performed by Condrey and Associates, Inc.

WITNESSETH, inasmuch as the COOPERATOR is desirous of setting up a cooperative service with Condrey and Associates and inasmuch as the CONSULTANT is willing to undertake and conduct such a cooperative service, the purpose of this agreement is to establish the terms and conditions under which such a cooperative service will be accomplished pursuant to the conditions herein set forth.

The CONSULTANT is an independent contractor. Furthermore, the parties hereto agree that any information gathered from the COOPERATOR or its employees, and the documents prepared therefrom, shall be the property of the COOPERATOR. They shall remain confidential and shall not be used by CONSULTANT other than in its duties and responsibilities hereunder.

NOW, THEREFORE, in consideration of the following mutual promises, covenants, and conditions, it is agreed as follows:

Section I

Condrey and Associates will:

a. Carry on the cooperative service via telephone, Zoom, and in the offices of Condrey and Associates substantially as set forth in the attached outline marked "Appendix A" and made a part of this agreement.

b. Preserve all of its records bearing upon the amounts payable under this agreement, and further agrees that any specifically authorized representative of the COOPERATOR shall, until the expiration of one year after final payment under this agreement, have access to and the right to examine any directly pertinent books, documents, papers, and records of Condrey and Associates involving transactions related to this agreement.

Section II

COOPERATOR will pay Condrey and Associates a fixed fee of $27,500 upon receipt of invoices. This amount will be paid in two (2) equal installments, within twenty (20) days of receipt of billing. The invoices should be directed to Ms. Amy Berger, Human Resources Director, City of Mandan, 205 2nd Avenue NW, Mandan, North Dakota 58554; telephone number (701) 667-3217. The billings shall occur on January 15, 2026 and March 1, 2026.

Section III

The term of this agreement shall be from January 2, 2026 through March 31, 2026. However, it may be terminated by either party by written notice of such intent submitted 30 days in advance. In the event of such termination, the COOPERATOR will pay Condrey and Associates a prorated portion of the upcoming installment consistent with the revised termination date. Condrey and Associates will continue to work on the project until the revised termination date and will provide to the COOPERATOR interim findings and summary notes that reflect the status of the project at the time of revised termination.

Section IV

This agreement may be modified at any time by mutual consent of the parties hereto. Any modification hereto shall be in writing and signed by both parties.

Section V

Neither party to this agreement will discriminate against any person, employee or applicant for employment because of race, creed, color, religion, sex, national origin, ancestry, age, veteran status, or disability.

IN WITNESS WHEREOF, this agreement is entered into on the date first above written.

FOR CONDREY AND ASSOCIATES:

_____
Stephen E. Condrey
President

Date:_____

_____
Jan H. Hansford
Vice President

Date:_____

Corporate Seal

FOR THE CITY OF MANDAN:

_____

Date:_____

APPENDIX A

Contract for Technical Assistance to the City of Mandan: Proposal for Reviewing and Updating the City's Classification and Compensation System

The administration of the City of Mandan has determined the need for a review and updating of the job classification system and pay plan for employees covered under its personnel system.

Objectives

Condrey and Associates proposes the following schedule of activities to accomplish three objectives:

1. Review and revise the current personnel classification system and pay plan for all employees covered under this agreement;

2. Collect salary data and produce a recommended pay plan based on job analysis, job evaluation, and survey data; and

3. Train designated personnel in each step of classification and pay plan development to help insure the implementation and maintenance of the system.

Phase I – Developing a Work Plan and Schedule of Activities

1.1 Condrey and Associates, in cooperation with appropriate officials, will generate a work plan of activities and target dates for completion.

1.2 During this phase all the documents detailing the current personnel policies and procedures, job classification system and pay plan will be made available to Condrey and Associates for review and analysis.

Phase II – Job Analysis Survey

2.1 Condrey and Associates staff will interview city department heads concerning employee duties and responsibilities.

2.2 Condrey and Associates will review specifically identified positions and make recommendations for placement on the current plan and assist with a general audit to determine if any other positions warrant review.

2.3 Condrey and Associates staff will make recommendations for revision of the position classification system based on 2.1 and 2.2 above.

Phase III -- Job Evaluation

3.1 Condrey and Associates staff will furnish a job evaluation format of established procedures for ranking jobs and measuring differences in job content.

3.2 Condrey and Associates staff and appropriate city officials will select a format best suited for measuring different levels of knowledge, skills, and abilities required to perform the jobs to be evaluated.

Phase IV -- Developing a Compensation Structure

Condrey and Associates will:

4.1 Condrey and Associates will conduct a salary survey of organizations specifically for this project. The survey will include up to 15 organizations and 40 benchmark positions.

4.2 Condrey and Associates will collect, review, and format published salary data covering relevant public and private organizations.

4.3 Condrey and Associates will analyze and format the survey data for use in establishing competitive pay levels.

4.4 After the survey data is compiled, Condrey and Associates will review all data generated to this point with appropriate officials to determine what additional information needs to be considered before moving to the next phase.

Phase V – Developing a Pay Plan

Condrey and Associates will:

5.1 Establish recommended pay grades based on the job evaluation results (Phase III) and the wage survey (Phase IV).

5.2 Establish pay steps or ranges in each grade and present the complete recommended pay plan to appropriate officials for review. At this point, the plan will reflect the data from Phases III and IV as well as cost-of-living data and the jurisdiction's financial condition and compensation policy.

Phase VI – Implementing and Administering the Program

Condrey and Associates will:

6.1 Recommend a series of career ladders and lattices as appropriate.

6.2 Determine the proper FLSA designation of each position.

6.3 Present alternative plans to ameliorate salary compression.

6.4 Be available to provide a reasonable level of ongoing technical assistance necessary to maintain the program.

Cost and Duration

The cost to Condrey and Associates to provide the services specified in this proposal will be a **fixed fee** of $27,500. Considering the scope of the project, we anticipate an approximate three (3) month work plan beginning January 2, 2026, with final reports submitted on or before March 31, 2026. Follow-up technical assistance will be provided through March 31, 2027 at no additional cost to the City (with the exception of travel-related costs). Formal involvement would terminate March 31, 2026.

City of Mandan
Schedule of Activities

DATE	ACTIVITY
January 2026	o Conduct project orientation for human resources staff and department heads o Distribute current job descriptions for department head review o Revised job descriptions returned to Condrey and Associates
February 2026	o Conduct department head interviews o Begin salary survey
March 2026	o Continue salary survey o Develop preliminary cost estimate o Present preliminary classification and pay report o Publish final report
April 2026 – March 2027	o Provide follow-up technical assistance in pay plan implementation

Project Directors: Dr. Stephen E. Condrey, President
steve@condrey-consulting.com
(706) 380-7107 (Phone)
Ms. Jan Hansford, Vice President
jan@condrey-consulting.com
(706) 540-2099 (Phone)
Condrey and Associates, Inc.
2046 Trimleston Road
Statham, Georgia 30666
www.condrey-consulting.com

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 13, 2026
SUBMITTING DEPARTMENT: HR
DEPARTMENT DIRECTOR: Amy Berger
PRESENTER: Amy Berger, HR Director
SUBJECT: Consider approval of updated Human Resources Generalist Job Description

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STATEMENT/PURPOSE:
To approve the updates in the Human Resources Generalist Job Description.

BACKGROUND/ALTERNATIVES:
To address operational needs within the Human Resources function, updates are proposed to the Human Resource Generalist job description. These changes establish a role-specific career ladder for the HR Generalist position by adding defined advancement levels beyond the existing role and support future planning and development as organizational needs evolve.

Requested updates include:

Human Resources Generalist II – Grade 18:

- A minimum of one year of employment as an HR Generalist with the City of Mandan
- A minimum of two years of experience in a direct Human Resources role
- Professional Certification: SHRM-CP required
- Must demonstrate competency to independently perform duties appropriate to this level

Senior Human Resources Generalist - Grade 19:

- A minimum of three years of employment as an HR Generalist with the City of

Mandan
- A minimum of four years of experience in a direct Human Resources role
- Professional Certification: PSHRA-CP required
- Must demonstrate competency to perform advanced HR duties with limited supervision.

These updates provide clear, role-specific advancement criteria to support consistency, internal development, and continuity within the Human Resources function.
Condrey has recommended the updated grade changes with the required steps in years of experience and obtaining certifications.

ATTACHMENTS:
1. HR02_Human-Resources-Generalist_2025-11-19_Draft

FISCAL IMPACT:
There is no current budget impact, as progression would occur in the future after required experience and certifications are obtained.

HR Generalist (Current) - Grade 17: $28.36 - $42.53
HR Generalist II - Grade 18: $29.79 - $44.69
Senior HR Generalist: Grade 19 - $31.30 - $46.95

Condrey has recommended the updated grade changes with the required steps in years of experience and obtaining certifications.

STAFF IMPACT:
NA

LEGAL REVIEW:
NA

RECOMMENDATION:
To approve as presented.

SUGGESTED MOTION:
I move to approve the Human Resources Generalist job description updates as presented.

Revised:	October 2023; December 2023; November 2025; Condrey 2025
Department:	Human Resources
Reports to:	Human Resources Director
Grade	17 (HRII – Grade 18) (Senior HR – Grade 19)
Dept. Manager Signature:	
Human Resources Signature:	
Finance Director Signature:	
City Administrator Signature:	
Employee Signature:	

JOB SUMMARY

This position is responsible for performing a variety of generalized human resources management duties in support of city operations such as Payroll, Benefits, Recruitment, and Safety related programs.

MAJOR DUTIES

- Oversees the employee selection process, including advertising, recruiting and interviewing for vacant positions; coordinates interviews; screens applications; prepares correspondence.
- Provides assistance to city staff in the interpretation of personnel policies and procedures.
- Develops and conducts new employee orientation.
- Participates in the administration of the City's workforce safety and insurance program; monitors return to work status; communicates with injured employees, WSI representatives, nurses, and vocational rehabilitation representatives.
- Serves on the Safety and Wellness Committee; participates in the administration of the City's safety and wellness programs; collaborates with city staff to reduce the cost, severity and frequency of accidents and illness; identifies and coordinates safety training and activities.
- Analyzes, develops, and revises computer applications and department forms; updates the department website.
- Serves as back-up for processing payroll; reviews payroll data for accuracy and completeness and makes changes as needed; processes and reviews deductions for accuracy; maintains employee leave balances.
- Maintains the confidentiality of employee records.

- Performs benefits administration duties; processes status changes; processes claims; communicates benefits information to employees.
- Tracks leave of absences and maintains leave records.
- Performs related duties.

KNOWLEDGE REQUIRED BY THE POSITION

- Knowledge of the principles and practices of human resources administration.
- Knowledge of the policies, procedures, and ordinances governing city personnel activities, the conditions of employment, and employee benefits.
- Knowledge of state and federal employment and labor statutes and legislative proposals.
- Knowledge of city payroll processes.
- Knowledge of employee benefits administration principles.
- Knowledge of computers and job-related software programs.
- Skill in prioritizing and organizing work.
- Skill in the provision of customer service.
- Skill in understanding and interpreting policies and procedures.
- Skill in the maintenance of confidential employee records.
- Skill in interpersonal relations and in dealing with the public.
- Skill in oral and written communication.

SUPERVISORY CONTROLS

The Human Resources Director assigns work in terms of general instruction. The supervisor spot-checks completed work for compliance with procedures and the nature and propriety of the final results.

GUIDELINES

Guidelines include the Mandan Code of Ordinances, city personnel policies, benefit plan

documents, state and federal laws, and other city policies and procedures. These guidelines require judgment, selection, and interpretation in application.

COMPLEXITY/SCOPE OF WORK

- The work consists of varied administrative and technical duties. The variety of functions to be managed and sensitive timelines contributes to the complexity of the position.

- The purpose of this position is to perform a variety of generalized human resources management duties. Successful performance contributes to the efficiency and effectiveness of department operations.

CONTACTS

- Contacts are typically with department directors, co-workers, other city employees, job applicants, benefits vendors and third-party administrators, representatives of other organizations, and members of the general public.

- Contacts are typically to provide services, to give or exchange information, to motivate persons, or to resolve problems.

PHYSICAL DEMANDS/ WORK ENVIRONMENT

- The work is typically performed while sitting at a desk or table or while intermittently sitting, standing, or stooping. The employee occasionally lifts light and heavy objects.

- The work is typically performed in an office.

SUPERVISORY AND MANAGEMENT RESPONSIBILITY

None.

MINIMUM QUALIFICATIONS

- Knowledge and level of competency commonly associated with the completion of a baccalaureate degree in a course of study related to the occupational field preferred.

- Experience sufficient to understand the basic principles relevant to the major duties of the position, usually associated with the completion of an apprenticeship/internship or having had a similar position for one to two years.

Human Resource Generalist II – Grade 18:

- A minimum of one year of employment as an HR Generalist with the City of Mandan
- A minimum of two years of experience in a direct Human Resources role
- Professional Certification: SHRM-CP required
- Must demonstrate competency to independently perform duties appropriate to this level

Senior Human Resource Generalist - Grade 19:

- A minimum of three years of employment as an HR Generalist with the City of Mandan
- A minimum of four years of experience in a direct Human Resources role
- Professional Certification: PSHRA-CP required
- Must demonstrate competency to perform advanced HR duties with limited supervision.

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 15, 2026
SUBMITTING DEPARTMENT:
DEPARTMENT DIRECTOR:
PRESENTER:
SUBJECT:

STATEMENT/PURPOSE:

BACKGROUND/ALTERNATIVES:

ATTACHMENTS:
None

FISCAL IMPACT:

STAFF IMPACT:

LEGAL REVIEW:

RECOMMENDATION:

SUGGESTED MOTION:

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 14, 2026
SUBMITTING DEPARTMENT: Administration
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Jim Neubauer, City Administrator
SUBJECT: Gaming Site Authorization for Mule Deer Foundation

STATEMENT/PURPOSE:
Approval of a Gaming Site Authorization

BACKGROUND/ALTERNATIVES:
n/a

ATTACHMENTS:
1. Gaming Site Auth - Mule Deer Foundation at Baymont

FISCAL IMPACT:
n/a

STAFF IMPACT:
n/a

LEGAL REVIEW:
n/a

RECOMMENDATION:
Approve.

SUGGESTED MOTION:
I move to approve the gaming site authorization for the Mule Deer Foundation at Baymont Inn & Suites on February 21, 2026.

GAMING SITE AUTHORIZATION

ND OFFICE OF ATTORNEY GENERAL

SFN 17996 (4-2023)

G - ___ ___ ___ ___ (___ ___ ___) ___

Site License Number
(Attorney General Use Only)

Full, Legal Name of Gaming Organization
Mule Deer Foundation

This organzation is authorized to conduct games of chance under the license granted by the North Dakota Attorney General at the following location

Name of Location			
Baymont			
Street **2611 Old Red Trail**	City **Mandan**	ZIP Code **58554**	County **Morton**
Beginning Date(s) Authorized **21FEB2026**	Ending Date(s) Authorized **21FEB2026**		Number of Twenty-One tables, if zero, enter "0" **0**

Specific location where games of chance will be conducted and played at the site (**required**)
Banquet Hall

If conducting **Raffle** or **Poker** activity provide date(s) or month(s) of the event(s) if known
21FEB2026

RESTRICTIONS FOR CITY/COUNTY USE ONLY

The organization **must** provide the City/County a list of game types included in their Internal Control Manual and have the manual available upon request. The manual must throughly explain each game type to be conducted. The City/County can only approve these games at the site.

ACTIVITY TO BE CONDUCTED Please check all applicable games to be conducted at site (**required**)

- ☐ Bingo
- ☐ **ELECTRONIC** Quick Shot Bingo
- ☐ Raffles
- ☐ **ELECTRONIC** 50/50 Raffle
- ☐ Pull Tab Jar
- ☐ Pull Tab Dispensing Device
- ☐ **ELECTRONIC** Pull Tab Device
- ☐ Club Special
- ☐ Tip Board
- ☐ Seal Board
- ☐ Punchboard
- ☐ Prize Board
- ☐ Prize Board Dispensing Device
- ☐ Sports Pools
- ☐ Twenty-One
- ☐ Poker
- ☐ Calcuttas
- ☐ Paddlewheel with Tickets
- ☐ Paddlewheel Table

Days of week of gaming operations (if restricted)	Hours of gaming (if restricted)

If any information above is false, it is subject to administrative action on behalf of the State of North Dakota Office of Attorney General

APPROVALS

Attorney General	Date
Signature of City/County Official	Date

PRINT Name and official position of person signing on behalf of city/county above

INSTRUCTIONS:

1. City/County - Retain a **copy** of the Site Authorization for your files.
2. City/County - Return the **original** Site Authorization form to the Organization.
3. Organizations - Send the **original**, **signed**, Site Authorization to the Office of Attorney General with any other applicable licensing forms for final approval

RETURN ALL DOCUMENTS TO:

Office of Attorney General
Licensing Section
600 E Boulevard Ave, Dept. 125
Bismarck, ND 58505-0040
Telephone: 701-328-2329 OR 800-326-9240

RENTAL AGREEMENT

OFFICE OF ATTORNEY GENERAL
LICENSING SECTION
SFN 9413 (7-2023)

License Number (Office Use Only)

Site Owner (Lessor)		Site Name		Site Phone Number
Baymont		**Baymont**		**701-663-7401**
Site Address	City	State	Zip Code	County
2611 Old Red Trail	**Mandan**	**ND**	**58554**	**Morton**
Organization	Rental Period			Monthly Rent Amount
Mule Deer Foundation	**February 21, 2026** to **February 21, 2026**			

1. Is Bingo going to be conducted at the site?	☒ No	☐ Yes	
1a. If "Yes" to number 1 above, is Bingo the **primary** game conducted? - If Bingo is the primary game, enter the monthly rent amount to be paid. Then answer questions 2 - 7 but do not enter any rent amounts.	☒ No	☐ Yes	$
2. Is Twenty-One conducted at this site? Number of Tables with wagers **up to** $5 _____ **X** Rent per Table $ _____	☒ No	☐ Yes	$
Number of Tables with wagers **over** $5 _____ **X** Rent per Table $ _____			$
3. Is Paddlewheels conducted at this site? Number of Tables _____ **X** Rent per Table $ _____	☒ No	☐ Yes	$
4. Is Pull Tabs Involving either a jar bar or standard dispensing device conducted at this site? Please Check: ☐ Jar Bar ☐ Standard Dispensing Device	☒ No	☐ Yes	$
5. Are Electronic Pull-Tabs conducted at this site? If "Yes" please indicate the number of devices _____	☒ No	☐ Yes	$
Total Monthly Rent			$
6. If the only gaming activity to be conducted at the site is a raffle drawing, please check here. ☒			

TERMS OF RENTAL AGREEMENT:

This RENTAL AGREEMENT is between the Owner (LESSOR) and Organization (LESSEE) that will be leasing the site to conduct games of chance.

The LESSOR agrees that no game will be directly operated as part of the lessor's business.

The LESSOR agrees that the (lessor), (lessor's) spouse, (lessor's) common household members, (management), (management's) spouse, or an employee of the lessor who is in a position to approve or deny a lease may not conduct games at any of the organization's sites and except for officers and board of directors members who did not approve the lease, may not play games at that site. However, a bar employee may redeem a credit ticket voucher from an electronic tab device, winning pull tab involving a dispensing device, pay a prize board cash prize, and award a prize board merchandise prize involving a dispensing device, and sell raffle tickets or sports pool chances on a board on behalf of an organization.

The LESSOR agrees that the lessors on call or temporary or permanent employee(s) will not, directly or indirectly, conduct games at the site as an employee of the lessee on the same day the employee is working in the area of the bar where alcoholic beverages are dispensed or consumed.

If the LESSEE provides the Lessor with a temporary loan of funds for redeeming credit ticket vouchers from an electronic pull-tab device, or pull tabs or prize boards involving a dispensing device, **the lessor agrees to repay the entire loan immediately when the lessee discontinues using the device at the site.**

The LESSOR agrees not to interfere with or attempt to influence the lessee's selection of games, determination of prizes, including a bingo jackpot prize, or disbursement of net proceeds.

The LESSOR agrees not to loan money to, provide gaming equipment to, or count drop box cash for the lessee.

The LESSOR agrees any advertising by the lessor that includes charitable gaming must include the charitable gaming organization's name.

A LESSOR who is an officer or board member of an organization **may not** participate in the organization's decision-making that is a conflict of interest.

At the LESSOR's option, the lessee agrees that this rental agreement may be automatically terminated if the lessee's gaming license is suspended at this site for more than fourteen days or revoked.

Signature of Lessor	Title: Sales Manager	Date: 1/8/26
Signature of Lessee	Title: **Regional Director**	Date: **1/8/26**

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 15, 2026
SUBMITTING DEPARTMENT: Administration
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Jim Neubauer, City Administrator
SUBJECT: Additions to Gaming Site Authorization for Fort Abraham Lincoln Foundation at Lonesome Dove through June 30, 2026

STATEMENT/PURPOSE:
Review and approve the gaming additions to the gaming site authorization for Fort Abraham Lincoln Foundation at Lonesome Dove through June 30, 2026.

BACKGROUND/ALTERNATIVES:
Received an updated Gaming Site Authorization for additions to the "activity to be conducted" section. The additions include bingo, pull tab jar, seal board, and sports pools.

ATTACHMENTS:
1. GAMING SITE AUTH - FALF AT LONESOME DOVE ADDITIONS

FISCAL IMPACT:
n/a

STAFF IMPACT:
n/a

LEGAL REVIEW:
n/a

RECOMMENDATION:
Approve

SUGGESTED MOTION:

I move to approve the updated gaming site authorization for Fort Abraham Lincoln Foundation at Lonesome Dove through June 30, 2026.

GAMING SITE AUTHORIZATION

ND OFFICE OF ATTORNEY GENERAL

SFN 17996 (4-2023)

G - ___ ___ ___ ___ (___ ___ ___) ___

Site License Number
(Attorney General Use Only)

Full, Legal Name of Gaming Organization

Fort Abraham Lincoln Foundation

This organzation is authorized to conduct games of chance under the license granted by the North Dakota Attorney General at the following location

Name of Location

Lonesome Dove

Street	City	ZIP Code	County
2939 Memorial Hwy	**Mandan**	**58554**	**Morton**

Beginning Date(s) Authorized	Ending Date(s) Authorized	Number of Twenty-One tables, if zero, enter "0"
7/1/2025	**6/30/2026**	**2**

Specific location where games of chance will be conducted and played at the site (required)

Whole Bar Area Except Restrooms

If conducting **Raffle** or **Poker** activity provide date(s) or month(s) of the event(s) if known

RESTRICTIONS FOR CITY/COUNTY USE ONLY

The organization must provide the City/County a list of game types included in their Internal Control Manual and have the manual available upon request. The manual must throughly explain each game type to be conducted. The City/County can only approve these games at the site.

ACTIVITY TO BE CONDUCTED Please check all applicable games to be conducted at site (**required**)

[X] Bingo	[ ] Club Special	[X] Sports Pools
[ ] **ELECTRONIC** Quick Shot Bingo	[ ] Tip Board	[X] Twenty-One
[ ] Raffles	[X] Seal Board	[ ] Poker
[ ] **ELECTRONIC** 50/50 Raffle	[ ] Punchboard	[ ] Calcuttas
[X] Pull Tab Jar	[ ] Prize Board	[ ] Paddlewheel with Tickets
[X] Pull Tab Dispensing Device	[ ] Prize Board Dispensing Device	[ ] Paddlewheel Table
[X] **ELECTRONIC** Pull Tab Device		

Days of week of gaming operations (if restricted)	Hours of gaming (if restricted)

If any information above is false, it is subject to administrative action on behalf of the State of North Dakota Office of Attorney General

APPROVALS

Attorney General	Date
Signature of City/County Official	Date

PRINT Name and official position of person signing on behalf of city/county above

INSTRUCTIONS:

1. City/County - Retain a **copy** of the Site Authorization for your files.
2. City/County - Return the **original** Site Authorization form to the Organization.
3. Organizations - Send the **original**, **signed**, Site Authorization to the Office of Attorney General with any other applicable licensing forms for final approval

RETURN ALL DOCUMENTS TO:

Office of Attorney General
Licensing Section
600 E Boulevard Ave, Dept. 125
Bismarck, ND 58505-0040
Telephone: 701-328-2329 OR 800-326-9240

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 15, 2026
SUBMITTING DEPARTMENT:
DEPARTMENT DIRECTOR:
PRESENTER:
SUBJECT:

STATEMENT/PURPOSE:

BACKGROUND/ALTERNATIVES:

ATTACHMENTS:
None

FISCAL IMPACT:

STAFF IMPACT:

LEGAL REVIEW:

RECOMMENDATION:

SUGGESTED MOTION:

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: December 16, 2025
SUBMITTING DEPARTMENT: Administration
DEPARTMENT DIRECTOR: Jim Neubauer
PRESENTER: Brenda Nagel
SUBJECT: Bismarck Mandan Chamber EDC Update

STATEMENT/PURPOSE:
To receive an update on the activities of the Bismarck Mandan Chamber EDC

BACKGROUND/ALTERNATIVES:
n/a

ATTACHMENTS:
1. 2026-01-20 BMCC Presentation

FISCAL IMPACT:
n/a

STAFF IMPACT:
n/a

LEGAL REVIEW:
n/a

RECOMMENDATION:
None needed

SUGGESTED MOTION:
n/a

MOVING BUSINESS FORWARD

BISMARCK MANDAN
CHAMBER | EDC

2026-2030 STRATEGIC PLAN

- JOB SHADOW WEEK
- PROJECT DEVELOPMENT
- MANDAN BUSINESS PITCH CHALLENGE

- FINALIZING LAND DEVELOPMENT CODE
- CANDIDATE PREPARATION
- ACTIVATE MILITARY AFFAIRS COMMITTEE

- STUDENT LEADERSHIP
- LEADERSHIP BISMARCK-MANDAN
- PREPARING OUR COMMUNITY'S LEADERS OF TOMORROW

- 25+ EVENTS FOR MEMBERS IN 2026
- WELCOME INITIATIVE
- WORKFORCE RECRUITMENT TOOLKIT

ECONOMIC IMPACTS

Top 3 contributors to Growth

1. Health Care
2. Retail
3. Manufacturing
   a. Chamber EDC is exploring industrial park locations to expand growth of manufacturing sector

WORKFORCE IMPACTS

MakeYourMarkBisMan.com

- 8.7k individuals reached
- 25+ pages of resources for those new to the community

Community Testimonial Videos

- Featured 4 families
- Recruitment resources for all businesses in community
- Produced 954,423 out-of-state impressions

MANDAN BUSINESS PITCH CHALLENGE

1ST PLACE

Chore

2ND PLACE

SODA DROP

3RD PLACE

Learning Loft®

PEOPLE'S CHOICE: SODA DROP LLC

WORKFORCE RECRUITMENT

SCAN THE QR CODE

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EMAIL
ESHEPHERD@BMCEDC.COM

City Commission

Agenda Documentation

MEETING DATE:	January 20, 2026
PREPARATION DATE:	December 11, 2025
SUBMITTING DEPARTMENT:	Engineering Department
DEPARTMENT DIRECTOR:	Jarek Wigness
PRESENTER:	Jarek Wigness, City Engineer Nic Cullen Michael Gunsch
SUBJECT:	Consider rewrite of Stormwater Design Manual and ordinance update

---

STATEMENT/PURPOSE:
To refine and adjust requirements of contractors, engineers, and landowners regarding stormwater in the City of Mandan.

BACKGROUND/ALTERNATIVES:
In January 2019, Houston Engineering, Inc. completed two memorandums related to the City of Mandan's stormwater management program. These memorandums were never officially adopted by the City. Over the last year, Houston has assisted the City in the implementation of the recommendations contained in the 2019 memorandums. This work included reviewing and revising the memorandums with City staff to incorporate changes that were either left over from the previous effort, or were necessitated by evolving regulations over the last six years. The officially adopted stormwater management ordinances and manual are 18 and 13 years old, respectively. It is imperative to align these documents with current best practices, as well as introduce quality-of-life improvements to the stormwater management review process.

ATTACHMENTS:
1. Mandatory Stormwater Scoping Sheet
2. City of Mandan SWDSM

FISCAL IMPACT:
Along with the updates to the design manual and the ordinance, the fee schedule and civil penalties will be updated to the numbers below:
Stormwater Scoping Sheet $50

Stormwater Management Plan – 1st Review $250 Application
Subsequent Amendments $150 Per Amendment
Inadequate Plan (returned) $250 Resubmittal
Resubmittal - 2nd Review $500 If revisions require additional review
Complex Reviews – 3rd Review or as required $750 min, or actual consultant review cost

Violations (Offense)

Stormwater Management Plan 1st Offense Notice of Noncompliance
2nd Offense $250/day until compliance
3rd Offense $500/day until compliance
4th Offense or Emergency
Suspension/Revocation STOP WORK ORDER
Minium re-check period 5 days
Owner requested extension $250/for a non-compliance extension period,
as determined by City Engineer
SWPPP (Erosion/Sediment Control -per site) 1st Offense Notice of Noncompliance
2nd Offense $250/day until compliance
3rd Offense $500/day until compliance
4th Offense or Emergency
Suspension/Revocation STOP
WORK ORDER
Minium re-check period 3 days
Owner extension request $250/ for a non-compliance extension period
determined by City Engineer

Landowner or Land User in violation of Sec. 107-3-15. - Management of site vegetation $50 Fine

STAFF IMPACT:
Staff will need to become accustomed to new processes and standards, but this should ultimately simplify and standardize workflows.

LEGAL REVIEW:
All documents have been made available to the City Attorney for review.

RECOMMENDATION:
To adopt the new stormwater design manual in this agenda item and approve the rewrite to the stormwater ordinance in the Resolutions and Ordinances section.

SUGGESTED MOTION:
I move to adopt the new stormwater design manual, as presented.

Mandatory Scoping Sheet

Engineering Department
City of Mandan
205 Second Avenue NW
Mandan, ND 58554
701-667-3215

For Office Use Only:
Date Received:
Tracking #:

MANDATORY STORMWATER MANAGEMENT SCOPING SHEET

(Complete all applicable items)

Section 1 - To Be Completed by Applicant

(Return to the City of Mandan Engineering Department)

Project Information:

Site Address: _____

Description of Work: _____

Lot & Block Number: _____ **Subdivision** _____

Project Classification:

- ❑ Residential Lot
- ❑ Site Plan Application
- ❑ Plat Application
- ❑ City Contracted
- ❑ Development or Redevelopment Not Requiring Land Use Approval

Project Size:

Land Disturbance:_____ Impervious Surface Created:_____

Part of a larger common plan of development or sale that will disturb greater than or equal to one (1) acre?

❑ Yes ❑ No

Contact Information:

Applicant: _____ Phone:_____ Fax:_____

Contact Name: _____ Email:_____

Mailing Address: _____ State _____ Zip Code _____

Project Description (Attach a Location Map showing the project in reference to the City Public Storm Sewer System)

Stormwater Management System (Describe the Point(s) of Discharge to the Public Storm Sewer System and attach a Drainage Map noting at a minimum the project site, contours indicating the overall drainage of the region, and Point(s) of Discharge)

Proposed Post-Construction Stormwater BMPs *(Provide a description of the proposed BMPs to mitigate impacts to water quantity and quality impacts. Include additional sheets if necessary.)*

MANDATORY STORMWATER MANAGEMENT SCOPING SHEET

(Complete all applicable items)

Section 2 - To Be Completed by the City

(At a minimum, all boxes checked by the City on this sheet shall be incorporated into the SWMP for the application to be deemed complete and ready for review. Additional requirements may be identified during the application review process.)

Stormwater Management Plan Submittal Requirements

Based upon the information provided in Section 1, the following represents the minimum requirements for a complete submittal for a Stormwater Management Plan Application. However, this list should not be used in lieu of the City of Mandan Zoning Ordinances, the City's Stormwater Design Standards Manual, or accepted engineering fundamentals and practice. Compliance with these requirements does not constitute permit or project approval.; Additional site specific information may be required to allow review and approval of the Stormwater Management Plan. Note: Upon scoping sheet submittal, ensure completed form has been signed in the space provided below:

Applicable Previous Completed Studies, Master Plans or Stormwater Management Plan (The project SWMP is required to meet the recommendations of previously completed plans for the project site)

Watershed Master Plan _____

SWMP _____

Other Plan _____

Summary of Previous Recommendations for Project Area (If applicable, the following are the City Engineer's findings regarding general recommendations for the project site based on previous studies. Additional requirements may be outlined in the studies referenced above)

Post-Development % Impervious _____

Post-Development Pervious CN _____

Post-Development Flow Rates _____

Required Improvements _____

Other _____

Known drainage issues in the vicinity of the Project and other applicable information

Requirements for SWMP Submittal (If project specific stormwater post-construction BMPs are required, or the proposed project exceeds the regional BMP sizing criteria, the following design standards shall be met by the project specific BMP)

Point(s) of Analysis _____

Stormwater Quantity BMP	❑ Regional	❑ Local	❑ On-Site
Stormwater Quality BMP	❑ Regional	❑ Local	❑ On-Site
Required Improvements	❑ Regional	❑ Local	❑ On-Site

Other _____

This form shall be included as an attachment, inside of the front cover, of the SWMP submitted. Failure to include the approved Mandatory Stormwater Management Scoping sheet with the SWMP will result in the application being deemed incomplete for processing.

Stormwater Design

Standards Manual

CITY OF
MANDAN
WHERE THE WEST BEGINS

City of Mandan, ND

Approved: July 2025
Effective: August 2025

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1. INTRODUCTION

1.1. PREFACE

The City of Mandan (City) originally adopted a Stormwater Design Standards Manual in March 2011 as a guide to engineers and developers for the implementation of infrastructure related to the collection, conveyance and discharge of stormwater. Since 2011, the City has completed numerous Watershed Stormwater Master Plans (Master Plans), experienced continuous growth, and has been designated as a Municipal Separate Storm Sewer System (MS4) under the North Dakota Pollutant Discharge Elimination System (NDPDES), necessitating a revision to the Stormwater Design Standards Manual.

1.2. PURPOSE

This Stormwater Design Standards Manual (SWDSM) has the primary purpose of providing uniform requirements for obtaining mandatory stormwater permits for development activities within the City and its extraterritorial area. This SWDSM was developed to:

1. Provide uniform requirements to demonstrate compliance with Chapter 107 of the City Code of Ordinances (Drainage and Stormwater Management) and the MS4 General Permit.
2. Reduce the number of mandatory stormwater permit application resubmittals and decrease delays in project approvals.
3. Clearly define submittal requirements and timing to obtain mandatory stormwater permits for plat and site plan applications.
4. Define the materials required for a stormwater permit application package to be deemed complete and ready for review.
5. Define City review timelines for mandatory stormwater permit applications to provide applicants with a greater level of certainty for planning their projects.
6. Clearly and concisely define the Performance Requirements for stormwater management.
7. Summarize the Design Standards for commonly used construction and post- construction stormwater best management practices.
8. Clearly and concisely define acceptable analysis methodologies.

Content included in this SWDSM is based on the following general assumptions:

9. The Design Engineer and reviewer are experienced Professional Engineers with a working knowledge of stormwater management, hydrologic analysis and hydraulic design applicable to the subject project.
10. Primary users of the manual will consist of Design Engineers preparing applications for mandatory stormwater permits in support of plat and site plan land use approvals.
11. The SWDSM requirements and standards are intended to apply to a majority of development situations. It is anticipated that not every situation can be contemplated in a design manual and that engineering judgment will need to be applied to some projects.
12. Large flood protection projects, floodplain management, regulated dams, roadway bridge hydraulics and other large scale regional drainage projects will have additional performance requirements and design standards outside the scope of this SWDSM.
13. Watershed Stormwater Master Plans adopted by the City Commission contain additional performance and design requirements for stormwater management and are considered complementary to the requirements of this SWDSM. Conflicts will be resolved by the City Engineer on a per project basis.

14. This revised SWDSM is focused on clarifying the requirements for the application and approval of mandatory stormwater permits with an emphasis on the Design Engineer having a strong working knowledge of the theory behind stormwater management.

1.3. USE OF THE MANUAL IN THE ETA

This SWDSM is intended to be utilized for all development and redevelopment projects inside of the corporate limits of the City of Mandan.

Development and redevelopment projects occurring within the City of Mandan extraterritorial area (ETA), require a permit issued by the City Engineer in consultation with the Morton County Engineer. Design Standards for projects in the ETA and Morton County shall meet the requirements of the Morton County Engineer and will generally be noted on the Mandatory Stormwater Scoping Sheet.

Construction activities in the ETA shall obtain coverage under the ND Construction General Permit and comply with the requirements of the Morton County Engineer.

1.4. ACRONYMS

The following acronyms and corresponding terms may be referenced in this SWDSM by use of the acronym.

Acronym	Term
BMP	Best Management Practice
CMP	Corrugated Metal Pipe
CN	Curve Number
EGL	Energy Grade Line
EPA	Environmental Protection Agency
ETA	Extraterritorial Area
FEMA	Federal Emergency Management Administration
HDPE	High-Density Polyethylene Pipe
HGL	Hydraulic Grade Line
HSG	Hydrologic Soils Group
LHWRD	Lower Heart Water Resource District
MS4	Municipal Separate Storm Sewer System
NDDEQ	North Dakota Department of Environmental Quality
NDDOT	North Dakota Department of Transportation
NDPDES	North Dakota Pollutant Discharge Elimination System
NOI	Notice of Intent
NOT	Notice of Termination
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
SHSND	State Historical Society of North Dakota
SWDSM	Stormwater Design Standards Manual
SWMP	Stormwater Management Plan
USACE	United States Army Corps of Engineers

1.5. DEFINITIONS

The following terms, phrases, and words, or their derivatives, are applicable to stormwater management in the City. A number of these entries have been reproduced from Chapter 107 of the City Code of Ordinances (Drainage and Stormwater Management) and the MS4 General Permit as a reference for use in this SWDSM. All terms listed below shall have the meanings as stated in this section. When inconsistent with the context, words used in the present tense include the future tense. Words in plural number include the singular number, and words in the singular number include the plural number. The word "shall" is always mandatory and never permissive.

Term	Definition
Applicant	Any person wishing to obtain a building permit, special use permit, zoning or subdivision approval, and site alternations which in turn under this Chapter requires the submittal and approval of a Stormwater Management Plan and/or an SWPPP.
Approval	Recognition that the project has addressed the applicable Stormwater Management Plan application requirements.
Best Management Practices or "BMPs"	Control measures taken to mitigate changes to both quantity and quality of urban runoff caused through changes to land use. Generally, BMPs focus on water quality problems caused by increased impervious surfaces from land development. BMPs are designed to reduce stormwater volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, and filtration or biological and chemical actions. BMPs also can improve receiving-water quality by extending the duration of outflows in comparison to inflow duration (known as hydrograph extension), which dilutes the stormwater discharged into a larger volume of upstream flow.
Catchment	The area of a development or redevelopment project that collects stormwater to a discrete Point of Discharge or Point of Analysis.
Certification Report	Required when a project is complete to document that the facilities identified in an approved Stormwater Management Plan have been constructed, as approved or with revisions, and will function as intended. A certification report shall also be included as part of the Notice of Termination (NOT) to release an SWPPP Permit.
Common Plan of Development or Sale	A contiguous area where multiple separate and distinct construction activities are planned to occur at different times on different schedules under one plan, e.g., a housing development of five ¼ - acre lots (40 CFR 122.26(b)(15)(i)).
Conditional Approval	The issuance of a Stormwater Management Plan approval on the stipulation that additional materials and/or actions occur in the future to document and confirm the submitted and reviewed application materials.
Construction Plans	Engineered drawings detailing the size and character of the stormwater management facilities and overall site development. Constructions plans are a required submittal to obtain SWPPP approval.

Term	Definition
Construction Stormwater Management	The implementation of appropriate temporary BMPs to minimize soil sediment or pollutants carried in runoff from construction activities. Also included is the management of run-on and runoff of stormwater from the construction activities.
Development	Means any of the following activities: a. Structural development, including construction of a new building or other structure; b. Expansion or alteration of an existing structure that results in an increase in the ground surface dimensions of the building or structure; c. Land disturbing activities; or d. Creation or expansion of impervious surfaces.
Excavation Fill	Any act by which organic matter, earth, sand, gravel, rock or any other similar material is cut into, dug, quarried, uncovered, removed, displaced, relocated or spread and shall include the resulting conditions.
Hydric Soils	Soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. (Reference: USDA, NRCS. 2010. Field Indicators of Hydric Soils in the United States. Field Indicators for Hydric Soils of the United States, Version 9.0)
Illicit Discharge	Any direct or indirect non-stormwater discharge to the storm drain system except water line flushing, landscape irrigation, diverted stream flows, rising groundwater, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation and footing drain water, air conditioning condensation, irrigation water, springs, water from crawl space pumps, stormwater management plan pump systems, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, street wash water, dye testing, and flows from firefighting or other discharges specified by the city to protect public health and safety.
Impervious Surface	Any land cover that prevents rain, or melting snow, from soaking into the ground, such as roofs (including overhangs), streets, sidewalks, patios, driveways, and parking lots. For the purposes of this SWDSM, all road, driveway or parking surfaces, including gravel surfaces, shall be considered impervious.

Term	Definition
Municipal Separate Storm Sewer System or "MS4"	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management Agency under Section 208 of the CWA that discharges to waters of the United States; Designed or used for collecting or conveying stormwater; Which is not a combined sewer; and Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.
Notice of Termination (NOT)	Notification to the NDDEQ that all construction activities for a project have been completed and exposed soils have achieved final stabilization.
NDDEQ	North Dakota Department of Environmental Quality.
Notice of Intent (NOI)	Notice of Intent for coverage under the state NDPDES General Permit NDR04-0000 for stormwaters discharges from small municipal separate storm sewer systems (MS4s) governed by the North Dakota Department of Environmental Quality.
Notice of Transfer	Notification to the City and/or the NDDEQ indicating that the responsibilities of the SWPPP have been transferred along with the transfer of a parcel of land.
On-site Post-Construction Facility or BMP	A permanent stormwater facility provided to serve only the project area or an individual property (lot) and no significant areas outside of the project boundaries. On-site post-construction facilities shall be sized to include the existing condition runoff flows from areas up gradient of the development boundary that flow onto the development site under the existing conditions.
Outfall	The point where a municipal separate storm sewer system discharges from a pipe, ditch, or other discrete conveyance to receiving waters, or other municipal separate storm sewer systems. It does not include diffuse runoff or conveyances, which connect segments of the same stream or other water systems
Pervious Surface	Any land cover that permits absorption of stormwater or snow melt into the ground.

Term	Definition
Point of Analysis	The location where runoff from development or redevelopment will be evaluated for compliance with the requirements of Chapter 107 of the City Code of Ordinances and this SWDSM. In general, this will be the location where post developed flow rates must meet the existing conditions rates and water quality BMPs have been provided. The Point of Analysis may be located downstream of the Point of Discharge(s). The Point of Analysis will be determined by the City Engineer. In practicality, there may be more than one Point of Analysis for a project.
Point of Discharge	A location where stormwater discharges from development or redevelopment areas into the Public Storm Sewer System or other receiving waters. In practicality, there may be more than one Point of Discharge on a site or for a project.
Post-Construction Facilities or Post-Construction BMP	Permanent structural and non-structural best management practices to mitigate adverse impacts to stormwater quality and water quantity which are part of any natural or constructed stormwater system that require periodic or minimal maintenance to retain their operational capabilities. This includes, and is not limited to, storm sewers, infiltration areas, detention areas, channels, streets, etc. These facilities serve more than one property and are typically for larger or multiple lot subdivisions.
Post-Construction Stormwater Management	The implementation of appropriate permanent BMPs to address the stormwater quantity, quality, and conveyance for new and redevelopment projects.
Private Storm Sewer System	A system of conveyances designed or used for collecting or conveying stormwater on privately-owned land or easements which eventually discharges into the Public Storm Sewer System.
Public Storm Sewer System	The Private Storm Sewer System consists of both open and enclosed drainage systems (including roads with drainage systems, parking lots, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are owned and operated by private entities. A system of conveyances designed or used for collecting or conveying stormwater, owned or operated by the City and included in the City's municipal separate storm sewer system (MS4). The Public Storm Sewer System consists of both open and enclosed drainage systems (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are owned or operated by the City and are designed to collect and convey stormwater; and discharge, either directly to an MS4 owned or operated by another public body, or to other receiving waters.

Term	Definition
Record Drawings	A complete clean set of construction drawings that reflect how the project was built, including revisions, addenda, and design revisions – compiled and marked by the design engineer as "record drawings" and dated.
Redevelopment	Any significant demolition and/or reconstruction, alteration or improvement on a previously developed site that could impact the existing stormwater system or creates an increase in impervious surfaces.
Regional Post-Construction BMPs	Stormwater best management practices that have been analyzed, constructed and installed per an adopted Stormwater Master Plan. Regional BMPs are provided to mitigate stormwater impacts from multiple developments contained within a larger watershed boundary. A regional BMP generally receives runoff from multiple stormwater sources and is part of the Public Storm Sewer System. Examples can include regional detention basins or water quality features.
Stabilized	When the exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, erosion control blanket, or other material that prevents erosion from occurring. Grass seeding alone is not stabilization. Snow covered and frozen ground conditions are not considered stabilized.
Standard Specifications	Refers to the current edition of the "Construction Specifications for Municipal Public Works Improvements Mandan, North Dakota" available from the office of the City Engineer.
Stormwater Easement	Provides authority to the entity to which it is granted the ability to convey stormwater runoff either on the surface or within a storm sewer through or within a defined area.
Stormwater Management Plan (SWMP)	A Stormwater Management Plan is required to address stormwater quantity, quality, and conveyance for projects in the City of Mandan as defined by Chapter 107 of the City Code of Ordinances.
Stormwater Pollution Prevention Plan	Stormwater Pollution Prevention Plan (SWPPP): A plan document that describes land disturbing activities that uses Best Management Practices to protect the public and natural stormwater systems and is in conformance with the City of Mandan's MS4 NPDES Permit No. NDR040003 requirements. The City utilizes the State of North Dakota's NPDES General Permit NDR04-0000 for stormwater discharges from small municipal separate storm sewer systems (MS4s). The State's Notice of Intent (NOI) process for a SWPPP requirement is for sites over one (1) acre in size, unless such disturbance is part of a larger development plan unless it is authorized under an existing North Dakota Stormwater Construction Permit. Sites greater than 3000 square feet and less than one (1) acre are authorized via a SWPPP included in the Stormwater Management Plan application. The SWPPP contains a written description of the number, locations, sizes and other pertinent information about best management practice methods designed to meet the requirements of this chapter. This plan shall

	be included in all Stormwater Management Plan applications for approval by the City, including those requiring a North Dakota Stormwater Construction permit.
Term	**Definition**
Sub-catchment	A smaller area of the hierarchical pattern of a drainage from a Catchment.
Sub-watershed	A smaller area of the hierarchical pattern of drainage from a Watershed. An area of land where all surface water is tributary to a larger drainage system. For example, in Mandan, the Heart River Watershed has several unique areas that tributary to the main channel.
Watershed	An area of land where all surface water from rain, melting snow, or ice converges to a single point at a lower elevation where the waters join another body of water, such as a river or lake. An example in Mandan includes the Terra Vallee upstream of the Missouri River.
Waters of the State	Any and all surface waters that are contained in or flow in or through the State of North Dakota as defined in NDCC 61-28-02. This definition includes all water courses, even if they are usually dry.
Wetlands	Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (Reference: Definition of wetlands as used by the USACE and EPA since the 1970s for regulatory purposes: How Wetlands are Defined and Identified under CWA Section 404 | US EPA)

1.6. General Requirements

Development and redevelopment projects within the City of Mandan shall control or collect stormwater runoff consistent with the performance requirements, design standards and analysis methods described in this SWDSM. Failure to do so may result in the denial of the Stormwater Management Plan applied for in accordance with Chapter 107 of the City Code of Ordinances.

Stormwater management is not a one size fits all process and the City has selected a BMP approach to meet the requirements of the MS4 General Permit and Chapter 107 of the City Code of Ordinances. Stormwater Management Plan applications are to include a summary of the site-specific stormwater management BMPs for the following categories:

1. Post-Construction Peak Flow Compliance (**Section 4**);
2. Post-Construction Water Quality Compliance (**Section 5**);
3. Post-Construction Drainage & Conveyance Compliance (**Section 6**); and
4. Construction Stormwater Control (**Section 7**);

1.7. DESIGN EXCEPTIONS AND DEVIATIONS

This SWDSM is not intended to limit innovation or creativity, particularly when such efforts result in more efficient and economical solutions. Departure from the required standards shall be evaluated for approval or denial by the City Engineer on a per project basis.

The City Engineer's decision to grant, deny, or modify the proposed deviation shall be based upon evidence that the deviation request meets all of the following criteria:

1. The change will meet the applicable performance requirement.
2. The change will achieve the intended result in a comparable or superior design.
3. The change will not adversely affect safety and/or operation of the Public Storm Sewer System.
4. The change will not adversely affect maintainability of the Public Storm Sewer System.

A non-standard system may take longer to review, which can influence approval timelines, therefore any deviations shall be requested during the Mandatory Stormwater Scoping Sheet described in ***Section 3***.

1.8. ERRORS & OMISSIONS

Any errors or omissions in the approved plans or information used as a basis for the approval of a Stormwater Management Plan application may constitute grounds for withdrawal of approvals and/or stoppage of any or all the approved work, as determined by the City. It shall be the responsibility of the Applicant and assigned agents to demonstrate why such work should continue, and to make changes to the plans as may be required by the City before approval of the plans is reinstated.

1.9. REFERENCES

Reference 1-1 – Stormwater Design Standards Manual Revision Log

2. STORMWATER MANAGEMENT PROGRAM

2.1. STORMWATER PROGRAM OVERVIEW

The City's stormwater program has been established with the goals of increasing public safety, providing protection of public and private property, and meeting the Municipal Separate Storm Sewer System (MS4) requirements per State and Federal water regulations. The City is a designated MS4 under the EPA's Stormwater Phase II Final Rule published on December 8, 1999 and is regulated under the North Dakota Pollutant Discharge Elimination System (NDPDES) by the NDDEQ. The City's MS4 system includes open and closed drainage systems that:

1. Are owned or operated by the City and are designed to collect and convey stormwater; and
2. Discharge, either directly or indirectly, to an MS4 owned or operated by another public body or to other receiving waters.

The MS4 General Permit requires that the City adopt by ordinance requirements that all new development and redevelopment activities provide post-construction stormwater quality BMPs.

To meet these goals and requirements, the City has adopted and enforced Chapter 107 of the City Code of Ordinances, which sets forth uniform requirements for the stormwater management systems within the City and its extraterritorial area. Refer to ***Section 1.3*** for additional information on use of the SWDSM within the extraterritorial areas.

2.2. MANDATORY STORMWATER MANAGEMENT PERMITS

To demonstrate compliance with the requirements of the MS4 General Permit and Chapter 107 of the City Code of Ordinances, all development activities are required to:

1. Obtain the necessary Stormwater Management Plan approvals;
2. Provide an acceptable method of mitigating increased stormwater flows from new impervious surfaces;
3. Provide an acceptable method of mitigating stormwater quality impacts from development and redevelopment activities;
4. Safely and efficiently convey stormwater flows to the City's Public Storm Sewer System; and
5. Provide management of stormwater runoff during land disturbing activities.

Chapter 107 of the City Code of Ordinances requires stormwater management plan approval for development inside of the City's zoning jurisdiction. This SWDSM is a refinement of the requirements of Chapter 107 of the City Code of Ordinances and provides detailed procedures, performance requirements, design standards and approved analysis methodologies for the application and approval of the Stormwater Management Plan.

2.3. CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

The purpose of this SWDSM is to provide requirements for the application for, and approval of, mandatory stormwater permits for developments within the City of Mandan's zoning jurisdiction. Approval of a City SWMP does not constitute project approval for all required local, State and Federal regulations and permits.

It is the responsibility of the Owner, or Applicant, to obtain all necessary approvals from local, State and Federal agencies for the proposed project. Agencies that may require consultation include, but are not limited to, other City of Mandan departments (i.e. building official or floodplain administrator), Lower Heart Water Resource District, Morton County, Morton County Water Resource District, NDDOT, NDDWR, NDDEQ, SHSND, USACE, FEMA and the EPA.

2.4. REFERENCES

Reference 2-1 – City of Mandan Chapter 107 of the City Code of Ordinances

Reference 2-2 – North Dakota MS4 General Permit

3. SUBMITTAL AND REVIEW PROCEDURES

The goal of this section is to provide a framework for uniformity in regulatory permit(s) and plan preparation. Such uniformity will promote predictability within the City and development community and help secure prompt review and approval of the Stormwater Management Plan. Submittals will also facilitate the operation and maintenance of the proposed system. Approval of SWMP by the City does not relieve applicants from the responsibility of ensuring system performance, safety, and compliance with other local, State, and Federal regulations.

The City will conduct a limited review of the SWMP application materials for compliance with requirements set forth in this SWDSM. Content and scope of the SWMP application materials vary based upon development type, location, and site characteristics. The Applicant acknowledges the following:

1. The Applicant is responsible for certifying that the design, construction drawings, completed construction, and record drawings comply with acceptable engineering practices, State requirements, City specifications, and this SWDSM.
2. The City's SWMP approval is not an endorsement of the application materials nor is it a verification of the engineering data and plans.
3. Neither the Applicant nor any third party may rely upon the City's limited review or approval.
4. The Applicant and Design Engineer are responsible for rectifying any errors or omission discovered in the plans submitted for approval as part of the SWMP application.

3.1. NDDEQ Construction General Permit

All projects that result in land disturbance activity that meets the minimum threshold outlined in the North Dakota Department of Environmental Quality Construction General Permit are required to obtain coverage from the North Dakota Department of Environmental Quality under the Construction General Permit.

3.1.1. Exclusions

The following activities are excluded, at the time of this Manual's publication:

1. Plowing or tilling for agricultural purposes;
2. Emergency activity that is immediately necessary for the protection of life, property, or natural resources;
3. Construction of a one- or two-family dwelling within the City limits and City's extraterritorial area, with the understanding that erosion control measures are implemented on-site during construction by the builder;
4. Construction of any project in the City's extraterritorial area, other than a one- or two-family dwelling, that does not contribute to the City's MS4, with the understanding that erosion control measures are implemented on-site during construction by the builder; or
5. Other construction activities that are determined by the City Engineer to not have potential for adverse impact on stormwater quality.

3.1.2. City Contracted Projects

Projects contracted by the City of Mandan shall meet the submittal and approval requirements of the NDDEQ Construction General Permit.

3.2. SWMP APPLICABILITY CRITERIA

The SWMP addresses the long-term, or permanent, function of drainage facilities for development and redevelopment projects. Factors which must be considered include functionality and maintenance, mitigation of increased runoff, clearly identified runoff conveyance routes, and

water quality treatment. The SWMP application is intended to deal with these considerations and will be used to evaluate a proposed new development or redevelopment project for compliance with the stormwater management requirements of this SWDSM and Chapter 107 of the City Code of Ordinances.

3.2.1. Development Activities

All projects, unless a waiver is granted by the City Engineer during the Mandatory Scoping Sheet Approval, a SWMP is required for activities in areas within either the corporate limits or the extraterritorial area that meet one or more of the following criteria:

1. Development and redevelopment projects resulting in a cumulative addition of 3,000 square feet or more of impervious surface;
2. Any development project that results in construction activity disturbing any amount of land if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more;
3. Land disturbing activity that involves excavating and/or filling in excess of 400 cubic yards of material, regardless of surface area;
4. Any development and redevelopment projects that exceed the assumptions and parameters established/approved in the original master plan.
5. Any development activity that requires approval of a subdivision under Title 14 of the City Code of Ordinances or any development project that requires approval of a site plan; or
6. Any other activity that the City Engineer determines to have a high risk for water quality or quantity impacts to the public storm sewer system or adjoining property.

3.2.2. City Contracted Projects

Projects commissioned by the City of Mandan shall meet the submittal and approval requirements for a SWMP as described in this SWDSM. The application fee will be waived for City contracted projects.

3.2.3. Exclusions

A SWMP will not be required for maintenance work within the public right-of-way. Exclusions from these stormwater permitting requirements do not relieve the development of other required permits and submittals. Common activities which this includes are:

1. Potholing, overlaying, and chip sealing;
2. Replacement of existing utilities and utility patching;
3. Resurfacing of an existing parking lot, including reconstruction of base materials, if resurfaced grades of the parking lot have not altered drainage patterns and the type of surfacing is not changed; and
4. City of Mandan maintenance projects.

3.3. Construction Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP addresses erosion and sediment controls, soil stabilization, dewatering, pollution prevention measures, prohibited discharges, and surface water discharges.

All projects that result in land disturbance greater than or equal to one-acre are required to obtain coverage from the NDDEQ under the Construction General Permit. Projects that require an NDDEQ Construction General Permit shall submit a SWPPP which meets the requirements presented within this SWDSM and requirements of the NDDEQ Construction General Permit along with a completed Notice of Intent (NOI).

3.3.1. Construction Stormwater Management Site Plan

A map of the construction site showing the locations of the construction stormwater management BMPs, the implementation schedule, and a description of illicit discharge controls shall be submitted with the SWMP application. The site plan format shall be consistent with the following:

1. The page size shall not exceed 24" by 36";
2. When multiple sheets are necessary, a cover sheet with an index shall be included;
3. The plan shall be legible and show all of the required information; and
4. The plan shall be prepared at an appropriate scale to show the required information. A scale of 1" = 20' is generally appropriate for projects smaller than one acre. For projects larger than one acre, a scale of 1" = 50' is generally appropriate.

Plan sheets are preferred to be 11" by 17" in size and should match the construction plan sheet sizes not to exceed 24" by 36".

3.3.2. Design Waivers or Deviations (if Applicable)

A description, justification, and copy of design waivers or deviations that are requested and have been granted for the Project shall be submitted with the SWMP application.

3.4. SWMP SUBMITTAL PROCEDURES

SWMP submittal, review and approval is a multi-step process that is intended to present the relevant information and allow applicable time related to an efficient review and approval of either a plat, site plan, other development or redevelopment projects. All SWMP applications and approvals will consist of:

1. Mandatory Stormwater Scoping Sheet;
2. Application, Review and Conditional Approval;

Note the design engineer may be required to submit the SWMP to other Federal, State, and Local agencies.

3.4.1. MANDATORY STORMWATER SCOPING SHEET

A mandatory Stormwater Scoping Sheet is required for all development applications (site plans and plats) and must be completed prior to submitting a SWMP. This document will define or identify the following for the City and Applicant:

1. Applicable Watershed or Master Plan Criteria;
2. Site Specific Analysis Requirements;
3. Known Areas of Deficiencies in the Public Storm Sewer System;
4. Point(s) of Analysis for the SWMP; and
5. Any other pertinent information that would assist in the preparation of the application package, as well as the submittal review and approval processes.

SWMPs will be required to include the approved Mandatory Stormwater Scoping Sheet in the application package, the process for this is as follows:

1. Obtain the scoping sheet from the office of the City Engineer;
2. Fill out the project information;
3. Submit the scoping sheet and any applicable appendices to the City Engineer;
4. The City Engineer will return the completed scoping sheet indicating the minimum requirements for a complete SWMP application as well as the SWMP analysis requirements;

5. Include the completed scoping sheet with the future SWMP submittal package; and
6. Projects in the ETA will require that the City and County approve the Mandatory Scoping Sheet.

3.4.2. SWMP MATERIALS FOR CONDITIONAL APPROVAL

The SWMP application shall be submitted at the time plat or site plan applications are submitted for review; or, if the project does not require plat or site plan approval, the SWMP shall be submitted a minimum of 30 days prior to proposed commencement of construction.

The following materials are required for a complete SWMP application package to allow for review and conditional approval:

1. Approved Mandatory Stormwater Scoping Sheet;
2. SWMP Checklist;
3. Stormwater Management Plan (SWMP); and
4. Stormwater Management Plan Exhibits (Maps and Figures).

The following sections provide a general description of the materials required for the initial SWMP. All submitted materials shall be prepared and sealed by a registered Professional Engineer.

3.4.3. Stormwater Management Plan Application

The Stormwater Management Plan Application is available from the office of the City Engineer. The Stormwater Management Plan Application must be signed by the landowner or include a notarized statement signed by the landowner authorizing the Applicant (i.e., engineer) to act as the landowner's agent and bind the landowner to the terms of Chapter 107 of the City Code of Ordinances and the SWMP conditions.

3.4.4. Stormwater Management Plan (SWMP)

The purpose of the SWMP is twofold:

1. To provide a narrative and analysis describing how the proposed project will meet the post-construction stormwater quantity and quality requirements of this SWDSM and Chapter 107 of the City Code of Ordinances; and
2. To provide documentation of the analysis and assumptions used in sufficient detail so the results can be duplicated.

The SWMP shall be prepared using the mandatory outline and include the required exhibits detailed on the SWMP checklist available from the office of the City Engineer. In general, the SWMP will need to include:

1. Site & Applicant Information;
2. Recommendations for the Project Area;
3. Project Stormwater Management Summary;
4. Hydrologic Analysis Summary;
5. Stormwater Management BMP Summary;
6. Construction Schedule and Phasing;
7. Construction Stormwater Control;
8. Engineer's Statement of Compliance and Seal;
9. Appendices and Additional Information;

3.4.5. Design Waivers or Deviations (If Applicable)

A description, justification, and copy of design waivers or deviations that are requested and have been granted for the project shall be submitted with the SWMP application.

3.4.6. Construction Plans and Specifications for Private Facilities within the Corporate Limits

Construction Plans and Specifications for Private Facilities within the Corporate Limits shall be submitted to the City for review and approval. Submittal of the construction plans shall utilize the SWMP Construction Plan Submittal Checklist available from the office of the City Engineer. The construction plans and specifications prepared for the construction of private stormwater management facilities within the corporate limits or on land that will be annexed prior to development must:

1. Demonstrate consistency with the approved SWMP;
2. Be sealed and signed by a Professional Engineer registered in the State of North Dakota; and
3. Be submitted to the City Engineer for approval.

No construction may commence until the construction plans and specifications have been approved by the City Engineer and all other applicable permits and approvals are received from outside agencies.

3.4.7. Construction Plans and Specifications for Facilities within the Extraterritorial Area

Construction of post-construction facilities within the City's extraterritorial area requires coordination and approval by the Morton County Engineer. The performance requirements and design standards outlined in ***Sections 4 - 7*** will be modified as noted on the Mandatory Stormwater Scoping Sheet.

3.4.8. Construction Plans and Specifications for Public Facilities

Construction Plans and Specifications for Public Facilities within the Corporate Limits shall be submitted to the City for review and approval. Submittals of the construction plans shall utilize the SWMP Construction Plan Submittal Checklist available from the office of the City Engineer. The construction plans and specifications prepared for the construction of public stormwater management facilities within the corporate limits or on land that will be annexed prior to development must:

1. Demonstrate consistency with the approved SWMP;
2. Be in conformance with the requirements of the City Standard Specifications, current special provisions, and any other necessary permits issues by other governmental agencies;
3. Be sealed and signed by a Professional Engineer registered in the State of North Dakota; and
4. Be submitted to the City Engineer for approval.

No construction may commence until the construction plans and specifications have been approved by the City Engineer and all other applicable permits and approvals are received from outside agencies.

3.4.9. Operations and Maintenance Manual

An Operation and Maintenance (O&M) Manual shall be included for each post-construction stormwater management control. The O&M Manual shall identify specific maintenance techniques and schedules for each type of system used on the project. At a minimum, the O&M Manual shall include the following:

1. The post-construction stormwater management control owner;
2. The party responsible for long-term O&M as well as their contact information;
3. An inspection checklist to be used for routine inspections; and
4. A schedule of inspection and maintenance for routine and non-routine inspections and maintenance tasks to be conducted.

The permittee shall provide copies of the approved O&M Manual to the parties responsible for O&M of each post-construction stormwater control. In addition, the responsible party must also provide the City with access to the facility for inspections and review during construction.

On above ground infiltration facilities (e.g., swales, basins) the O&M Manual shall identify maximum allowable trapped sediment depth as well as methods for testing and disposing of accumulated sediments.

3.4.10. Access and Drainage Easements

The SWMP and O&M Manual shall include provisions to allow access to post-construction BMPs to allow for continued operations and ongoing maintenance of the facilities. As a condition of approval of the SWMP, the City Engineer can require that an easement be recorded to allow for continued access to post-construction BMPs, cross parcel drainage easements, and other elements as deemed necessary.

All easements not otherwise included on a plat shall be prepared by a Professional Land Surveyor and recorded against the property at the Morton County Recorder's office. A copy of all recorded easements, including the document number, shall be submitted to the City Engineer for inclusion in the SWMP files and incorporated into the O&M Manual.

3.4.11. Geotechnical and/or Hydrogeological Reports

The permittee shall provide a detailed geotechnical and/or hydrogeological report for all projects proposing the use of stormwater infiltration BMPs as a method of mitigating the stormwater quantity or quality impacts due to development or redevelopment activities.

The purpose of the Geotechnical/Hydrogeology Report is to provide sufficient information demonstrating an understanding of the underlying soils and critical hydrogeological properties that will govern the overall performance, maintenance requirements, and potential impacts to adjacent property or facilities from the use of infiltration BMPs.

3.5. SWMP REVIEW PROCEDURES

3.5.1. Mandatory Stormwater Scoping Sheet

SITE PLAN APPLICATION

An application for a Mandatory Stormwater Scoping Sheet shall be submitted prior to the Site Plan application and required SWMP application.

Within at least seven (7) days of submittal, the approved Mandatory Stormwater Scoping Sheet will be returned to the Applicant. The completed and approved Mandatory Stormwater Scoping Sheet must be attached to the SWMP Application.

PLAT APPLICATION

An application for a Mandatory Stormwater Scoping Sheet shall be submitted seven (7) days prior to the required subdivision pre-planning meeting. The approved Mandatory Stormwater Scoping Sheet will be returned to the Applicant at the pre-planning meeting.

OTHER PROJECTS REQUIRING SWMP

An application for a Mandatory Stormwater Scoping Sheet shall be submitted and approved prior to application for a SWMP for projects that do not require Site Plan or Plat approval.

Within seven (7) days of submittal, the approved Mandatory Stormwater Scoping Sheet will be returned to the Applicant.

3.5.2. SWMP Conditional Approval Materials

Review of the SWMP application is a two-step process:

1. Perform a completeness review to determine that all necessary materials have been submitted to allow a comprehensive review; and
2. Perform a limited review of the submitted materials to determine compliance with the requirements of this SWDSM, Chapter 107 of the City Code of Ordinances and applicable State and Federal Law.

COMPLETENESS REVIEW

Only complete submittals will be reviewed by the City. Within seven (7) working days of receiving the submittal, the City Engineer will review the application package and determine if the required materials and the application are sufficient for review. The Applicant will be informed that the application materials constitute a complete submittal and the application is being reviewed for approval. Determination of a complete application does not guarantee approval of the application.

In the event that the application does not contain the required materials for review, the Applicant will be informed, in writing, of the deficiencies that need to be addressed.

APPROVAL REVIEW

Within 21 working days of the application being deemed complete, the City Engineer will approve the application or provide the Applicant with a list of deficiencies to be addressed in a revised application submittal. Following an approval or denial decision, the City Engineer will mail or email the Applicant the original (signed) copy of the conditional approval, or a list of deficiencies that require consideration and resubmittal. Conditions of final approval will be summarized in the approval letter, including any conditions regarding additional regulatory review from other entities.

If a deficiency list is provided to the Applicant, the Applicant shall submit a revised application package within 60 days. The revised application shall include a summary letter or memo indicating how each deficiency noted in the original application has been revised and remedied in the revised application package.

Land disturbance activities shall not begin until the applicable conditions of SWMP approval have been met. If land disturbances occurs prior to approval, the City will halt any further review of the application and issue a cease-and-desist letter.

RE-APPLICATION CRITERIA

A new application, including fees, shall be required if either of the following conditions is met:

1. A revised application package is not submitted within 60 days of the Applicant being notified of deficiencies; or
2. The revised application package does not address all deficiencies noted in the review.

3.6. SWMP REQUIREMENTS FOLLOWING CONDITIONAL APPROVAL

This section includes the requirement to modify a SWMP after conditional approval and how to obtain final approval.

3.6.1. SWMP Modifications or Changes

If the permittee wishes to make changes or revisions to the originally approved SWMP, the proposed revisions should be submitted to and approved by the City prior to construction of changes. If changes are made after construction has commenced, work may be suspended until revisions are approved. Resubmittals shall include the following:

1. Revised checklist(s) identifying which portions of the project have been modified;
2. Brief narrative description of the change and the purpose/reason for the change;
3. Substitute pages of the originally approved materials that include the proposed changes;
4. Revised drawings showing all changes; and
5. Other supporting information that explains and supports the reason for the change.

The revisions including, but not limited to, any revised calculations and model data shall be submitted to the City Engineer, who, within 30 days, will issue a revised conditional approval letter or a justification for rejecting the proposed modification(s).

3.6.2. SWMP Completion

Completion of the SWMP consists of meeting all of the conditions of approval, installation of all required post-construction BMPs and submitting a Certification Report to the City Engineer for review and approval. During the review and approval of the Certification Report, the City Engineer may make a final inspection of the site to confirm improvements have been completed consistent with the approved SWMP.

CERTIFICATION REPORT

The purpose of the Certification Report is to provide documentation that the installed post-construction BMP will function as described in the approved SWMP. In general, the Certification Report shall include:

1. A narrative, and, if necessary, revised analysis summarizing the performance of the implemented post-construction BMPs;
2. A statement that the implemented post-construction BMPs are functioning as intended by the SWMP;
3. Record Drawings of conveyance systems or flow control facilities discharging to the City's Public Stormwater System.
   - The page size shall not exceed 24" by 36";
   - Where multiple sheets are necessary, a cover sheet with an index shall be included;

The Certification Report shall be prepared and sealed by a registered professional engineer or other qualified individual as deemed acceptable by the City Engineer.

FAILURE TO COMPLETE SWMP

Failure to comply with the conditions of the SWMP may result in enforcement activities by the City as described in Chapter 107 of the City Code of Ordinances.

3.7. REFERENCES

Reference 3-1 – Mandatory Stormwater Scoping Sheet

Reference 3-2 – Stormwater Management Plan Application & Checklist

Reference 3-3 – Stormwater Management Plan Template

Reference 3-4 – Certification Report Checklist

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4. POST-CONSTRUCTION PEAK DISCHARGE COMPLIANCE

The goal of this section is to provide guidance on the design, performance, and analysis requirements of the City of Mandan regarding Post-Construction Peak Discharge Compliance to focus on the prevention of damage to the development site, streams, drainage ways, streets, and public and private property.

4.1. POST-CONSTRUCTION BMP PERFORMANCE REQUIREMENTS

Projects that require a SWMP are subject to Peak Discharge Control requirements and shall include peak discharge post-construction structural or non-structural BMPs to conform to the requirements of ***Table 4-1***and ***Section 4.1.1*** of this SWDSM. Note that these are underlying basic requirements and additional analysis and design requirements for specific components of the City's Public Storm Sewer System are provided within the following sections of this SWDSM.

Table 4-1 – Point of Discharge Peak Flow Compliance

Point of Discharge Location	Peak Discharge Control Requirement
Public Storm Sewer System and new Outfalls to surface waters	Post-Construction runoff resulting from the 2-, 5-, 10-, and 100-year 24-hour rainfall events shall not exceed the runoff rate of the existing conditions. The conveyance capacity of the receiving system shall not be exceeded.

4.1.1. HYDROLOGIC REQUIREMENTS FOR PROJECTS

Projects requiring a SWMP that are not located in a Stormwater Master Plan or previously approved SWMP are required to provide on-site post-construction BMPs to address peak discharge compliance performance requirements of ***Table 4-1***.

Projects that require a SWMP and are located within an area that has an adopted Stormwater Master Plan or previously approved SWMP shall provide documentation that the project meets the requirements for Peak Discharge Compliance by utilizing one of the scenarios described below.

Scenario 1 - Master Plan Based on Current Rainfall and NRCS HSG

Scenario: The project is located within an area that has an adopted Stormwater Master Plan or previously approved SWMP.

1. Master Plan or SWMP utilized the Rainfall and Hydrologic Soil Groups required by Section 4.4.1 of this SWDSM;
2. Master Plan or SWMP included regional or local post-construction peak discharge BMPs that have been constructed; and
3. Proposed project includes less than or equal to the impervious percentage and maintains overall drainage boundaries that were assumed in the Master Plan or SWMP.

Requirement: Document the project percent impervious and drainage boundaries in the SWMP application.

Scenario 2 - Master Plan Based on Current Rainfall and NRCS HSG

Scenario The project is located within an area that has an adopted Stormwater Master Plan or previously approved SWMP and the following conditions are met:

1. Master Plan or SWMP utilized the Rainfall and Hydrologic Soil Groups required by Section 4.4.1 of this SWDSM;
2. Master Plan or SWMP included regional or local post-construction peak discharge BMPs that have been constructed; and

3. Proposed project includes greater than the impervious percentage and/or alters overall drainage boundaries that were assumed in the Master Plan or SWMP.

Requirement:

1. Analyze the peak to each Point of Analysis utilizing the modeling parameters assumed in the Master Plan or previously approved SWMP. Parameters include impervious cover, CN, rainfall, HSG, and drainage boundaries;
2. Analyze the peak flow to each Point of Analysis utilizing the proposed project impervious coverage and drainage boundaries; and
3. Provide an on-site post-construction BMP to mitigate the difference between the peak flow rate calculated in Steps 1 & 2.

Scenario 3 - Master Plan Based on TP 40 Rainfall and Outdated NRCS HSG

Scenario: The project is located within an area that has an adopted Master Plan or previously approved SWMP that utilized:

1. TP 40 rainfall depths; and\or
2. Outdated NRCS HSG.

Requirement:

1. Analyze the peak flow to each Point of Analysis utilizing the impervious cover, CN, rainfall, HSG, and drainage boundaries assumed in the Master Plan or SWMP;
2. Analyze the peak flow to each Point of Analysis utilizing the proposed project impervious coverage, drainage boundaries, and the model parameters required by Section 4.4.1 of this SWDSM; and
3. Provide an on-site post-construction peak flow BMP to mitigate the difference between the peak flow rate calculated in Steps 1 & 2.

Scenario 4 - Master Planned Regional Facilities Not Yet Constructed

Scenario: The project is located within an area that has an adopted Master Plan or previously approved SWMP that included regional or local post-construction peak flow mitigation that has not yet been constructed.

Requirement:

1. Construct the regional or local post-construction peak flow BMP(s) required by the Master Plan or SWMP; or
2. Provide an on-site post-construction peak flow BMP that meets the requirements of Section 4.1.1 of this SWDSM, until such time that master planned facilities are constructed to accommodate the site.

Scenario 5 - Projects Outside of Master Planned Areas

Scenario: The project is located within an area that has not been included in an adopted Master Plan or previously approved SWMP.

Requirement:

1. Analyze the existing condition peak flow to each Point of Analysis utilizing the existing condition impervious coverage, drainage boundaries and the model parameters required by Section 4.4.1 of this SWDSM;
2. Analyze the post-construction peak flow to each Point of Analysis utilizing the proposed project impervious coverage, drainage boundaries, and the model parameters required by Section 4.4.1 of this SWDSM; and
3. Provide an on-site post-construction BMP to mitigate the difference between the peak flow rate calculated in Steps 1 & 2.

4.2. POST-CONSTRUCTION BMP ANALYSIS & REPORTING REQUIREMENTS

4.2.1. HYDROLOGIC ANALYSIS & REPORTING

All Projects that require the analysis and sizing of post-construction BMPs shall document the following minimum information for the hydrologic analysis in the SWMP application:

1. The SWMP shall document that the SWMP application and project design meets or exceeds the Performance Requirements for Peak Flow Compliance; and
2. Hydrologic analysis and reporting requirements that are included on the SWMP Checklist available in Reference 3-5.

4.2.2. DETENTION BASINS ANALYSIS & REPORTING

When detention basins are proposed as a post-construction BMP to mitigate for peak discharge compliance, the following minimum performance standards shall be documented in the SWMP application.

Engineered Outlets

All proposed detention basins shall include an outflow structure to limit the post-construction peak flow discharge less than or equal to the existing condition peak flow discharge for the events required by ***Table 4-1.***

Engineered outlet analysis and reporting requirements are included on the SWMP Checklist available in ***Reference 3-2***.

Infiltration as an Engineered Outlet

When infiltration is used as an engineered outlet:

1. The Applicant shall note on the Mandatory Stormwater Scoping Sheet the proposed use of infiltration as a peak discharge compliance post-construction BMP;
2. The Design Engineer shall obtain City approval on approach, analysis methods, and field investigation requirements as part of the Mandatory Stormwater Scoping Sheet; and
3. The Design Engineer shall provide a Project specific geotechnical analysis and report the proposed compliance requirements.

Emergency Spillway and\or Overflow Requirement

All proposed detention basins shall have an emergency spillway or overflow path that will route overflow without causing a failure of the detention basin berm or embankment. All overflows shall be contained within a designated conveyance that is not directed towards structures or on to private properties.

Emergency Spillway analysis and reporting requirements are included on the SWMP Checklist.

When approved by the City Engineer, small basins may utilize an oversized riser structure and outlet culvert for the emergency overflow path.

North Dakota Dam Safety Standards shall be followed when meeting regulated criteria.

4.3. BMP MINIMUM DESIGN STANDARDS

The following sections include minimum standards that stormwater structures and BMPs shall meet within the City of Mandan jurisdiction. The standards below do not replace judgment or standard of care for the Design Engineer.

4.3.1. DETENTION BASINS

The following minimum design standards are provided as a general guide for small detention basins associated with local and on-site post-construction BMPs. Design of large regional basins and dams requires engineering experience and knowledge outside of the scope of this SWDSM.

Detention basins proposed as post-construction peak discharge BMPs shall meet the following minimum design requirements:

Regulatory Permit Required:

Detention basins shall be designed such that the facility does not create a requirement that it is considered a regulated dam per the applicable ND Administrative Code and State Statutes.

1. Regulated dams and water rights are administered by the North Dakota Department of Water Resources.
2. In the event of a design variation allowing a State regulated facility, it is the Applicants responsibility to coordinate and secure all required permits with the North Dakota Department of Water Resources.

Design and Construction Standards:

Public and private basins shall meet the requirements of the current edition of the City of Mandan Construction Specifications and the following minimum construction standards:

1. **Side Slopes and Slope Stability:** Slopes of detention basins shall meet the following minimum requirements:
   a. Maximum Side Slopes: 3H:1V
   b. Minimum Bottom Grade: 0.5 percent
   c. Maximum Bottom Grade: 5 percent
2. **Seepage Control:** A seepage control system should be provided for all embankments where a reservoir pool will be maintained for more than 72 hours, regardless of the depth of pond, height of embankment, or foundation materials.
3. **Material and Compaction Requirements:** Fill material shall meet the following minimum standards:
   a. **Material Type**: Embankments shall consist of cohesive material consisting of Silts and Clays (CL and SC). Other materials may be approved by the City Engineer.
   b. **Maximum Lift Depth**: 6” compacted
   c. **Compaction Equipment**: All compaction shall be completed with a sheeps foot or pneumatic roller.
   d. **Compaction Requirement:** 95% of Maximum as determined by ASTM D698 (Standard Proctor)
   e. **Moisture Requirement:** 0 to +3% of optimum as determined by ASTM D698
4. **Freeboard**: Per Table 4-2.

Table 4-2 – Detention Basin Minimum Freeboard Requirements

BMP Catchment Area	Minimum Freeboard Requirement(1)
One (1) Acre or Less	0.5 foot
Greater than One (1) Acre	1.0 foot

(1) Calculated from 100-year 24-hour water surface elevation to the lowest uncontrolled overflow structure

5. **Embankment & Pool Protection:** All exposed soil shall be stabilized by an appropriate method. The preferred stabilization method is vegetation. All vegetated slopes and pool areas shall include the installation of a layer of suitable plant growth material prior to seeding. Large detention basins shall include protection from wind and wave action for the normal pool surface.

a. **Minimum Topsoil Depth**: 6 inches

b. **Seeding:** Per City Standard Specification

c. **Rip-Rap Stabilization:** Per City Standard Specification and ***Table 6-12***.

d. Shall also follow standards established in Section 5.3.1

6. **Engineered Outlets:** All basins shall have an engineered outlet that conforms to the following minimum standards:

a. Minimum orifice size of 4 inches (note that water quality outlets have a smaller allowable orifice size);

b. Trash protection for all orifices and\or structural overflows; and

c. A direct connection to the Public Storm Sewer System.

I. It is the responsibility of the Applicant to obtain all necessary offsite easements to allow connection of proposed basin outlets to the Public Storm Sewer System at the Point of Discharge identified in the Mandatory Stormwater Scoping Sheet approval process.

II. Direct Connection can include pipe or open channel conveyance.

7. **Infiltration as an Engineered Outlet**: Basins that utilize infiltration as an engineered outlet require an underdrain that, at a minimum, satisfies the following criteria:

a. Consists of a 12-inch layer of drain rock underlying the calculated maximum pool area.

b. Drainage layer shall be located under the growing medium and shall not hinder the facilities ability to suitably vegetate.

c. Drainage layer shall include properly sized underdrain perforated pipes to collect water that does not infiltrate to the groundwater system.

d. Underdrain pipes shall have a direct connection to the Public Storm Sewer System following the approved criteria.

8. **Outlet Protection**: Design of outlet culverts shall include:

a. Culverts shall have flared end sections.

b. Energy dissipation and armoring shall be provided that is appropriate for the calculated shear stress and velocities from the 100-year 24-hour event.

c. Rip-rap sizing shall meet the recommendations of ***Table 6-12.***

9. **Emergency Overflow**: Basins shall include an emergency spillway or overflow.

a. The invert of the overflow shall be set to the 100-year 24-hour event water surface elevation.

b. The overflow shall be designed to convey the design flows around the berm structure for discharge into the downstream conveyance system.

c. The overflow shall be designed, stabilized, and sited to protect the structural integrity of the berm.

d. When possible, an earthen overflow should be constructed in native soils and not

fill material within the berm structure.

10. **Easements Required**: Basins shall include drainage easements within or outside the proposed plat, or be platted as an undevelopable lot to fully contain the detention basin maximum pool, embankment, outlet protection and other appurtenances as required by the City Engineer.
    a. Easements shall be noted as “Public” (maintained by the City of Mandan or other approved public entity) or “Private” (maintained by the Applicant/Owner).
    b. Public Easements must be approved by the City.
    c. Private Easements must have a provision to allow access by the City to allow for inspection and maintenance of derelict BMPs.
    d. BMPs constructed on undevelopable lots will only be allowed when platted as Common Interest Lots that are attached to benefiting parcels. Use of Common Interest Lots must be approved by the City.
11. **Operation and Maintenance**: When utilizing detention basins, the SWMP application shall include:
    a. Identification of the entity responsible for long-term maintenance of all drainage facilities.
    b. All privately maintained post-construction BMPs shall include the submittal and approval of Operations and Maintenance Plan as part of the SWMP application.

4.3.2. GEOTECHNICAL / HYDROGEOLOGIC REPORT REQUIREMENTS

Geotechnical reports are required for sites where an infiltration system is proposed. Site specific geotechnical requirements will be determined during the Mandatory Stormwater Scoping Sheet process. In general, geotechnical reports are to include the information required by ***Reference 4-1.***

4.4. ANALYSIS METHODOLOGIES

The goal of this section is to provide detailed requirements for the analysis of Peak Discharge Control Compliance. This section is not intended to provide instruction on how to use the various methodologies or software packages as it is assumed that a sufficient understanding of hydrologic and hydraulic analyses as they apply to urban stormwater management and drainage is a prerequisite to the use of this SWDSM.

4.4.1. HYDROLOGY (COMPUTING RUNOFF)

Requirements necessary for computing runoff within the City of Mandan’s jurisdiction are listed below:

Acceptable Methods:

1. NRCS (SCS) Curve Number (CN) Method, NRCS Unit Hydrograph Methods & Time of Concentration Methods.
2. The Rational Method is not an accepted methodology for Peak Discharge Control Compliance.

Separation of Impervious/Pervious:

1. Impervious and pervious cover must be separated in the analysis on a per sub-catchment basis. **Use of composite CN numbers that include the impervious area will not be permitted.**
2. If the hydrology modeling software selected by the Design Engineer does not allow for direct entry of the sub-catchment percent impervious, the sub-catchment will need to be

modeled as two individual sub-catchments, each having the same time of concentration but with the areas of each appropriately reflecting the pervious and impervious cover. This method is demonstrated in Example 4-1.

3. Pervious and Impervious area within the project site must be manually measured to reflect the actual site design.

4. Modeling of offsite watersheds that are routed through a project site may utilize typical impervious percentages as provided in ***Table 4-3.***

Example 4-1 – Separation of Impervious and Pervious Areas

If a 10-acre site is 25 percent impervious with the pervious portion having a CN of 74, the site:

1. Shall not be assumed to have a single, composite CN of 80; and

2. The runoff shall be computed using:

a. A 2.5-acre sub-catchment with a CN of 98 for the impervious area;

b. A 7.5-acre sub-catchment with a CN of 74 for the pervious area; and

c. Both sub-catchments shall be assigned the same Tc, calculated based on the longest flow path within the 10-acre site.

Table 4-3 - Typical Impervious Coverage for Offsite Drainage

Land Use Type		Impervious Cover
Residential	1/8 Acre Lots	65%
	1/4 Acre Lots	38%
	1/3 Acre Lots	30%
	1/2 Acre Lots	25%
	1 Acre Lots	20%
	2 Acre Lots	12%
Commercial		85%
Industrial		90%
Street ROW(1)		85%

(1) Street ROW includes the street, landscape boulevard, sidewalk and driveway aprons included in the public street right-of-way. Highway and/or arterial street sections may require higher impervious percentage.

Minimum Impervious Coverage:

The minimum impervious coverage values provided in ***Table 4-4*** are intended to guide the planning of stormwater facilities in the platting phase by providing a minimum impervious cover to be used for each zoning type based on Section 101-8 of the City Zoning Ordinance. Impervious coverages exceeding the values in ***Table 4-4*** may be used when planning stormwater facilities. Site plans shall use the actual measured impervious cover. Additional explanation is provided below:

1. Plats:

a. Development in the platting phase shall not assume a minimum impervious coverage value less than those provided in Table 4-4.

b. Higher assumed impervious amounts may be recommended or used by the Design Engineer.

c. The approved plat SWMP will set the maximum impervious coverage for the development as a whole. Individual lots will conform to this standard unless they are developed as combined parcels.

d. Development of individual or combined parcels inside of an approved plat SWMP to higher than planned impervious percentages may require a modification to existing facilities or construction of new facilities.

2. Site Plans:

a. Shall use the actual impervious cover for the proposed project.

Table 4-4 – Minimum Impervious Coverage

Zoning Type		Minimum Impervious Cover
Residential Development	RR	12%
	R7,4,3.2	15%
	RH/RMH	18%
	RM	25%
Commercial		85%
Industrial / MX		90% / 45%
Street ROW(1)		85%

(1) Street ROW include the street, landscape boulevard, sideway and driveway aprons included in the public street right-of-way. Highway and/or arterial street sections may require higher impervious percentage.

Hydrologic Soil Group (HSG):

1. Shall be obtained from the NRCS Web Soil Survey;
2. Complex soil groups shall be set to the Aggregation Method of “Dominant Condition” within the Advanced Options of the NRCS Web Soil Survey (See ***Reference 4-2***);
3. “Urban Land” shall be assigned a HSG of “C”; and
4. Dual HSG classifications shall be assigned the HSG with the higher runoff potential (i.e. HSG B/D shall be assumed to be HSG D).

CN Values

CN values shall be obtained from ***Table 4-5***. Values different from those provided in ***Table 4-5*** must be approved by the City Engineer.

Table 4-5 – Runoff Curve Numbers

Cover Type	Curve Numbers for HSG Soil Groups			
	HSG A	HSG B	HSG C	HSG D
Impervious	98	98	98	98
Gravel Surface	96	96	96	96
Grass (Lawn)	39	61	74	80
Brush	30	48	65	73
Pasture/Rangeland	39	61	74	80
Cropland	62	73	80	84
Meadow (not grazed)	30	58	71	78

1. The CN values are the maximum allowable for existing conditions analyses.
2. The CN values Table 4-5 are the minimum allowable for post-construction conditions analyses.

Time of Concentration (Tc):

1. **Minimum** Tc: 5 minutes
2. **Sheet Flow**: Maximum length of 100 feet.
3. Refer to Part 630 Chapter 15 of the National Engineering Handbook for additional guidance and information.

Rainfall Depths: *See Reference 4-3*

1. **Rainfall Distribution**: SCS Unit Hydrograph Type II or Atlas-14 Nested
   a. **Peak Rate Factor**: 325
2. **Rainfall Event:** 24-Hour Storm, unless otherwise master planned or platted.

Maximum Rainfall Hyetograph Time Increment:

10 minutes

Gravel Roadways and Gravel Parking Lots:

Shall be considered as part of the impervious area when separating and analyzing pervious and impervious area within a catchment.

4.4.2. HYDRAULIC ROUTING

The following list is intended to provide the Design Engineer with City of Mandan requirements for Hydraulic Routing.

Routing Method:

1. Storage Indication Method (also known as level-pool routing) may be utilized for projects with unconnected basins and free discharges. This method eliminated the need for detailed geometric input allowing for overflows through a separate outlet.
2. Dynamic Routing Methods (also known as hydraulic routing) shall be incorporated for all projects that include interconnected basins, pump stations, tail water or backwater

conditions, and other complex conditions that require a dynamic routing method.

3. **Rational routing methods shall not be permitted.**
4. Routing method requirements may be noted in the Mandatory Stormwater Scoping Sheet.

Starting Water Surface Elevation:

1. For proposed basins the starting Water Surface Elevation (WSE) in a detention facility shall be assumed to be equal to the invert of the lowest engineered outlet.
2. Known tail water or backwater conditions may require that the starting WSE be higher.

Outlet Protection:

1. **Shear Stress:** Shall be calculated using the following equation:

$\tau = \gamma D S$

Where:

τ = Shear Stress (lb/ft^2)

γ = Weight of Water (lb/ft^3)

D = Average Depth of Water (ft)

S = Surface Water Slope (Energy Grade Line)

4.4.3. ACCEPTABLE SOFTWARE

Acceptable software for the analysis of peak discharge is provided by ***Reference 4-4***.

4.5. REFERENCES

Reference 4-1 – Geotechnical Investigation and Report Requirements

Reference 4-2 – Advanced Options of the NRCS Web Soil Survey

Reference 4-3 - NOAA Atlas 14 Rainfall Depths

Reference 4-4 – Acceptable Software

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5. POST-CONSTRUCTION WATER QUALITY COMPLIANCE

The goal of this section is to provide guidance on the design, performance, and analysis for Post-Construction Water Quality BMPs to meet the requirements as outlined in the City's MS4 permit (***Reference 2-2***).

5.1. POST-CONSTRUCTION BMP PERFORMANCE REQUIREMENTS

Projects that require a SWMP are subject to Post-Construction Water Quality requirements and shall propose permanent structural or non-structure BMPs that conform to the requirements of ***Table 5-1***. Note that these are underlying basic requirements and additional analysis and design requirements for specific components of the City's Public Storm Sewer System are provided within the following sections of this SWDSM.

Table 5-1 – Water Quality Performance Requirement

Situation	Water Quality Requirement
New Development & Impervious Areas	Prescriptive BMP sizing requirements per Reference 5-1.
Redevelopment & Retrofit	Design BMPs to treat the first 0.5 inches of runoff from impervious areas.
Alternative BMP Method[1]	80% Total Suspended Solids (TSS) removal on an average annual basis shall be achieved.

(1) Requires approval from the City Engineer during the Mandatory Scoping Sheet process.

5.1.1. REQUIREMENTS FOR PROJECTS

Projects that require a SWMP and are not located within a Stormwater Master Plan or previously approved SWMP are required to provide on-site, post-construction BMPs to address post-construction water quality compliance performance requirements of ***Table 5-1***.

Projects that require a SWMP and are located within an area that has an adopted Stormwater Master Plan or previously approved SWMP shall provide documentation that the project meets the requirements for Water Quality Compliance by utilizing one of the scenarios described below.

Scenario 1 – Master Plans with Water Quality Post-Construction BMPs

Scenario: The project is located within an area that has an adopted Stormwater Master Plan and the following conditions are met:

1. Master Plan or SWMP included regional or local post-construction water quality BMPs that have been constructed; and
2. Proposed project includes less than or equal to the impervious percentage and maintains overall drainage boundaries that were assumed in the Master Plan or SWMP; then

Requirement: Document that proposed project impervious percentage is less than or equal to that assumed in the Master Plan.

Scenario 2 – Master Plans with Water Quality Post-Construction BMPs

Scenario: The project is located within an area that has an adopted Stormwater Master Plan or previously approved SWMP and the following conditions are met:

1. Master Plan or SWMP included regional or local post-construction water quality BMPs that have been constructed; and
2. Proposed project includes greater than the impervious percentage and/or alters overall

drainage boundaries that were assumed in the Master Plan or SWMP.

Requirement: Provide on-site post-construction water quality BMPs for the difference between the Master Planned and project proposed impervious percentage consistent with the requirements of ***Table 5-1***.

Scenario 3 – Master Planned or Local Post-Construction Water Quality BMPs Not Yet Constructed

Scenario: The project is located within an area that has an adopted Master Plan or previously approved SWMP that included regional or local post-construction water quality BMPs that have not yet been constructed.

Requirement:

1. Construct the Master Plan proposed regional or local post-construction water quality BMPs; or
2. Provide on-site post-construction water quality BMP consistent with the requirements of **Table 5-1,** until such a time as the master planned BMPs are fully implemented.

Scenario 4 – Master Plans Require On-site Post-Construction Water Quality BMPs

Scenario: The project is located within an area that has an adopted Master Plan or previously approved SWMP that included recommendations that on-site post-construction water quality BMPs be utilized.

Requirement: Provide on-site post-construction water quality BMPs consistent with the requirements of ***Table 5-1***.

Scenario 5 – Master Plans without Post-Construction Water Quality BMPs

Scenario: The project is located within an area that has an adopted Stormwater Master Plan or previously approved SWMP that did not recommend or include regional or local post-construction water quality BMPs.

Requirement:

1. Retrofit the existing regional or local post-construction peak discharge BMP to function as a post-construction water quality BMP consistent with Table 5-1; or
2. Provide on-site post-construction water quality BMPs consistent with the requirements of **Table 5-1**.

Scenario 6 – Projects Outside of Master Planned Area

Scenario: The project is located within an area that has not been included in an adopted Master Plan or previously approved SWMP.

Requirement: Provide on-site post-construction water quality BMP consistent with the requirements of ***Table 5-1.***

5.2. POST-CONSTRUCTION BMP ANALYSIS & REPORTING REQUIREMENTS

5.2.1. PRESCRIPTIVE BMP ANALYSIS AND REPORTING

Post-construction water quality BMP SWMP analysis and reporting requirements are included on the SWMP Checklist.

5.2.2. ALTERNATIVE BMP METHOD ANALYSIS AND REPORTING

Post-Construction water quality BMPs, other than Prescriptive BMPs included in

Reference 5-1, may be utilized when the analysis and sizing has been documented in the required SWMP application materials. The following minimum information shall be provided:

1. Citation and reference to an accepted BMP Manual for the analysis requirements and

design standards for the Alternative BMP;

2. Demonstration that the requirements of Table 5-1 have been met; or
3. Demonstration that alternative performance requirements approved by the City Engineer have been met; and
4. The alternative performance requirements have been approved as a deviation prior to the submittal of the SWMP application.

5.3. POST-CONSTRUCTION WATER QUALITY BMP DESIGN STANDARDS

The following sections include minimum standards that stormwater structures and BMPs shall meet in the City of Mandan. The standards below do not replace judgment or standard of care for the Design Engineer.

5.3.1. DETENTION BASINS

In addition to the minimum design standards presented in ***Section 4.3.1***, detention basins proposed for post-construction water quality BMPs shall meet the following minimum design standards:

Engineered Outlets:

All water quality basins shall have an engineered outlet that conforms to the following minimum standards:

1. Minimum orifice size of 2 inches.
2. The distance between inlets and the outlet shall be maximized to facilitate sedimentation and limit short-circuiting of the water quality BMP:
    a. Minimum length to width ratio is 3:1 as measured along the flow path from inlet to outlet; or
    b. If project area constraints make this ratio unobtainable, the Design Engineer shall incorporate baffles, islands or peninsulas to increase the flow path and limit short-circuiting.

Required Forebay:

All water quality basins shall include a forebay to aid in routine maintenance, limit the potential for short-circuiting, and reduce resuspension of accumulated sediments.

1. Dry Detention Basins shall be divided into a minimum of two cells.
    a. The first cell (forebay) shall contain, at a minimum, 10-percent of the design surface area as measured at the required water quality volume surface elevation; and
    b. The forebay shall provide a minimum of 1 foot of dead storage for sediment accumulation.
2. Wet Detention Basins shall be divided into a minimum of two cells with the forebay containing no less than 10-percent of the design surface area as measured at the required water quality volume surface elevation.

Embankment and Basin Protection:

All exposed soils shall be stabilized by an appropriate method. Stabilization of the active storage area will need to consider the type of protection, including vegetation species selection, given the anticipated frequency and depth of inundation.

1. Dry Detention Basins shall be stabilized with native vegetation suitable for frequent inundation or other vegetative plantings that will allow for 100% coverage of the basin area;
2. Wet Basins shall include:

a. Appropriate stabilization at and below the normal pool elevation;

b. Suitable native grass or other vegetative plantings above the normal pool elevation;

c. Vegetation shall provide 100% coverage to the basin area over the normal pool elevation; and

d. Vegetative stabilization shall be selected from species suitable to grow and survive during periods of inundation.

3. Topsoil shall be used in the top 6 inches of the finished grade; or

4. The top 12 inches of soil shall be amended to achieve a suitable plant growth medium.

5.3.2. INFILTRATION BMPS

Use of infiltration and filtration BMPs requires approval by the City Engineer during the Mandatory Stormwater Scoping Sheet process.

When approved for use, infiltration and filtration BMPs shall meet the Geotechnical Report requirements of ***Section 4.3.2*** and the following design standards:

Infiltration BMPs:

1. Located on sites with soils that drain freely and infiltrate 1 inches per hour or greater;

2. Are separated from seasonal high groundwater levels by greater than 5 feet;

3. Include an overflow to an approved Point of Discharge; and

4. Meets the design requirements of a BMP manual approved by the City Engineer.

Filtration BMPs:

1. Located on sites that infiltrate less than 1 inches per hour and/or are located within 5 feet of seasonal groundwater elevations;

2. Include a gravel underdrain and collection pipe that conveys filtered stormwater to an approved Point of Discharge;

3. Include an overflow to an approved Point of Discharge; and

4. Meets the design requirements of a BMP manual approved by the City Engineer.

5.3.3. FLOW THROUGH BMPS

Flow Through BMPs are defined as proprietary mechanical treatment devices. Flow Through BMPs shall be:

1. Certified by the manufacturer to provide treatment that meets or exceeds the requirements of Table 5-1; and

2. Designed to bypass peak flows that exceed the water quality volume.

5.4. ANALYSIS METHODOLOGIES

The goal of this section is to provide detailed requirements for the analysis of Water Quality performance.

5.4.1. WATER QUALITY VOLUME (VWQ)

The water quality volume shall be determined using the methods described in ***Reference 5-2***.

5.4.2. STANDARD METHODOLOGY

Standard Methodology analysis will be for the prescribed drawdown time of the selected BMP. The method presented in ***Reference 5-3*** shall be used to determine compliance with the drawdown requirements.

Drawdown time refers to the amount of time it takes for the V_{wq} to drain down to within 3 inches of the lowest engineered outlet. Depths under 0.25 feet (3 inches) may take an extensive amount of time to draw down to the point of zero volume due to minimal head.

5.4.3. ALTERNATE METHODOLOGY

In situations not clearly covered in ***Reference 5-1,*** such as multiple basins in series, alternate methodologies that explicitly model the build-up, wash-off, and trapping of Total Suspended Solids (TSS) may be used as determined acceptable by the City in the scoping letter.

1. When using alternate methodologies, utilize the performance requirements shown in ***Table 5-1***; and
2. Example alternate methodologies are provided in ***Reference 5-4.***

5.5. REFERENCES

Reference 5-1 – Prescriptive BMP Performance Requirements

Reference 5-2 – Water Quality Volume Analysis Procedure

Reference 5-3 – Standard Analysis Methodology

Reference 5-4 – Alternative Analysis Methodology

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6. POST-CONSTRUCTION DRAINAGE AND CONVEYANCE COMPLIANCE

The goal of this section is to provide guidance on the design, performance, and analysis requirements for Drainage and Conveyance within the City of Mandan. Examples of drainage and conveyance facilities include storm sewer, drainage ditches, streets, open channels, culverts and other engineered systems intended to carry stormwater to a Point of Discharge.

6.1. PERFORMANCE REQUIREMENTS

6.1.1. STREET DRAINAGE PERFORMANCE REQUIREMENTS

The criteria and procedures found in this section establish the performance requirements for street drainage conveyance infrastructure including gutters, inlets, manholes, and storm sewers.

Hydrologic Requirements

The street drainage system shall be designed as an integral part of the Public Storm Sewer System. Performance standards for stormwater flows on City streets are separated into requirements for the 5-year 24-hour event and the 100-year 24-hour event:

1. The 5-year 24-hour event has been selected to minimize nuisance flooding, protect against recurring minor damages, and reduce maintenance costs for streets by removing frequent flows in an orderly and economic manner.
2. The 100-year 24-hour event has been selected to minimize the potential for substantial property damage and loss of life by providing a defined drainage pathway for large rainfall events.

Allowable Street Spread

Street spread performance requirements are applicable to runoff being conveyed longitudinal to (i.e. parallel to) the right-of-way.

In situations where runoff is conveyed perpendicular to the traffic direction or cross flows occur, the stream crossing and culvert crossing performance standards described in ***Section 6.1.3*** are applicable.

On the 5-year 24-hour storm, the performance requirements are to limit the spread (encroachment into the travel lanes) and the depth (inundation) of stormwater conveyed longitudinally in the right- of-way to below acceptable limits during the design event.

On the 100-year 24-hour storm, the performance requirement is to contain the runoff inside of the public right-of-way.

The street spread performance requirements for the 5-year 24-hour and 100-year 24-hour storm events are provided in ***Table 6-1*** and ***Table 6-2.***

Table 6-1 – 5-year 24-hour Storm Street Performance Requirements

Street Classification(1)	Max Depth	Max Encroachment(2)
Local Residential	No curb overtopping.	Flow may spread to crown of the street.
Local Non-Residential	No curb overtopping.	Flow may spread to crown of the street.
Collector – (All Sections)	No curb overtopping.	Leave 12 feet on each side of centerline clear of encroachment.
Arterial (Principal & Minor) & Parkways (3)	No curb overtopping.	Flow spread shall be limited to 7.5 feet or less from the face of curb.
State Highways	Shall meet the requirements of the NDDOT.	

1. Typical City urban street classification and geometry as defined by Table 109-3-2 4 c of the Zoning Ordinance.

2. Where no curb exists, flow spread shall not extend past the street rights-of-way.

3. Maximum encroachment from an interior raised median shall be less than 4-feet from the median curb.

4. Performance Requirements for non-standard street sections and geometry shall be determined by the City Engineer during the Mandatory Stormwater Scoping Sheet.

Table 6-2 – 100-year 24-hour Storm Street Performance Requirements

Street Classification(1)	Max Depth	Max Encroachment
Local Residential	6 inches at the crown	The inundated area shall not exceed the street right-of-way.
Local Non-Residential	6 inches at the crown	The inundated area shall not exceed the street right-of-way.
Collector – (All Sections)	6 inches at the crown	The inundated area shall not exceed the street right-of-way.
Arterial (Principal & Minor) & Parkways	3 inches at the highest point of the driving lane.	The inundated area shall not exceed the street right-of-way.
State Highways	Shall meet the requirements of the NDDOT	

1. Typical City urban street classification and geometry as defined by Table 109-3-2 4 c of the Zoning Ordinance.

2. Performance Requirements for non-standard street sections and geometry shall be determined by the City Engineer during the Mandatory Stormwater Scoping Sheet.

3. At no time shall flows be allowed to exit the street right-of-way, unless adequate easement conveyance is provided with the affected off right-of-way properties.

Allowable Cross-Street Flow

Cross-street flow occurs when runoff flowing longitudinally in a gutter is allowed to cross the travel lane due to a lowered crown in the street section or a valley gutter in an intersection. Cross- street flow is applicable to runoff contained in the street right-of-way and is not the same as allowable street overtopping for culverts crossing perpendicular to a street right-of-way.

Allowable cross-street flows for the 5-year 24-hour and 100-year 24-hour storm events are shown in ***Table 6-3.***

Table 6-3 – Allowable Cross-Street Flow Requirements

Street Classification(1)	5-year 24-hour Criteria (1)	100-year 24-hour Criteria (1)
Local	6-inch Depth at Crown or in Valley Gutter	9-inch Depth at Crown or in Valley Gutter
Collector	3-inch Depth in Valley Gutter	6-inch Depth at Crown or in Valley Gutter
Arterial	None	3-inch Depth or Less at Crown no allowable Valley Gutter Flow

(1) Typical City urban street classification and geometry as defined by Table 109-3-2 4 c of the Zoning Ordinance.

6.1.2. STORM SEWER SYSTEM PERFORMANCE REQUIREMENTS

The Storm Sewer System is a series of underground pipes designed to convey runoff to an outfall. This system includes inlets, pipes, manholes and other appurtenances necessary to efficiently collect and covey drainage from streets and surrounding properties. Design of the Storm Sewer System components shall be determined by a thorough analysis of the drainage area involved in accordance with the provisions of this SWDSM.

The following section generally describes the performance standards for the analysis and design of a Storm Sewer System associated with a transportation system. These standards also can be applied to Storm Sewer trunk mains or other drainage pipes not located under a road or street. Based on drainage area, the Design Engineer or City Engineer may determine that more stringent performance requirements may be necessary for specific projects.

Storm Sewer Inlets and Catch Basins

INLET CAPACITY AND SPACING

Storm sewer inlets are a structure that intercept and capture surface runoff and direct the flow into the mainline pipe. All storm sewer inlets shall meet the following minimum performance requirements:

1. Storm sewer inlets installed in public streets shall be designed with capacity and spacing such that the maximum street spread widths and cross flow requirements of Table 6-1, Table 6-2, and Table 6-3 are not exceeded.
2. Storm sewer inlets shall be designed to intercept the 5-year 24-hour design flow with the allowable bypass as defined in Table 6-4. Storm sewer inlets located in sag locations shall include the consideration of conveying flows greater than the design event in a manner that limits the potential for damage to adjacent property or structures.
3. The theoretical capacity of inlets and grates in sags or on grade shall be determined from manufacturers' or industry design charts or procedures utilizing the 5-year 24-hour event street spread criteria.
4. The capacity of the inlet lateral pipe shall exceed that of the theoretical capacity of the inlet for the 5-year 24-hour event.

Table 6-4 – Storm Sewer Inlet Bypass Flow Design Requirements

Condition	Allowable Bypass
Sag Location or Low Point with a Storm Sewer Outfall	**No bypass flows are allowed during the 5-year 24-hour event.** Provide a 100-year 24-hour event overflow path that minimizes the potential for damage to adjacent property or structures.5 Storm Sewer Inlets and Outfall Pipe shall be designed to allow no bypass flows during the 25-year 24-hour event design flow.
Streets on Continuous Grade	The final downstream inlet or inlets shall be designed to intercept no less than 50% of the 5-year 24-hour storm.
Temporary Dead End Streets on Down Grade	Unless otherwise approved by the City Engineer, final downstream Storm Sewer Inlets shall not allow bypass flows during the 5-year 24-hour event.
Tee-Intersections on Down Grades and Low Points	**No bypass flows are allowed during the 5-year 24-hour event design flow.** Depending on downstream conditions, the City Engineer may require oversizing inlets at low points.

INLETS LOCATED ON SAGS WITH A STORM SEWER OUTFALL

In situations where a street drainage inlet and storm sewer system intercepts street runoff and discharges perpendicular to the right-of-way, the final sag inlets shall be sized to allow no bypass flows during a **25-year 24-hour event** and a pipe shall convey this design flow to the Point of Discharge. Additionally, an open channel overflow path shall be provided to convey the 100-year 24-hour event from the street sump location to the Point of Discharge consistent with the requirements of ***Section 6.1.4.***

Storm Sewer Pipe

All storm sewer pipe shall meet the minimum performance requirements for the 5-year 24-hour and 100-year 24-hour design events as shown in ***Table 6-5.***

Table 6-5 – Storm Sewer Pipe Capacity Requirements

Storm Classification	Requirement
5-year 24-hour Storm	HGL less than 0.5 foot above the crown of pipe as measured at the structure inlet point.
100-year 24-hour Storm	Storm sewer may be designed to surcharge during the 100-year 24-hour events; however, surcharging shall not result in a HGL elevation higher than the criteria listed in ***Table 6-1 or Table 6-2***.

All storm sewer pipe shall meet the velocity performance requirements listed in ***Table 6-6.***

Table 6-6 – Storm Sewer Pipe Velocity Requirements for 5-year 24-hour Storm

Parameter	Requirement
Minimum Velocity	3 feet per second
Maximum Velocity	15 feet per second

Storm Sewer Reporting Requirements

INLETS & CATCH BASINS

When storm sewer inlets are proposed for a project that requires a SWMP application, the SWMP shall include the following information documenting the performance of the proposed storm sewer system design:

1. Location, type, size, rim elevation and depth of the proposed inlet;
2. 5-year 24-hour design flow to the inlet; or as specified by City Engineer
3. Theoretical inlet capacity;
4. Depth of water in the gutter at the inlet;
5. Flow intercepted and flow bypassed; and
6. Street drainage spread width.

STORM SEWER PIPE

When storm sewer is proposed for a project that requires a SWMP application, the SWMP shall include the following information documenting the performance of the storm sewer system:

1. Pipe calculations that state the design peak flow rates and design information for each pipe run, such as size, slope, length, material type, and Manning's coefficient;
2. Velocities at design flow for each segment of proposed pipe;
3. HGL at each manhole, angle point, and outlet;
4. Depth from finish grade to pipe invert for each segment of proposed pipe; and
5. When there is a significant change in slope of the pipe through a manhole or other structure, the EGL shall be reported.

6.1.3. CULVERT PERFORMANCE REQUIREMENTS

Requirements presented in this section shall be used in the analysis and reporting for design of culverts for public streets, roads and highways. Culverts are defined as a closed conduit for the passage of water under an embankment, such as a road or street. Water enters the culvert directly through the upstream opening in the conduit.

Calculations relating to design of culverts shall be submitted for approval with the SWMP application, with criteria sections of this SWDSM being referenced. The following tables define the minimum performance requirements for the analysis and design of culverts.

Hydrologic analysis and capacity of culverts shall be determined using a combination of the design storm, the allowable headwater depth and allowable street overtopping. The headwater depth is measured from the invert of the culvert to the resulting inlet headwater elevation.

The proposed culvert size and/or slope shall be increased until the requirements of ***Table 6-7, Table 6-8***, and ***Table 6-9*** have been met.

The allowable headwater requirements in ***Table 6-7*** are intended to apply to a majority of situations encountered in the City of Mandan. All culvert crossing of the State Highway System shall also conform to the North Dakota Public Highway Stream Crossings as defined by NDAC 89-14.

Table 6-7 – Culvert Headwater Requirements

Storm	Allowable Headwater
25-year 24-hour Event	1.5 times the culvert diameter or culvert rise(1)
100-year 24-hour Event	Table 6-8 Overtopping Criteria shall not be exceeded

(1) Culvert Rise is the height of the culvert for shapes other than round.

Allowable street overtopping for culverts installed perpendicular to road rights-of-way shall meet the criteria shown in ***Table 6-8.*** The street overtopping criteria is applicable to situations where the culvert headwater rises to a level where the flow in the channel overtops the street embankment and flows over the street to the downstream outlet of the culvert. Culvert street overtopping is not the same as allowable cross-street flow.

Table 6-8 – Culvert Allowable Street Overtopping Requirements

Street Classification	Storm	Requirement
All Streets	25-year 24-hour Event	No Overtopping
Local	100-year 24-hour Event	6 inches measured to the highest point on the street section (1)
Collector & Arterial	100-year 24-hour Event	No Overtopping

(1) For local urban streets, the highest point is typically the ROW line and for local rural road the highest point is the centerline of the ROW.

Analysis of the culvert shall consider the minimum velocity for cleansing and the maximum velocity for outlet protection. ***Table 6-9*** presents the minimum required cleaning velocity and allowable outlet velocities for typical types of protection. Outlet velocities exceeding 10 feet per second require an engineered energy dissipation feature or outlet armor design and supporting calculations.

Table 6-9 – Culvert Velocity Requirements

Parameter	Requirement
Minimum Velocity	3 feet per second during the 5-year 24-hour Storm
Outlet Protection	Per ***Table 6-12***

Culvert Reporting Requirements

When culverts are proposed for a project that requires a SWMP application, the SWMP shall include the following information documenting the performance of the culvert:

1. Complete culvert calculations that state the design peak flow rates, culvert size, slope, inverts, length, material type, wall thickness, and Manning's coefficient.
2. Type of end treatment.
3. Headwater depths and water surface elevations for the design storm events.
4. Velocities at the inlet and outlet for the design storm events.
5. Flow control type (inlet or outlet).
6. Roadway cross-section and roadway profile.

6.1.4. OPEN CHANNELS PERFORMANCE REQUIREMENTS

Open channels in the City of Mandan consist of two types; engineered channels and natural channels. Engineered channels are generally constructed to uniform lines and grades with lining materials or established vegetation to protect the channel from erosive forces. Natural channels include all watercourses that have been established by nature. State, local, and federal laws shall be adhered to if modifications are proposed to natural channels.

Requirements presented in this section shall be used in the analysis and reporting for design of engineered open channels that convey runoff through and from developed areas. Analysis and impact to natural channels shall conform to FEMA floodplain management requirements and other applicable local, state and federal regulations. Channels should be located such that they will not adversely affect existing infrastructure.

Calculations relating to design of engineered channels shall be submitted with the SWMP application for approval, with criteria sections of this SWDSM being referenced. The following tables define the minimum performance requirements for the analysis and design of engineered open channels.

Engineered channels shall meet the minimum freeboard requirements listed in ***Table 6-10*** for the 100-year 24-hour event. Excavated or incised channels are constructed below the existing grade and do not require berms to contain the 100-year 24-hour design flows and freeboard requirements.

When berms are used to contain the 100-year 24-hour design flows, a greater amount of freeboard is required to account for the increased risk of uncontrolled flows if the berms are breached.

Table 6-10 – Engineered Channel Freeboard Requirement

Channel Type	100-year 24-hour Storm Minimum Freeboard
Fully Excavated or Incised	1 foot below the easement or right-of way boundary
Berms or Built-Up Channels [1, 2]	2 feet below the easement or right-of way boundary

(1) City Engineer may require more stringent requirements for channels constructed with berms that could overtop and result in an uncontrolled discharge.

(2) Minimum top width of channel berms shall be 6-feet

Engineered open channels shall be designed to resist the erosive forces of both the 5-year 24-hour and 100-year 24-hour events. Each case will require the Design Engineer to select channel geometry and lining materials that meet the performance requirements of this section. Channel lining design requires analysis of both the design velocity and predicted shear stress to select the proper lining material for individual channels.

Channels should be designed to avoid flows near critical depth or supercritical flows.

Table 6-11 and ***Reference 6-1*** provide minimum performance requirements for the allowable velocity and shear stress for engineered channels.

Table 6-11 – Engineered Channel Lining Requirements

Condition	Minimum Requirement
5-year 24-hour Event V < 5 FPS	Grass Lined Channels
5-year 24-hour Event V > 5 FPS	Lining to Resist Calculated Shear Forces
100-year 24-hour Event V < 5 FPS	Grass Lined Channel
100-year 24-hour Event V > 5 FPS	Lining to Resist Calculated Shear Forces

V = Velocity

FPS = Feet per Second

Open Channel Reporting Requirements

When engineered open channels are proposed for a project, the submitted SWMP shall include the information outlined on the SWMP Checklist.

6.1.5. OUTLET AND OUTFALL PROTECTION PERFORMANCE REQUIREMENTS

Outlet and\or outfall protection of culverts shall be designed to resist the erosive forces of events up to the 25-year 24-hour storm. For critical infrastructure, the City Engineer may require that culvert outfalls be designed for the 100-year 24-hour event.

Culvert outfalls shall be designed to resist the scour at the outlet and dissipate velocities to values that are appropriate for the downstream channel. For the majority of installations, utilization of properly sized riprap at the outlet will provide suitable protection against scour and sufficient energy dissipation.

Table 6-12 – Maximum Allowable Design Velocities for Outlet Protection

Parameter		Velocity of Design Event
Vegetation and/or Permanent Turf Reinforcement Mat		< 5 feet per second
Riprap Size Classification	VL	6.5 feet per second
	L	8.0 feet per second
	M	9.5 feet per second
	H	10.5 feet per second
	VH	11.0 feet per second
Energy Dissipater Required		> 11 feet per second

When velocities exceed 11 feet per second for the 25-year 24-hour event, or the City Engineer requires a higher design standard for critical infrastructure, the Design Engineer shall include an engineered energy dissipation structure. Accepted structures include:

1. Short Stilling Basin (USBR Type II).
2. Baffled Apron Stilling Basin (USBR Type IX).
3. Impact Stilling Basin (USBR Type VI).

Energy dissipation structures shall meet the design requirements of the current United States Bureau of Reclamation technical circular.

Other proprietary outlet protection measures may be proposed by the Design Engineer and approved at the City's discretion. **Articulated Concrete Block is not permitted as culvert outlet protection**.

6.2. MINIMUM DESIGN STANDARDS

All design and construction for the extension of the City's Public Storm Sewer System shall conform to the requirements of the current edition of the Standard Specifications. Requirements of the Standard Specifications are not reproduced or repeated in this SWDSM. It is the responsibility of the Design Engineer to cross-reference the requirements for this SWDSM and the Standard Specifications.

6.2.1. STREET DRAINAGE DESIGN STANDARDS

Street Layout

Street layout and design shall meet the requirements of Table 109-3-2 4 c of the Zoning Ordinance.

Curb & Gutter

Curb & Gutter shall be included on all new public and private streets within the city limits of Mandan.

Curb and gutter grades shall meet the minimum design requirements of Section 115-3 of the City Code of Ordinances.

Public Streets shall have curb and gutter that conforms to Section 603 of the Standard Specifications.

Valley Gutters

Where storm sewer is not required by street spread requirements or otherwise not justified, valley gutters may be installed to convey runoff through Local Street intersections only. **No valley gutters are permitted on Arterial or Collector streets unless approved by the City Engineer.**

Design considerations for valley gutters include:

1. The minimum grade of the valley gutter shall be 0.5 percent at the flow line.
2. When valley gutters are used to redirect surface flow greater than 90-degrees (change direction), the Design Engineer shall include an analysis of the HGL and EGL to determine if a significant change in water surface elevation occurs due to a reduction in velocity.

6.2.2. STORM SEWER SYSTEM DESIGN STANDARDS

Storm Sewer Inlets

The primary purpose of storm sewer inlets is to intercept surface runoff and deposit it in a Public Storm Sewer System, thus reducing the potential for surface flooding. Storm sewer inlets can be located along street and\or in landscaped areas. The following design requirements generally apply to storm sewer inlets located within public streets and rights-of-way. These general concepts can be applied to private collection systems located in parking lots, parks, athletic fields and other areas that have storm sewer inlets and pipes to collect runoff.

The inlet capacity governs both the rate of water removed from the gutter and the amount of water that can enter the storm drain system. Inadequate inlet capacity or poor inlet location may cause flooding which creates a safety hazard and may interrupt traffic or damage adjacent property.

Storm sewer inlets located within public streets are classified into two major groups: Sag inlets and On-Grade inlets. In addition, inlet types vary as well. A brief description of the inlet types follows:

1. Curb-opening inlets: These inlets consist of a vertical opening in the curb through which the gutter flow passes.
2. Grate inlets: These inlets consist of an opening in the gutter covered by one or more grates.
3. Combination inlets: These units consist of both a curb-opening and a grate inlet acting as a single unit.
4. Catch Basin Inlets: These inlets consist of a flat grate opening intended to be installed in a parking lot or landscaped area.

Storm sewer inlets shall conform with the requirements of Section 1205 of the Standard Specifications and applicable current details.

The following are minimum design standards for inlet situations:

1. **Parking Lots and Private Property**: Catch basins installed in parking lots or private unpaved or pervious areas shall meet the following minimum requirements:
    a. **Catch Basin Capacity**: Provide 150% of the 5-year 24-hour event at each catch basin assuming a 0.5 foot depth;
    b. **Max Ponding Depth**: 18 inches during the 100-year 24-hour event.
    c. **Minimum Freeboard**: 1 foot to the lowest adjacent grade, finished floor elevations, or lowest wall openings, of adjacent buildings during the 100-year 24-hour event.
    d. **Overflows**: No uncontrolled (overflow) discharge to the public street right-of- way during the 100-year 24-hour event.
2. **Private Streets**: Meet the requirements of Public Streets.
3. **Public Street Right-of-Ways**: Inlets installed in public street rights-of-way shall meet the following minimum design standards:
    a. **On-Grade Inlets:**
        i. Inlet Capacity: Can use 100% of the computed inlet capacity (i.e. ignore clogging); and
        ii. Minimum Inlet Size: Type 36”
    b. **Sag Inlets:**
        i. Inlet Capacity:
            1. Sag without a Storm Sewer Outfall: Provide 150% of the 5-year 24-hour design flow at curb depth;
            2. Sag with a Storm Sewer Outfall: Provide 150% of the 25-year 24- hour design flow at a depth that does not allow overflow from right-of-way;
        ii. Minimum Inlet Size: Type 72”
        iii. See
        iv. ***Reference*** 6-2 for theoretical capacity of standard inlets in a sag. Design Engineer shall confirm capacities for actual location and products

specified.

Storm Sewer Pipe Design Standards

Storm Sewer Pipe design, material and construction shall conform to the requirements of Section 802 and current Standard Drawings of the Standard Specifications. They shall also comply with the current 10-State Standards, unless specific provisions are noted herein.

All storm sewer pipe sizes shall conform to the requirements of ***Table 6-13*** unless approved by the City Engineer.

Table 6-13 – Storm Sewer Pipe Size Requirements

Pipe Type	Minimum Size Requirement
Public Lateral	15-inch diameter
Public Mainline	18-inch diameter or not decreasing in flow direction
Private Storm Sewer	12-inch diameter
Private Foundation or Building Drain	4-inch diameter

All storm sewer pipes shall be located consistent with the requirements ***Table 6-14*** unless approved by the City Engineer.

Table 6-14 – Storm Sewer Pipe Location Standards

Situation	Design Location
Street Right-of-Way	Storm sewer parallel to the street and in the right-of-way should be placed beneath the traveled lanes, to fit specific manhole or inlet connections. Storm sewers should be located in streets with horizontal separation from sanitary sewers and water mains meeting 10 State Standards. Storm sewer pipe changes in grade or direction shall be made at manholes that are accessible through a standard manhole casting.
Public Easements	Pipe in a 30-foot minimum easement width. Easements located outside of street rights-of-way shall include a 20 foot wide all-weather access and maintenance path.
Private Easements	Pipe centered in a 20-foot minimum easement width, unless dictated otherwise by City Engineer.

Notes:

(1) Easements shall be noted as “Public” (maintained by the City of Mandan or other approved public entity) or “Private” (maintained by the Applicant).

(2) Public Easements must be approved by the City.

(3) Private Easements must have a provision to allow access by the City to allow for maintenance of derelict storm sewer pipes.

(4) The depth and grade of installation shall be approved by the City Engineer.

Pipes shall be designed to withstand anticipated loads in accordance with standard industry design procedures. AASHTO HS-20 loading may be assumed during design unless unique conditions of the site warrant a higher load capacity. The Design Engineer shall confirm the minimum pipe cover for materials specified for individual projects.

Manholes

Manholes or other maintenance access ports (tee manhole sections on large diameter pipe) are required whenever there is a change in direction, elevation, grade or the junction of two runs of storm sewer. When feasible, manholes should be installed at street intersections. Manholes must be located within areas that allow direct access by maintenance vehicles, including jetting and vacuum equipment.

Manhole design, material and construction shall conform to the requirements of Section 1205 and current Standard Drawings of the Standard Specifications.

Manholes shall be located such that the maximum spacing requirements of ***Table 6-15*** are not exceeded.

Table 6-15 – Storm Sewer Manhole Spacing Standards

Situation[1]	Maximum Manhole Spacing
18” to 21” Storm Sewer Pipe	450 feet
24” to 30” Storm Sewer Pipe	500 feet
Over 30” Storm Sewer Pipe	600 feet

(1) All pipe sizes are in round diameters.

Manhole size (diameter) shall be sufficient for the size of pipe entering and exiting the structure Table 6-16. lists the design standards for typical reinforced concrete pipe and precast concrete manholes. The Design Engineer shall confirm that the minimum manhole size listed in ***Table 6-16*** is appropriate for the materials specified for individual projects and angles of pipe entering/exiting the manhole.

Table 6-16 – Storm Sewer Manhole Typical Minimum Sizes

Situation[2]	Minimum Manhole Size[1,3]
18” to 24” Storm Sewer Pipe	48-inch Diameter Manhole
27” to 36” Storm Sewer Pipe	60-inch Diameter Manhole
42” Storm Sewer Pipe	72-inch Diameter Manhole
48” and larger Storm Sewer Pipe	Junction Box or Tee Manhole as approved by the City Engineer

(1) The number of pipe connections into a manhole may require a larger size. Design engineer to confirm manhole sizing and connections with supplier.

(2) All pipe sizes are in round diameters. Design engineer to confirm minimum manhole size to other pipe shapes.

(3) Inlets shall not be utilized as manholes for mainline storm sewer pipe, unless approved by City Engineer.

Elevation drop shall be provided in manholes per the requirements of ***Table 6-17***.

Table 6-17 – Storm Sewer Manhole Drop Standards

Situation(1)	Minimum Manhole Drop
Increase in Storm Sewer Pipe Size	Match Crowns of Pipes(2)
Same Size Pipe with less the 45-degree Change in Direction	Carry the Pipe Slope Through the Manhole Structure
Same Size Pipe with 45-degree or greater Change in Direction	Minimum of 0.2-foot Drop Through the Manhole

(1) All pipe sizes are in round diameters. Design engineer to confirm minimum manhole size to other pipe shapes.

(2) In areas of flat topography, City Engineer may waive the requirement to match crowns.

Easements

Storm sewer pipes constructed outside of the street right-of-way shall include drainage meeting the requirements of ***Table 6-14***.

6.2.3. CULVERT DESIGN STANDARDS

Culverts shall conform with the requirements of Section 802 of the Standard Specifications and applicable current details.

Minimum Size

Culverts shall meet the minimum design requirements.

Table 6-18 – Minimum Culvert Size Requirements

Culvert Shape	Minimum Size
Round	18-inch Diameter
Arch	22-inch x 13-inch
Elliptical	23-inch x 13-inch
Box	3-foot x 5-foot

Design Considerations

Factors to be taken into consideration in culvert design include design flows, the culvert's hydraulic performance, the economy of alternative pipe materials and sizes, horizontal and vertical alignment, and environmental concerns. The following minimum design considerations shall be met when designing culverts:

1. The minimum size as listed by ***Table 6-18.***
2. The minimum cover over the top of all culverts shall be 12" or as recommended by the manufacturer.
3. The size, shape, and type of culvert crossings shall be based on flow quantities calculated using the hydrologic methods set forth in Section 6.1.3.
4. Minimum culvert longitudinal grades shall be 1%.

5. The maximum allowable length of culvert installations shall be 200 feet, unless the additional length is approved by the City Engineer.
6. The structural design of culverts shall conform to those methods and criteria recommended by the manufacturer for that culvert type and for the conditions found at the installation site. However, the minimum standards set forth in the current AASHTO standards shall be adhered to.
7. All culvert inlet structures shall be designed to minimize entrance losses. All culverts shall be fitted with flared end sections, headwalls, wing-walls or other approved methods of entrance loss minimization. **Projecting ends are not permitted.**
8. Culvert outlets shall be designed to resist the erosive forces from the design storm. All culvert outlets shall be fitted with a flared end section, headwalls, wing-walls or other approved outlet structure. **Projecting ends are not permitted.**
9. Regarding large structures or where groundwater is a problem, the design shall include necessary provisions to resist hydrostatic uplift forces that could result in failure of the structure.
10. All culvert designs shall include an analysis that determines whether inlet or outlet control conditions govern.
11. Ponding above culvert inlets will not be permitted if such ponding will cause property or roadway damage, culvert clogging, saturation of fills, detrimental upstream deposits of debris, or inundate any other structure. In the instance of equalizer culverts, they shall be sized to not allow head differential across the roadway that would result in overtopping.
12. All culvert designs shall meet AASHTO HS-20 loading criteria.

Easements

Culverts extended outside of the street right-of-way shall include drainage easements of a width necessary to contain the 100-year 24-hour water surface elevation required freeboard and maintenance access.

1. Easements shall be noted as “Public” (maintained by the City of Mandan or other approved public entity) or “Private” (maintained by the Applicant).
2. Public Easements must be approved by the City.
3. Private Easements must have a provision to allow access by the City to allow for maintenance of derelict open channels and culverts.
4. The minimum public drainage easement width shall be 30 feet, see **Table 6-14.**

6.2.4. OPEN CHANNEL DESIGN STANDARDS

The use of open channels shall generally be limited to undeveloped areas that can conform to the requirements of the hydraulics, topography, and right-of-way limitations.

Minimum Geometry Requirements

Table 6-19 – Engineered Channel Geometry Requirements

Parameter	Minimum Value
Longitudinal Slope of Channel	0.25 Percent
Side-Slopes	4 Horizontal to 1 Vertical or flatter
Cross Section Shape	Trapezoidal
Minimum Bottom Width	4 feet

Restrictions on Inter-Lot Flow

Overland flow occurs when excess precipitation runs off in sheet fashion prior to accumulating in a drainage way. Overland flow generally occurs on private property and can also be described as inter-lot flows. Restrictions on inter-lot flows include:

1. Overland flow will only be permitted within individual private lots or land parcels, and in defined swales less than 2 feet deep.
2. Stormwater runoff cannot be collected then diverted, or channelized, from private lots downstream though a separate lot unless appropriate easements, with adequate conveyance capacity to contain the projected flows, are executed.
3. Private adjacent lots in common ownership are still required to dedicate easements to a location with adequate natural conveyance.
4. Obstructions of these easements or natural drainage by any means (e.g. fences, structures, signs, berms, etc.) are not permitted and may limit the development within these lots.

Engineered Channels – Vegetated

In addition to the requirements stated in ***Section 6.1.4*** the following minimum design standards shall be met:

1. Drop structures may be used to control the grade in order to meet the velocity and shear stress requirements.
2. The design shall consider the channel material's ability to withstand projected channel velocities and shear stresses for the 100-year 24-hour event. Channel protection measures shall be designed where necessary.
3. Side slopes greater than 4H:1V may be permitted if approved stabilization is utilized.
4. All grass channels shall include the utilization of a biodegradable or photodegradable erosion control mat to resist the calculated shear stress until vegetation can be established.
5. The grass species selected for seeding shall conform to requirements set forth by the Standard Specifications.

Open Channels – Lined

Lined channels may only be utilized when the conditions for vegetated channels cannot be met and when approved by the City Engineer. Additional requirements for lined channels include:

1. Designs for lined channel with supercritical design flows shall consider the suitability of the lining material to resist calculated shear forces, velocities and hydraulic jumps.

2. Design of lined channels on bends or curves shall take into consideration the centrifugal and gravitational forces on the flow within the channel section.
3. Design and construction of lined channels shall consider the full range of expected climatic conditions including frost heave, expansive soils and other considerations identified by the City Engineer.
4. Lined channels shall be protected from hydrostatic uplift forces by the use of drain piping, weep holes, or appropriate footings.
5. Lined channels must have the bottom sloped so that the flow is channelized toward the center line.
6. When lined channels with high velocity flows enter unlined channels with subcritical flow, a structure for the purpose of reducing velocity and dissipating energy is required. Concrete, gabions, slope mattresses, riprap and other approved measures can be used.

Easements

Open channels shall include drainage easements of a width necessary to contain the 100-year 24- hour water surface elevation required freeboard and maintenance access.

1. Easements shall be noted as “Public” (maintained by the City of Mandan or other approved public entity) or “Private” (maintained by the Applicant).
2. Public Easements must be approved by the City.
3. Private Easements must have a provision to allow access by the City to allow for maintenance of derelict open channels.
4. The minimum open channel drainage easement width shall be 30 feet regardless of the size of the channel.

6.3. ANALYSIS METHODOLOGIES

The goal of this section is to provide the detailed requirements for the analysis of drainage and conveyance facilities.

6.3.1. HYDROLOGIC ANALYSIS

1. **Unit Hydrograph:** NRCS (formerly SCS) Curve Number (CN) & Time of Concentration (Tc) Methods discussed in ***Section 4*** of this SWDSM.
2. **Rational Method** - Use of the rational method requires a request and approval by the City Engineer during the Mandatory Stormwater Scoping Sheet process.
    a. Intensity-Duration-Frequency (IDF) curves shall be from NOAA Atlas 14 using the Mandan City Hall coordinates. (***Reference 6-3)***.
    b. Intensity (I) shall be based on the Time of Concentration (Tc) to the inlet(s). Note that multiple intensities may be needed for a single system.
    c. Runoff Coefficient (C) shall be determined based on the site cover and obtained from accepted references. The source used to obtain the Runoff Coefficient(s) shall be stated in the SWMP.

6.3.2. HYDRAULIC ANALYSIS

1. **Inlet Analysis:** Shall use the following methods:
    a. On-Grade:
        i. HEC-22 methodology.

b. Sag (Low Point):

i. HEC-22 methodology; or

ii. Orifice/Weir Equation.

2. Manning's n Coefficients:

a. Manning's n coefficients for commonly used materials and surfaces are provided in ***Table 6-20***.

b. For surfaces not covered by ***Table 6-20*** values shall be obtained from references approved by the City Engineer.

c. The source(s) used to determine any coefficient(s) not provided in ***Table 6-20*** shall be stated in the SWMP.

Table 6-20 – Manning's Coefficients

Material/Surface	Manning's n Coefficient
RCP	0.013 – 0.014
CMP	0.022 – 0.024
HDPE (smooth)	0.010 – 0.012
HDPE (corrugated)	0.021 – 0.023
PVC	0.010 – 0.012
Vegetated Channel (not mowed)	0.035 – 0.050
Maintained /Channel (mowed)	0.030 – 0.040
Concrete Channel	0.015
Street (Asphalt)	0.014 – 0.016
Street (Concrete)	0.013 – 0.015
Urban Street Boulevards	0.045

3. Entrance and Exit Coefficients:

a. Entrance and Exit Coefficients for common configurations are provided in ***Table 6-21*** and ***Figure 6-1.***

b. For situations not covered by ***Table 6-21***, values should be obtained from accepted references approved by the City Engineer.

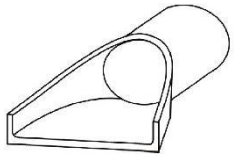
c. The source(s) used to determine any coefficient(s) not provided in ***Table 6-21*** shall be stated in the SWMP.

Table 6-21 – Entrance and Exit Coefficients

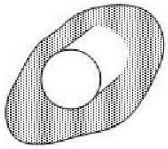
	Material	Design Scenario	Entrance Coefficient	Exit Coefficient
Pipe or Arch Culverts	RCP	Flared End Section	0.5	1.0
		Square Cut*	0.5	
		Socket or Rounded*	0.2	
	CMP or HDPE	Projecting	0.9	
		Mitered	0.7	
		Conforms to Fill	0.5	
Box Culverts RCP		No Wingwalls	0.5	1.0
		Wingwalls (30° - 75°)	0.4	
		Wingwalls (10° - 25°)	0.5	
		Wingwalls (Straight)	0.7	

*Applies to Headwall or Projecting

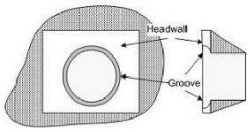
Figure 6-1- Entrance and Exit Configurations



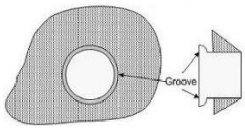
Flared-End Section
These are common end sections that function hydraulically equivalent in operation to a headwall in both inlet and outlet control.



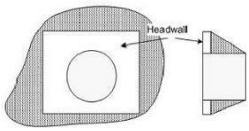
Projecting
This configuration results in the end of the culvert barrel projecting out of the embankment. **(Use of this end type is NOT PERMITTED in new designs)**



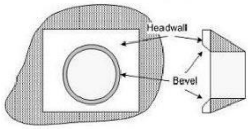
Grooved Pipe with Headwalls
The grooved pipe is for concrete culverts and decreases the loss through the culvert entrance.



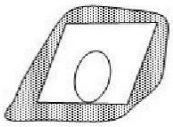
Grooved Pipe Projecting
This option is for concrete pipe culverts.



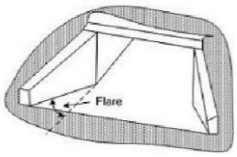
Square Edge with Headwalls
Square edge with headwalls is an entrance condition where the culvert entrance is flush with the headwall.



Beveled Edge with Headwalls
A beveled edge is a tapered inlet edge that decreases head loss as flow enters the culvert barrel.



Mitered
A mitered entrance is when the culvert barrel is cut so it is flush with the embankment slope.



Wingwall

Wingwalls are used when the culvert is shorter than the embankment and prevents embankment material from falling into the culvert.

Source: http://www.fhwa.dot.gov/

4. **Storm Sewer Junction Losses**
   a. Minimum storm sewer junction losses are provided in ***Table 6-22.***
   b. For situations not covered by ***Table 6-22*** values should be obtained from accepted references approved by the City Engineer.
   c. The source(s) used to determine any coefficient(s) not provided in ***Table 6-22*** shall be stated in the SWMP.

Table 6-22 – Storm Sewer Junction Losses

Design Scenario	Entrance Coefficient	Exit Coefficient
Inlet Junction	0.2	0.5
Manhole Junction	0.1	0.3

5. **Inlet/Outlet Control:**
   a. Analysis method shall account for both the potential for inlet or outlet control conditions with the water surface based on the higher computed water surface elevation.
   b. Inlet/outlet control shall be computed at all surface entrances to storm sewer (e.g. ditch draining to a flared end section) and culverts.
6. **Inlet Analysis Clogging Factor:**
   a. Inlet clogging factors are not required.
   b. For situations that the Design Engineer determines inlet clogging factors are necessary or applicable, state the use of clogging factors in the SWMP.
7. **Shear Stress:** Shall be calculated using the following equation:

$$\tau = \gamma D S$$

Where:

τ = Shear Stress (lb/ft^2)

γ = Weight of Water (lb/ft^3)

D = Average Depth of Water (ft)

S = Surface Water Slope (Energy Grade Line)

6.3.3. ACCEPTABLE DRAINAGE AND CONVEYANCE MODELS

See ***Reference 6-4.***

6.4. REFERENCES

Reference 6-1 – Allowable Velocity and Shear Stress for Selected Materials

Reference 6-2 – Theoretical Street Sag Inlet Capacities

Reference 6-3 – IDF Curves

Reference 6-4 – Acceptable Models – Drainage & Conveyance

7. CONSTRUCTION STORMWATER CONTROL

The goal of this section is to provide guidance on the design, performance, and analysis of the Construction Stormwater Control requirements of the City of Mandan.

Uncontrolled stormwater runoff from construction sites has the potential to impact natural drainages and adjacent property in an adverse manner. All projects that exceed the land disturbance thresholds defined in ***Section 3*** shall obtain the necessary permits.

This SWDSM does not generally require specific BMPs for all projects or sites because practices should be selected on a case-by-case basis depending on the physical characteristics of the site, types and methods of construction activities, and the duration and schedule of the activities.

7.1. PERFORMANCE REQUIREMENTS

All projects, unless a waiver is granted by the City Engineer during the Mandatory Scoping Sheet Approval, shall develop and implement a site specific SWPPP including appropriate BMPs to limit the discharge of sediment-laden or otherwise contaminated stormwater until all construction actives are completed and the site has achieved final stabilization.

The following sections define the minimum performance requirements for the SWPPP, Minimum Controls, Monitoring & Record Keeping, and Final Stabilization.

7.1.1. STORMWATER POLLUTION PREVENTION PLAN

All construction projects that meet the disturbance thresholds listed in ***Section 3*** are required to prepare a site-specific Stormwater Pollution Prevention Plan (SWPPP).

7.1.2. SWPPP MINIMUM CONTROLS

The SWPPP shall, at a minimum, address the following items:

1. Construction Site Management Controls
2. Erosion Controls
3. Sediment Controls
4. Runoff Controls
5. Waste Management & Illicit Discharge Controls
6. Restoration & Final Stabilization Controls
7. Inspections and Record Keeping

Construction Site Management Controls

The SWPPP shall describe the Construction Site Management Controls with the minimum information:

1. **Project Description**: Each plan shall provide a description of the construction activity and potential sources of pollution as indicated below:
    a. Project type and construction activities;
    b. Total project area and total area of the site that is expected to be disturbed by construction activities;
    c. A description of the NRCS soil type and erosion potential for soils contained in the project area; and
    d. Location of the Point of Discharge to the Public Storm Sewer System for discharges leaving the site.
2. **Site Plan Map:** Meeting the requirements of the ND General Construction Permit

3. **Construction Site Management Narrative:** At a minimum describe:
   a. The person (by name and relationship) who is responsible for the implementation of the BMPs, inspection and maintenance of the BMPs until a NOT is filed or the permit is transferred;
   b. The installation, maintenance, and removal (if applicable) requirements of proposed Best Management Practices (BMPs) for each phase/stage of construction activity;
   c. The rationale for the selection of all BMPs (calculations should be included if appropriate); and
   d. Whether selected BMPs are temporary or permanent.
4. **Construction Operational BMPs:** The SWPPP shall describe the BMPs used in the day-to-day operation of the project site that reduce the concentration of pollutants in stormwater runoff by identifying:
   a. Good housekeeping practices used to maintain a clean and orderly site.
   b. Preventative maintenance practices used to ensure the proper operation of erosion and sediment control devices (e.g., fiber rolls, erosion control blankets and silt fences) and equipment used or stored on site.
   c. Spill prevention and response procedures where potential spills can occur. Specific handling procedures, storage requirements, spill containment, cleanup procedures, and disposal must be identified. Storage structures for petroleum products and other chemicals shall have adequate leak and spill protection to prevent any spilled materials from entering waters of the state or storm sewer systems.
   d. Site operation BMPs to limit the exposed soil including construction sequencing, construction schedule and preservation of natural vegetation.

Erosion Controls

The SWPPP shall identify the minimum erosion control BMPs that are to be implemented to minimize the potential for soil to become mobilized into stormwater runoff. Erosion Control BMPs are a preferred method for temporarily stabilizing exposed soils to limit sediment laden stormwater discharges.

Erosion control BMPs consist of:

- **Avoidance measures** intended to limit the amount of area disturbed at the same time; and
- **Erosion control measures** that temporarily stabilize exposed soils.

Stabilized means the exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, erosion control blanket, or other BMPs that prevents erosion from occurring. Grass seeding alone is not stabilization. Snow cover and frozen ground conditions are not considered stabilized.

The SWPPP shall address the following minimum requirements for Erosion Control BMPs:

1. **Construction Phasing and Protection of Vegetation**: The SWPPP shall address the following minimum construction practices and shall guide the scheduling and phasing of the construction activities for the purpose of limiting exposed soils:
   a. **Phased Grading & Stabilization**: The SWPPP shall consider phasing of the project to minimize the area of exposed soil during construction activities. Stabilization of the site shall occur as areas reach final lines and grades.
   b. **Protection of Existing Vegetation**: Areas not to be disturbed by grading activities shall be protected and utilized as natural buffers as allowed by the site conditions. The SWPPP shall strive to limit construction activities to active grading areas and locations to be disturbed.

c. **Staging and Stockpile Areas**: Staging and Stockpile areas shall be noted on the SWPPP. When practical, staging and stockpiles areas shall be located in areas that require disturbance from grading or other construction activities.

2. **Minimum Stabilization Requirements**: The following minimum stabilization requirements shall guide the selection of erosion control BMPs for the project site:

a. **Exposed Soils**: All exposed soil areas must be stabilized.

i. Stabilization must be initiated immediately where activities have been permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days.

ii. Stabilization must be completed as soon as practicable, but no later than fourteen (14) calendar days after the initiation of soil stabilization.

iii. Temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) are exempt from this requirement.

b. **Exposed Soils on Steep Slopes**: For slopes with a grade of 3H:1V or greater, stabilization must be initiated immediately once activities have been completed or temporarily ceased. Stabilization must be completed as soon as practicable, but no later than seven (7) calendar days after the initiation of soil stabilization.

c. **Channels, Ditches and Swales**: The 2-year 24-hour normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized at least 200 linear feet from the property edge, or from the point of discharge to any surface water. Stabilization shall be completed prior to connection with a surface water. Any remaining portion of the temporary or permanent drainage ditch must be stabilized within fourteen (14) calendar days for portions which construction activities have temporarily or permanently ceased.

3. **Protection of Outlets:** Erosion control BMPs shall be installed at the inlet and outlet of all culverts, outfalls, roof drains and other sources of concentrated flow from a conduit.

Sediment Controls

The SWPPP shall identify the minimum sediment control BMPs that are to be implemented to limit sediment laden stormwater from discharging from the project area onto adjacent property or into the Pubic Stormwater System. Sediment Control BMPs are the last line of protection and should not be utilized as the primary method of construction site stormwater management.

The SWPPP shall meet the following minimum requirements for Sediment Control BMPs:

1. **Design Storm**: Sediment Control BMPs are expected to withstand and function properly during precipitation events of up to the 2-year 24-hour storm event. Visible erosion and/or off-site sediment deposition from such storm events should be minimal.

2. **Minimum Sediment Control BMPs**: Prior to the start of land disturbing activities, all projects shall have the following minimum sediment control BMPs in place and functioning:

a. **Perimeter Control**: Consisting of silt fence, straw wattles, vegetative buffers or other applicable BMP at the down gradient perimeter of the project site;

b. **Inlet Protection**: For all Public and Private Storm Sewer inlets or catch basins located within 600 feet (down-gradient) of the Point of Discharge(s) from the project site;

c. **Stabilized Construction Access:** All construction egress points that exit the project site to paved public or private areas shall have appropriate tracking prevention BMPs (note that sweeping alone does not constitute tracking prevention); and

d. **Soil Stockpiles:** All soil stockpiles shall include perimeter sediment control BMPs.

3. **Sediment Traps or Basins:** Temporary sediment basins or traps shall be utilized at all points of discharge from the project site where the tributary area to the point of discharge is equal to or greater than 10 acres.

4. **Natural Buffers:** A 50-foot natural buffer or equivalent erosion and sediment controls must be provided when a project is within 50 feet of a surface water and stormwater flows to the surface water. If equivalent erosion and sediment controls are used, rationale for using equivalent controls must be provided in the SWPPP.

5. **Soil Stockpiles:** Are both temporary and permanent collections of soil material that has been excavated or hauled to the site. Generally, soil stockpiles consist of material that will be utilized in subsequent phases of the project. All soil stockpile locations shall be noted on the SWPPP and utilize the following minimum BMPs.

   a. Perimeter sediment controls shall be installed at the base of all soil stockpiles;

   b. Temporary stabilization of all piles where no construction activities will occur for seven days or longer; and

   c. Final Stabilization is required of all stockpiles that are to be left on-site and not utilized as construction materials for future phases.

Runoff Control

The SWPPP shall identify the minimum construction stormwater Runoff Control BMPs that are to be implemented to minimize the potential for erosion of soils and impact to open water drainages or natural drainages on and adjacent to the project site.

The SWPPP shall address the following minimum requirements for the section of applicable Runoff Control BMPs:

1. **Design Storm:** Construction Drainage Management BMPs shall meet the following requirements for design storms:

   a. **Check Dams:** Are expected to withstand and function properly during precipitation events of up to the 2-year 24-hour storm event;

   b. **Temporary Stormwater Diversions**: Are expected to withstand and function properly during precipitation events of up to the 5-year 24-hour storm event; and

   c. **Permanent Stormwater Diversions:** Shall meet the requirements of Section 6 for the stormwater management after project completion.

2. **Overflow Paths:** The SWPPP shall identify construction stormwater overflow paths for events greater than the design storm and shall include a description for how runoff ultimately gets to an established natural or artificial waterway. Construction scheduling and phasing shall consider conveyance of construction stormwater to the point of discharge that minimizes the potential for damage to adjacent property or structures.

Waste Management & Illicit Discharge Control

The SWPPP shall identify the minimum Waste Management & Illicit Discharge Control BMPs that are to be implemented to minimize the potential for a non-stormwater discharge from the project site.

The SWPPP shall address the following minimum requirements for the selection of applicable Waste Management & Illicit Discharge BMPs:

1. **Concrete Washout**: All projects shall have a designated concrete truck washout location to eliminate the potential for concrete or concrete wash water to be discharged from the project site. Maintenance and disposal of Concrete Washout Areas shall be the responsibility of the permittee.
2. **Vehicle Washing Areas:** All projects that will include on-site vehicle washing shall have designated vehicle and equipment wash areas with BMPs to eliminate the potential for wash water to discharge from the project site.
3. **Spill Prevention and Control Plan**: All projects shall have BMPs for chemical, fuel, lubricant and other non-stormwater spills and cleanup.
4. **Waste Disposal:** All projects shall provide designated waste management collection areas. All waste collected shall be disposed of at a facility licensed or approved for the material to be disposed.

Restoration and Final Stabilization

The SWPPP shall identify the schedule and type of final stabilization for all areas disturbed by construction activities.

7.1.3. MONITORING AND RECORD KEEPING

The permittee is responsible for self-monitoring and reporting. Copies of the SWPPP, monitoring reports and maintenance records shall be kept on the project site during normal operating hours for review by City Staff.

All sites that require coverage under the ND Construction General Permit shall follow the monitoring and record keeping requirements of the required permit. These records shall be kept on-site for review by City staff consistent with the requirements for ND Construction General Permit.

1. Inspections shall be performed by or under the direction of the permittee at least once every 14 calendar days and within 24 hours after any storm event of greater than 0.25 inches of rain per 24-hour period.
2. Inspections are only required during normal working hours. The permittee shall use a rain gauge on-site or utilize the nearest National Weather Service precipitation gauge station. Rain gauge locations or stations must be representative of the site.
3. “Within 24 hours after any storm event greater than 0.25 inches rain per 24-hour period” means that the permittee is required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. If there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.
4. There may be times when a site inspection may not be practical at the specified time. Adverse climatic conditions, such as flooding, high winds, tornadoes, electrical storms, site access constraints, etc., may prohibit inspections. The permittee must include a description of why the inspection(s) could not be performed at the designated time in the next inspection record. If an inspection is delayed due to adverse weather conditions or rain events outside normal working hours, an inspection must be conducted during the next working day, or as conditions allow.
5. Some erosion and sediment control measures may require more frequent inspection based on location (e.g., sensitive areas or waters of the state) or as a result of recurring maintenance issues. Erosion or sediment control measures found in need of maintenance between inspections must be repaired or supplemented with appropriate measures as soon as practicable. Erosion and sediment control measures which require more frequent inspection based on location or because of recurring maintenance issues must be identified in the SWPPP.

6. Records of inspection activity shall include:
   a. Date and time of inspections;
   b. Name of person(s) conducting inspections;
   c. Findings of inspections, including recommendations and schedule for corrective actions;
   d. Date and amount of all rainfall events greater than 0.25 inches in 24 hours; and
   e. Documentation that the SWPPP has been amended when changes are made to BMPs in response to inspections.
7. Records for corrective action and maintenance activities shall include:
   a. BMP corrected;
   b. Date and time of corrective action;
   c. Name of person(s) performing corrective actions; and
   d. Description of corrective actions and maintenance activities.
8. Completed areas that have been stabilized but do not meet the criteria for final stabilization may be inspected once per month. Inspections may be suspended for parts of the construction site that meet final stabilization requirements. The SWPPP must be updated to identify any areas which meet this condition.

7.1.4. FINAL STABILIZATION

Termination of coverage requires that the project achieve final stabilization as described below:

The permittee(s) must ensure final stabilization of the site consistent with the requirements of the ND Construction General Permit. Final stabilization shall be considered achieved when one of the following scenarios has been met:

1. All soil disturbing activities for the project have been completed and all soils have been stabilized by a permanent surface covering. For “grass” vegetated areas, soils will be considered stabilized when a uniform perennial vegetative cover with a density of 70 percent is achieved;
2. All of the following conditions are met: 1) all soil disturbing activities for the project have been completed and all soils have been stabilized.; and 2) down gradient stormwater controls for individual lots has been implemented and the residence has been transferred to the homeowner; or
3. The control of the residential lot is transferred to a homeowner and the house becomes an occupiable residence. If the transfer and occupiable status occurs during the stabilization period (or scheduled stabilization period) the requirement to stabilize the site ends for the permittee.
4. All drainage ditches, constructed to drain water from the site after construction is complete, have been stabilized to preclude erosion;
5. All temporary erosion prevention and sediment control BMPs (such as silt fence) have been removed and disposed of in a proper manner; and
6. All sediment has been removed from conveyances and temporary sedimentation basins that will be used as permanent water quality management basins. Sediment must be stabilized to prevent it from being washed into basins, conveyances or drainage ways discharging off-site, or to surface waters or adjacent properties. The cleanout of permanent basins must be sufficient to return the basin to design capacity.

7.2. BMP MINIMUM DESIGN STANDARDS

BMPs are a key component of the SWPPP required by this SWDSM and the ND Construction General Permit for construction activities. BMPs are measures or controls that reduce the transport of pollutants, including sediment, from the project site. These practices can also be used to divert runoff away from areas of exposure to pollutants, or to treat stormwater runoff before discharge to receiving waters. BMPs are designed to address the quality of stormwater leaving the site, and to meet environmental water quality standards or benchmarks. BMPs are most effective when organized into a comprehensive SWPPP.

Selection of BMPs for a site specific SWPPP is outside of the scope for this SWDSM. There are numerous sources for construction stormwater BMP manuals that are acceptable sources of selection and design criteria. Examples include:

1. EPA National Menu of Best Management Practices (BMPs) for Stormwater
2. North Dakota Department of Transportation Erosion and Sediment Control Handbook
3. International Stormwater BMP Database
4. Minnesota Pollution Control Agency

The following sections provide basics BMP design standards that can be used to supplement the recommendations of accepted BMP manuals.

7.2.1. WORK IN THE PUBLIC RIGHT-OF-WAY

All work performed under City of Mandan construction contracts or within the public right-of- way shall conform with the criteria established in this Stormwater Design Standards Manual and the City's Standard Specifications.

7.2.2. CONSTRUCTION SITE MANAGEMENT CONTROLS

The following list includes key concepts to consider when selecting BMPs for the site specific SWPPP:

1. Minimize the open area by phasing or sequencing construction and preserving existing vegetation where possible.
2. Divert stormwater away from disturbed or exposed areas when possible.
3. Install BMPs to limit the potential for soil to become mobilized in stormwater runoff (erosion control).
4. Install BMPs to capture soil that becomes mobilized in stormwater runoff prior to discharging from the project site (sediment control).
5. Inspect the site regularly and properly maintain BMPs, especially after rainfall, high winds, and snowmelt events.
6. Revise the SWPPP as site and climatic conditions change during the construction and if BMPS are not effectively controlling erosion and sediment.
7. Keep the construction site clean by putting refuse in proper containers, keeping storage bins covered and preventing or removing excess sediment on roads or other impervious surfaces.

7.2.3. EROSION CONTROL

Erosion control BMPs identified in the SWPPP or utilized for the project site shall meet the following minimum design standards:

1. **Channel Erosion Control Mats:** When erosion control mats are utilized to stabilize proposed and existing stormwater channels, swales, or ditches during construction and final stabilization establishment, the following minimum design standards shall be met:

   a. Temporary Mat shall be selected to resist the calculated shear stress for the 2-year 24-hour design flow.

   b. Permanent mat shall be selected based on the calculated velocity and shear as described in Section 6.

   c. Mat shall be installed after all top soiling, fertilizing and seeding has been completed, unless the manufacturer requires otherwise.

   d. Mats shall extend to whichever is greater: upslope one-foot minimum vertically from the ditch bottom or 6 inches higher than the design flow depth.

   e. The mat shall be in firm and continuous contact with the soil. It shall be anchored, overlapped, staked and entrenched per the manufacturer's recommendations.

   f. Temporary Mats shall be selected so that they last long enough for the grass or other vegetation to become densely established.

   g. It may be difficult to establish permanent vegetation and adequate erosion protection in a channel with continuous flow. The Design Engineer should consider riprap or other channel lining methods.

   h. Once a gully has formed in a channel, it is difficult to stabilize due to loss of soil structure. Even when the gully is filled with topsoil and reseeded, the soil has a tendency to dislodge in the same pattern. If gully formation continues to be a problem the design should be reevaluated, including the use of other mat classes and/or energy dissipation such as ditch checks or riprap.

2. **Non-Channel Erosion Control Mats:** Erosion control mats utilized to stabilize exposed soils on slopes or other areas of high potential for erosion during the establishment of final stabilization shall meet the following minimum design requirements:

   a. The purpose of this practice is to protect the soil surface from the erosive effect of rainfall, prevent sheet erosion during the establishment of grass or other vegetation, and to reduce soil moisture loss due to evaporation.

   b. Only 100% biodegradable or photodegradable mats shall be utilized.

   c. Mat shall be selected to resist the calculated shear stress for the 2-year 24-hour design flow.

   d. Mat shall be installed after all top soiling, fertilizing, and seeding has been completed.

   e. The mat shall be in firm and continuous contact with the soil. It shall be anchored, overlapped, staked and entrenched per the manufacturer's recommendations.

3. **Mulching**: Mulching is the application of organic material to the soil surface to protect it from raindrop impact and sheet flow. Mulch covers the soil and absorbs the erosive impact of rainfall and reduces the flow velocity of runoff. When mulching is used, the following minimum requirements must be met:

   a. This practice may be applied on exposed soils as a temporary control where soil grading or landscaping has taken place or in conjunction with temporary or permanent seeding.

   b. **Mulching is not permitted in channels or areas of concentrated flow.**

   c. **Mulching is not permitted in detention or retention basins.**

d. Mulch shall consist of natural biodegradable material such as plant residue (including but not limited to straw, hay, wood chips, bark and wood cellulose fiber), or other equivalent materials of sufficient dimension (depth or thickness) and durability to achieve the intended effect for the required time period.

e. Mulch shall be environmentally harmless to wildlife and plants. Materials such as gravel, plastic, fabric, sawdust, municipal solid waste, solid waste byproducts shredded paper, and non-biodegradable products shall not be used.

f. Mulch shall be free of diseased plant residue, noxious weed seeds, harmful chemical residues, heavy metals, hydrocarbons and other known environmental toxicants.

g. Straw and hay mulch that will be crimped shall have a minimum fiber length of 6 inches.

h. Wood chips or wood bark shall only be used for sites that are not seeded.

    i. Wood products typically absorb available soil nitrogen as they degrade, thus making it unavailable for seed.

i. Mulch Anchoring Methods: Anchoring of mulch shall be based on the type of mulch applied, site conditions, and accomplished by one of the following techniques:

    i. Crimping;

    ii. Biodegradable Netting; or

    iii. Tackifier.

j. Considerations:

    i. The use of mulch behind curb and gutter may not be desirable unless anchored by netting because air turbulence generated from nearby traffic can displace the mulch. Consider the use of erosion mat or sod as an alternative.

    ii. In areas where lawn type turf will be established, the use of tackifiers is the preferred anchoring method. Crimping will tend to leave an uneven surface and plastic netting can become displaced and entangled in mowing equipment.

    iii. Concentrated flows above the site where mulch is applied should be diverted.

    iv. Mulch should be placed within 24 hours of seeding.

    v. Materials such as gravel may be effective for erosion control but are not considered mulches.

7.2.4. SEDIMENT CONTROLS

Sediment control BMPs identified in the SWPPP or utilized for the project site shall meet the following design standards:

1. **Perimeter Control**: Sediment control practices are installed generally at the perimeter of a project site or disturbed area. Perimeter control BMPs shall meet the following criteria:

a. Installed per the manufacturer's recommendations and applicable City of Mandan Standard Construction Details.

b. Silt Fence, Straw Wattles, Weight Fiber Roll and similar perimeter control BMPs shall be embedded as directed by the manufacturer, or standard detail, to limit the potential for runoff to short circuit underneath the installed BMP.

c. Perimeter BMPs shall be installed along topographic contours to promote the natural dispersion of runoff. **Installation across contours without consideration for the dispersion of flow will not be permitted.**

d. Removal of sediment collected behind BMPs shall occur before the accumulation reaches 1/2 of the height of the BMP and per manufactures recommendations.

2. **Inlet Protection**: A temporary device installed in or around a storm drain inlet, drop inlet, or curb inlet. All inlet protection BMPs shall:

a. Be installed and maintained per the manufactures recommendations;

b. Allow for high flows to enter the inlet and storm sewer system;

c. Be maintained on a regular basis to remove accumulated sediment and debris; and

d. Meet the requirements of the Standard Specifications when installed in a public street right-of-way.

3. **Stabilized Construction Access:** Consists of a stabilized pad of stone aggregate, or other tracking prevention BMP approved by the City Engineer, located at any point where traffic will egress a construction site. Stabilized construction access pads shall meet the following minimum design standards:

a. The construction access pad shall be installed prior to any traffic leaving the site;

b. The aggregate for construction access pads shall be 3 to 6 inch clear or washed stone with all material retained on a 3-inch sieve;

c. The aggregate shall be placed in a layer at least 12 inches thick. On sites with a high-water table, or where saturated conditions are expected during the life of the practice, stone tracking pads shall be underlain with a separating geotextile fabric to prevent migration of underlying soil into the stone;

d. The construction access pads shall be the full width of the egress point and a minimum of 50 feet long;

e. Surface water must be prevented from passing through the construction access pads. Flows shall be diverted away from construction access pods or conveyed under and around them by using a variety of practices, such as culverts, or other similar practices; and

f. Any sediment tracked onto a public or private road should be removed by street cleaning, not flushing, at a minimum before the end of each working day or sooner as weather and safety may require. Noncompliance with this provision is subject to enforcement and penalty.

4. **Sediment Traps or Basins:** Temporary or permanent sediment basins or traps shall be sized to meet the following requirements:

a. Sediment traps or basins shall be sized such that they provide:

i. Storage volume corresponding to a calculated volume of runoff from a 2-year 24-hour storm per acre drained to the basin and provide not less than 1,800 cubic feet of sediment storage below the invert of the outlet pipe from each acre drained to the basin; or

ii. 3,600 cubic feet of sediment storage below the invert of the outlet pipe per acre drained to the basin if calculations are not performed.

b. Outlets must be designed to avoid short-circuiting and the discharge of floating debris. Basins must be designed with the ability to allow complete basin drawdown for maintenance activities. Basins must release the storage volume in at least 24 hours.

c. Outlet structures must be designed to withdraw water from the surface, unless not practicable. If not practicable, rationale must be provided in the SWPPP. The basin must have a stabilized emergency overflow to minimize the risk of failure. Energy dissipation must be provided for the basin outlet.

5. **Vegetative Buffers**: When vegetative buffers are utilized as perimeter sediment control, the following minimum design standards shall be met:

a. Vegetated buffers must have a minimum width of 1 foot for every 5 feet of disturbed area that drains to the buffer.

b. The width of the buffer shall have a slope of 5 percent or less and the area draining to the buffer shall have a slope of 6 percent or less.

c. Concentrated flows should be minimized throughout the buffer.

d. Buffers shall consist of dense grassy vegetation, 3 to 12 inches tall with uniform coverage over 90 percent of the buffer. Woody vegetation shall not be counted for the 90 percent coverage. No more than 10 percent of the overall buffer may be comprised of woody vegetation.

7.2.5. RUNOFF CONTROLS

Runoff control BMPs identified in the SWPPP or utilized for the project site shall meet the following minimum design standards:

1. **Check Dams:** Temporary dams constructed across a swale or drainage ditch to reduce the velocity of water flowing in the channel. Check Dams can be constructed out of stone, a double row of straw bales or from engineered products. Check Dams shall meet the following minimum design standards:

a. Under no circumstance shall check dams be placed in an intermittent or perennial stream without approval of a USACE 404 Permit.

b. Height:

i. Installed, the minimum height of ditch checks shall be 10 inches and shall not exceed a maximum height of 16 inches for manufactured or biodegradable materials and 36 inches for stone (or other inorganic materials).

ii. Installed with the center lower than the sides forming a weir to prevent scour along the edge of the channel.

iii. Stone check dams shall have a minimum top width of 2 feet measured in the direction of flow with maximum slopes of 2:1 (2 horizontal to 1 vertical) on the upslope and downslope sides.

c. Placement:

i. At a minimum, install one check dam for every two feet of drop in the channel.

ii. Check dams shall be placed such that the resultant ponding will not cause inconvenience or damage to adjacent areas.

d. Materials shall be in accordance with the requirements of the Standard Specifications or as approved by the City Engineer.

e. Ditch checks shall be utilized during rough grading and shall be removed once the final grading and channel stabilization is applied, unless intended to be part of a permanent SWMP.

f. Ditch checks installed in grass lined channels may kill the vegetation if water is ponded for extended periods or excessive siltation occurs. Proper maintenance is required to keep areas above and below the ditch check stabilized.

g. When placing ditch checks in swales adjacent to roadways, consider designating a 'clear zone' free of obstacles posing a threat to out of control vehicles.

2. **Temporary Stormwater Diversions**: Temporary stormwater diversions are a temporary berm or channel constructed for the purpose of intercepting, diverting and safely conveying run-on around exposed soils or the project area. Temporary stormwater divisions shall meet the following minimum design standards:

a. This practice is applicable to construction sites where temporary surface water runoff control or management is needed. Locations and conditions include:

i. Upstream of disturbed areas, to limit runoff onto the site.

ii. Across slopes to reduce slope length.

iii. Below slopes to divert excess runoff to stabilized outlets.

iv. To divert sediment-laden water to sediment control facilities.

v. At or near the perimeter of the construction area to keep sediment from leaving the site.

b. Permanent diversions shall meet the requirements of ***Sections 4 - 7*** of this SWDSM.

c. Sediment-laden runoff from disturbed areas shall be diverted into a sediment control BMP.

d. When diverting clean water, the diversion channel and its outfall shall be immediately stabilized for the 2-year frequency, 24-hour duration storm. Construct and stabilize clean water diversions before initiating down slope land-disturbing activities.

e. Diversions shall be protected from damage by construction activities. At all points where diversion berms or channels will be crossed by construction equipment, the diversion shall be stabilized or shaped appropriately. Temporary culverts of adequate capacity may be used.

f. For diversions that are to serve longer than 30 days, the side slopes including the ridge, and down slope side the diversion shall be stabilized as soon as they are constructed. The diversion channel shall be stabilized with an erosion control mat or other suitable lining that can stay in place for the service time of the diversion.

g. For diversions serving less than 30 days, the down slope side of the diversion shall be stabilized as soon as constructed.

h. The channel cross section may be parabolic, or trapezoidal. The use of "V" channels is generally discouraged due to potential erosion problems.

i. Check dams may be used to enhance sediment removal and provide energy dissipation.

7.2.6. WASTE MANAGEMENT & ILLICIT DISCHARGE CONTROLS

Waste Management & Illicit Discharge control BMPs identified in the SWPPP or utilized for the project site shall meet the following minimum design standards:

1. **Concrete Washout:** Concrete washouts are a designated area on the project site for the washout of concrete trucks to prevent or reduce the discharge of pollutants to stormwater. All sites that utilize concrete as a construction material shall have a designated concrete washout that meets the following minimum design standards:

a. Locate washout area at least 50 feet from sensitive areas such as storm sewers, open ditches, or other natural and man-made water bodies, including wetlands.

b. The minimum sized washout pit shall be 10-feet x 10-feet x 3-feet (LxWxD) and shall be lined with a 15-mil plastic liner.

c. Constructed above ground to limit the potential for an illicit discharge due to overflowing from runoff or snowmelt events.

d. Have signs directing concrete trucks to the designated wash out area.

e. Allow convenient access for concrete trucks, preferably near the area where the concrete is being poured.

f. On large sites with extensive concrete work, washouts may need to be placed in multiple locations for ease of use by concrete truck drivers.

g. Concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.

h. Once concrete wastes are washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed of per applicable solid waste regulations. Dispose of hardened concrete on a regular basis, prior to exceeding 80% of the total capacity.

2. **Vehicle Wash Area**: For situations that a stabilized construction pad is not sufficient to limit tracking or non-stormwater discharge, a tire washing station shall be placed at any point of traffic egress When a vehicle wash BMP is utilized, the following minimum design standard shall be met:

a. The washing station shall be located on-site in an area that is stabilized and drains into a suitable sediment trapping or settling device.

b. The wash rack shall consist of a heavy grating over a lowered area. The rack shall be strong enough to support the vehicles that will cross it.

7.2.7. RESTORATION & FINAL STABILIZATION CONTROLS

Restoration and final stabilization control BMPs identified in the SWPPP or utilized for the project site shall meet the following minimum design standards:

1. **Exposed Soils**: All soils disturbed and or exposed by the construction activities shall be permanently stabilized by:

a. Creation of permitted impervious surface; and

b. Establishment of permanent vegetation consisting of final landscaping. Temporary seeding of exposed areas between phases in the project (for example subdivision mass grading and home site development) is not considered final stabilization.

2. **Permanent Seeding**: Permanent seeding consists of final vegetative cover of the site for the purpose of achieving final stabilization of exposed soils. Permanent seeding shall meet the minimum design standards:

a. Topsoil installation shall be completed prior to permanent seeding.

b. Permanent seeding requires a seedbed of loose topsoil to a minimum depth of 4 inches with the ability to support a dense vegetative cover.

c. Application rates of fertilizer or lime shall be based on soil testing results.

d. Prepare a tilled, fine, but firm seedbed. Remove rocks, twigs, foreign material and clods over 2 inches that cannot be broken down.

e. The soil shall have a pH range of 5.5 to 8.0.

f. Seed material and seeding rates shall meet the requirements of the Standard Specifications.

7.3. ANALYSIS METHODOLOGIES

The goal of this section is to provide specific analysis methodologies for Construction Stormwater Control as required by the North Dakota Construction General Permit and the City's MS4 General Permit (***Reference 7-1***).

7.3.1. HYDROLOGY (COMPUTING RUNOFF)

1. **Computing** Runoff: Runoff calculation methods shall be consistent with those discussed in Section 4.4.1.
2. **Newly Graded Ground:** A minimum CN of 90 shall be used for all newly graded ground regardless of Hydrologic Soil Group.

7.3.2. HYDRAULIC ANALYSIS

Hydraulic analyses shall be made using the methods described below unless otherwise approved by the City Engineer.

1. Velocity: Shall be obtained using the acceptable methods presented in ***Reference 6-4.***
2. **Shear Stress:** Shall be calculated using the following equation:

   $\tau = \gamma D S$

   Where:

   τ = Shear Stress (lb/ft^2)

   γ = Weight of Water (lb/ft^3)

   D = Average Depth of Water (ft)

   S = Surface Water Slope (Energy Grade Line
3. **Capacity of Swales and Ditches:** Shall be analyzed using one of the methods presented in ***Reference 6-4.***

7.4. REFERENCES

Reference 7-1 – North Dakota Construction General Permit

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Reference 1 - Introduction

Reference 1-1 – Stormwater Design Standards Manual Revision Log

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Reference 1-1 – Stormwater Design Standards Manual Revision Log

Version	Effective Date	Comment

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Reference 2 - Stormwater Management Program

Reference 2-1 – City of Mandan Chapter 107 of the City Code of Ordinances

Reference 2-2 – North Dakota MS4 General Permit

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Reference 2-1 – City of Mandan Chapter 107 of the City Code of Ordinances

The current Chapter 107 of the City Code of Ordinances can be found on the City of Mandan website at https://library.municode.com/nd/mandan/codes/code_of_ordinances .

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Reference 2-2 – North Dakota MS4 General Permit

The current edition of the North Dakota MS4 General Permit can be obtained from the NDDEQ's website at
https://www.deq.nd.gov/publications/wq/2_NDPDES/Stormwater/MS4/NDR04_per_20160401F.pdf

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Reference 3 - Submittal and Review Procedures

Reference 3-1 – Mandatory Stormwater Scoping Sheet

Reference 3-2 – Stormwater Management Plan Application & Checklist

Reference 3-3 – Stormwater Management Plan Template

Reference 3-4 – Certification Report Checklist

Reference 3-1 – Mandatory Stormwater Scoping Sheet

Mandatory Scoping Sheet

Engineering Department
City of Mandan
205 Second Avenue NW
Mandan, ND 58554
701-667-3215

For Office Use Only:
Date Received:
Tracking #:

MANDATORY STORMWATER MANAGEMENT SCOPING SHEET

(Complete all applicable items)

Section 1 - To Be Completed by Applicant

(Return to the City of Mandan Engineering Department)

Project Information:

Site Address: _____

Description of Work: _____

Lot & Block Number: _____ **Subdivision** _____

Project Classification:

- ❑ Residential Lot
- ❑ Site Plan Application
- ❑ Plat Application
- ❑ City Contracted
- ❑ Development or Redevelopment Not Requiring Land Use Approval

Project Size:

Land Disturbance:_____ Impervious Surface Created:_____

Part of a larger common plan of development or sale that will disturb greater than or equal to one (1) acre?

❑ Yes ❑ No

Contact Information:

Applicant: _____ Phone:_____ Fax:_____

Contact Name: _____ Email:_____

Mailing Address: _____ State _____ Zip Code _____

Project Description (Attach a Location Map showing the project in reference to the City Public Storm Sewer System)

Stormwater Management System (Describe the Point(s) of Discharge to the Public Storm Sewer System and attach a Drainage Map noting at a minimum the project site, contours indicating the overall drainage of the region, and Point(s) of Discharge)

Proposed Post-Construction Stormwater BMPs *(Provide a description of the proposed BMPs to mitigate impacts to water quantity and quality impacts. Include additional sheets if necessary.)*

MANDATORY STORMWATER MANAGEMENT SCOPING SHEET

(Complete all applicable items)

Section 2 - To Be Completed by the City

(At a minimum, all boxes checked by the City on this sheet shall be incorporated into the SWMP for the application to be deemed complete and ready for review. Additional requirements may be identified during the application review process.)

Stormwater Management Plan Submittal Requirements

Based upon the information provided in Section 1, the following represents the minimum requirements for a complete submittal for a Stormwater Management Plan Application. However, this list should not be used in lieu of the City of Mandan Zoning Ordinances, the City's Stormwater Design Standards Manual, or accepted engineering fundamentals and practice. Compliance with these requirements does not constitute permit or project approval.; Additional site specific information may be required to allow review and approval of the Stormwater Management Plan. Note: Upon scoping sheet submittal, ensure completed form has been signed in the space provided below:

Applicable Previous Completed Studies, Master Plans or Stormwater Management Plan (The project SWMP is required to meet the recommendations of previously completed plans for the project site)

Watershed Master Plan _____

SWMP _____

Other Plan _____

Summary of Previous Recommendations for Project Area (If applicable, the following are the City Engineer's findings regarding general recommendations for the project site based on previous studies. Additional requirements may be outlined in the studies referenced above)

Post-Development % Impervious _____

Post-Development Pervious CN _____

Post-Development Flow Rates _____

Required Improvements _____

Other _____

Known drainage issues in the vicinity of the Project and other applicable information

Requirements for SWMP Submittal (If project specific stormwater post-construction BMPs are required, or the proposed project exceeds the regional BMP sizing criteria, the following design standards shall be met by the project specific BMP)

Point(s) of Analysis _____

Stormwater Quantity BMP	❑ Regional	❑ Local	❑ On-Site
Stormwater Quality BMP	❑ Regional	❑ Local	❑ On-Site
Required Improvements	❑ Regional	❑ Local	❑ On-Site

Other _____

This form shall be included as an attachment, inside of the front cover, of the SWMP submitted. Failure to include the approved Mandatory Stormwater Management Scoping sheet with the SWMP will result in the application being deemed incomplete for processing.

Reference 3-2 – Stormwater* Management *Plan Application & Checklist

For Office Use Only:
Date Received:
Tracking #:

Engineering Department
City of Mandan
205 2nd Ave NW
Mandan, ND 58554
701-667-3215

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Project Information:

Site Address: _____

Description of Work: _____

Lot & Block Number: _____ **Subdivision:** _____

Project Classification:

❑ Residential Lot ❑ Site Plan Application ❑ Plat Application
❑ City Contracted ❑ Development or Redevelopment Not Requiring Land Use Approval

Project Size:

Land Disturbance: _____ Impervious Surface Created: _____

Part of a larger common plan of development or sale that will disturb greater than or equal to one (1) acre
❑ Yes ❑ No

I certify that I am the Owner or Owner's authorized agent. If acting as an authorized agent, I further certify that I am authorized to act as the Owners agent regarding the property at the above-referenced address for the purpose of filing applications for decisions, permits or review under the City of Mandan Zoning Ordinance and have full power and authority to perform on behalf of the Owner all acts required to enable the City to process and review such applications.

I certify that the information on this application is true and correct and understand that I shall not start this project until this application is approved. I shall comply with the laws of the State of North Dakota and the ordinances of the City of Mandan.

_____ _____
Signature of Legally Responsible Person Date Signed

_____ _____
Name (Printed) Title

_____ _____

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Contact Information:	
APPLICANT: _____	Phone: _____ Fax: _____
Contact Name: _____	Email: _____
Mailing Address: _____	State: _____ Zip Code _____
PROPERTY OWNER:_____	Phone:_____ Fax: _____
Mailing Address: _____	State _____ Zip Code _____
GENERAL CONTRACTOR:_____	Phone:_____ Fax: _____
Contact Name: _____	Email:_____
Mailing Address: _____	State _____ Zip Code _____
Person Responsible For SWMPP Implementation:	Phone:_____ Zip Code _____
Contact Name:_____	Email:_____
Mailing Address: _____	State_____ Zip Code_____

Projects that are part of a common plan of sale or development that disturb greater than one (1) acre are required to submit a SWPPP and Erosion Control Plan that meet the requirements of the NDDEQ Construction General Permit.

Notes:
No land disturbance is permitted on any project site without an approved City of Mandan Stormwater Management Plan
This approval is separate from any permits that may be required by the North Dakota Department of Environmental Quality. See https://deq.nd.gov/WQ/2_NDPDES_permits/7_Stormwater/stw.aspx for requirements.

STORMWATER MANAGEMENT PLAN APPLICATION &CHECKLIST

(Complete all applicable items)

For Office Use Only			
Required Documents		**By**	**Date**
❑ Approved Mandatory Stormwater Scoping Sheet	**Site Visit:**		
❑ Stormwater Management Plan (SWMP)	**Approval:**		
❑ Checklist	**Comments:**		
❑ Construction Plans			
❑ SWPPP or NDDEQ SWPPP			
❑ Payment			
❑ ND Notice of Intent (NOI) (if distributing >1 Acre)			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Standard Application Materials	Complete	Comment
Approved Mandatory Stormwater Scoping Sheet	❑ Yes ❑ N/A	
Stormwater Management Plan, Narrative, Exhibits & SWPPP *See Required Items Below*	❑ Yes ❑ N/A	
Construction Plans	❑ Yes ❑ N/A	
Design Waivers or Variances (if Acceptable)	❑ Yes ❑ N/A	
Optional Materials	**Complete**	**Comment**
Geotechnical Report	❑ Yes ❑ N/A	
Access & Drainage Easements	❑ Yes ❑ N/A	
Operation and Maintenance Manuals	❑ Yes ❑ N/A	

Summary of Site Cover

	Pervious Area (square feet)	Impervious Area (square feet)	Total Area (square feet)
Existing Conditions			
Conditions			
Change in Area (+/-)			

Waterbodies and Storm Conveyance Systems

Waterbodies within 200 feet of Project (Lakes, Rivers, Streams, Wetlands, Sloughs, etc.):

1. _____ 3. _____

2. _____ 4. _____

Storm Conveyance Systems within 200 feet of Project (Storm Sewer, Ditches, Detention Facilities, etc.):

1. _____ 4. _____

2. _____ 5. _____

3. _____ 6. _____

Stormwater Management Plan Narrative

Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM

Item	Description	Yes	N/A	Page
1.0	**Site & Applicant Information** ***3.4.4 of the SWDSM***			
1.0A	Applicant, Contact Name, Address, Phone, & Email			
1.0B	Site Address and Subdivision Lot & Block as Applicable			
1.1	Project Background & Description			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*				
Item	**Description**	**Yes**	**N/A**	**Page**
2.0	**Recommendations for the Project Area**			
2.0A	Summary Table by Lot & Block of allowable Proposed Pervious CN and % Impervious.			
2.0B	Summary Table of the Existing Conditions and Proposed peak flow and volumes at the Point(s) of Analysis for all storm events required by ***Table 4-1*** of the SWDSM.			
2.1	Required Easements for Existing or Proposed Stormwater BMPs			
2.2	Inter-Lot Drainage Requirements to be Addressed by Future Grading Plans and Proposed.			
2.3	Post-Construction Stormwater BMPs Required to be Implemented by Future Development			
2.4	Additional Project Specific Recommendations as Necessary			
3.0	**Project Stormwater Management Summary** The SWMP shall include a brief description of the following items**.**			
3.1	Description of the Point(s) of Analysis			
3.2	Description of the Point(s) of Discharge			
3.3	Description of existing channels, pipes, culverts, or other stormwater features.			
3.4	Description of existing wetlands on and adjacent to the project including the source (i.e. field delineation, NWI, LWI, etc.)			
3.5	Identify FEMA FIRM map and location.			
3.6	Identify Missouri River Setback & Easement Provisions			
3.7	Report the NRCS soil types for the project area. Note if NRCS soils are listed as Hydric Soils.			
3.8	Description of how Project proposes to manage proposed stormwater runoff consistent with the requirements of the SWDSM.			
4.0	**Hydrologic Analysis Summary** The SWMP shall include a description of each catchment by Point of Analysis that includes a brief description of the existing and proposed conditions of each catchment. The design engineer can utilize sub-catchments to define specific areas within the overall Point of Analysis.			
4.1	Description of Existing Zoning & Land-use			
4.2	Summary Table for the Existing Conditions Catchment by Point of Analysis that Includes: 1. Tributary Area (both onsite and off-site run-on); 2. Impervious Coverage Area; 3. Impervious Coverage Curve Number; 4. Pervious Coverage Area; 5. Pervious Coverage Curve Number; and 6. Time of Concentration.			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*				
Item	**Description**	**Yes**	**N/A**	**Page**
4.3	Proposed Zoning & Land-use			
4.4	Summary Table for the Proposed Catchment by Point of Analysis that Includes: 1. Tributary Area (both on- site and off-site run-on); 2. Impervious Coverage Area; 3. Impervious Coverage CN; 4. Pervious Coverage Area; 5. Pervious Coverage Curve Number; and 6. Time of Concentration.			
4.0A	Included as an appendix to the SWMP modeling results for the existing and proposed condition hydrographs to each Point of Discharge for the storm events listed ***Table 4-1*** of the SWDSM.			
4.5	The SWMP hydrologic analysis and reporting shall account for and consider the following: 1. The project shall safely pass the 100-year 24-hour event without impacting or inundating any homes, structures or other buildings. 2. If the off-site contributing areas are greater than 50-percent of the catchment total, provide a description of the impact of future development in the off-site watershed on the proposed BMPs and make any applicable recommendations. 3. The conveyance capacity of the receiving system shall not be exceeded.			
5.0	**Stormwater Management BMPs Summary** The SWMP shall include documentation that the Project meets the Performance Requirements, Design Standards and Analysis Method of the SWDSM for A) Peak Flow Compliance (Section 4.0) B) Water Quality Compliance (Section 5.0) and C) Drainage and Conveyance. (Section 6.0)			
5.1	**Peak Flow Compliance BMP** *(Section 4 of the SWDSM)*			
5.1.1	**Engineered Outlets** The SWMP shall include a summary of the proposed engineered outlet structure in a table that reports: 1. Outlet configuration including size and inverts; 2. Outlet culvert discharge velocity and depth for all storm events required by ***Table 4-1*** of the SWDSM; 3. Calculated water surface elevation for all storm events required by ***Table 4-1*** of the SWDSM; 4. Maximum available storage in the proposed basin (to emergency spillway or overflow elevation); and 5. Reference to where the Stage/Storage/Discharge report is contained in the SWMP.			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*				
Item	**Description**	**Yes**	**N/A**	**Page**
5.1.2	**Emergency Spillway and Uncontrolled Overflows** The SWMP shall include the hydrologic and hydraulic summary demonstrating that the proposed emergency spillway\overflow satisfies the following conditions: 1. Capable of passing the post-construction 100-year 24-hour event without overtopping the detention basin berm during a clogged outlet structure condition; 2. Properly armored to resist the erosive forces during the post-construction 100-year 24-hour event; and 3. Will not be utilized during the normal function of the detention basin.			
5.0A	Included as an appendix to the SWMP modeling results for the inflow and outflow hydrographs for the proposed condition for each of the storm events listed ***Table 4-1*** of the SWDSM.			
5.2	**Water Quality Compliance BMP** *(Section 5 of the SWDSM)*			
5.2.1	**Wet Detention Basins** The SWMP shall include a summary table that reports: 1. Required Water Quality Volume (Vwqreq); 2. Proposed Water Quality Volume in the form of a Stage-Storage relationship; 3. Calculated drawdown time; and 4. Reference to where the Stage/Storage/Discharge report is contained in the SWMP.			
5.2.2	**Dry Detention Basins (w/Extended Detention)** The SWMP shall include a summary table that reports: 1. Required Extended Detention Water Quality Volume (Vwqreq); 2. Proposed Extended Detention Water Quality Volume in the form of a Stage-Storage relationship; 3. Calculated drawdown time; and 4. Reference to where the Stage/Storage/Discharge report is contained in the SWMP.			
5.2.3	**Infiltration** The SWMP shall include a summary table that reports: 1. Required Water Quality Volume (Vwqreq); 2. Proposed Water Quality Volume in the form of a Stage-Storage relationship; 3. Calculated infiltration time; and 4. Reference to where the Stage/Storage/Discharge report is contained in the SWMP.			
5.2.4	If applicable, Alternative BMP Method analysis and reporting requirements consistent with ***Section 5.2.2*** of the SWDSM.			

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*				
Item	**Description**	**Yes**	**N/A**	**Page**
5.0B	Included as an appendix to the SWMP modeling results for proposed water quality BMPs demonstrating compliance with ***Table 5-1*** of the SWSDM.			
5.3	**Drainage & Conveyance BMPs** *(Section 6 of the SWDSM)*			
5.3.1	**Streets** Demonstrate compliance with ***Table 6-1*** and ***Table 6-2*** of the SWDSM Summary table listing: 1. Street Classification; 2. Critical Design Grade; 3. Calculated Maximum Street Flow Depth; and 4. Maximum Encroachment.			
5.3.2	**Storm Sewer** Brief summary of the storm sewer system. Summary Table of Inlets & Catch Basins reporting for each structure: 1. Location, type, size, rim elevation and depth of the proposed inlet; 2. 5-year 24-hour design flow to the inlet; 3. Theoretical inlet capacity; 4. Depth of water in the gutter at the inlet; 5. Flow intercepted and flow bypassed; and 6. Street drainage spread width. Summary Table of Storm Sewer Pipes reporting for each length of pipe: 1. Pipe calculations that state the design peak flow rates and design information for each pipe run, such as size, slope length, material type, and Manning's coefficient; 2. Velocities at design flow for each segment of proposed pipe; 3. HGL at each inlet, manhole, angle point, and outlet; 4. Depth from finish grade to pipe invert for each segment of proposed pipe; and 5. When there is a significant change in slope of the pipe through a manhole or other structure, the EGL shall be reported.			

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*				
5.3.3	**Culverts** Brief summary of required culverts. *Culverts Report shall include the following information documenting the performance of the culvert:* 1. Complete culvert calculations that state the design peak flow rates, culvert size, slope, inverts, length, material type, wall thickness, and Manning's coefficient. 2. Type of end treatment. 3. Headwater depths and water surface elevations for the design storm events. 4. Velocities at the inlet and outlet for the design storm events. 5. Flow control type (inlet or outlet). 6. Roadway cross-section and roadway profile.			
5.3.4	**Open Channels** When engineered open channels are utilized as a Proposed BMP include the following information. 1. The size and shape of open channels shall be based on flow quantities calculated using the hydrologic methods set forth in **Section 4.3.1** of the SWDSM. 2. Post-Construction flows and the maximum Froude number for each design event 3. Calculations reporting the velocity and shear stress to support the channel lining material selection. 4. Graphical profile of the channel longitudinal section reporting the design slope and 5-year 24-hour and 100-year 24-hour storm hydraulic grade lines.			
5.4	Identification of Parties Responsible for the Operation and Maintenance of the Proposed Stormwater Structural and Non-Structural BMPs. *Note: O&M Manuals for each approved post-construction BMP shall be required as a condition of approval of the SWMP*			
6.0	**Construction Schedule & Phasing**			
6.1	Project Schedule *Start Date:* *Completion Date:* *Final Stabilization Date:*			
6.2	Narrative of proposed project construction phases and the necessary future submittals and approvals as required by the SWDSM. For example, grading project, water sewer project, final site development, etc.			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*			
Item	**Description**	**Complete**	**Comment**
7.0	**Construction Stormwater Control**	❑ Yes ❑ N/A	
7.1	**Construction Site Management Controls**	❑ Yes ❑ N/A	
7.1.1	Project Description 1. Project Type & Construction Activities; 2. Total Project Area & Total Disturbed Area; 3. NRCS Soil Type Description; and 4. Location of Point(s) of Discharge.	 ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A	
7.1.2	Construction Site Management Narrative 1. Person Responsible for BMPs; 2. BMP Installation, Maintenance, & Removal Requirements for each Phase/Stage; 3. Rationale for BMP Selection; and 4. State whether BMPs are Temporary or Permanent.	 ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A	
7.1.3	Construction Operational BMPs 1. Describe Maintenance Practices; 2. Describe Preventative Practices; 3. Describe Spill Prevention & Response Procedures; and 4. Site Operation BMPs to Limit Exposed Soils.	 ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A	
7.2	**Erosion Controls**	❑ Yes ❑ N/A	
7.2.1	Construction Phasing & Stabilization 1. Phased Grading & Stabilization; 2. Protection of Existing Vegetation; and 3. Staging & Stockpile Areas Identified.	 ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A	
7.2.2	Minimum Stabilization Requirements 1. Stabilization of Exposed Soils; 2. Stabilization of Soils on Steep Slopes; and 3. Stabilization of Channels, Ditches, & Swales.	 ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A	
7.2.3	Protection of Inlets & Outlets: BMPs shall be installed at all inlets and outlets.	❑ Yes ❑ N/A	
7.3	**Sediment Controls**	❑ Yes ❑ N/A	
7.3.1	Design Storm: BMPs withstand & function during events up to the 2-year 24-hour storm.	❑ Yes ❑ N/A	
7.3.2	Minimum Sediment Control BMP's 1. Perimeter Control; 2. Inlet Protection; 3. Stabilized Construction Access; and 4. Soil Stockpiles.	❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A ❑ Yes ❑ N/A	
7.3.3	Sediment Traps or Basins: Utilized at all Points of Discharge where tributary area is equal to or greater than 10 acres.	❑ Yes ❑ N/A	
7.3.4	Natural Buffers: 50-foot natural buffer, or equivalent erosion & sediment control, where project is within 50 feet of surface water.	❑ Yes ❑ N/A	

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan Narrative *Provide a SWMP Narrative consistent with the requirements of the SWDSM and the approved Mandatory Stormwater Scoping Sheet. Attach this checklist to the SWMP Narrative that matches the outline as defined in Section 3.4.4 of the SWDSM*			
7.3.5	Soil Stockpiles: Utilize Perimeter Sediment Controls; Utilize Temporary Stabilization where necessary; and Final Stabilization of all stockpiles left on-site.	❑ Yes ❑ N/A	
7.4	**Runoff Control**	❑ Yes ❑ N/A	
7.4.1	Design Storm: Check Dams withstand & function in 2-year 24-hour storm; Temporary Stormwater Diversions withstand 5-year 24-hour storm; and Permanent Stormwater Diversions meet Post- Construction Requirements.	❑ Yes ❑ N/A	
7.4.2	Overflow Paths Identified	❑ Yes ❑ N/A	
7.5	**Waste Management & Illicit Discharge Control**	❑ Yes ❑ N/A	
7.5.1	Concrete Washout Identified	❑ Yes ❑ N/A	
7.5.2	Vehicle Washing Areas On-Site	❑ Yes ❑ N/A	
7.5.3	Spill Prevention & Control Plan	❑ Yes ❑ N/A	
7.5.4	Waste Disposal Provided	❑ Yes ❑ N/A	
7.6	**Restoration & Final Stabilization** (Schedule & Type Identified)	❑ Yes ❑ N/A	
7.7	**Construction Stormwater Site Plan** (Must Meet the Requirements of the ND Construction General Permit if greater than 1 Acre)	❑ Yes ❑ N/A	
8.0	**Engineer's Statement of Compliance & Seal**	❑ Yes ❑ N/A	
9.0	**Appendices & Additional Information**	❑ Yes ❑ N/A	
9.1	**Hydrologic & Hydraulic Modeling Results**	❑ Yes ❑ N/A	
9.2	**Peak Flow Compliance BMP Calculations**	❑ Yes ❑ N/A	
9.3	**Water Quality Compliance BMP Calculations**	❑ Yes ❑ N/A	
9.4	**Drainage and Conveyance Calculations**	❑ Yes ❑ N/A	
9.5	**Required Exhibits & Summary Tables**	❑ Yes ❑ N/A	
9.6	**Construction Plans**	❑ Yes ❑ N/A	
9.7	**Geotechnical Reports**	❑ Yes ❑ N/A	

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan – Required Exhibits

All Stormwater Management Plans are to include the exhibits listed below. Additional exhibits may be required for complex sites or multiple phase projects.

General Requirements:

1. *Paper Size*
2. *Minimum = 11x17*
3. *Maximum = 24x36*
4. *All Exhibits must have a unique name and number*
5. *All Exhibits are to be labeled "For Regulatory Review Only – Not Approved for Construction"*

Item	Description	Yes	N/A	Page
1	**Exhibit 1.0 – Cover Sheet & Location Map** *(if more than one sheet is required use 1.0, 1.1, 1.2, ect.)*			
A	Name of Project or Name of the Plat			
B	Owner with Contact Information			
C	Applicant			
D	Engineer			
E	Site Location by Address and/or PLSS			
F	SWMP Exhibits Sheet index by Number & Title			
G	Location – *Map GIS data is sufficient for accuracy. The purpose of the location map is to demonstrate where the proposed project fits in the existing Public Storm Sewer System.* 1. North Arrow 2. Scale 3. Project Site Highlighted 4. Streets 5. Adjacent Parcels 6. Existing Offsite Stormwater Facilities 7. Regional Stormwater Facilities (If Used for the Project) 8. Stormwater Master Plan Study boundary 9. Point(s) of Analysis			
2	**Exhibit 2.0 – Existing Conditions Site Plan** *(if more than one sheet is required use 2.0, 2.1, 2.2, etc.)*			
A	North Arrow and Bar Scale			
B	Existing topography at a minimum of 1-foot interval. Sites with grades steeper than 10%, the existing topography can be shown at 2- foot contour intervals.			
C	Identify the Point(s) of Analysis and delineate each corresponding drainage area.			
D	Identify the Points(s) of Discharge to the Public Storm Sewer System and delineate the sub-catchment area boundary(s) including any upstream areas that flow on to the project site.			
E	Time of concentration path for each catchment or sub-catchment.			
F	Property boundaries , easements, and street ROW			
G	Existing underground public utilities			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

(Complete all applicable items)

Stormwater Management Plan – Required Exhibits *All Stormwater Management Plans are to include the exhibits listed below. Additional exhibits may be required for complex sites or multiple phase projects.* *General Requirements:* *10. Paper Size* *11. Minimum = 11x17* *12. Maximum = 24x36* *13. All Exhibits must have a unique name and number* *All Exhibits are to be labeled "For Regulatory Review Only – Not Approved for Construction"*				
H	Existing above ground public utilities			
I	Existing impervious ground cover			
J	Existing pervious ground cover			
K	Location of wetlands			
L	FEMA Floodplains and Floodways			
M	NRCS Soils Boundaries			
N	Missouri River Setback & Easement Provisions			
O	Legend identifying all layers or features.			
P	Notes Identifying: 1. Source and Date of Topography 2. Source of NRCS Soil Boundaries 3. Total Site Impervious and Pervious Area 4. Point(s) of Analysis Total Drainage Area			
	Exhibit 3.0 – Proposed Site Plan *(if more than one sheet is required use 3.0, 3.1, 3.2, etc.)*			
A	North Arrow and Bar Scale			
B	Proposed grading at a minimum of 1-foot interval. For sites with grades steeper than 10% the existing topography can be shown at 2-foot contour intervals.			
C	Identify the Point(s) of Analysis			
D	Identify the Point(s) of Discharge to the Public Storm Sewer System and delineate the corresponding Catchment area including any upstream areas that flow on to the project site.			
E	All catchments and sub-catchments labeled with identifiers that match the hydrologic modeling results.			
F	Proposed impervious ground cover			
G	Proposed pervious ground cover			
H	Proposed BMPs			
I	Proposed time of concentration paths for each catchment or sub-catchment			
J	Legend identifying all layers or features.			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

Stormwater Management Plan – Required Exhibits

All Stormwater Management Plans are to include the exhibits listed below. Additional exhibits may be required for complex sites or multiple phase projects.

General Requirements:

1. *Paper Size*
2. *Minimum = 11x17*
3. *Maximum = 24x36*
4. *All Exhibits must have a unique name and number*
5. *All Exhibits are to be labeled "For Regulatory Review Only – Not Approved for Construction"*

Item	Description	Yes	N/A	Page
	Exhibit 4.0 – Proposed BMP Details *(if more than one sheet required use 4.0, 4.1, 4.2, etc.)*			
A	Peak Flow and/or Water Quality Basin Typical Section and Outlet Structure Detail with: 1. Outlet structure including sizes of orifices, weirs and culverts; 2. Invert elevations for all outlet orifices, weirs and culverts; 3. Invert elevation for emergency spillway or overflow structure; 4. Elevation of the top of embankment or basin structure; 5. Calculated water surface elevation for all storm events required by ***Table 4-1*** of the SWDSM; 6. Proposed Outlet Protection, and 7. If applicable, the elevation of the nearest adjacent finished floor or other critical elements.			

Comments associated with checklist items:

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

Required Summary Tables:

(Note: The Design Engineer may reproduce the following tables electronically and attach to this checklist as a summary.)

Project Hydrologic Modeling Summary – Existing Conditions			
Storm Event	**Peak Flow (cfs) by Point of Analysis**		
	Point 1	***Point 2***	***Point 3***
2-year 24-hour			
5-year 24-hour			
10-year 24-hour			
100-year 24-hour			

Project Hydrologic Modeling Summary – Existing Conditions			
Storm Event	**Total Volume (acre-feet) by Point of Analysis**		
	Point 1	***Point 2***	***Point 3***
2-year 24-hour			
5-year 24-hour			
10-year 24-hour			
100-year 24-hour			

Project Hydrologic Modeling Summary – Proposed Conditions			
Storm Event	**Peak Flow (cfs) by Point of Analysis**		
	Point 1	***Point 2***	***Point 3***
2-year 24-hour			
5-year 24-hour			
10-year 24-hour			
100-year 24-hour			

Project Hydrologic Modeling Summary – Proposed Conditions			
Storm Event	**Total Volume (acre-feet) by Point of Analysis**		
	Point 1	***Point 2***	***Point 3***
2-year 24-hour			
5-year 24-hour			
10-year 24-hour			
100-year 24-hour			

STORMWATER MANAGEMENT PLAN APPLICATION & CHECKLIST

Construction Plans				
Item	**Description**	**Yes**	**N/A**	**Page**
A	Public Improvement Construction Plan – Meeting the requirements of the City of Mandan CAD Standards.			
B	Site Plan – Meeting the requirements of the City of Mandan Site Plan submittal requirements.			
C	Private Improvement Construction Plans			

Design Engineer			
SWMP application materials are to be submitted under the seal and signature of a Professional Engineer registered in the State of North Dakota.			
	Yes	**No**	**Page**
Have all items included in this application been sealed and signed by a Professional Engineer registered in the State of North Dakota?			
Submittal Copies:			
1 PDF Copy Emailed to City Engineering			
Application Fee Paid			

Reference 3-3 – Stormwater Management Plan Template

Project Name

Stormwater Management Plan

Date:

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1.0 SITE & APPLICANT INFORMATION

APPLICANT:

CONTACT NAME:

CONTACT ADDRESS:

PHONE #:

EMAIL:

SITE ADDRESS: SUBDIVISION, LOT, & BLOCK:

1.1 PROJECT BACKGROUND & DESCRIPTION

Write a brief description of the project including a summary of the proposed improvements and final use, location and significant existing features

PROJECT SIZE:

IMPERVIOUS SURFACE CREATED:

2.0 RECOMMENDATIONS FOR THE PROJECT AREA

Table 2-1 – *Proposed Conditions Recommendations Summary*

Block #	***Lot #***	***Pervious CN***	***% Impervious***

Table 2-2 – *Existing Conditions & Proposed Conditions Runoff Summary*

Point of Analysis	***Existing Conditions Flow (cfs)***	***Proposed Conditions Flow (cfs)***	***Existing Conditions Volume (Acre-Ft)***	***Proposed Conditions Volume (Acre-Ft)***

2.1 DESCRIPTION OF EASEMENTS

2.2 INTER-LOT DRAINAGE REQUIREMENTS

2.3 REQUIRED POST-CONSTRUCTION STORMWATER BMPS

2.4 ADDITIONAL PROJECT RECOMMENDATIONS

3.0 PROJECT STORMWATER MANAGEMENT SUMMARY

3.1 DESCRIPTION OF POINT(S) OF ANALYSIS (IF APPLICABLE)

Provide a description of the point of analysis and if applicable why it is not the same location as the Project Point of Discharge

3.2 DESCRIPTION OF POINT(S) OF DISCHARGE

Provide a description of where the proposed project will connect to the Public Storm Sewer System. If there is not a direct adjacent connection, describe what easements the applicant must obtain to reach the Public Storm Sewer System.

3.3 DESCRIPTION OF EXISTING STORMWATER FEATURES

Provide a narrative of the existing post-construction stormwater BMPs including peak flow mitigation, water quality, storm sewer, culverts, and open channels

3.4 DESCRIPTION OF EXISTING WETLANDS

Note wetland areas that are shown on NWI or aerial photography. Provide documentation that a USACE 404 permit is not required for the project or state that the applicable permit will be obtained prior to the start of construction.

3.5 FEMA FIRM

Identify FIRM panel and 100-year WSE if applicable.

3.6 MISSOURI RIVER SETBACK & EASEMENT PROVSIONS

Identify existing and proposed Missouri River setbacks and easements if applicable

3.7 NRCS SOIL TYPES

Provide the NRCS soil types and HSG, note any soils that are listed as being hydric.

3.8 DESCRIPTION OF PROPOSED CONDITIONS RUNOFF MANAGEMENT

Provide a summary of how proposed conditions stormwater will be managed to meet the Peak Flow, Water Quality, and Drainage & Conveyance performance standards included in the SWDSM.

4.0 HYDROLOGIC ANALYSIS SUMMARY

4.1 DESCRIPTION OF EXISTING ZONING & LAND USE

Provide a summary by (sub)catchment, reference the applicable figure and modeling schematic.

4.2 EXISTING CONDITIONS POINT OF ANALYSIS SUMMARY

Table 4-1 – *Existing Conditions Point of Analysis Summary*

	Point(s) of Analysis		
	1	***2***	***3***
Tributary Area (on-site & off-site)			
Impervious Area			
Impervious CN			
Pervious Area			
Pervious CN			
Tc (minutes)			

4.3 DESCRIPTION OF PROPOSED CONDITIONS ZONING & LAND USE

Provide a summary by (sub)catchment, reference the applicable figure and modeling schematic.

4.4 PROPOSED CONDITIONS POINT OF ANALYSIS SUMMARY

Table 4-2 – *Proposed Conditions Point of Analysis Summary*

	Point(s) of Analysis		
	1	***2***	***3***
Tributary Area (on-site & off-site)			
Impervious Area			
Impervious CN			
Pervious Area			
Pervious CN			
Tc (minutes)			

4.5 HYDROLOGIC ANALYSIS CONSIDERATIONS

Does the project safely pass the 100-year 24-hour event, potential impact of future development upstream, recommendations, etc.

5.0 STORMWATER MANAGEMENT BMPS

5.1 PEAK FLOW COMPLIANCE BMP

5.1.1 ENGINEERED OUTLETS

Table 5-1 – *Engineered Outlet Summary*

Outlet Size		
Upstream Invert		
Downstream Invert		
Outlet Velocity and Depth		
2-Year Event	ft/sec	ft
5-Year Event	ft/sec	ft
10-Year Event	ft/sec	ft
100-Year Event	ft/sec	ft
Maximum Basin Storage		
Pervious CN		
Tc (minutes)		
Stage/Storage/Discharge Location		
Calculated Water Surface Elevation		
2-Year Event		
5-Year Event		
10-Year Event		
100-Year Event		

5.1.2 EMERGENCY SPILLWAY AND UNCONTROLLED OVERFLOWS

5.2 WATER QUALITY COMPLIANCE BMP

5.2.1 WET DETENTION BASINS

Table 5-2 – *Wet Detention Basin*

Required Water Quality Volume (Vwqreq)	
Proposed Water Quality Depth	
Calculated Drawdown Time	
Stage/Storage/Discharge Location	

5.2.2 DRY DETENTION BASINS

Table 5-3 – *Dry Detention Basin*

Required Water Quality Volume (Vwqreq)	
Proposed Water Quality Depth	
Calculated Drawdown Time	
Stage/Storage/Discharge Location	

5.2.3 INFILTRATION

Table 5-4 – *Infiltration Basin*

Required Water Quality Volume (Vwqreq)	
Proposed Water Quality Depth	
Calculated Infiltration Time	
Stage/Storage/Discharge Location	

5.2.4 ALTERNATIVE BMP METHOD REQUIREMENTS

5.3 DRAINAGE & CONVEYANCE BMPS

5.3.1 STREETS

Table 5-5 – *Streets Summary*

Street Classification	
Critical Design Grade	
Calculated Maximum Street Flow Depth	
Maximum Encroachment	

5.3.2 STORM SEWER

5.3.3 CULVERTS

5.3.4 OPEN CHANNELS

5.4 BMP OPERATION AND MAINTENANCE

Identify parties responsible for the operation and maintenance of the proposed conditions stormwater structural and non-structural BMPs.

6.0 CONSTRUCTION SCHEDULE & PHASING

6.1 PROJECT SCHEDULE

Describe construction phases and the necessary future submittals and approvals as required by the SWDSM.

6.2 PHASING NARRATIVE

Table 6-1 – *Future SWMP Application Materials*

Application Material	***Approximate Timing***
Certification Report	

7.0 CONSTRUCTION STORMWATER CONTROL

7.1 CONSTRUCTION SITE MANAGEMENT CONTROLS

7.1.1 PROJECT DESCRIPTION

7.1.2 CONSTRUCTION SITE MANAGEMENT NARRATIVE

7.1.3 CONSTRUCTION OPERATIONAL BMPs

7.2 EROSION CONTROLS

7.2.1 CONSTRUCTION PHASING & STABILIZATION

7.2.2 MINIMUM STABILIZATION REQUIREMENTS

7.2.3 PROTECTION OF INLETS & OUTLETS

7.3 SEDIMENT CONTROLS

7.3.1 DESIGN STORM

7.3.2 MINIMUM SEDIMENT CONTROL BMPs

7.3.3 SEDIMENT TRAPS OR BASINS

7.3.4 NATURAL BUFFERS

7.3.5 SOIL STOCKPILES

7.4 RUNOFF CONTROLS

7.4.1 **DESIGN STORM**

7.4.2 **OVERFLOWS PATHS IDENTIFIED**

7.5 WASTE MANAGEMENT & ILLICIT DISCHARGE CONTROLS

7.5.1 **CONCRETE WASHOUT INDENTIFIED**

7.5.2 **VEHICLE WASHING AREAS ONSITE**

7.5.3 **SPILL PREVENTION & CONTROL PAN**

7.5.4 **WASTE DISPOSAL PROVIDED**

7.6 RESTORATION & FINAL STABILIZATION

7.7 CONSTRUCTION STORMWATER SITE PLAN

8.0 ENGINEERS STATEMENT OF COMPLIANCE & SEAL

9.0 APPENDICIES & ADDITIONAL INFORMATION

9.1 HYDROLOGIC & HYDRAULIC MODELING RESULTS

9.2 PEAK FLOW COMPLIANCE BMP CALCULATIONS

9.3 WATER QUALITY COMPLIANCE BMP CALCULATIONS

9.4 DRAINAGE AND CONVEYANCE CALCULATIONS

9.5 REQUIRED EXHIBITS & SUMMARY TABLES

9.6 CONSTRUCTIONS PLANS

9.7 GEOTECHNICAL REPORTS

Reference 3-4 – Certification Report Checklist

Certification Report

Engineering Department
City of Mandan
205 Second Ave NW
Mandan, ND 58554
701-667-3215
(Complete all applicable items)

For Office Use Only:
Date Received:
Tracking #:

Project Information:

Site Address: _____

Description of Work: _____

Lot & Block Number: **Subdivision (if applicable):**

Contact Information:

PERMITTEE: _____ Phone: _____ Fax: _____

Contact Name: _____ Email: _____

Mailing Address: _____ State _____ Zip Code _____

DESIGN ENGINEER: _____ Phone: _____ Fax: _____

Mailing Address: _____ State _____ Zip Code _____

CERTIFYING ENGINEER: _____ Phone: _____ Fax: _____

Contact Name: _____ Email: _____

Mailing Address: _____ State _____ Zip Code _____

Summary of Site Conditions

The purpose of this summary is to provide a brief comparison of the Design pervious and impervious areas utilized in the As-Constructed pervious and impervious areas.

	Pervious Area (square feet)	**Impervious Area (square feet)**	**Total Area (square feet)**
Design			
As-Constructed Conditions			
Change in Area (+/-)			

Certification Report Requirements

The Certification Report is to provide documentation that the installed BMP will function as described in the approved SWMP. The Certifying Engineer is to provide the information listed below and provide a statement that the project was, or was not, completed consist with the conditions of the SWMP approval.

Item	**Description**	**Complete**	**Comment**
1.0	**Narrative & Summary Tables**	❑ Yes ❑ N/A	
1.1A	Peak Flow BMP(s) (See Table 1)	❑ Implemented ❑ N/A	
1.1B	Water Quality BMP(s) (See Table 1)	❑ Implemented ❑ N/A	
1.1C	Street Drainage (Provide Updated Streets Summary Table)	❑ Implemented ❑ N/A	
1.1D	Storm Sewer (Summarize Changes in a Narrative)	❑ Implemented ❑ N/A	

Certification Report (Complete all applicable items)

1.1E	Culverts (See Table 2)	❑ Implemented ❑ N/A	
1.1F	Open Channels (Summarize Changes in a Narrative)	❑ Implemented ❑ N/A	
1.1G	Outlet Protection (Summarize Changed in a Narrative)	❑ Implemented ❑ N/A	
1.2	Final Hydrology & Hydraulics (See Table 3 & Table 4)	❑ Yes ❑ N/A	
2.0	**Statement on Function of Implemented Post-BMPs**	❑ Yes ❑ N/A	
3.0	**Quality Assurance Testing Results**	❑ Yes ❑ N/A	
4.0	**Record Drawings**	❑ Yes ❑ N/A	

Certifying Engineer

All Certification Report materials are to be submitted under the seal and signature of a Professional Engineer registered in the State of North Dakota.

	Yes	**No**	**Page**
Have all items included in the Certification Report been sealed and signed by a Professional Engineer registered in the State of North Dakota?			
Submittal Copies:			
1 PDF Copy Emailed to City Engineering			

Comments:

Required Summary Tables:

(Note: The Certifying Engineer may reproduce the following tables electronically and attach to this checklist as a summary.)

Table 1: Basin & Outlet Sizing							
	Approved			***As-Constructed***			
	Size	***Invert Elevation***	***Volume (acre-feet)***	***Size***	***Invert Elevation***	***Volume (acre-feet)***	
Outlet 1							❑ N/A
Outlet 2							❑ N/A
Outlet 3							❑ N/A
Outlet 4							❑ N/A
Outlet 5							❑ N/A
Overflow							❑ N/A

Table 2: Culverts									
	Approved				***As-Constructed***				
	Size (inches)	***Length (feet)***	***Upstream Invert***	***Downstream Invert***	***Size (inches)***	***Length (feet)***	***Upstream Invert***	***Downstream Invert***	
Culvert 1									❑ N/A
Culvert 2									❑ N/A
Culvert 3									❑ N/A
Culvert 4									❑ N/A
Culvert 5									❑ N/A

Table 3: Project Post-Construction Hydrologic Modeling Summary – Peak Flows						
Storm Event	**Peak Flow (cfs) by Point of Analysis**					
	Point 1		***Point 2***		***Point 3***	
	Approved	***Constructed***	***Approved***	***Constructed***	***Approved***	***Constructed***
2-year 24-hour						
5-year 24-hour						
10-year 24-hour						
100-year 24-hour						

Table 4: Project Post-Construction Hydrologic Modeling Summary – Total Volume						
Storm Event	**Total Volume (acre-feet) by Point of Analysis**					
	Point 1		***Point 2***		***Point 3***	
	Approved	***Constructed***	***Approved***	***Constructed***	***Approved***	***Constructed***
2-year 24-hour						
5-year 24-hour						
10-year 24-hour						
100-year 24-hour						

Reference 4 - Post-Construction Peak Discharge Compliance

Reference 4-1 – Geotechnical Investigation and Report Requirements

Reference 4-2 – Advanced Options of the NRCS Web Soil Survey

Reference 4-3 - NOAA Atlas 14 Rainfall Depths

Reference 4-4 – Acceptable Software

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Reference 4-1 – Geotechnical Investigation and Report Requirements

Geotechnical Reporting General Requirements:

1. Types of soil and subsurface materials underlying the infiltration facility;
2. Infiltration rates, locations, and test dates at the infiltration facility locations (e.g., generally within 50' of the facility unless the geotechnical professional provides an opinion that the substrate at the tested/observed location extends to the infiltration facility);
3. Permeability test method, reduction factor, and permeability of the soil and subsurface materials underlying the infiltration facility;
4. Slope and geometry of the site;
5. Proximity to surface water;
6. Proximity of the seasonal high ground water table beneath the bottom of the infiltration facility;
7. Proximity and classification of bedrock beneath the bottom of the infiltration facility; and
8. The infiltration rate shall be measured at a depth equal to the proposed bottom grade of the facility.

Geotechnical field work, test pit and boring requirements:

1. Complete a standard soil boring to a depth of 10 feet below the proposed facility bottom;
2. Determine depth to groundwater table (if within 10 feet of proposed bottom) upon initial digging or drilling, and again 24 hours later;
3. Determine United States Department of Agriculture (USDA) or Unified Soil Classification (USC) soil characteristics and textures at the proposed bottom; and
4. Site specific percolation testing meeting the requirements of EPA Falling Head Percolation Test Procedure or similar approved method.

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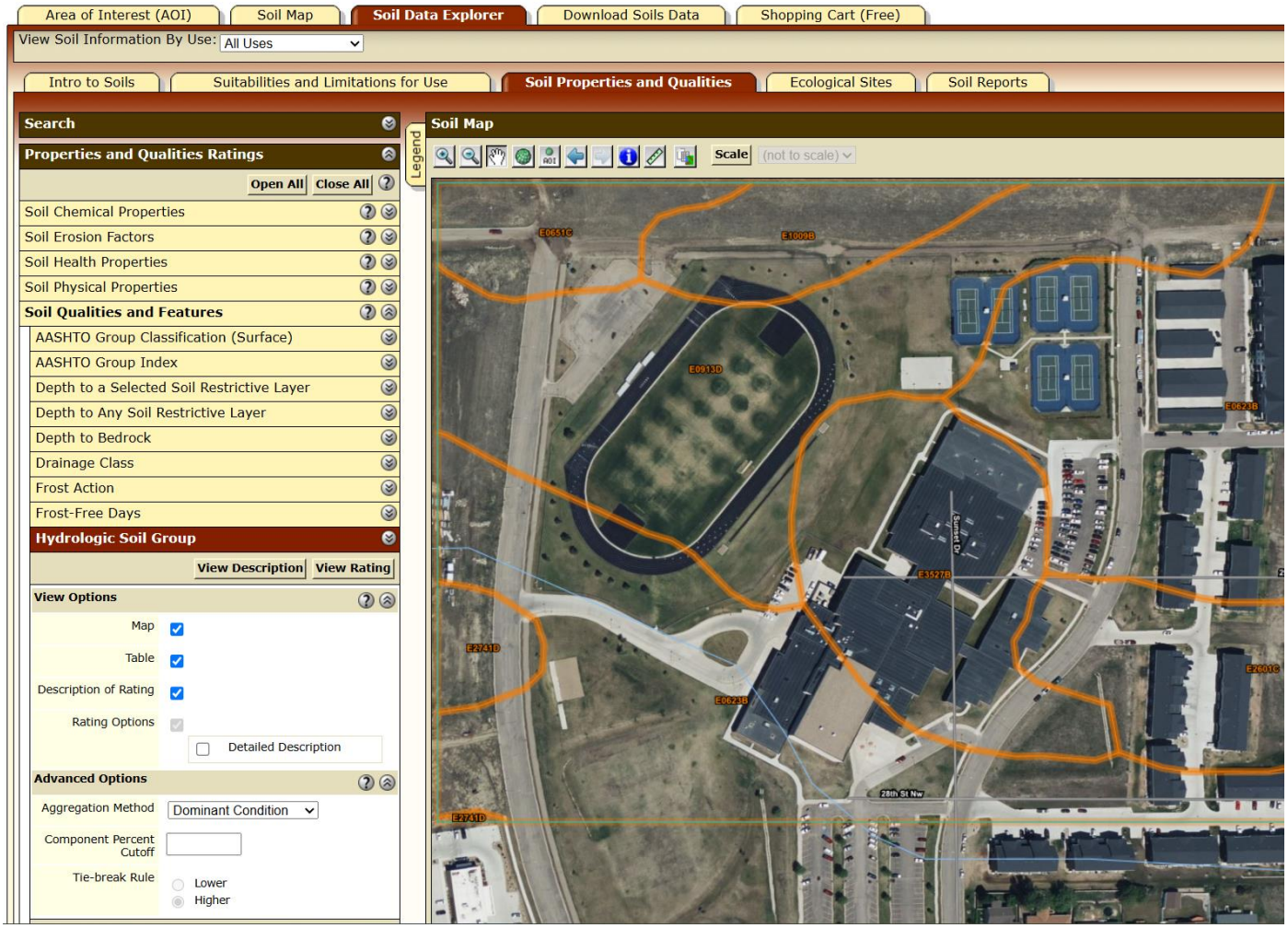
Reference 4-2 – Advanced Options of the NRCS Web Soil Survey



Source: http://websoilsurvey.sc.egov.usda.gov/

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Reference 4-3 - NOAA Atlas 14 Rainfall Depths

Average Recurrence Frequency	*24-Hour Rainfall Event (inches)*
2-year (50% Chance Storm)	2.1
5-year (20% Chance Storm)	2.6
10-year (10% Chance Storm)	3.1
25-year (4% Chance Storm)	3.9
100-year (1% Chance Storm)	5.3
500-year (0.2% Chance Storm)	7.2

Source: http://www.noaa.gov/

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Reference 4-4 – Acceptable Software

The following software is allowed the analysis of peak discharge hydrologic and hydraulics associated with ***Section 4*** of this SWDSM. The City acknowledges that other software exists and that new software may become available in the future. As such, software requests may be made in the scoping letter for review and request for City approval.

1. HydroCAD
2. XP-SWMM / XP-STORM (FEMA Approved Nationally)
3. InfoSWMM
4. InfoWorks ICM / Infodrainage
5. Bentley OpenFlows Storm
6. PCSWMM
7. HEC-HMS
8. Autodesk Storm & Sanitary Analysis (No Weirs Allowed in Model)

Note, the EPA-SWMM model utilizes a Curve Number methodology that is not the same as TR-55. It is not recommended for use in determining compliance with the SWDSM.

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Reference 5 - Post-Construction Water Quality Compliance

Reference 5-1 – Prescriptive BMP Performance Requirements

Reference 5-2 – Water Quality Volume Analysis Procedure

Reference 5-3 – Standard Analysis Methodology

Reference 5-4 – Alternative Analysis Methodology

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Reference 5-1 – Prescriptive BMP Performance Requirements

Control	Water Quality Design Consideration
Wet Detention Ponds	Water Quality Volume (Vwq) = 1800 cu-ft per impervious acre draining to the pond. The drawdown time for the Vwq should be a minimum of 12 hours.
Dry Detention Ponds (w/Extended Detention)	Extended Detention / Water Quality Volume (Vwqed) = 1800 cu-ft per impervious acre draining to pond. The drawdown time for the Vwqed should be a minimum of 24 hours and not more than 72 hours.
Infiltration	Water Quality Volume (Vwq) = 0.5 inches from impervious area. The volume captured in rain gardens, or passed through biofilters with under drains, would be grouped with infiltration for water quality treatment. The Vwq should discharge through the soil or filter media within 48 hours. Additional flows that cannot be infiltrated in 48 hours should be routed to bypass the system through a stabilized outlet.
Flow-Through Treatment Devices	Size devices to treat the first 0.5 inches of runoff from impervious area.
Redevelopment / Retrofit	Incorporate water quality criteria by reducing impervious surface area and implementing controls to treat the first 0.5 inches of runoff from impervious areas.

Source: Appendix 1 of 2016 MS4 General Permit (https://www.deq.nd.gov/)

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Reference 5-2 – Water Quality Volume Analysis Procedure

Water Quality Volume (Vwq) is determined using the method described for each BMP listed in

Reference 5-1. The following is an example of computing the water quality volume for a detention facility:

Example:

Site: 40 acres, 40 percent impervious

Vwq = 1,800 cu. ft. / acre * (40 acres * 0.40) = 28,800 cu. ft.

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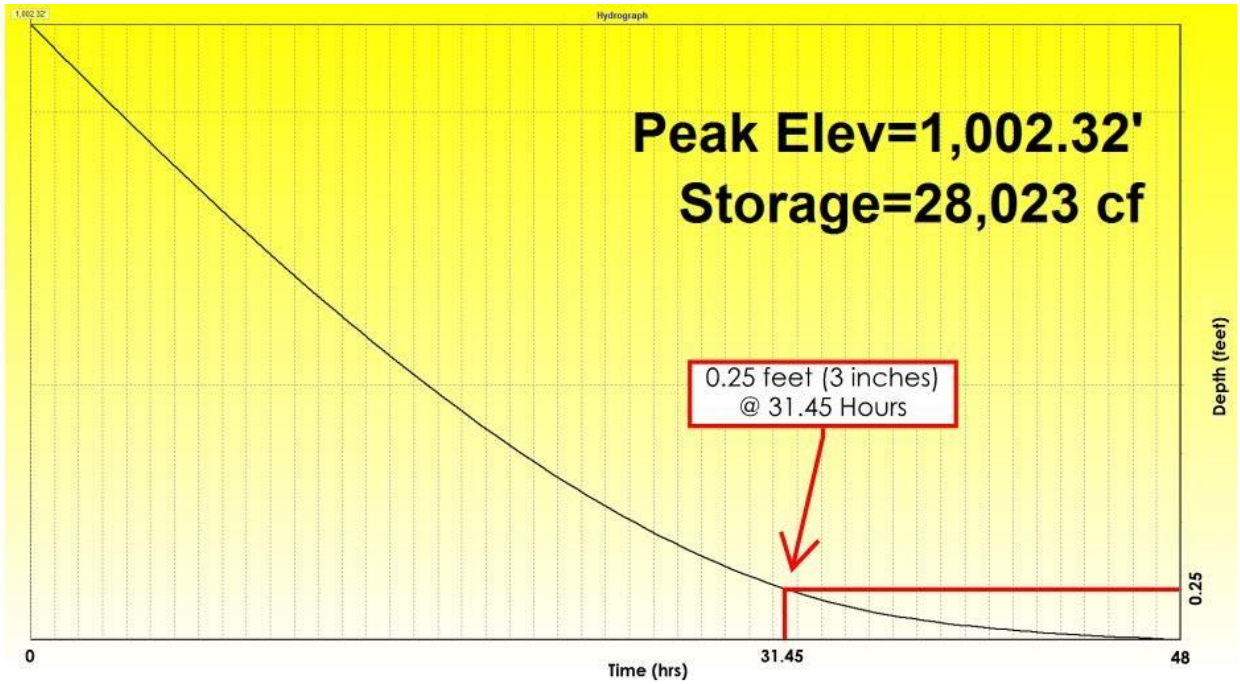
Reference 5-3 – Standard Analysis Methodology

Example:

Dry Detention Basin: 100’ by 100’ at lowest engineered outlet (basin floor), 4H:1V side slopes.

Depth for Vwq is 2.32’ corresponding to approximately 28,800 cu. ft. in basin. Set initial depth in the basin to 2.32’ with zero rainfall / runoff entering the basin.

The drawdown time to within 0.25 feet (3 inches) of the basin floor is greater than 24 hours and less than 72 hours, so the basin meets water quality performance requirements.



Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
31.30	0.00	2,652	1,000.26	0.09
31.35	0.00	2,637	1,000.26	0.09
31.40	0.00	2,621	1,000.26	0.09
31.45	0.00	2,606	1,000.25	0.09
31.50	0.00	2,591	1,000.25	0.08
31.55	0.00	2,575	1,000.25	0.08
31.60	0.00	2,560	1,000.25	0.08
31.65	0.00	2,545	1,000.25	0.08
31.70	0.00	2,530	1,000.25	0.08
31.75	0.00	2,515	1,000.25	0.08
31.80	0.00	2,500	1,000.24	0.08

0.25' Depth (Invert = 1,000)

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Reference 5-4 – Alternative Analysis Methodology

The following are examples of alternate methodologies for analyzing water quality performance.

1. P8 Urban Catchment Model
2. Source Loading and Management Model (SLAMM)
3. Water Quality Analysis Simulation Program (WASP)
4. Storm Water Management Model (SWMM)

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Reference 6 - Post-Construction Drainage and Conveyance Compliance

Reference 6-1 – Allowable Velocity and Shear Stress for Selected Materials

Reference 6-2 – Theoretical Street Sag Inlet Capacities

Reference 6-3 – IDF Curves

Reference 6-4 – Acceptable Models – Drainage & Conveyance

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Reference 6-1 – Allowable Velocity and Shear Stress for Selected Materials

Material Category	Material Type	Allowable Velocity (ft/s)	Allowable Shear Stress (lb/ft2)
Temporary Rolled Erosion Control Product (RECP) (1)	Jute Net	1-2.5	0.45
	Straw w\ Net	1-3	1.5-1.65
	Coconut Fiber w\ Net	3-4	2.25
	Fiberglass roving	2.5-7	2
Nondegradable RECP (1)	Unvegetated Partially Established	5-7	3
		7.5-15	4-6
	Fully Vegetated	8-21	8
Hard Surface (1)	Gabions Concrete	1-19	10
		>18	12.5
Riprap (2)	D50 = 6-inches D50 = 12-inches		2.4
			4.8

Source:

1. NRCS Part 654 Stream Restoration Design National Engineering Handbook, Table 8-11.
2. Kilgore, R. T. and Cotton, G. K. (2005). Design of roadside channels with flexible linings. FHWA-NHI-05- 114 Hydraulic Engineering Circular Number 15, 3rd Edition, 153 pp.

The allowable velocity and shear stress presented in ***Reference 6-1*** are provided as a guideline for the selection of a type, or class, of stabilization. The Design Engineer shall select materials and provide manufactures references for allowable velocity and shear of the actual material to be installed.

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Reference 6-2 – Theoretical Street Sag Inlet Capacities

Sag Inlet Size	Theoretical 6” Head Capacity (cfs)
36-Inch	6.8
72-Inch	10.3
108-Inch	13.8
144-Inch	17.3

*Inlets were analyzed as Neenah Foundry R-3295 Type C

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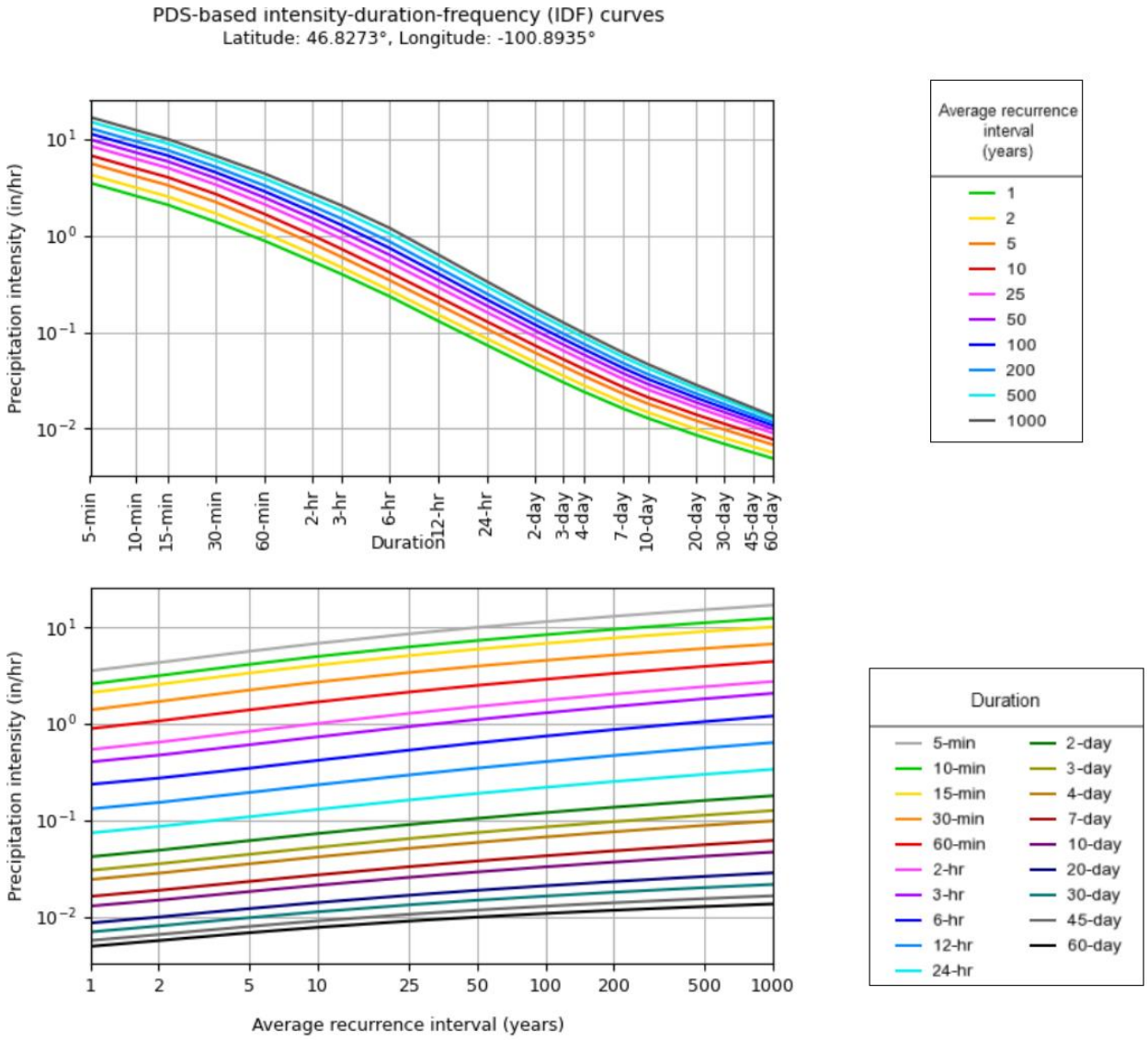
Reference 6-3 – IDF Curves

Precipitation-Intensity Graphical



NOAA Atlas 14, Volume 8, Version 2

Source: http://www.noaa.gov/

Precipitation-Intensity Tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	3.53 (2.90-4.28)	4.30 (3.54-5.23)	5.63 (4.62-6.86)	6.80 (5.56-8.34)	8.52 (6.73-11.0)	9.94 (7.63-12.9)	11.4 (8.44-15.3)	13.0 (9.17-17.9)	15.2 (10.3-21.6)	16.9 (11.1-24.3)
10-min	2.58 (2.13-3.14)	3.14 (2.59-3.83)	4.12 (3.38-5.03)	4.98 (4.06-6.11)	6.24 (4.93-8.03)	7.27 (5.59-9.48)	8.36 (6.18-11.2)	9.51 (6.71-13.1)	11.1 (7.51-15.8)	12.4 (8.12-17.8)
15-min	2.10 (1.73-2.55)	2.56 (2.11-3.11)	3.35 (2.75-4.09)	4.05 (3.30-4.97)	5.07 (4.01-6.53)	5.91 (4.54-7.70)	6.79 (5.02-9.10)	7.73 (5.46-10.7)	9.04 (6.11-12.8)	10.1 (6.60-14.5)
30-min	1.39 (1.15-1.69)	1.70 (1.40-2.07)	2.23 (1.83-2.73)	2.70 (2.21-3.32)	3.39 (2.68-4.36)	3.95 (3.03-5.14)	4.53 (3.35-6.07)	5.16 (3.64-7.11)	6.02 (4.07-8.55)	6.71 (4.40-9.65)
60-min	0.887 (0.732-1.08)	1.07 (0.880-1.30)	1.39 (1.14-1.70)	1.68 (1.37-2.06)	2.12 (1.68-2.75)	2.49 (1.92-3.26)	2.89 (2.14-3.88)	3.32 (2.35-4.59)	3.92 (2.66-5.59)	4.42 (2.89-6.35)
2-hr	0.539 (0.448-0.652)	0.642 (0.532-0.777)	0.831 (0.686-1.01)	1.01 (0.826-1.23)	1.28 (1.02-1.65)	1.50 (1.17-1.96)	1.76 (1.31-2.35)	2.03 (1.44-2.79)	2.42 (1.65-3.43)	2.74 (1.81-3.91)
3-hr	0.401 (0.334-0.482)	0.471 (0.392-0.567)	0.604 (0.500-0.729)	0.730 (0.602-0.887)	0.930 (0.750-1.20)	1.10 (0.862-1.44)	1.30 (0.972-1.73)	1.51 (1.08-2.07)	1.81 (1.24-2.56)	2.06 (1.37-2.93)
6-hr	0.234 (0.196-0.280)	0.272 (0.227-0.325)	0.345 (0.287-0.414)	0.416 (0.345-0.502)	0.530 (0.431-0.682)	0.631 (0.497-0.818)	0.743 (0.562-0.988)	0.867 (0.627-1.19)	1.05 (0.726-1.48)	1.20 (0.801-1.69)
12-hr	0.130 (0.110-0.155)	0.152 (0.128-0.181)	0.193 (0.162-0.230)	0.232 (0.193-0.278)	0.293 (0.239-0.372)	0.346 (0.273-0.444)	0.404 (0.307-0.531)	0.467 (0.340-0.633)	0.560 (0.390-0.780)	0.636 (0.427-0.892)
24-hr	0.073 (0.062-0.086)	0.085 (0.072-0.101)	0.108 (0.091-0.128)	0.129 (0.108-0.153)	0.161 (0.132-0.202)	0.188 (0.150-0.239)	0.218 (0.167-0.285)	0.251 (0.183-0.337)	0.298 (0.208-0.411)	0.336 (0.227-0.468)
2-day	0.041 (0.035-0.048)	0.048 (0.041-0.057)	0.061 (0.051-0.071)	0.072 (0.061-0.085)	0.089 (0.073-0.111)	0.104 (0.083-0.130)	0.119 (0.091-0.154)	0.136 (0.100-0.180)	0.159 (0.112-0.218)	0.178 (0.122-0.247)
3-day	0.030 (0.025-0.035)	0.035 (0.030-0.041)	0.044 (0.037-0.051)	0.052 (0.044-0.061)	0.064 (0.052-0.079)	0.074 (0.059-0.092)	0.084 (0.065-0.109)	0.096 (0.071-0.127)	0.112 (0.079-0.153)	0.125 (0.086-0.172)
4-day	0.024 (0.020-0.028)	0.028 (0.024-0.032)	0.035 (0.030-0.041)	0.041 (0.035-0.048)	0.050 (0.041-0.062)	0.058 (0.047-0.073)	0.066 (0.051-0.085)	0.075 (0.056-0.099)	0.088 (0.062-0.119)	0.098 (0.067-0.134)
7-day	0.016 (0.013-0.018)	0.018 (0.016-0.021)	0.023 (0.019-0.026)	0.027 (0.023-0.031)	0.032 (0.027-0.040)	0.037 (0.030-0.046)	0.042 (0.033-0.054)	0.048 (0.035-0.062)	0.055 (0.039-0.074)	0.061 (0.042-0.084)
10-day	0.012 (0.011-0.014)	0.014 (0.012-0.017)	0.018 (0.015-0.020)	0.021 (0.018-0.024)	0.025 (0.021-0.030)	0.029 (0.023-0.035)	0.032 (0.025-0.041)	0.036 (0.027-0.047)	0.042 (0.030-0.056)	0.046 (0.032-0.063)
20-day	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.012 (0.010-0.013)	0.013 (0.012-0.016)	0.016 (0.013-0.019)	0.018 (0.015-0.022)	0.020 (0.016-0.026)	0.023 (0.017-0.029)	0.026 (0.018-0.034)	0.028 (0.019-0.038)
30-day	0.006 (0.006-0.007)	0.007 (0.006-0.009)	0.009 (0.008-0.011)	0.011 (0.009-0.012)	0.013 (0.010-0.015)	0.014 (0.011-0.017)	0.016 (0.012-0.020)	0.017 (0.013-0.022)	0.019 (0.014-0.026)	0.021 (0.015-0.028)
45-day	0.005 (0.004-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.009 (0.007-0.010)	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.012 (0.010-0.015)	0.013 (0.010-0.017)	0.015 (0.011-0.020)	0.016 (0.011-0.021)
60-day	0.004 (0.004-0.005)	0.005 (0.004-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.010)	0.009 (0.008-0.011)	0.010 (0.008-0.013)	0.011 (0.008-0.014)	0.012 (0.009-0.016)	0.013 (0.009-0.018)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Source: http://www.noaa.gov/

Reference 6-4 – Acceptable Models – Drainage & Conveyance

Software	Drainages and Conveyances		
	Storm Sewer	Culverts	Open Channel & Streets
HydroCAD	✓*	✓	✓**
XP-SWMM/XP-STORM	✓	✓	✓
InfoSWMM	✓	✓	✓
InfoWorks ICM / Infodrainage	✓	✓	✓
Bentley OpenFlows Storm	✓	✓	✓
Autodesk Storm & Sanitary Analysis	✓***	✓***	✓***
PCSWMM	✓	✓	✓
HY8		✓	
HEC-RAS		✓	✓
Manning's "n" Equation			✓**

* Only applicable if inlets are located at a low point or sag and the storm sewer has minimal surcharging.

**Only allowed when backwater conditions are not present.

***No weirs allowed in model.

Rational Method is not a model.

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Reference 7 - Construction Stormwater Control

Reference 7-1 – North Dakota Construction General Permit

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Reference 7-1 – *North Dakota Construction General Permit*

The current edition of the North Dakota Construction General Permit and application materials can be obtained from the NDDEQ's website at
https://deq.nd.gov/WQ/2_NDPDES_Permits/7_Stormwater/stw.aspx

END OF MANUAL

City Commission

Agenda Documentation

MEETING DATE:	January 20, 2026
PREPARATION DATE:	December 5, 2025
SUBMITTING DEPARTMENT:	Human Resources / Public Works
DEPARTMENT DIRECTOR:	Shane O'Keefe
PRESENTER:	Amy Berger, HR Director
SUBJECT:	Consider the Introduction and First Consideration of Ordinance No. 1481, Relating to On Call Pay.

STATEMENT/PURPOSE:
To approve the introduction and first consideration of Ordinance 1481, which would amend Section 20-6-10 of the Mandan Code of Ordinances to include a provision related to on-call pay.

BACKGROUND/ALTERNATIVES:
Various City departments rely on employees being available outside of their regular working hours when operational needs arise after hours. At this time, employees who are on call are compensated only if they are called in, and there is no additional compensation for the requirement to remain available and respond within a reasonable timeframe while on an on-call rotation. While this is not required, the City believes it is important to implement a more supportive approach for departments that schedule employees to be on call during after-hours periods, including evenings and weekends.

Introducing a flat daily stipend is a proactive step that recognizes the added responsibility of being on call and creates a consistent structure across departments. Adding this language to the ordinance gives clear authority for offering on-call pay and allows administration to establish procedures that support operational needs and provide a fair, predictable process for employees. If the ordinance is approved, administration will develop a procedure that will outline the following details:

Pay
On-call use is determined at the department level according to operational requirements. Non-exempt employees who are scheduled for on-call duty will receive a flat daily allowance for each day they are assigned to be on call.

Response Expectations

Employees must be able to arrive at their worksite within approximately 30 minutes when contacted, assuming normal conditions and safe, legal travel. While on call, employees are expected to remain fit for duty and follow all City of Mandan policies, including the Drug-Free Workplace Policy and any applicable drug and alcohol requirements.

Vehicle Use
To support timely response, an employee who is scheduled for on-call duty may be permitted to take a City vehicle home during their assigned week. This option is determined by the Department Director based on operational needs and availability.

Staff will finalize the on-call pay framework, including rates and operational details, through administrative review. For planning purposes, the framework is being evaluated using a planning estimate of approximately $3 per hour of on-call time not worked, or about $48 per day. Weekend considerations are also being evaluated. A $20,000 budget allocation per department utilizing this, is requested to support anticipated on-call usage, averaging approximately $384 per week per department.

Initially, this framework is anticipated to apply to the Streets, Utility, Water Treatment, and Wastewater Treatment departments that operate on a weekly on-call rotation. Sworn Police and Career Firefighters will be excluded from this ordinance, as they follow separate policies and procedures.

Departments will be responsible for developing and managing internal procedures related to on-call rotations, payroll reporting and tracking, and ongoing monitoring.

ATTACHMENTS:
1. Ordinance 1481 - On-Call Pay(30492169.1)

FISCAL IMPACT:
The estimated annual cost is $20,000 per department, for a total annual fiscal impact of $80,000, allocated as follows:

Street Department: $20,000

Funding Source: General Fund

Wastewater Treatment Plant (WWTP): $20,000

Funding Source: Water & Sewer Utility Fund

Water Treatment Plant (WTP): $20,000

Funding Source: Water & Sewer Utility Fund

Utility Department: $20,000

Funding Source: Water & Sewer Utility Fund

The proposed on-call policy would be implemented in 2026. Adoption of this item will require an amendment to the 2026 budget to incorporate the above costs into the appropriate funds and departmental budgets.

STAFF IMPACT:
This change provides a more consistent and supportive structure for employees who rotate through on-call assignments. Staff who are scheduled for on-call duty will receive a flat daily stipend, which acknowledges the added responsibility of being available outside regular work hours.

LEGAL REVIEW:
Attorney Oster has reviewed the policy and drafted the attached ordinance.

RECOMMENDATION:
I recommend to approve the introduction and first consideration of Ordinance No.1481, along with the associated budget amendment, as presented.

SUGGESTED MOTION:
I move to approve the introduction and first reading of Ordinance No. 1481, along with the associated budget amendment, as presented.

ORDINANCE NO. 1481

An Ordinance to Amend and Re-enact
Section 20-6-10(b) of the Mandan Code of Ordinances
Relating to Compensation and On-Call Pay

Be it Ordained by the Board of City Commissioners as follows:

Sec. 20-6-10. – Administration of salary plan.

(b) *Compensation*.

(1) *New hire pay rate*. The minimum rate of pay for a grade shall be paid upon appointment to a position. Appointment at a rate above the minimum requires written justification submitted from the department director to the human resources director and the city administrator. Appointment at a rate above the minimum may be offered in exception and only with the consent of the human resources director and city administrator.

(2) *Performance increases*. Subject to the level of municipal appropriations and the approval of the board, performance increases may be granted based upon a merit system. Appraisers will recommend to the human resources director employees for a performance increase. The human resources director will in turn forward the list of employees recommended for performance increases to the city administrator for final approval. Employees who have been promoted or demoted shall not be eligible for a merit increase until six months after the action was taken.

(3) *Promotions.* Employees receiving a promotion shall receive at least a five percent increase or the minimum of the grade for the new position upon promotion. After the probationary period associated with the promotion is completed, the promoted employee may be considered for another salary increase, up to five percent.

(4) *Cost of living adjustments*. Annually, the board of city commissioners may approve a dollar/percentage cost of living adjustment for equitable distribution among staff.

(5) *Demotions*. If an employee is demoted, the rate of pay may be reduced to an amount within the applicable grade.

(6) *Increase in responsibility*. A department director may submit written justification to the human resources director and city administrator for proposing a salary increase due to a position's increased responsibilities. The increase may be provided in exception and only with the consent of the human resources director, finance director, and city administrator.

(7) *Temporary additional duty pay*. At times, a department may require temporary additional duty pay for a specific employee due to a short-term need. In the event this occurs, the department director will submit written justification to the human resources director and the city administrator. The temporary additional duty pay may be provided in exception and only with the consent of the human resources director, finance director, and city administrator.

(8) *Market/equity adjustments*. A department director may justify a pay increase based upon internal salary parity (for example, as a result of compression or inversion) or external labor market parity. Any request for a market/equity adjustment must include written justification. If the justification is greater than ten percent, the adjustment must be approved by the board of city commissioners. If the justification is less than ten percent, the adjustment must be approved by the human resources director, finance director, city administrator, and mayor.

(9) *Salary adjustments*. Occasionally, salary adjustments may be necessary for reasons not identified in sections (1) through (8) above. Proposed salary adjustments not identified above must be reviewed and approved by the finance director, human resources director, city administrator, and mayor.

(10) *On-call pay*. Operational needs may require employees to be available outside of regular working hours. The city administrator and human resources director will establish procedures for assigning on-call status and administering on-call pay, as appropriate. Sworn Police Officers and Career Firefighters are excluded from this provision.

By:_____

James Froelich, President, Board of City Commissioners

Attest:

_____

James Neubauer, City Administrator

First Consideration: January 20, 2026

Second Consideration and Final Passage: February 3, 2026

City Commission

Agenda Documentation

MEETING DATE: January 20, 2026
PREPARATION DATE: January 14, 2026
SUBMITTING DEPARTMENT: Engineering Department
DEPARTMENT DIRECTOR: Jarek Wigness
PRESENTER: Jarek Wigness, City Engineer
SUBJECT: Update to Stormwater Design Manual and Ordinance

STATEMENT/PURPOSE:
To refine and adjust requirements of contractors, engineers, and landowners regarding drainage and stormwater in the City of Mandan.

BACKGROUND/ALTERNATIVES:
In January 2019, Houston Engineering, Inc. completed two memorandums related to the City of Mandan's stormwater management program. These memorandums were never officially adopted by the City. Over the last year, Houston has assisted the City in the implementation of the recommendations contained in the 2019 memorandums. This work included reviewing and revising the memorandums with City staff to incorporate changes that were either left over from the previous effort, or were necessitated by evolving regulations over the last six years. The officially adopted stormwater management ordinances and manual are 18 and 13 years old, respectively. It is imperative to align these documents with current best practices, as well as introduce quality-of-life improvements to the stormwater management review process.

ATTACHMENTS:
1. Ordinance 1483 - Drainage and Stormwater Management
2. Stormwater Resolution Establishing Rates and Charges

FISCAL IMPACT:
Along with the updates to the design manual and the ordinance, the fee schedule and civil penalties will be updated to the numbers below:
Stormwater Scoping Sheet $50
Stormwater Management Plan – 1st Review $250 Application
Subsequent Amendments $150 Per Amendment
Inadequate Plan (returned) $250 Resubmittal

Resubmittal - 2nd Review $500 If revisions require additional review
Complex Reviews – 3rd Review or as required $750 min, or actual consultant review cost

Violations (Offense)

Stormwater Management Plan 1st Offense Notice of Noncompliance
2nd Offense $250/day until compliance
3rd Offense $500/day until compliance
4th Offense or Emergency
Suspension/Revocation STOP WORK ORDER
Minium re-check period 5 days
Owner requested extension $250/for a non-compliance extension period,
as determined by City Engineer
SWPPP (Erosion/Sediment Control -per site) 1st Offense Notice of Noncompliance
2nd Offense $250/day until compliance
3rd Offense $500/day until compliance
4th Offense or Emergency
Suspension/Revocation STOP
WORK ORDER
Minium re-check period 3 days
Owner extension request $250/ for a non-compliance extension period
determined by City Engineer

Landowner or Land User in violation of Sec. 107-3-15. - Management of site vegetation
$50 Fine

STAFF IMPACT:
Staff will need to become accustomed to new processes and standards, but this should ultimately simplify workflows.

LEGAL REVIEW:
All documents have been made available to the City Attorney for review.

RECOMMENDATION:
To adopt the new stormwater design manual and approve the rewritten stormwater ordinance.

SUGGESTED MOTION:
I move to approve the first consideration of Ordinance 1483, as presented.

ORDINANCE NO. 1483

An Ordinance to Amend and Re-enact
Chapter 107 of the Mandan Code of Ordinances
Relating to Drainage and Stormwater Management

Be it Ordained by the Board of City Commissioners as follows:

ARTICLE 1. – IN GENERAL

Sec. 107-1-1. - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. When inconsistent with the context, words used in the present tense include the future tense. Words in the plural number include the singular number, and words in the singular number include the plural number. The word "shall" is always mandatory, and the word "may" is always permissive:

Agricultural land use means the use of land for planting, growing, cultivating, and harvesting crops for human or livestock consumption and pasturing or yarding of livestock.

Appeals Committee for the purposes of this chapter consists of the City Administrator, City Planner, and Public Works Director or their designee.

Applicant means any person wishing to obtain a building permit, special use permit, zoning or subdivision approval, resulting in site alternations which in turn under this chapter require submittal and approval of a Stormwater Management Plan and/or an SWPPP.

Base flood means the flood having a one percent chance of being equaled or exceeded in any given year (i.e., 100-year flood). The term "base flood" is also referred to as the regional flood.

Best Management Practice (BMP) are control measures taken to mitigate changes to both quantity and quality of urban runoff caused through changes to land use. Generally, BMPs focus on water quality problems caused by increased impervious surfaces from land development. BMPs are designed to reduce stormwater volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, and filtration or biological and chemical actions. BMPs also can improve receiving-water quality by extending the duration of outflows in comparison to inflow duration (known as hydrograph extension), which dilutes the stormwater discharged into a larger volume of upstream flow.

Board of City Commissioners means the governing body for the City of Mandan.

Certification Report is required when a project is complete to document that the facilities identified in an approved Stormwater Management Plan have been constructed, as approved or with revisions, and will function as intended. A Certification Report shall also be included as part of the Notice of Termination (NOT) to release an SWPPP Permit.

City means the City of Mandan including all lands within its city limits and its extraterritorial jurisdiction, unless otherwise noted.

City Engineer means the City Engineer of the City of Mandan or their designee.

Construction activity is defined by the current North Dakota stormwater discharge General Construction Permit NDR10-0000, including, but not limited to, a disturbance to the land that results in a change in topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated stormwater run-off, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of a construction activity may include clearing, grading, filling, and excavating. Construction activity includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

Construction plans are engineered drawings detailing the size and character of the stormwater management facilities and overall site development. Constructions plans are a required submittal to obtain SWPPP approval.

Control measure means a practice or combination of practices to control erosion and attendant pollution; see BMP definition.

Conveyance structure means a pipe, culvert, open channel, or other facility that transports runoff from one location to another.

County means Morton County.

County Commission means the Board of County Commissioners for Morton County.

County Engineer means the county engineer of Morton County or their designee.

Detention facility means a natural or manmade structure, including wetlands, for the temporary storage of runoff, which may contain a pool of water, or may be dry during times of no runoff. These facilities may be utilized to provide NPDES water quality compliance.

Developer means a person, firm, corporation, sole proprietorship, partnership, federal or state agency, or political subdivision thereof engaged in a non-agricultural land disturbance and/or land development activity.

Development property means lands and properties located within an approved stormwater management permit boundary or those in the process of being zoned or platted for urban uses.

E.P.A. means the United States Environmental Protection Agency.

Enforcement Officer means the City Engineer of the City of Mandan or their designee.

Erosion means any process that wears away at the surface of the land by the action of water, wind, ice, or gravity. Erosion can be accelerated by the activities of man and nature.

Extraterritorial jurisdiction means the territorial authority of the City of Mandan, which may extend to all unincorporated land located within four miles of the corporate limits of the city, as authorized by the North Dakota Century Code.

FEMA means the Federal Emergency Management Agency.

Flood fringe means that portion of the floodplain outside of the floodway.

Floodplain means the areas adjoining a watercourse or water basin that have been or may be covered by a regional or base flood.

Floodplain management means regulating the nature and location of construction on, or other occupancy of, lands subject to inundation by floodwaters, so that foreseeable (probable) flooding damages will have an average annual risk smaller than some pre-selected amount. Floodplain management consists of technical and non-technical studies, policies, management strategies, statutes, and ordinances that collectively manage floodplains along rivers, streams, major drainageways, outfalls, or other conveyances. The federal government normally plays a major role in floodplain planning and management, whereas in urban stormwater management and design, local governments dominate the decision-making process.

Floodway means the channel of the watercourse, the bed of water basins, and those portions of the adjoining floodplains that are reasonably required to carry and discharge and provide water storage during a regional or base flood.

Hydric soils mean soils that are saturated, flooded, or covered by water long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile.

Hydrophytic vegetation means macrophytic plant life growing in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Illicit connection means a physical connection to the City's MS4 that primarily conveys non-stormwater discharges other than uncontaminated groundwater into the MS4; or a physical connection not authorized or permitted by the City of Mandan, where a local authority requires authorization or a permit for physical connections.

Illicit discharge means any direct or indirect non-stormwater discharge to the storm drain system except water line flushing, landscape irrigation, diverted stream flows, rising groundwater, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation and footing drain water, air conditioning condensation, irrigation water, springs, water from crawl space pumps, stormwater management plan pump systems, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, street wash water, dye testing, and flows from firefighting or other discharges specified by the City to protect public health and safety.

Impervious Surface means any land cover that prevents rain or melting snow from soaking into the ground, such as roofs (including overhangs), streets, sidewalks, patios, driveways, and parking lots. For the purposes of this chapter, all road, driveway, or parking surfaces, including gravel surfaces, shall be considered impervious.

Land development activity means the construction or demolition of buildings, roads, parking lots, paved storage areas, and similar facilities.

Land disturbing activity means any manmade change of the land surface that may result in erosion, sedimentation, or a change in runoff including, but not limited to, removing vegetative cover, excavating, filling, and grading, but not including agricultural land uses such as planting, growing, cultivating, and harvesting of crops; growing and tending of gardens; and harvesting trees. Stormwater Management Plans are required for a disturbance area greater than 3,000 square feet.

Land user means any person operating, leasing, renting, or having made other arrangements with a landowner by which the landowner authorizes use of their land.

Landowner means any person holding title to, or having an interest in, land.

Local detention means detention provided to serve only the developing area in question and no areas outside of the development boundaries. The term "*local detention*" is also known as on-site detention and is operated and maintained by the property owner.

Local drainage system means the storm drainage system which transports the minor and major stormwater runoff to the major stormwater system, serving only the property within the development boundaries. The term "local drainage system" is also known as the on-site drainage system.

Major stormwater system means the portion of the total stormwater system that collects, stores, and conveys runoff that exceeds the capacity of the minor system. The major drainageways are

readily recognizable natural or improved channels that convey runoff that exceeds the capacity of the minor drainage system, including emergency overflow facilities. It transports the minor and major stormwater runoff and serves more than the area within the development boundaries. The major system is usually less controlled than the minor system and will function regardless of whether or not it has been deliberately designed and/or protected from encroachment, including when the minor system is blocked or otherwise inoperable. The major stormwater system is usually evaluated for the 100-year runoff event.

Management practice means a practice or combination of practices to control erosion and water quality degradation.

Minor stormwater system means the portion of the total drainage system that collects, stores, and conveys frequently occurring runoff, and provides a relief from nuisance and inconvenience. This system has traditionally been carefully planned and constructed and normally represents the major portion of the urban drainage infrastructure investment. Minor systems include roof gutters and on-site drainage swales, curbed or side swaled streets, stormwater inlets, underground storm sewers, open channels, and street culverts. Generally, the minor stormwater system is designed to accommodate the minor, or ordinary, storm recurring at regular intervals, generally from two to ten years.

Missouri River Setback is a distance inland from the ordinary high-water mark (i.e. sovereign land) required to provide a reasonable level of protection to structures constructed along the river associated with erosion or riverbank movement, established as follows:

a) Structures on lots or tracts with stabilized banks, either stabilized by an existing Army Corps of Engineers structure or as permitted and approved by the Army Corps of Engineers, shall be set back a minimum of seventy-five (75) feet from the ordinary high-water mark of the Missouri River.

b) All structures on lots or tracts without such approved stabilized banks shall be set back a minimum of one hundred (100) feet from the ordinary high-water mark of the Missouri River.

c) Existing bank stabilization easements associated with federal structures shall not be modified or operation and maintenance provisions changed without written concurrence from the USACE and North Dakota Department of Water Resources, the grantee of the easement, and the City of Mandan.

Multiple-purpose facility means an urban stormwater facility that fulfills multiple functions, such as enhancement of runoff quality, erosion control, wildlife habitat, or public recreation, in addition to its primary purpose of conveying or controlling runoff.

Municipal Separate Storm Sewer System or “MS4” refers to a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditched, man-made channels, or storm drains):

a) Owned or operated by a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district, or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act, that discharges to waters of the United States;

b) Designed or used for collecting or conveying stormwater;

c) Which is not a combined sewer; and

d) Which is not part of a publicly owned treatment works (POTW) as defined by 40 C.F.R. 122.2.

Natural watercourse is a path with sufficient natural and accustomed flow of water to form and maintain a distinct and defined channel. It is not essential that the supply of water should be continuous or from a perennial living source. It is enough if the flow arises periodically from natural causes and reaches a plainly defined channel of a permanent character.

National Pollution Discharge Elimination System (NPDES) permit means any permit or requirement, enforced by the North Dakota Department of Water Quality, pursuant to the Clean Water Act, as amended, for the purposes of regulating stormwater discharge.

NDDEQ means the North Dakota Department of Environmental Quality.

Notice of Intent (NOI) means the Notice of Intent for coverage under the state NDPDES General Permit NDR04-0000 for stormwaters discharges from small municipal separate storm sewer systems (MS4s) governed by the North Dakota Department of Environmental Quality.

Notice of Termination (NOT) means notification to the City and/or the NDDEQ that all construction activities for a project have been completed and exposed soils have achieved final stabilization.

Notice of Transfer means notification to the City and/or the NDDEQ indicating that the responsibilities of the SWPPP have been transferred along with the transfer of a parcel of land.

Noncompliance fee means a monetary fee assessed to a developer, contractor, or landowner for violating this ordinance as part of the enforcement provisions noted herein.

On-site detention means detention provided to serve only the developing area in question and no areas outside of the development boundaries. The term “on-site detention” is also referred to as local detention.

Operations and Maintenance Manual Private (O&M Plan) is a document provided to the City Engineer upon completing private stormwater detention features constructed as part of an

approved Stormwater Management Plan. This document shall contain information related to the future system operation as well as routine or annual maintenance. Certificates of occupancy for a building may be withheld until the O&M Plan is approved. The City Engineer has the authority to enforce the O&M Plans and, if necessary, assess the cost for maintenance to the landowner and/or applicable management authority should such be ordered for noncompliance.

Outfall facility means any natural watercourse, channel, storm sewer, or other conveyance receiving water into which a stormwater facility or system discharges.

Outlet means any outlet, including storm sewers and combined sewer overflows, into a watercourse, pond, ditch, lake, or other body of surface water or groundwater.

Owner or occupant means any person owning or using a lot, parcel of land, or premises, and who pays for, and is legally responsible for, the payment of stormwater rates or charges made against the lot, parcel of land, building, or premises, if connected to the stormwater system, or who would pay or be legally responsible for such payment.

Permanent cover is considered a constructed impervious area or a minimum of 70% vegetative cover, which is used to determine if an Erosion Sediment Control Permit can be considered released or terminated.

Permanent development means any buildings, structures, landscaping, and related features constructed as part of a development project approved under a stormwater management plan.

Permanent facilities mean those features of a stormwater management plan which are part of any natural or constructed stormwater system that require periodic or minimal maintenance to retain their operational capabilities. The term “permanent facilities” includes, but is not limited to, storm sewers, infiltration areas, detention areas, channels, streets, etc.

Permittee means any person who applies for and receives an Erosion and Sediment Control Permit from the City through the state permit process.

Point of analysis means the location where run-off from development or redevelopment will be evaluated for compliance with the requirements of this chapter. In general, this will be the location where post-development flow rates must meet or be lower than the existing conditions rates and water quality BMPs have been provided. The point of analysis may be located downstream from the point of discharge(s). The point of analysis will be determined by the City Engineer. In practicality, there may be more than one point of analysis on each site or project location.

Point of discharge means a location where stormwater discharges from development or redevelopment into the public storm sewer system or other receiving waters. In practicality, there may be more than one point of discharge on a site or for a project.

Private drainage channel means a drainage channel on privately owned land or easements.

Private storm sewer system means a storm sewer or stormwater conveyance features located on privately owned land or easements.

Public drainage channel means a drainage channel located entirely within a naturally occurring or constructed watercourse on publicly owned land or easements.

Public storm sewer means a storm sewer located entirely within publicly owned land or easements.

Riverine set back means a defined distance between the top of a river or stream bank and a building or structure. The purpose is to provide flood and erosion protection for the structure, and a buffer zone from the river. All new structures must be located outside any regulatory floodways established through the FEMA mapping process. The maximum allowable gradient from the floodway boundary to the structure shall be 4 feet horizontally to 1 foot vertically.

Redevelopment means new construction on a site that has pre-existing uses. This represents a process of land development to convert the existing use to a different purpose that may or may not have an impact on surrounding properties.

Regional detention means detention facilities provided to serve an area outside the development boundaries. A regional detention site generally receives runoff from multiple stormwater sources and development sites. The term "*regional detention*" generally refers to a system typically operated and maintained by either the City or a larger development entity.

Regional flood means a flood that is representative of large floods known to have occurred generally in the state and characteristic of what can be expected to occur on an average frequency in the magnitude of a 100-year recurrence interval or a one (1) percent chance of occurring in any given year. The term "regional flood" is also referred to as the base flood.

Regulatory agency is a federal, state, or local governmental entity with jurisdictional authority over any actions taken under this chapter.

Retention facility means a natural or manmade structure that provides for the storage of stormwater runoff by means of a pool of water. These facilities may be utilized to provide for NDPDES water quality compliance.

Runoff means rainfall, snowmelt, dewatering, or irrigation water over the ground surface and into open channels, underground storm sewers, and detention or retention ponds.

Rural area means land outside of a defined city or town which is not associated with, or part of, a city or town and its extraterritorial jurisdiction.

Sediment means solid material or organic material that, in suspension, is being transported or has been moved by air, water, gravity, or ice, and deposited at another location.

Site means the entire area included in the legal description of the parcel or other land division on which the land development or land disturbing activity is proposed in the permit application.

Stabilize means to make the site steadfast or firm, minimizing soil movement by mulching and seeding, sodding, landscaping, concrete, gravel, or other measures.

Storm sewer means a pipe or conduit for carrying stormwater, surface runoff, street and wash waters, and drainage, excluding sewage and industrial wastes.

Stormwater means runoff generated by rainfall, snowmelt, and other surface drainage activities.

Stormwater Design Standards Manual (Manual) as adopted and amended by the City of Mandan, contains the principal standards and design criteria for complying with the City's stormwater management program. The Manual details criteria for hydrologic evaluations, the design of stormwater management system facility components, water quality protection standards, and requirements for easements and rights-of-way. The Manual also contains a discussion regarding operation and maintenance requirements, standard forms to be used, and references to standard construction details adopted by the City.

Stormwater detention means temporary storage of stormwater runoff in ponds, parking lots, depressed grassy areas, roof tops, buried underground tanks, etc., for future or controlled release that is used to delay and attenuate flow.

Stormwater easement provides authority to the entity to which it is granted the ability to convey stormwater runoff either on the surface or within a storm sewer through or within a defined area.

Stormwater management means the planned set of public policies and activities undertaken to regulate runoff under various specified conditions within various portions of the drainage system. It may establish criteria for controlling peak flows or runoff volumes, for runoff detention and retention, or for pollution control, and may specify criteria for the relative elevations among various elements of the drainage system. Stormwater management is primarily concerned with limiting future flood damage and environmental impacts due to development, whereas flood control aims at reducing the extent of flooding that occurs under current conditions.

Stormwater management criteria mean specific guidance provided to the engineer/designer to carry out drainage and stormwater management policies. An example might be the specification of local design hydrology, the design storm.

Stormwater Management Plan (SWMP) means a plan document detailing the stormwater runoff characteristics for a defined watershed or site development that defines the facilities required to manage or mitigate adverse impacts due to stormwater quality and quantity. This plan is required for a final plat and certain site plan approvals and must comply with the criteria contained in the Stormwater Design Standards Manual. Stormwater Management Plans are required for a disturbance area greater than 3,000 square feet.

Stormwater Management Plan Review Fee is a fee set by the City Engineer and approved by the City Commission on an annual basis. Its purpose is to recover the costs associated with the SMWP reviews, which may be adjusted based on staff review or needs via consultant.

Stormwater management system means physical facilities that collect, store, convey, and treat stormwater runoff in urban areas. These facilities normally include detention and retention facilities, streets, storm sewers, inlets, open channels and special structures, such as inlets, manholes, and energy dissipaters.

Stormwater retention means storage designed to eliminate subsequent surface discharge. Wet ponds are the most common type of retention storage, though wet ponds may also be used for detention storage and water quality treatment.

Stormwater Permit: See Erosion and Sediment Control Permit

Stormwater Program Coordinator means the City Engineer, or a duly authorized representative, who will administer the City's stormwater program, the NDPDES (MS4) permit, and oversee compliance and regulation of stormwater plans and permits issued by the City.

Stormwater Pollution Prevention Plan (SWPPP) means a plan document that describes land disturbing activities that uses Best Management Practices to protect the public and natural stormwater systems and is in conformance with the City of Mandan's MS4 NPDES Permit No. NDR040003 requirements. The City utilizes the State of North Dakota's NPDES General Permit NDR04-0000 for stormwater discharges from small municipal separate storm sewer systems (MS4s). The State's Notice of Intent (NOI) process for a SWPPP requirement is for sites more than one (1) acre in size, unless such disturbance is part of a larger development plan authorized under an existing North Dakota Stormwater Construction Permit. Sites greater than 3,000 square feet and less than one (1) acre are authorized via a SWPPP included in the Stormwater Management Plan application. The SWPPP contains a written description of the number, locations, sizes, and other pertinent information about best management practice methods designed to meet the requirements of this chapter. This plan shall be included in all Stormwater Management Plan applications for approval by the City, including those requiring a North Dakota Stormwater Construction permit.

Structure means anything manufactured, constructed, or erected, including portable structures, earthen structures, roads, parking lots, and paved storage areas.

Undevelopable Lands are properties deemed by the City as being unsuitable for development of habitable structures due to various factors, including, but not limited to, topography, wetlands, unsuitable soils, floodway, environmentally sensitive areas, cultural resources, historic areas, or related concerns.

Unpolluted water means any water of quality equal to, or better than, the effluent criteria in effect. Water that would not cause a violation of receiving water quality standards and would not benefit by discharge into a sanitary sewer and wastewater treatment facilities is considered unpolluted.

Urban area means land associated with, or part of, a defined city or town. This chapter applies to urban or urbanizing, rather than rural, areas.

User means any person who discharges, causes, or permits the discharge of stormwater into the city's stormwater management system.

User fee means a fee levied on users of a stormwater management system for the user's proportionate share of the cost of operation and maintenance, including replacement, of such works.

Violation (offense) means site conditions or facilities that are determined to be noncompliant with either an approved Stormwater Management Plan (SWMP), an Erosion Control Sediment Control Permit, or any illicit discharges. Such violations are subject to civil penalties and fees as described in this ordinance, and as established by the City.

Watershed master plan means the plan that an engineer/designer formulates to manage urban stormwater runoff for a particular project, development, or drainage area. It typically addresses such subjects as characterization of the site development and grading plan; peak rates of runoff, flow duration, and runoff volumes for various return frequencies; locations, criteria and sizes of detention or retention ponds and conveyances; runoff control features; land parcels, easement locations, opinions of probable costs, measures to enhance runoff quality, salient regulations, and how the plan addresses them, and consistency with secondary objectives, such as public recreation, aesthetics, public safety, and groundwater recharge. It is usually submitted to regulatory officials for their review for adoption. These plans often include parcels of land that are not included in a specific project, which may be related or associate with future development within the master plan watershed.

Wetlands means lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this chapter, wetlands must have the following three attributes:

(1) A predominance of hydric soils;

(2) Are inundated or saturated by the surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and

(3) Under normal circumstances, support the prevalence of such vegetation.

Sec. 107-1-2. - Purpose and policy.

This chapter sets forth uniform requirements for stormwater management systems within the City and its extraterritorial jurisdiction. It is the intent of the Board of City Commissioners that the requirements and standards contained in this chapter comply with all applicable state and federal laws. In the event of any conflict between the provisions of this chapter and the provisions of an erosion control, shoreland protection, floodplain ordinance, or other regulations adopted by the city, county, state or federal authorities, the more restrictive standard prevails. The objectives of this chapter are:

(1) To promote, preserve, and enhance the natural resources within the City and its extraterritorial jurisdiction;

(2) To protect and promote the health, safety and welfare of the people and property through effective stormwater management practices;

(3) To protect the city's natural resources from adverse impacts occasioned by development or other activities;

(4) To regulate land development and land disturbing or other activities that may have an adverse and potentially irreversible impact on water quality and environmentally sensitive lands;

(5) To minimize conflicts and encourage compatibility between land disturbing and development activities and environmentally sensitive issues (i.e., land, water, habitat, etc.);

(6) To require detailed review standards and procedures for land development activities proposed throughout the City and its extraterritorial jurisdiction, thereby achieving a balance between growth and development, and the protection of water quality;

(7) To provide for the protection of surrounding or adjacent properties from water and wind erosion using Best Management Practices that meet the intended use; and

(8) To provide for adequate stormwater system analysis and appropriate stormwater system design as necessary to protect public and private property, water quality, and existing natural resources. This chapter establishes and provides for the following stormwater management criteria:

a. Regulating development through issuance of Stormwater Management Plans, and Erosion and Sediment Control Permits, through enforcement of general stormwater drainage requirements throughout the City and its extraterritorial jurisdiction. It authorizes monitoring and enforcement activities and provides for establishing applicable fees for the equitable distribution of costs associated with the administration of the stormwater management program established in this chapter.

b. The regulation of, and the establishment of criteria for, public underground storm sewers, artificial and natural open channel, drainage systems, stormwater detention and retention ponds, and private stormwater drainage systems discharging into the public system.

c. The regulation of development activities as they relate to managing stormwater volumes, rates of runoff, flow duration, water quality, and their subsequent impacts to downstream property and stormwater management facilities.

d. Provides for a stormwater management system user charge and the method for calculating charges for each user classification. Procedures for rate adjustments and annual review criteria are established.

e. Imposes civil penalties for violating the provisions of this chapter, and the orders, rules, regulations and permits issued under this chapter.

f. Applies in the City and its extraterritorial jurisdiction, and to persons outside the City who are, by contract or agreement with the City, users of the city stormwater management system. Except as otherwise provided in this chapter, the City Engineer shall administer, implement, and enforce the provisions of this chapter.

(9) To comply with the requirements of the Municipal Separate Storm Sewer System (MS4) under the North Dakota Pollutant Discharge Elimination System (NDPDES).

Sec. 107-1-2.1 – Transfer of authority.

The Board of City Commissioners may, using a joint powers agreement, transfer the authority for the administration and/or enforcement of this chapter in the City's extraterritorial area to another entity.

Sec. 107-1-3 - Scope.

(a) Every applicant for a building permit, subdivision approval, or permit to allow land disturbing activities must submit for approval a Stormwater Management Plan to the City Engineer, which must comply with the provisions of this chapter and the Stormwater Design Standards Manual (Manual). No building permit, subdivision approval, or permit to allow land disturbing activities shall be issued until approval of the Stormwater Management Plan, Erosion and Sediment Control Permit, or a waiver of the approval requirements has been obtained in strict conformance with the provisions of this chapter. In addition, no land disturbing activities shall start until the approvals and permits are issued and BMPs installed; otherwise the site is considered noncompliant and in violation of the ordinance.

(b) Exemptions to the requirements of this section include:

a. Any part of a subdivision if a plat of the subdivision has been approved by the Board of City Commissioners and recorded with the recorder on or before the effective date of this chapter. An Erosion Control and Sediment Permit for land disturbing activities on such properties is still required, however, in accordance with this chapter;

b. Land disturbing activity involving the construction of a single-family or a two-family dwelling that is not part of a larger development;

c. A parcel for which a building permit has been approved on or before the effective date of this chapter;

d. Installation of a fence, sign, telephone, and electric poles and other kinds of posts or poles; or

e. Emergency work to protect life, limb or property.

(c) The City Engineer may waive any requirement of this chapter upon making a finding that compliance with the requirement will involve an unnecessary noneconomic hardship, and the waiver of such requirement will not adversely affect the standards and requirements set forth in Article 3 of this chapter. The City Engineer may require as a condition of the waiver, such dedication or construction, or agreement to dedicate, or to construct, as may be necessary to adequately meet the said standards and requirements. At the City Engineer's discretion, a waiver request maybe brought before the Board of City Commissioners for consideration, and approval or denial. At the request of a city commissioner, a waiver denied by the City Engineer may be brought before the Board of City Commissioners for reconsideration.

(d) Illicit Discharges Prohibited. Illicit discharges, including dumping, into the public storm sewer system within the City or its extraterritorial area are prohibited. Such discharges are considered a violation of this ordinance and are subject to a fine or civil penalty under this chapter.

ARTICLE 2. - VIOLATIONS

Sec. 107-2-1. – Enforcement - Legal action.

If any person commences any land disturbing activities which result in increased stormwater quantity or stormwater quality degradation into the city stormwater management system, contrary to the provisions of this chapter, federal or state requirements or any order of the City, the City Engineer, building official, Code Enforcement Officer, or other designated agent of the City may commence action for appropriate legal and/or equitable relief. Actions available to the City include one or more of the following:

(1) The City Engineer may assess a monetary penalty pursuant to the adopted noncompliance or violation fee schedule approved by the Board of City Commissioners.

(2) A code enforcement action under Chapter 26 of the Mandan Code of Ordinances.

(2) Action by the City to correct the problem and billing the property owner or assessing the property for the costs incurred by the City, including but not limited to legal, engineering, and administrative costs.

(3) Action by the City to obtain an injunction and/or court order to cease and desist and remediate the problem.

(4) Notice of the suspension or revocation of permits and/or inspections required for construction to continue.

Appeal. All decisions of the City Engineer related to violations of a stormwater management plan, SWPPP, or this chapter, or the issuance or non-issuance of the permits required by this chapter, may be appealed to the Appeals Committee, upon written notice of appeal filed within fifteen (15) days of issuance of the decision. If no appeal is filed within the timeline specified, the decision of the City Engineer is final. An appeal stays the City Engineer's decision unless the City Engineer declares the order to be an emergency and certifies to the Appeals Committee that a stay would cause imminent danger to life and property, in which case the decision may be stayed only by a restraining order from the Board of City Commissioners or a court of record.

Hearing. Upon receiving the notice of appeal, the Appeals Committee shall set a date for a hearing within thirty (30) days of receipt of the notice of appeal. Notice of the time and place for the hearing must be served upon the appellee by certified mail or in person not less than five (5) days prior to the hearing.Any applicant dissatisfied with an order the Appeals Committee issued pursuant to this section may request a hearing before the Board of City Commissioners by filing a written request for a hearing with the City Engineer within 15 days of receipt of the order, who shall inform city administration. The hearing must be held within 30 days of receipt of the request or as subject to the current meeting schedule, whereupon the Board of City Commissioners may affirm, modify, or rescind the order. A request for a hearing filed pursuant to this section does not stay the order while the hearing is pending.

Sec. 107-2-2. - Order to remove.

The discharge of deposited or eroded materials onto public rights-of-way or public storm sewer systems within the City shall be considered an offense and may result in an order to remove such materials. Removal of such materials shall be at the property owner's expense, based upon the properties from which the materials originated. The property owner shall be given three days after receiving notice to remove the materials. If such materials are not removed, they may be removed under the City Engineer's direction, and any associated costs shall be the responsibility of the property owner. Failure to comply with the City's order or pay the associated costs, within a specified period, will result in the property being assessed for the applicable costs.

Sec. 107-2-3. - Penalty.

A violation of an order of the City made in accordance with this chapter, or any failure to comply with any provision of this chapter and the orders, rules, regulations, and permits issued under this article, is an offense. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. The penalty amounts shall be consistent with the adopted noncompliance and violation fees (civil penalties).

The City Engineer shall annually provide to the Board of City Commissioner for its consideration and adoption a listing of monetary civil penalties, which shall be used by the City Engineer in the cases of non-compliance and violations of this ordinance.

Sec. 107-2-4. - Costs of damage.

Any person violating any of the provisions of this chapter or initiating an activity which causes a deposit, obstruction, or damage or other impairment to the City's stormwater management system is liable to the City for any expense, loss, or damage caused by the violation or the discharge. The City may bill the person violating this chapter the costs for any cleaning, repair or replacement work caused by the violation of stormwater discharge. As long as the bill remains unpaid, the City may refuse to approve any plan, issue any permit or certificate of occupancy for any project for which the person is a participant. The City reserves the right to assess the subject properties for the applicable expenses, pursuant to its authority.

Sec. 107-2-5. - City attorney's fees and costs.

In addition to the civil penalties provided in this article, the City may recover reasonable attorney fees, court costs, court reporter's fees, and other expenses of litigation by appropriate action against the person found to have violated this chapter or the orders, rules, regulations, and permits issued under this chapter.

Sec. 107-2-6. - Falsifying information.

Any person who knowingly makes any false statements, representations, or certification in any applicable record, report, plan, or other document filed or required to be maintained pursuant to this chapter, or stormwater management permit, or who knowingly falsifies, tampers with, or knowingly renders inaccurate any monitoring devices or method required under this chapter, shall be charged with a class B misdemeanor

ARTICLE 3. - STORMWATER MANAGEMENT PLAN

Sec. 107-3-1. - Contents of stormwater management plan.

The contents of the Stormwater Management Plan are outlined in the Stormwater Design Standards Manual and are subject to periodic review and revision by the City Engineer.

Stormwater management plan report. A written report discussing pre- and post-development hydrology and hydraulic analysis, erosion and sedimentation control during and after construction, protective measures for proposed and existing structures, and water quality concerns is required. The contents of the report shall be in accordance with the recommended format in the Stormwater Design Standards Manual (Manual). The City Engineer has the authority to enforce the design criteria as outlined in the Manual.

Sec. 107-3-2. - Application.

(a) A written application for a Stormwater Management Plan approval, along with the proposed Stormwater Management Plan, shall be filed with the City Engineer. The application shall include a statement indicating the grounds upon which approval is requested, that the proposed use is permitted in the underlying zoning district, and adequate evidence showing the proposed use will conform to the standards set forth in this chapter. Prior to applying for

approval of a Stormwater Management Plan, it is recommended that the applicant have the Stormwater Management Plan reviewed by the applicable public agencies.

(b) Three sets of legible copies of the drawings and required information shall be submitted to the City Engineer and shall be accompanied by a receipt from the City to document the payment of all required fees for processing and approval as set forth in the Stormwater Design Standards Manual. Plans shall be prepared on a scale appropriate to the site of the project and suitable for the review to be performed.

Sec. 107-3-3. - Fees.

All applications for a Stormwater Management Plan approval shall be accompanied by a processing, approval, and review fee schedule established by the City Engineer and adopted by resolution of the Board of City Commissioners. The City Engineer shall annually provide to the Board of City Commissioners, for its consideration and adoption, a listing of review fees and civil penalties associated with violations of this ordinance.

Sec. 107-3-4. - Plan review process.

(a) Stormwater management plans meeting the requirements of this article shall be submitted to the City Engineer for review and compliance with the standards of this article. The City Engineer shall approve, approve with conditions, or deny the stormwater management plan. If a particular stormwater management plan involves a complex application or has the potential for significant controversy, the City Engineer or the applicant may bring the proposed stormwater management plan before the Board of City Commissioners for consideration and public comment. The City Engineer, after determining technical assistance is required to review any application, or a complex application, may retain an outside consultant to conduct a peer review. The cost to review complex applications shall be borne by the applicant, pursuant to the annual fee schedule adopted by the City, or using an hourly fee schedule provided by the review consultant and approved by the City Engineer.

(b) Any watershed having any portion located within the city limits or its extraterritorial jurisdiction shall have any land disturbing activity regulated by the City and this chapter.

Sec. 107-3-5. - Duration of plan.

Approval of any Stormwater Management Plan submitted under the provisions of this chapter shall expire one year after the date of approval, unless construction has commenced in accordance with the plan or unless documentation has been provided showing work is proceeding with design toward implementation. However, if, prior to the expiration of approval, the applicant makes a written request to the City Engineer for an extension of time to commence construction, setting forth the reasons for the requested extension, the City Engineer may grant one extension of not greater than one single year. Receipt of any request for an extension shall be acknowledged by the City Engineer within 15 days. The City Engineer shall decide whether to grant the requested extension within 30 days of receipt of the request. Any plan may be revised in the same manner as originally approved. Any denied application may be resubmitted with additional information

addressing the concerns contained within the denial. The resubmittal is subject to all applicable fees and shall be considered as a new application.

Sec. 107-3-6. - Conditions placed on approval.

A Stormwater Management Plan may be approved subject to compliance with conditions reasonable and necessary to ensure that the requirements contained in this chapter are met. Such conditions may, among other matters, relate to the size, kind or character of the proposed development, require the construction of structures, drainage facilities, storage basins and other facilities, require replacement of vegetation, establish required monitoring procedures, stage the work over time, require alteration of the site design to ensure buffering, require the acquisition of certain lands or easements, and require the conveyance to the City or other public entity of certain lands or interests therein. The City Engineer may specify special requirements for specific watersheds within the City and its extraterritorial jurisdiction. The nature of these requirements will be subject to the unique environmental and natural resource environment of each sub-watershed. Approval of the plan shall bind the applicant to perform all the conditions and requirements of the plan prior to any land disturbing activities.

Sec. 107-3-7. - Approval standards.

(a) This section describes approval standards against which proposed stormwater management plans will be measured. A Stormwater Management Plan which fails to meet the standards contained in this section shall not be approved by the City Engineer or the Board of City Commissioners. Other standards, such as state and federal standards, shall also apply. If two standards of different agencies conflict, the more restrictive standard shall apply.

(b) It shall be the responsibility of the applicant to obtain any required permits from other governmental agencies having jurisdiction over the work to be performed. Typically, such agencies include, but are not limited to, the county water resource district, county engineer's office, department of water resources and state engineer's office, state department of transportation, state health department, state department of waters quality, state historical preservation officer, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and possibly others. In addition to this chapter, the applicant is responsible for adhering to the requirements of this Code, including all zoning regulations applicable to development projects and all regulations governing the subdivision of land.

Sec. 107-3-8. - Stormwater Design Standards Manual.

The Stormwater Design Standards Manual (Manual), as adopted and amended by the City, contains the principal standards and design criteria for developing an effective and acceptable Stormwater Management Plan. The Manual contains an overview of the City's stormwater management policy and design objectives, as well as a discussion of the contents of stormwater management plans submitted to the City Engineer for approval. The Manual contains detailed criteria for hydrologic evaluations, the design of stormwater management system facility components, water quality protection standards, instructions for the development of an erosion and sedimentation control plan, and requirements for easements and rights-of-way. The Manual also

contains a discussion regarding operation and maintenance requirements, standard forms to be used, and references to standard construction details adopted by the city.

Stormwater management plans submitted in a format deemed inadequate based on that designated in the Manual, will be returned without review and will be charged a resubmittal fee, if revised and resubmitted. Those found in noncompliance will be returned with comments regarding identified deficiencies and will be charged a resubmittal fee when the revisions are provided.

Sec. 107-3-9. - Models; methodologies; computations.

Hydrologic models and design methodologies used to determine runoff conditions and to analyze stormwater management structures and facilities shall be approved in advance by the City Engineer or as stated in the Manual. All stormwater management plans, drawings, specifications, and computations for stormwater management facilities submitted for review shall contain a validated seal and be signed by a professional engineer registered in the state. This requirement will be met as part of the properly completed stormwater management plan report, as described in the stormwater design standards manual.

Sec. 107-3-10. - Construction plans and specifications.

(a) The construction plans and specifications prepared for the construction of the stormwater management facilities must:

  (1) Be consistent with the stormwater management plan approved by the City Engineer.

  (2) Be in conformance with the requirements of the City of Mandan Municipal Specifications and any other necessary permits issued by other governmental agencies.

  (3) Be sealed and signed by a professional engineer registered in the state.

  (4) Be submitted to the City Engineer for approval.

(b) No construction may commence until approval of the construction plans and specifications has been received.

(c) The set of construction plans, in a format acceptable to the City Engineer, shall contain a drawing delineating the erosion and sedimentation management plan, including details of silt fences, storm drain inlet protection, and other construction erosion control facilities. The construction specifications shall contain technical specifications describing erosion, sedimentation, and water control requirements during and after construction operations.

Sec. 107-3-11. - Construction activities.

Construction operations must at a minimum comply with the following requirements:

  (1) *Site dewatering.* Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, up flow chambers, hydro-cyclones, soil concentrators, or other appropriate controls as deemed necessary. Water may not be discharged in a

manner that causes erosion, sedimentation, or flooding on the site, the receiving channels, or any wetland.

(2) *Waste and material disposal.* All waste and unused building materials, including garbage, debris, cleaning wastes, wastewater, toxic materials, or hazardous materials, shall be properly disposed of offsite and must not be carried by runoff into a receiving channel, storm sewer system, or wetland.

(3) *Tracking management.* Each site shall have roads, access drives, and parking areas of sufficient width, length, and surfacing to prevent sediment from being tracked onto public or private roadways. Any material reaching or placed on a public or private road shall be removed, not by flushing, before the end of each workday.

(4) *Water quality protection.* The construction contractor shall be required to control oil and fuel spills and the discharge of any chemicals to prevent such spills or discharges from entering any watercourse, sump, sewer system, water body, or wetland.

(5) *Site erosion and sedimentation control.* Construction operations must include erosion and sedimentation control measures meeting accepted design criteria, standards, and specifications contained in the Manual.

(6) *Downspouts*. All downspouts from new construction shall be connected to a storm sewer system or extended on the surface to an impervious area (e.g., paved street) or an established watercourse to avoid erosion on unvegetated landscape areas (e.g., newly topsoiled residential yards and boulevards).

Sec. 107-3-12. - Criteria for permanent facilities.

Stormwater control facilities included as part of the final design for a permanent development shall be addressed in the stormwater management plan and shall meet the following criteria:

(1) *Pre-construction versus post-construction hydrological response of site.* An applicant shall install or construct, on or for the proposed land disturbing or development activity, all stormwater management facilities necessary to manage increased runoff so that the two (2) year, ten (10) year and one hundred (100) year storm peak discharge rates existing before the proposed development shall not be increased, and accelerated channel erosion will not occur because of the proposed land disturbing or development activity. In lieu of the installation or construction of stormwater management facilities, an applicant may make an in-kind or monetary contribution for the development and maintenance of regional stormwater management facilities designed to serve multiple land disturbing and development activities undertaken by one or more persons, including the applicant. The City Engineer shall establish this in-kind fee based upon an approved master plan and an analysis of drainage and flood protection benefits provided to property directly impacted by the regional stormwater management facilities.

(2) *Redevelopment sites.* New construction on a site with pre-existing uses with the purpose of converting these properties to a different use shall comply with all elements of subsection (1) of this section. In addition, if a site review identifies existing stormwater

runoff concerns, the City Engineer may require additional controls to reasonably alleviate these concerns, focusing only on predevelopment site conditions.

(3) *Natural features of the site.* The applicant shall give special consideration to reducing the need for stormwater management facilities by incorporating the use of natural topography and land cover, such as wetlands, ponds, natural swales, and depressions as they exist before development to the degree that they can accommodate the additional flow of water without compromising the integrity or quality of these natural features.

(4) *Stormwater management strategies.*

a. The following stormwater management practices shall be investigated in developing a stormwater management plan:

1. Natural infiltration of precipitation and runoff on site, if suitable soil and geological conditions are available. The purpose of this strategy is to encourage the development of a stormwater management plan that encourages natural infiltration. This includes providing as much natural or vegetated area on the site as possible, minimizing impervious surfaces and directing runoff to vegetated areas rather than to adjoining streets, storm sewers and ditches.

2. Flow attenuation through using open vegetated swales and natural depressions.

3. Stormwater detention facilities.

4. Stormwater retention facilities, on a case-by-case basis.

b. A combination of successive practices may be used to achieve the applicable minimum control requirements specified in the four strategies in subsection 4(a) of this section. Justification shall be provided by the applicant for the method selected.

c. The use of infiltration as a means to control runoff volumes or peak flows may only be considered if a geotechnical review indicates no adverse impacts will occur to groundwater or adjoining properties.

(5) *Adequacy of outlets.* The adequacy of any outlet, used as a discharge point for proposed stormwater management facilities, must be assessed and documented to the satisfaction of the City Engineer. The hydraulic capacities of downstream natural channels, reaches, storm sewer systems, or streets shall be sufficient to receive post-development runoff discharges and volumes without causing increased property damage or any increase in the established base floodplain elevation. If a floodplain or floodway has not been established by the Federal Emergency Management Agency, then the applicant shall provide a documented analysis and estimate of the base flood elevation as certified by a professional engineer registered in the state. In addition, projected velocities in downstream natural or manmade channels shall not exceed that which is reasonably anticipated to cause erosion unless protective measures acceptable to the City Engineer are approved and installed as part of the stormwater management plan. The assessment of outlet adequacy shall be included in the stormwater management plan and shall be certified by a professional engineer registered in the state.

(6) *Runoff volume*. In cases where the outfall consideration in subsection 5 of this section determines that an increase in runoff volume could adversely impact downstream properties, special considerations must be made to limit or prevent the proposed increases. Such impacts could include, but are not limited to, discharges into a closed basin and/or wetland, or overland flows where the runoff passes through very slowly resulting in excessive infiltration.

(7) *Stormwater detention/retention facilities.* Stormwater detention or retention facilities proposed to be constructed in the stormwater management plan shall be designed according to the most current technology, as reflected in the Stormwater Design Standards Manual.

Sec. 107-3-13. - Operation, maintenance and inspection.

All stormwater management facilities shall be designed to minimize the need for maintenance, to provide access for maintenance purposes, and to be structurally sound. All stormwater management facilities shall have a plan of operation and maintenance that ensures continued effective removal of pollutants carried in stormwater runoff. The City Engineer may inspect all stormwater management facilities at any time. Inspection records will be kept on file at the City Engineering department. It shall be the responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the stormwater management facilities for inspection and maintenance purposes. The City Engineer shall retain enforcement powers for assuring adequate operation and maintenance activities through permit conditions and civil penalties for noncompliance orders.

The owner of private detention/retention facilities is required to provide an Operations and Maintenance Plan as part of their Certification Report, and retain records associated with their routine and annual inspections, including all repairs, general maintenance, and system operations. The plan shall include full access to the City Engineer for compliance inspections and the ability to review related records.

Sec. 107-3-14. - Easements and bonds.

Easements or performance bonds may be required as conditions to the issuance of a Stormwater Management Plan or a SWPPP Permit. Any performance bond must equal 110 percent of the estimated project costs.

Sec. 107-3-15. - Management of site vegetation.

The applicant shall provide for the installation and maintenance of vegetation on development property in accordance with the following criteria:

(1) *Use of impervious surfaces.* No person shall apply fertilizer to or deposit grass clippings, leaves, or other vegetative materials on impervious surfaces, or within stormwater drainage systems with impervious liners or conduits.

(2) *Unimproved land areas.* Except for driveways, sidewalks, patios, areas occupied by structures, or areas which have been improved, all areas shall be covered by plants or vegetative growth.

(3) *Use of pervious surfaces.* No person shall deposit grass clippings, leaves, or other vegetative materials, with the exception of normal mowing or weed control, within natural or manmade drainageways, wetlands or within wetland buffer areas.

Any landowner or land user who violates subsections 1 or 3 of this section shall be guilty of an offense under this chapter, and subject to applicable civil penalties or fees.

Sec. 107-3-16. - Plan applicability.

A plan issued under this chapter runs with the land and is a condition of plat or site plan approval. Any owner or subsequent owner of any parcel within the plat or the site must comply with the plan or any approval, revision, or future modification.

ARTICLE 4. - LAND DISTURBING ACTIVITIES

Sec. 107-4-1. - Prohibited activities.

It is unlawful to initiate land development, land disturbing, or other activities which result in an increase in stormwater quantities, degradation of stormwater quality, or restriction of flow in any storm sewer system, open ditch or natural channel, stormwater easement, water body, or wetland outlet within the jurisdiction of the city, without having first complied with the terms of this chapter.

Sec. 107-4-2. - SWPPP Permits.

(a) *Mandatory permits.* Any person proposing a development or project which involves land development, land disturbing, or other activities as defined in this chapter, shall obtain an SWPPP Permit, as part of their Stormwater Management Plan approval, before initiating such activities. The following subsections apply even in cases in which a Stormwater Management Plan waiver may be granted.

(b) *Permit application.* All persons subject to compliance with the requirements for a mandatory permit shall complete and file, with the City Engineer, an application in the form prescribed by the City Engineering department and accompanied by a fee established by the City Engineer and adopted by the Board of City Commissioners. The permit application shall accompany the Stormwater Management Plan as prescribed under this chapter. The City Engineer will evaluate the data furnished as part of the Stormwater Management Plan and may require additional information. After evaluation and acceptance of the Stormwater Management Plan, the City Engineer may issue an SWPPP Permit, subject to any terms and conditions deemed necessary.

(c) *Permit conditions.* SWPPP Permits are issued subject to all provisions of this chapter and all other applicable regulations, user charges, and fees established by the City. Permits may contain any of the following conditions:

(1) The user fee for a stormwater outlet utilizing a regional stormwater management facility;

(2) Limits on the maximum rate of stormwater discharge;

(3) Limits on water quality degradation of stormwater discharge;

(4) Requirements for the ownership, installation, operation, and maintenance of stormwater detention/retention facilities;

(5) Compliance schedule;

(6) Requirements for notification to and acceptance by the City Engineer of any land disturbing activities which have the potential for increasing the rate of stormwater discharge resulting in degradation of stormwater quality; and

(7) Other conditions as deemed appropriate by the City Engineer to ensure compliance with this chapter.

(d) *Permit duration.* Permits must be issued for a fixed period specified by the City Engineer. The applicant shall apply for permit renewal a minimum of 90 days prior to the expiration of the applicant's existing permit. The terms and conditions of a permit are subject to modification by the City Engineer during the term of the permit as set forth in subsection (e) of this section.

(e) *Permit modification.*

(1) Permits may be modified by the City Engineer for just cause upon 30 days' notice. Just cause shall include, but is not be limited to:

a. Promulgation of a new applicable nationwide permit standard;

b. Changes in the requirements of this chapter;

c. Changes in the process used by the permittee or changes in discharge rate, volume, or character; and

d. Changes in the design or capability of receiving stormwater facilities.

(2) The applicant must be informed of any proposed changes in the permit at least 30 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

(f) *Permit amendments.* SWPPP Permits may be amended only by a written request submitted by the permittee to the City Engineer. This request shall contain the reason for the change and documentation related to any additional impacts which may result from amendment approval. Amendment requests submitted prior to issuance of a permit shall be considered part of the original submittal. Amendment requests filed after permit approval shall be considered and reviewed under the same procedures and guidelines as used for the original permit applications under this chapter.

(g) *Permit transfer.* A permit runs with the property it covers and may be transferred to new owners in its entirety or by parcel, with each parcel being subject to the permit and any conditions which apply to that parcel. Permits shall be terminated only after completing all construction and after a Certification Report has been provided to the City Engineer. Permits

may not be transferred if the permit has been suspended due to noncompliance or if the property is the subject of civil penalties or fees.

(h) *Monitoring facilities.* The City Engineer may require the applicant to provide and operate, at the applicant's expense, a monitoring facility to allow inspection, sampling, and flow measurements of each stormwater facility component. Where possible, the monitoring facility shall be located on the property of the applicant, as opposed to on public rights-of-way. Ample room must be allowed for accurate flow measuring and sampling, and the facility shall be kept in a safe and proper operating condition.

(i) *Inspection.* The City Engineer may inspect the stormwater management facilities of any permittee to determine compliance with the requirements of this chapter. A permittee shall allow the City Engineer to enter upon the premises at all reasonable hours for the purpose of inspection, sampling, or record examination. The City Engineer may place equipment on the permittee's premises as required for the purpose of collecting samples and flow recording.

Sec. 107-4-3. - Final Stormwater Management Plan.

Upon completion of all required construction activities, the permit applicant shall submit to the City Engineer the final stormwater management plan to document any changes to the original stormwater management concept. The final stormwater management plan shall contain record drawings showing the final configuration for all improvements as constructed. The final stormwater management plan and record drawings shall be certified by a professional engineer registered in the state as part of the required Certification Report.

Sec. 107-4-4. - Notification of violation.

Whenever the City Engineer finds that any person is not in compliance with the SWPPP or Stormwater Management Plans and/or any conditions or any prohibition, limitation, or requirement contained in this chapter, the City Engineer shall serve, either in person, by email, or first-class mail, a written notice stating the nature of the violation along with any applicable fees and civil penalties. Within 30 days of the date of the notice, unless a shorter time frame is set by the City Engineer due to the nature of the violation, a plan for the satisfactory correction thereof must be submitted to the City Engineer. The City Engineer in a timely manner shall review the plan submitted and either approve or reject it.

Sec. 107-4-5. - Emergency suspension of permits.

(a) The City Engineer may, for cause, order the suspension or stopping of work on a project including the Stormwater Management Plan or SWPPP permit of a person or parcel owner when it appears to the City Engineer that an actual or threatened discharge presents or may present an imminent or substantial danger to the health or welfare of persons downstream, substantial danger to the environment, or a violation of any permit conditions imposed by this chapter. If any person is notified of the suspension action and/or a person fails to comply voluntarily with the suspension order, the City Engineer shall commence whatever steps are necessary to obtain compliance, including judicial proceedings. If the violation creates an immediate threat to the public health, safety, or welfare, the City Engineer may order an

immediate stop to all work on site and arrange for a contractor hired by the City to effect emergency mitigation efforts. Any cost incurred by the City shall be billed to the owner of the property and assessed to the property if the bill is left unpaid. The City Engineer may reinstate the permit upon proof of compliance with all permit conditions.

(b) Whenever the City Engineer orders the suspension of a Stormwater Management Plan or an SWPPP Permit pursuant to the emergency provisions of this section, the City Engineer shall serve notice on the permittee personally or by first class mail and/or electronic mail (e-mail). The permittee has the right to an informal hearing before the City Engineer upon request made in writing and filed with the City Engineer. The informal hearing must be held within five days of the request. Following the hearing, the City Engineer may affirm, modify, or rescind the order. Any appeal of the City Engineer's final determination may be filed with the Appeals Committee as defined in this chapter, who will affirm, modify, or rescind the order of the City Engineer.

(c) Any applicant dissatisfied with an order the Appeals Committee issued pursuant to this section may request a hearing before the Board of City Commissioners by filing a written request for a hearing with the City Engineer within 15 days of receipt of the order, who shall inform city administration. The hearing must be held within 30 days of receipt of the request or as subject to the current meeting schedule, whereupon the Board of City Commissioners may affirm, modify, or rescind the order. A request for a hearing filed pursuant to this section does not stay the order while the hearing is pending.

Sec. 107-4-6. - Revocation of permit.

A stormwater management permit may be revoked following notice and an opportunity for a hearing. The Board of City Commissioners may revoke a stormwater management permit for cause, including, but not limited to:

(1) Violation of any terms or conditions of the stormwater permit;

(2) False statements on any required reports;

(3) Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; or

(4) Any other violation of this chapter or related ordinance.

By:_____
James Froelich, President, Board of
City Commissioners

Attest:

_____
James Neubauer, City Administrator

First Consideration: January 20, 2026
Second Consideration and Final Passage: February 3, 2026
Publication: _____

Resolution Establishing Rates and Charges for services from the General Fund for the Engineering Department Stormwater Inspection and Review.

BE IT RESOLVED by the Board of City Commissioners of the City of Mandan, North Dakota, pursuant to the provisions of the Mandan Municipal Code, that the following rates and charges are hereby established for services from the General Fund for the Engineering Department Stormwater Inspection and Review.

Type	Current Fee	New Fee
Stormwater Submittal		
Stormwater Scoping Sheet	$-	$50
Stormwater Management Plan		
1st Review	$300	$250
Subsequent Amendments	$-	$150 (per amendment)
Inadequate Plan (Returned)	$50	$250
Resubmittal – 2nd Review	$50	$500
Complex Reviews – 3rd Review	$-	$750min (Actual Consultant Cost)
Violations (Offense)		
Stormwater Management Plan		
1st Offense	$-	$-
2nd Offense	$-	$250/day*
3rd Offense	$-	$500/day*
4th Offense or Emergency	$-	Suspension/Revocation STOP WORK ORDER
Owner requested extension	$-	$250/for a non-compliance extension period as determined by City Engineer
SWPPP (Erosion/Sediment Control - per site)		
1st Offense	$-	$-
2nd Offense	$25	$250/day**
3rd Offense	$-	$500/day**
4th Offense or Emergency	$-	Suspension/Revocation STOP WORK ORDER
Owner requested extension	$-	$250/for a non-compliance extension period as determined by City Engineer

*Minimum recheck 5 days

**Minimum recheck 3 days

BE IT FURTHER RESOLVED that the rates and changes for services from the General Fund shall be effective as of February 3rd, 2025.

Date this 20th day of January, 2025

_____
President, Board of City Commissioners

Attest:

_____
City Administrator